Fachhochschule Köln
Cologne University of Applied Sciences

UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ
FACULTADES DE CIENCIAS QUÍMICAS, INGENIERÍA Y
MEDICINA
PROGRAMA MULTIDISCIPLINARIO DE POSGRADO EN
CIENCIAS AMBIENTALES

AND

COLOGNE UNIVERSITY OF APPLIED SCIENCES
INSTITUTE FOR TECHNOLOGY AND RESOURCES
MANAGEMENT IN THE TROPICS AND SUBTROPICS

ANALYSIS OF THE AGROBIODIVERSITY OF HOME GARDENS IN THE TROPICAL REGIONS OF MEXICO

THESIS TO OBTAIN THE DEGREE OF
PROGRAMA MULTIDISCIPLINARIO
DE POSGRADO EN CIENCIAS AMBIENTALES
DEGRREE AWARDED BY UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ
AND
MASTER OF SCIENCE
"TECHNOLOGY AND RESOURCES MANAGEMENT IN THE TROPICS AND SUBTROPICS
FOCUS AREA "ENVIRONMENTAL AND RESOURCES MANAGEMENT"
DEGREE AWARDED BY COLOGNE UNIVERSITY OF APPLIED SCIENCES

PRESENTED BY:

CLAUDIA HEINDORF

CO-DIRECTOR OF THESIS PMPCA:
DR. JUAN ANTONIO REYES-AGÜERO
CO-DIRECTOR OF THESIS ITT:
PROF. DR. HARTMUT GAESE
ASSESSOR:
DR. JAVIER FORTANELLI MARTÍNEZ

SAN LUIS POTOSÍ, MÉXICO AUGUST, 2011

Fachhochschule Köln
Cologne University of Applied Sciences

UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ
FACULTADES DE CIENCIAS QUÍMICAS, INGENIERÍA Y MEDICINA
PROGRAMA MULTIDISCIPLINARIO DE POSGRADO EN CIENCIAS AMBIENTALES

AND

COLOGNE UNIVERSITY OF APPLIED SCIENCES
INSTITUTE FOR TECHNOLOGY AND RESOURCES MANAGEMENT IN THE TROPICS AND SUBTROPICS

ANALYSIS OF THE AGROBIODIVERSITY OF HOME GARDENS IN THE TROPICAL REGIONS OF MEXICO

THESIS TO OBTAIN THE DEGREE OF

MAESTRÍA EN CIENCIAS AMBIENTALES
DEGRRE AWARDED BY UNIVERSIDAD AUTÓNOMA DE SAN LUIS POTOSÍ
AND
MASTER OF SCIENCE
TECHNOLOGY AND RESOURCES MANAGEMENT IN THE TROPICS AND SUBTROPICS
FOCUS AREA "ENVIRONMENTAL AND RESOURCES MANAGEMENT"
DEGREE AWARDED BY COLOGNE UNIVERSITY OF APPLIED SCIENCES

PRESENTED BY:

CLAUDIA HEINDORF

DR. JUAN ANTONIO REYES-AGÜERO, CO-DIRECTOR (PMPCA)
PROF. DR. HARTMUT GAESE, CO-DIRECTOR (ITT)
DR. JAVIER FORTANELLI MARTÍNEZ, ASSESSOR (PMPCA)

SAN LUIS POTOSÍ, MÉXICO **AUGUST, 2011**

PROYECTO REALIZADO EN:

ITT AND PMPCA

CON EL APOYO DE:

DEUTSCHER AKADEMISCHER AUSTAUSCH DIENST (DAAD)

CONSEJO NACIONAL DE CIENCIA Y TECNOLOGÍA (CONACYT)

LA MAESTRÍA EN CIENCIAS AMBIENTALES RECIBE APOYO A TRAVÉS DEL PROGRAMA NACIONAL DE POSGRADOS (PNP - CONACYT)

Erklärung / Declaración

Name / *Nombre*: Claudia Heindorf
Matri.-Nr. / N° de matrícula: 11072578 (CUAS), 180193 (UASLP)

Ich versichere wahrheitsgemäß, dass ich die vorliegende Masterarbeit selbstständig verfasst und keine anderen als die von mir angegebenen Quellen und Hilfsmittel benutzt habe. Alle Stellen, die wörtlich oder sinngemäß aus veröffentlichten und nicht veröffentlichten Schriften entnommen sind, sind als solche kenntlich gemacht.
Aseguro que yo redacté la presente tesis de maestría independientemente y no use referencias ni medios auxiliares a parte de los indicados. Todas las partes, que están referidas a escritos o a textos publicados o no publicados son reconocidas como tales.

Die Arbeit ist in gleicher oder ähnlicher Form noch nicht als Prüfungsarbeit eingereicht worden.
Hasta la fecha, un trabajo como éste o similar no ha sido entregado como trabajo de tesis.

San Luis ,Potosí, den /*el* 15/08/2011

Unterschrift / *Firma*: Claudia Heindorf

Ich erkläre mich mit einer späteren Veröffentlichung meiner Masterarbeit sowohl auszugsweise als auch als Gesamtwerk in der Institutsreihe oder zu Darstellungszwecken im Rahmen der Öffentlichkeitsarbeit des Institutes einverstanden.
Estoy de acuerdo con una publicación posterior de mi tesis de maestría en forma completa o parcial por las instituciones con la intención de exponerlos en el contexto del trabajo investigación de las mismas.

Unterschrift / *Firma*: Claudia Heindorf

Acknowledgement

It is a pleasure to thank those who made my investigation possible and all those who directly or in directly contributed to the successful elaboration of my master thesis.

My first and very special thanks goes to Dr. Juan Antonio Reyes Agüero for his really great guidance throughout my whole investigation and for the fertile and memorable conversations with him. I owe deepest gratitude to Dr. Javier Fortanelli Martinez, who was an excellent support during my research time in Mexico, for his constructive remarks and his efforts to obtain financial supports for my excursions. I also thank Prof. Dr. Hartmut Gaese for his motivating comments and for always trusting in my capacities.

I am grateful to all the experts who I personally met and who contributed with valuable information to my work. Particular thanks to Dr. Heike Vibrans, Alfonso Castillo, Dr. Pedro Joaquín Correa Navarro, Dr. Alayón Gamboa Alay and Dr. Francisca Acevedo Gasman, including her nice colleagues from CONABIO. Also my gratitude to Dr. Daisy for her warm welcome in Merida, and her friendly students that guided mi through Merida during the first days.

Not to forget, all the inspiring and special people that I met on the markets and in the countryside; some of them are "secret" agrobiodiversity experts.

Special thanks goes to José D. García Peréz, the treasurer of the herbarium of the IIZD, for his time and his taxonomic expertise. Also my appreciation to all the friendly and kind library staff of several research centres that I have visited.

Lastly, I want to thank all those who supported me in any respect during the completion of the project. Nico, Agosto, my cheerful, motivating "San Luis Trio", Clau's mom, Manu and, of course, my lovely family far away, THANKS TO YOU ALL!

ABSTRACT

Traditional land use systems such as home gardens serve as a reservoir for plant genetic resources. Mexico is one of the centre of origin of cultivated plants and one of the richest countries in vascular plants. Therefore, the agrobiodiversity of Mexican home gardens gains special research importance.

The attempt of the study is to provide an overview about the agrobiodiversity of the home gardens in the tropical region of Mexico. As a database served the information of 31 caution fully selected home garden studies from 12 different Mexican states. The data was used to create a complete floristic list that represents the species richness and infra- and interspecific diversity of home garden vegetation. In a further step, taxonomic and additional information about plant use and origin was analyzed. Moreover, complementary data was taken to describe influencing factors of agrobiodiversity in home gardens.

In total 1347 plants were recorded (including 22 hybrids, 24 botanical varieties and 13 subspecies) that correspond to 149 plant families and 732 different genus. The portion of native plants, with 65%, is high. The species composition shows analogies to the natural vegetation of Mexico and to similar floristic regions of the world. Most of the home garden plants are dedicated to food production, followed by ornamental and medicinal use. Fruit trees are typical plant components. The home garden consists of various layers. According to the growth habit, most of the plants are expected to be found in the herb strata. The numerous listed local names indicate a high infraspecific diversity of home garden plants.

Complementary data show that home garden size and age influence the species richness and diversity. The arrangement of plants is rather planned than spontaneous. Home gardens are managed by the family members and a gender specific division of activities is observed. Management activities are complex and correspond to individual needs of the home gardeners. The home garden production is mainly dedicated to subsistence and plants between home gardens and the environment are constantly exchanged and distributed. Problems such as lack of water for irrigation are widely observed. At the same time socioeconomic tendencies and demographic factors influence agrobiodiversity in home gardens.

ZUSAMMENFASSUNG

Traditionelle Landnutzungssysteme wie Hausgärten stellen ein Reservoir für pflanzengenetische Ressourcen dar. Mexiko gehört zu den Genzentren der Kulturpflanzen und ist eines der artenreichsten Länder an Gefäßpflanzen. Untersuchungen zur Agrobiodiversität der Hausgärten in Mexiko sind daher von besonderer Relevanz.

Das Ziel der vorliegenden Arbeit besteht darin einen Überblick über die Agrobiodiversität von Hausgärten der tropischen Region Mexikos zu geben. Als Datengrundlage dienten die Ergebnisse von 31 sorgfältig ausgewählten Untersuchungen aus 12 verschiedenen Bundesstaaten Mexikos. Die Informationen der Arbeiten wurden verwendet um eine komplette Pflanzenliste der tropischen Hausgärten zu erstellen welche das intra- und interspezifische Pflanzenreichtum der Hausgärten aufzeigen soll. In einem weiteren Schritt wurden die taxonomische Informationen sowie Angaben zur Pflanzenherkunft und Nutzung analysiert. Zusätzlich wurden ergänzende Daten verwendet um die Einflussfaktoren der Agrobiodiversität in Hausgärten darzustellen.

Insgesamt wurden 1347 Pflanzenarten gelistet (inkl. 22 Hybride, 24 botanische Varianten und 13 Unterarten). Zudem wurden 149 Pflanzenfamilien und 736 Gattungen datiert. Der Anteil an einheimischen Pflanzen (65%) ist hoch. Die Pflanzenzusammensetzung ähnelt der natürlichen Vegetation Mexikos sowie vergleichbarer Pflanzenregionen weltweit. Ein Gros der Pflanzen dient der Nahrungsmittelversorgung, gefolgt von Zierpflanzen und Medinzinalpflanzen. Obstbäume stellen die typischen Pflanzenkomponenten dar. Die Hausgärten bestehen aus mehreren Pflanzenschichten und bezüglich der Wuchsform sind die meisten Pflanzen im Krautstadium zu erwarten. Es konnten zahlreiche Lokalnamen registriert werden, was auf eine hohe infrapspezifische Diversität der Hausgartenvegetation hindeutet.

Ergänzende Informationen zeigen, dass das Alter von Hausgärten sowie die Größe einen Einfluss auf die Artenzahl und Diversität besitzen. Die Anordnung der Pflanzen erfolgt geplant und nicht spontan. Hausgärten werden von den Familienmitgliedern bewirtschaftet und eine geschlechtsspezifische Aufgabenteilung ist erkennbar. Die Bewirtschaftungsmaßnahmen sind komplex und auf die individuellen Bedürfnisse der Gärtner abgestimmt. Die Produktion der Hausgarten dient hauptsächlich der Selbstversorgung und

die Nutzpflanzen werden konstant getauscht und verbreitet. Probleme wie z.B. Wasserknappheit sind mehrheitlich genannt. Zudem beeinflussen sozioökonomische Tendenzen und demografische Faktoren die Agrobiodiversität der Hausgärten.

RESUMEN

Los huertos familiares son sistemas tradicionales del uso de la tierra que sirven como reserva de recursos genéticos de plantas. México es uno de los centros de origen de las plantas cultivadas y uno de los países más ricos en plantas vasculares. En este contexto, la agrobiodiversidad de los huertos familiares mexicanos adquiere una especial atención.

El presente estudio busca proporcionar una visión general acerca de la agrobiodiversidad de los huertos familiares en la región tropical de México. Se ha recolectado, para la creación de una base de datos, la información detallada en 31 estudios acerca de los huertos familiares en 12 estados de la región tropical de México. Con estos datos se ha creado una lista florística completa, que muestra la riqueza de especies y la diversidad infra e interespecífica de la vegetación de los huertos familiares. Posteriormente, se ha examinado la información taxonómica y otros datos concernientes al uso y origen de las plantas. Además se analizaron datos complementarios para describir los factores influyentes en la agrobiodiversidad.

En total se registraron 1347 especies (incluidas 22 híbridos, 24 variedades botánicas y 13 subespecies), correspondientes a 149 familias y 736 géneros. Se observa una alta aportación de plantas nativas (65%). La composición de especies muestra analogías con la vegetación natural de México y con otras regiones florísticas similares del mundo. La mayoría de estas plantas son utilizadas con fines alimenticios, ornamentales y medicinales. Los árboles frutales son típicos componentes. Los huertos familiares se componen de varios estratos y de acuerdo al tipo de crecimiento se espera encontrar un mayor número de plantas en el estrato herbario. Los numerosos nombres locales que fueron registrados indican una alta diversidad infraespecífica.

Datos complementarios muestran que el tamaño y la edad de los huertos familiares influyen en la riqueza y diversidad de las especies. La disposición de las plantas es más bien planificada antes que espontánea. Las actividades de manejo de los huertos familiares son realizadas por los miembros de la familia y están divididas según los sexos. Dichas actividades son complejas y responden a las necesidades individuales de los huerteros. La producción principal se dedica a la subsistencia y las plantas están en constante intercambio y distribución con el ambiente. Problemas como escasez de agua fueron mencionados

frecuentemente. En la agrobiodiversidad de los huertos familiares las tendencias socioeconómicas y los factores demográficos tienen gran influencia.

INDEX

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1 General Introduction

Mexico is one of the original agricultural centres of the world. A lot of agricultural plants that contribute to human alimentation have their origin in Mexico (*Zea mays*, *Phaseolus vulgaris*, *Cucurbita pepo*) (Bellón *et al.* 2009) Regarding the increasing population and the disappearance of suitable agricultural land the role of agrobiodiversity is becoming more and more important. Agrobiodiversity contributes to food security and health of the world population, enables a higher productivity and it is an important element towards pest and disease management (Jackson *et al.* 2005, Wood & Lenné 1999).

However, the modern agricultural development during the last decades resulted in mass production and intensive genetic improvement of cultivated crops and animals with the effect that many traditional landraces have been neglected and their value disregarded (Collins & Qualset 1999, Upreti & Upreti 2002, FAO 1998).

Until now, profound knowledge about the landraces and their management gets vanished and scientific efforts are necessary to gather information about forgotten variants that could contribute to the commonwealth of the human population and the sustainable management of agroecosystems. Traditional small scale production systems such as home gardens are very often the origin of landraces of important food crops and hence contribute to the protection of seldom variants (Engels 2002a, Galluzzi *et al.* 2010). To promote the usage of the variants from home gardens or other land use systems in future, information about the existence of the different landraces of particular crops that still exist in Mexico has to be gathered and compact knowledge about useful plants must be gained and documented.

The aim of this study is to create an overview about the plant richness and diversity of home gardens. Furthermore accompanying data, that includes information about management practices in home garden and other characteristics such as the structure and home garden elements, gender aspects and production will be presented. This information is helpful to understand the complexity of home gardens and which is useful for the promotion and the creation of successful conservation strategies of agrobiodiversity in future.

2 Theoretical Background

2.1 What is agrobiodiversity?

During the last decades scientists and public actors have put a lot of attention towards biodiversity which nowadays is a widely used term and rewarded as something valuable to protect and to promote (Redford & Richter 1999).

The scope on agrobiodiversity has evolved more quiet in the shadow of the biodiversity discourse that had begun during the decade of 80 in the past century. Since 1992, Agenda 21 and the Convention on Biological Biodiversity (CBD) have created the framework for the sustainable use and conservation of biological diversity. A few years later in 1996 agricultural biodiversity was addressed for the first time at the 3rd session of the Conference of the Parties to the Convention (COP3) in 1996 (FAO 1998).

However, although the recognition of agrobiodiversity is more recent, it is actually an old concept. Agrobiodiversity or agricultural biodiversity, or more accurate agricultural richness, can be regarded as a subset of biodiversity. It is the outcome of the interactions among genetic resources, the environment and the management practices. In other words, it is the result of species adaption to the natural environment by natural selection as well as artificial selection by farmers, herders and fishers over millennia (Thrupp 1998).

The FAO (1999) defines agrobiodiversity as:

"The variety and variability of animals, plants and micro-organisms that are used directly or indirectly for food and agriculture, including crops, livestock, forestry and fisheries."

The components of agrobiodiversity are:

A The diversity of genetic resources of harvested species such as crop varieties, livestock breeds, fish species and wild resources within the field, forest, rangeland and aquatic ecosystems.

B Non- harvested species supporting food provision

C Non- harvested species in the wider environment that contribute to the food production ecosystem

The different components can be divided into planned agrobiodiversity, which is the biodiversity chosen by the farmer (A), and associated agrobiodiversity (B) that includes biota that is able to colonize the agroecosystem and become adapted to their management and environment. The third group (C) includes species outside the agroecosystem but those indirectly benefit and promote the ecosystem functions. This group may include biota which from the human utilitarian point of view is still unknown. On landscape level, the interactions between agricultural and non-agricultural systems, that enhance the resources for agriculture and the resilience potential of an agroecosystem during environmental change, are also included (Jackson *et al.* 2007).

2.2 Declaration of some terms

Within the biodiversity of cultivated and used species it can be distinguished between the interspecific and infraspecific level. The interspecific level of the agroecosystem is of particular interest for agro-ecologists. It refers to applied farming systems and the difference between the combination of crops, livestock, forest, fish or microorganism. The diversity depends on each management system and can range from low, as it can be expected for example in monoculture cropping systems, to high diversity as for example in multicropping systems (Wood & Lenné 1999).

The infraspecific level corresponds to the genetic variety between the species and refers for example to the number of different landraces, varieties or breeds that are cultivated per crop or livestock species (Wood & Lenné 1999, Ramel 1998). The classification of cultivated plants includes other terms than for the botanical classification of wild species. In order to avoid the readers' misunderstanding, a few definitions of special terms will be presented:

Cultigen: includes species with only cultivated representatives. An example is *Triticum aestivum* L. which has no wild species as a counterpart (Spooner *et al.* 2002).

Botanical variety: is a term used for species found in the wild. The botanical variety in the taxonomic hierarchy is below the rank of species and subspecies and above the rank of form (species/subspecies/variety/form) (Bisby 1994). An example of a botanical variety would be *Capsicum annuum* L. var. *glabriusculum.*

Cultivated plants: include the plants, whose origin or selection is primarily due to the intentional selection of mankind (Spooner *et al.* 2002).

Cultivar/variety: are terms that are often used as equivalents (Reiley & Shry 2002). A cultivar/variety refers to a cultivated that is clearly distinct, uniform, and stable in its characteristics. When it is propagated by appropriate means, it retains these characteristics (Spooner *et al.* 2002). The cultivar name begins with capital letters and is inverted in simple commas. (Adams & Early 2004). An example would be *Mangifera indica* 'Ataulfo'. Equivalent terms of cultivar in other languages are "variedad" (Spanish), "variedade" (Portuguese), "varieté" (French), "ras" (Dutch) and "Sorte" (German) (Brickell 2009).

Form: refers to the lowest rank in the taxonomic hierarchy (below variety), meant to express minor variants in nature. Form, when referring to cultivated plants is sometimes used as an equivalent to the word "cultivar" which is actually misleading and according to the taxonomic ranking would not be the correct use (Brickell 2009).

Hybrid: is the result of crosspollination and the offspring bears characteristic of either parents. It can occur between different cultivars within a species and sometimes result in a new distinctive cultivar. In case hybridization of two different species the result is an interspecific hybrid (Adams & Early 2004).

Landrace: is a cultivar which is the product of (the first stages of) mass selection. It is not a result of modern plant breeding and it has not been bred deliberately. The landraces are mostly adapted to specific environments of a certain region (Spooner *et al.* 2002). Zeven (1998) compares a variety of definitions and comes to the conclusion that landraces are of indefinable nature. The author describes autochthon landraces as a variety with a high capacity of tolerances towards biotic and abiotic stress factors. Landraces are characterized in high yield stability and an intermediate yield level under a low input agricultural system. Villa *et al.* (2005) proposes following definition of landraces:

"A landrace is a dynamic population(s) of a cultivated plant that has its historical origin, distinct identity and lacks of local crop improvement, as well as often being genetically diverse, locally adapted and associated with traditional farming systems".

Landraces had also been referred to as an indigenous cultivar or a primitive cultivar (Spooner *et al.* 2002).

2.2.1 Remaining doubts

Cultivar/ variety

The discussion about the use of the terms variety/cultivar and their equivalents is ongoing and still causes a lot of confusion. The botanical variety used by the ICBN (International Code of Botanical Nomenclature) is understood differently as the cultivated variety used by ICNCP (International Code of Nomenclature of Cultivated Plants) and some taxonomists may have their own criteria and treat variation pattern differently. It gets even more complicated when cultivated plants are wished to assign to the species where they originate from. Different translation of the terms may increase the confusion in this debate (Spooner *et al.* 2002). However, the double use of the same word in different classification systems and the resulting ambiguity opens a broader topic that will not be treated in this work more profoundly. But there exist several publications that discuss the problems more in detail (e.g. Spooner *et al.* 2002, Brickell 2009, Ochsmann 2003, Jeffrey 2003, Smekalova 2003). To avoid

confusion it is recommended to apply the term "cultivar" when referring to a cultivated plant and only use the term "variety" exclusively when referring to a wild plant.[1]

Landrace:

Even though landraces share some characteristics as mentioned in the definition above, the weight of each characteristic depend on the individual crop, its management, reproduction biology, domestication process, as well as on the production purpose. It is not always clear whether plant material can be considered as a landrace or not. For example, a plant that has a recognized identity (local name), an historical origin (has been grown various decades), is locally adapted (dry resistance) and that was not artificially selected, but shows uniform characteristics would not be considered as a landrace. That means a too strict application of the definition would actually exclude many landraces. This problem is also enhanced by the personal perception of the importance of different landrace criteria (Villa *et al.* 2005).
The Figure 1 below gives a schematic overview about the different terms:

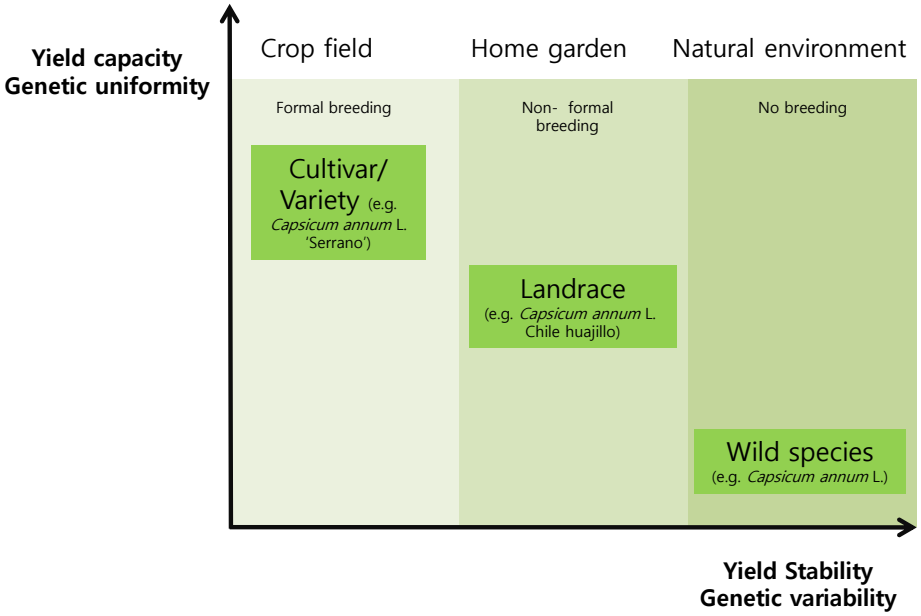

Figure 1: Schematic overview of different taxonomic terms

[1] In this work the term "cultivar" is exclusively used for cultivated plants and the term "variety" for botanical varieties according to the ICBN

2.3 Role of agrobiodiversity

Agrobiodiversity, in general, is the plant genetic resource for food and agriculture production. It has an important role to meet the demand for food resources of a growing population (Thrupp 1998). Approximately 75,000 edible plant species exist worldwide. Only about 7000 plants have been used or cultivated by the humans throughout their history and only 3000 plants are exploited for food production in a regular base while as over 90% of the world's food supply is contributed by only 30 species (Figure 2). However, within these species, thousands of crop varieties have been developed through the selection processes of their cultivators and evolution processes as a respond to different environments (FAO 1998).

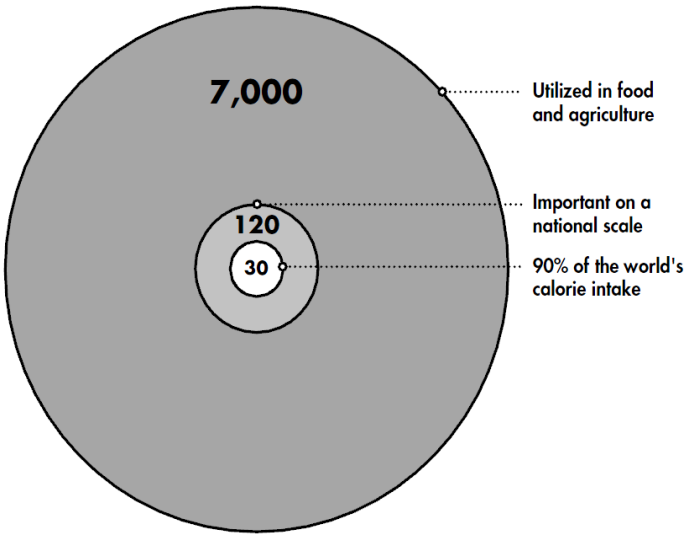

Figure 2: Number of worldwide food crops (FAO, 1998)

Around forty species of mammals and birds have been domesticated and only 14% contribute to 82 percent of the world's food and agriculture production (Scherf 2000). It seems to be a relatively small number compared to the plant diversity that is used for food production but there exist thousands of genetically diverse breeds among the major livestock species that have developed through natural evolution and human selection (Thrupp 1998).

The significance of genetic resources for the creation of modern breeds should not be dismissed. The improvement in agricultural production due to the introduction of modern varieties has been facilitated by the diversity in farmers' landraces. The landraces provide valuable traits into existing breeding lines. One example of introgression[2] the use of several wild species of tomato (*Lycopersicon esculentum*) as donors of genes for fungus and insect resistance *(L. hirsutum)*, virus resistance *(L. chilense),* improvement of fruit quality (*L. chmielewskii)* and adaption to adverse environments *(L. cheesmanii)* (Esquinas Alcazar 1981).

The demand for food will always exist and therefore plant genetic resources will be valuable during the time of human existence. In the monetary sense, it is estimated that the global value of plant genetic resources accounts from hundreds of millions to tens of billions of dollars per year. The annual turnover in commercial seed industry in OECD countries is approximately 13 billion dollars (FAO, 1998).

Besides, non-harvested species within the agricultural production unit as for example insects, other invertebrates, fungi and microorganism help to maintain nutrient cycling, moisture balance and soils structure and, by that way, contribute to the productivity of an agroecosystem (Nair & Kumar 2006, UNDP & Rosen 2000). Furthermore, among these little creatures exist many predators, which help to regulate the occurrence of crop pests. Not to forget the pollinator species what are crucial for agricultural production. Thanks to the associated biodiversity of an agroecosystem the usage of agrochemical products can be reduced, which implies less investments cost (BMELV 2007), being especially important for farmers with less financial reserves.

Moreover, agrobiodiversity has important functions towards the ecosystems itself. In the year 1996, it was estimated that 4.93 billion hectares are used for agricultural production (UNDP & Rosen 2000). Cultivated landscapes that are transformed to arable land also form new habitats for a range of plants and animals. Several species are adapted to agricultural practices and depend on anthropocentric interventions. Especially species that need a variety

[2] Introgression, also known as introgressive hybridization, in plant genetics, is the gene flow from one species into the gene pool of another by repeated backcrossing (Arnold 2007).

of different habitats through their lifecycle, like the partridge *Perdix perdix,* or the European Hare *Lepus europaeus*, rely on high diverse agriculture landscapes (BMELV, 2007).

2.4 Threats to agrobiodiversity and problems

Despite all the benefits agrobiodiversity shows, a loss can be recognized. During the last decades, the agricultural production increased and the international trade of germplasm, seeds and food products expanded. The extension of agricultural land and the increased output per unit of land (intensification) and the green revolution, promoted by the public and private sectors, since the middle of the last century are symptoms of the agroindustrial development. With the objective to maximize the yield per land unit, a more frequent use of high yield varieties along with a high input of agrochemicals in the monocropping systems can be observed. The trend certainly has contributed to augment the food production, but resulted very often in serious environmental and socioeconomic problems as well as in the loss of agrobiodiversity (Thrupp 1998).

The intensification of agriculture causes genetic vulnerability, which is the condition that occurs when a widely planted crop is uniformly susceptible to a pest, pathogen or a natural hazard as a result of its uniform genetic constitution which can create widespread crop losses. The potential of genetic vulnerability depends on the relative area occupied by each cultivar and the degree of uniformity (relatedness). In 1982 in Asia, for example, the rice variety "IR36" covered 11 million hectares in the same region simultaneously (FAO 1998). An occurrence of pests would have led to enormous economic and social consequences. However, the major concern towards agrobiodiversity is the genetic erosion (Thrupp 1998), that refers to the loss of genetic diversity and the decline of individual genes and particular combination of genes (genecomplexes) that are still remaining in locally adapted landraces.

The main reason for genetic erosion is the replacement of landraces by improved or exotic varieties (FAO 1998). There exists lot of examples for the degeneration of agricultural diversity around the world, the Figures 3 and 4 illustrate a few. Policy and legislation often enhance the problem as they discourage the cultivation of local varieties. Also economic processes are a reason, because farmers might be more attracted to plant modern varieties,

due to a higher demand for those crops on the market (FAO 1998). Another driving factor of agrobiodiversity loss is the habitat destruction (land clearance, deforestation) of natural ecosystems and the expansion of monocropping agricultural landscapes. Furthermore, the overexploitation of genetic resources that includes for example overgrazing and excessive harvesting of natural resources causes a loss of agrobiodiversity. Environmental disasters such as drought and desertification are additional concerns. Population pressure, urbanization trends are further threats. In addition, the development of a constantly more homogenized society with a shrinking cultural diversity along with the disappearance of native languages, results in the loss of agrobiodiversity because there exist a relationship between cultural and genetic diversity. In addition, the introduction of new pest and diseases also cause genetic erosion of landraces particularly in small islands (Heywood 1995). War and civil strife often leads to the abandonment of land by migrating people, which can have negative impacts on agrobiodiversity as well (FAO 1998).

Vegetable	Latin Name	Number of Varieties, 1903	Number of Varieties, 1983	Loss (percent)
asparagus	*Asparagus officinalis*	46	1	97.8
beans	*Phaseolus vulgaris*	578	32	94.5
beets	*Beta vulgaris*	288	17	94.1
carrot	*Daucus carota*	287	21	92.7
leek	*Allium ampeloprasum*	39	5	87.2
lettuce	*Lactuca sativa*	497	36	92.8
onion	*Allium cepa*	357	21	94.1
parsnip	*Pastinaca sativa*	75	5	93.3
pea	*Pisum sativum*	408	25	93.9
radish	*Raphanus sativus*	463	27	94.2
spinach	*Spinacia oleracea*	109	7	93.6
squash	*Cucurbita spp.*	341	40	88.3
turnip	*Brassica rapa*	237	24	89.9

Figure 3: Decline in varieties in the U.S.A. between and 1903 and 1983 (Source: Thrupp 1998, adopted from World Conservation Monitoring Centre 1992)

Crop	Country	Number of Varieties	Source
Rice	Sri Lanka	75% of varieties are descended from a common stock. Down from 2,000 varieties in 1959 to less than 100 today.	Rhoades, 1991
Rice	Bangladesh	62% of varieties are descended from a common stock.	Hargrove et al., 1988
Rice	Indonesia	74% of varieties are descended from a common stock.	Hargrove et al., 1988
Wheat	United States	50% of crop in 9 varieties.	NAS, 1972
Potato	United States	75% of crop in 4 varieties.	NAS, 1972
Soybeans	United States	50% of crop in 6 varieties.	NAS, 1972

Figure 4: Declines in agricultural diversity (Source: Thrupp 1998, adopted from various authors)

2.5 Conservation strategies

The importance of agrobiodiversity creates a demand for conservation strategies to conserve the remaining agrobiodiversity and to recreate the lost agricultural biodiversity. Principally it can be distinguished between in situ and ex situ strategies.

The *in situ* conservation seeks to maintain and to recover viable populations of species in their natural ecosystems. In case of landraces, strategies are created to protect the surroundings where they have developed their distinctive properties (Meilleur 2004). The *in situ* conservation as strategy is especially important because it allows continuing the process of natural evolution and adaption (Engels 2002a). The creation of biosphere reserves and protected areas as well as on-farm conservation are common practices of *in situ* conservation (Poussiel *et al.* 1995).

Ex situ or "off-site" conservation means the protection of endangered species outside of its natural habitat for example through relocating a part of the threatened population in order to conserve genetic material in genebanks and botanical gardens (Meilleur 2004). The *ex situ* conservation is frequently practiced and a widespread method to conserve plant genetic resources (Engels 2002a) Even though viable populations of organism can be maintained under cultivation outside their natural environment these methods are less effective and accompanied by high costs. *In situ* conservation projects are usually more secure and economically viable. Furthermore, many scientists share the idea that, until it is not clarified

which of the genetic varieties will become economically interesting in future; *in situ* conservation should be the primary key to maintain genetic resources (Poussiel *et al.* 1995). Formerly *in situ* conservation strategies were usually applied to conserve wild species and ecosystems whereas *ex situ* protection played a more important role to conserve the genetic materials for food and agriculture production. There exist several pros and cons concerning the two conservation strategies that will not be discussed in detail in this paper but can be reviewed in Engels (2002b). Recently more holistic conservation concepts are questioned that intend to combine *in-situ* and *ex-situ* conservation of genetic material of natural resources (FAO 1998).

2.5.1 Home gardens as a tool for the conservation of genetic diversity

Home gardens are often mentioned as an example for *in situ* conservation (Watson & Eyzaguirre 2002, Bennett- Lartey *et al.* 2002, Abdoellah *et al.* 2002, Castineiras *et al.* 2002) or for "on-farm conservation", which is considered as a part of *in situ* conservation (Poussiel *et al.* 1995, Perrino 1993). However, in a more strict sense *in situ* conservation refers only to the conservation of wild species in their natural environment (Chauvet 1993) rather than of cultivated species. Nevertheless, home gardens can contain wild species and cultivated species. It might be not that significant to argue about which particular conservation strategy is applied when preserving plant genetic resources in home gardens. Home gardens could be considered as keystone to link different conservation strategies towards a holistic one and to build a bridge between different actors and (agro) ecosystems.

Home gardens are multi-diverse land use systems that contain a large number of plants and animal species (Montagnini 2006, Kumar & Nair 2004, Galluzzi *et al.* 2010). Most of the species that can be found in home gardens have a particular use for its manager which is important, because the best approach to conserve agrobiodiversity is to use it (Eyzaguirre & Watson 2002). At the same time they are the birthplace of new variants and function as an exchange tool of genetic resources. Harlan (1992) points out that the domestication of plants took place around the dwellings of human settlements where water, fertile and good soil was available and the crops could be easily protected against animals. And still, the

domestication process is ongoing where richness of plant diversity still exists and the link between home gardens and nature has been preserved (Engels 2002b). Distinct selection pressures due to differences in the microenvironments and the gen flow between the gardens contribute to the evolution of crop species. New germplasm can develop and home gardens, as a place of plant domestication, contain and conserve unique and rare genetic diversity that has developed locally. Especially these local variants are important for the conservation of genetic resources on the national and international level. Furthermore, home gardens are a place of experimentation and research for the interested local farmers but also for excellent scientists as for example Georg Mendel who formulated the genetic laws based on experimentation in home gardens of his monastery. From the production perspective home gardens are important for the cultivation and preservation of neglected and underutilized species that generally are less economically important for the agro industry, hence underrepresented in genebanks (FAO 1998). In order to conserve diversity it is also important to preserve the knowledge about the use and management of the species. Home gardens are a space of social interaction for the family, visitors and an important place for knowledge-transfer and exchange (Eyzaguirre & Watson 2002).

Not to forget, home gardens are also a suitable tool to create and raise public awareness of the importance of diversity in the agricultural and horticultural context as a part of the cultural heritage (GTZ 2003). Moreover, homegardens at ecosystem level imitate natural forest ecosystems (Caballero 1992) and therefore have a conservation function within or around protected areas and can help to prevent the overexploitation of nearby ecosystems (Eyzaguirre & Watson 2002).

Thus, the above arguments describe the advantages of home gardens from a more *in situ* conservation perspective, but it is combinable with *ex situ* a conservation strategies that is recommended by various authors (Sharrock & Engels 1997, Dulloo *et al.* 1998, FAO 1998). For example, the collaboration between genebanks and farmers help to reintegrate seed material that is stored in seed banks or obtained from botanical gardens and seldom present in agroecosystems nowadays. Local farmers can be provided with seed material of plants with the aim to integrate seldom variants in their gardens and, thereby, help to remain and monitor genetic material. After one growing season a certain part of seed material is

returned to the gen banks and documented. But some standards, for example a minimum of distance to other varieties, have to be accomplished to assure that genetic material remains pure. In addition, farmers can be questioned to note their experience with the plant and to their properties (health, yield, utilization purpose). By that way, useful information is constantly collected by the genebanks and becomes accessible for experts all around the world. Additionally, the farmers are encouraged to disperse the seed material with other farmers with the objective to revitalize the popularity of forgotten variants. (Arndorfer *et al.* 2009). However, the conservation of plant genetic resources is complex and includes also political action to promote systematic study and to regenerate and re-implement genetic resources in land use systems (FAO 1998).

2.6 Description of home gardens

Home gardens are traditional land use systems that involve the management of multipurpose trees, shrubs, herbs and climbing plants in intimate association with annual and perennial agricultural crops and livestock, within the compounds of individual houses (Figure 5). Home gardens, as such, are typical to find in the tropics and subtropics especially in humid lowlands with higher population density (Fernandes & Nair 1986). From a social perspective, home gardens are culturally constructed spaces and managed by the family members, mainly by women. Usually no external labor is required (Niñez 1987). The use of agrochemicals in home garden is not a common practice. An enhancement of agricultural production is achieved through the integrated use of households refuse, animal manure, plant or crops residues. Home gardens are not focused on commercial production and basically supply subsistence requirements, but in some cases they also generate secondary income. With the difference to similar agroforestry systems, home gardens are defined by their proximity to dwellings. Frequently they are connected to infrastructure. There is no defined size of home gardens but (Eyzaguirre & Linares 2004) summarize that the average size is about 0,1-0,5 ha.

Figure 5: A typical tropical home garden system including the housing complex, trees, shrubs, herbs, annual, perennial crops and livestock

2.6.1 Benefits from home gardens

The benefits of home garden are numerous. First, they provide the families with food (Montagnini 2006, Nair 1993), which becomes especially important in marginal areas or in times of crisis (civil conflicts, economic crisis). Further resources that are obtained from the home garden are for example wood, fiber, spices, and medicinal plants that otherwise would have to be bought on markets. Some products that are sold or exchanged help to generate additional income (Fernandes & Nair 1986).

Moreover, as already mentioned before, home gardens count as a reserve for agrobiodiversity. Traditional home gardens have an important habitat function for landraces, cultivated plants, wild plants and fauna of the region. The multicanopy structure of tropical home gardens creates lots of different microclimatic conditions where a lot of species can find their niches. The multistrata vegetation also protects the soil from erosion, creates more balanced microclimatic conditions and enhances the microbiological processes that support the decomposition of organic matter and contribute to soil fertility (Nair 1993, Young 1991).

In a certain way, home gardens strengthen the autonomy of women that play an important role towards the home garden management (Pérez *et al.* 2009). Additionally, a well

presented home garden contributes to the recognition of their owners and they are welcomed places for recreation and social meetings (Mohan 2004).

2.6.2 The term "home garden"

Sometimes similar land use systems have different names as in the case of the broadly used term "home garden". A lot of synonyms exist that refer to a variety of land use systems with equal home garden characteristics. In English home gardens can also be termed as: "agroforestry home gardens" (Torquebiau 1992) "household or homestead farm" (Leuschner & Khaleque 1987, Steppler & Nair 1987), "compound farm" (Okafor & Fernandes 1987), "backyard garden", "backyard" (Zaizhi 2000), "village forest garden" (Nair 1993), "dooryard garden" (Wilken 1976, Davis *et al.* 1992, Coe & Anderson 1996, Comerford 1996) and "household garden" (Niñez 1985). Further names are "mixed garden", "horticulture" and "kitchen garden" (Nair 1993). Internationally there also exist widely adopted local names for home gardens, such as "Talun-Kebun", "Pekarangan" for home gardens in Java, Chamba and Chagga in East Africa (Nair 1993).

In Spanish language equivalent terms for "home garden" are "huerto" or "huerto familiar" (Gaytán Avila *et al.* 2001, Rebollar-Domínguez *et al.* 2008, Herrera Castro 1994). Another Spanish denomination for home garden is "solar" that is common in the Peninsula of Yucatan (Osorio Hernández 1997, Jimenez-Osornio *et al.* 1999, Mariaca Méndez *et al.* 2010). Further terms are "patio", "traspatio" (Guerra Mukul 2005), "huerto casero" (Arévalo Vizaíno 1999) or "huerto maya" (Mariaca Méndez *et al.* 2010). Expressions that are less frequent may be "jardín" and "jardín indígena" (Vara 1994[3], Anderson 1950[2]).

Contemporary Maya names for home gardens are e.g. "inn luumel" (my land, my property), "pach nah" (everything around the house) and "inn wotoch" (my house my property)[4] (Rebollar-Domínguez *et al.* 2008). Further indigenous names from other regions are for example "calmil" (Puebla) (Palerm & Wolf 1972[2]) and "kalum lab'" (a Nahuat term from the people in the Huasteca region) (Alcorn 1984).

[3] Adapted from Mariaca Méndez *et al.* (2010)

[4] A more complete listing of Maya names for home garden can be obtained from Mariaca Méndez *et al.* (2010)

Thus, there exist a great number of different names that refer to the generic term "home garden". The differences are not always well defined and the synonyms for home gardens are influenced by culture, geographical distribution and their popularity that changes from time to time. For example De la Cruz Osorio (2009) points out that in the last years the terms "huerto casero" and "solar" are used more frequently. According to the literature that was reviewed during this study, the term "huerto familiar" seems to be also very common at present time. Even though the term "solar" is often understood as a synonym of "huerto familiar" in a strict sense the two terms should be distinguished from each other. The "solar" describes the whole parcel of land together with the housing complex. The "huerto familiar" is actually a subsystem of the "solar" and refers to the area of cultivated plants within the parcel (Correa Navarro 1997).

Sometimes it depends also on the fact in which context the term is used. The terms "traspatio" is mostly taken in studies about the animal component in home hardens. For example "avicultura de traspatio" "pollos de traspatio" refer to poultry farming in home gardens (Pérez & Polanco Expósito 2011, Gutiérrez-Ruiz *et al.* 1998, Camacho-Escobar *et al.* 2006). Basurto (1982) distinguishes between three varieties of home garden that are "huerto milpa", huerto cafetal" and "huerta". They are all close to the house, but show differences in the composition and intensity of management. Other authors use "huerto" (garden) to refer to small land use systems very close to the house, whereas "huerta" (orchard) is used to describe a home garden of larger extension that is located more far away from the house and more intensively managed in order to produce food plants that are commercialized. Ornamental plants and medicinal plants are usually missing (De la Cruz Osorio 2009).

.

2.7 Mexico and agrobiodiversity

Mexico is characterized by a diverse landscape and culture. It presents almost every climate types that allow the development of nearly all land ecosystems in a surface of approximately 2 million km². It is counted as one of the five countries that have the highest number of vascular plants (Figure 6 and 7) and it is also the third richest country of endemic vascular plants (Sarukhán *et al.* 2009).

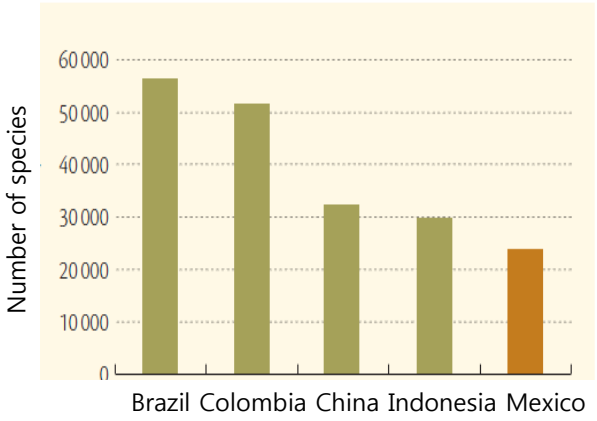

Figure 6: Countries with highest number of vascular plants (Sarukhán *et al.* 2009, adapted from CONABIO 2006)

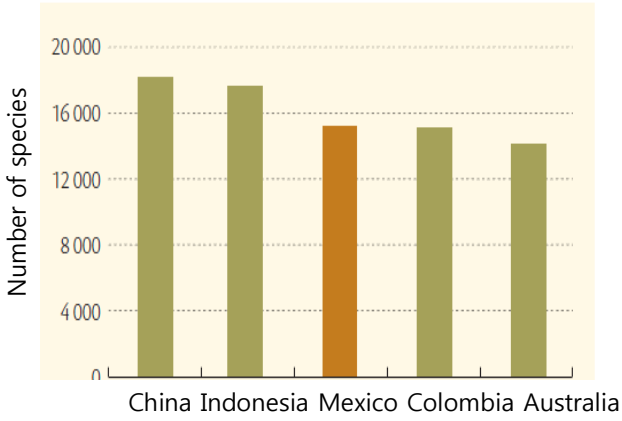

Figure 7: Countries with highest number of endemic vascular plants (Sarukhán *et al.* 2009, adapted from CONABIO 2006)

The pre-Columbian cultures domesticated around 225 species (Zeven & De Wet 1982) for food and medicinal purpose as well as for ornamental, textile use and for construction. Mexico was defined by Vavilov as one of the centers of origin of cultivated plants (Figure 8) and a lot of food crops that are distributed worldwide have their origin in Mexico, for example *Zea mays*[5], *Phaseolus vulgaris* and *Cucurbita pepo* (Ladizinsky 1998). A variety of species that have been domesticated in Mexico thousands of years ago are still important to the alimentation of the worldwide population. More or less 9.0 % of the worlds' most important food crops have their origin in Mexico (Zeven & de Wet 1982) and almost half of

[5] The authorities for all the mentioned binomial names are shown in Appendix IV

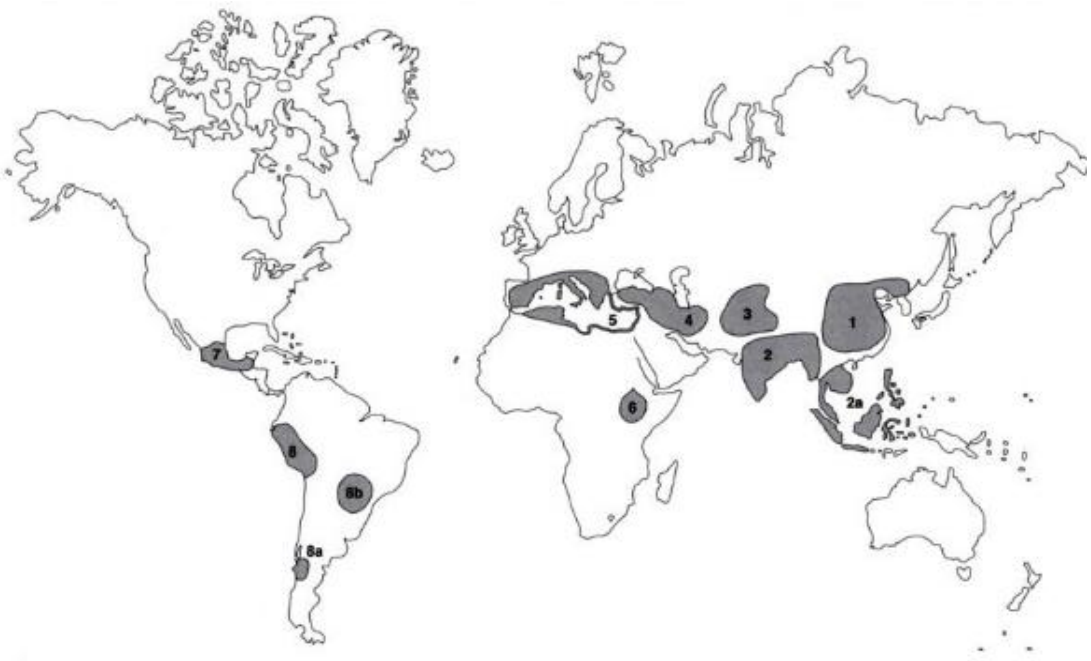

Figure 8: Centres of origin of cultivated plants: (1) China, (2) India, (2a) Indochina, (3) Central Asia (4) The´ Near East (5) Mediterranean Sea, coastal and adjancant regions (6) Ethopia (7) Southern Mexico and Central America, (8) Northeastern South America, Bolivia, Ecuador, Peru, (8a) Isles of Chile (Source: Ladizinsky 1998).

the food that is consumed by Mexicans has its historical origin in their country (Sarukhán *et al.* 2009). Mexico is also a center of diversity of minor crops such as Chayote *(Sechium edule),* Spanish plum *(Spondias purpurea)* and Tomatillo or "Tomate de cascara/ Tomate de bolsa" *(Physalis philadelphica).* These minor crops are crucial for a secure food supply for the rural people throughout the year in several regions of Mexico.

Nevertheless, the loss of agricultural biodiversity is a global phenomenon and is also noticed in Mexico. For example, a comparison of the maize *(Zea mays)* varieties in 1930 with the varieties at present time shows that only 20% of them are still existing (FAO 1998). Trends such as urbanization and migration are enhancing the loss of traditional knowledge that is necessary to conserve the management and usage of the agrobiodiversity. At the same time the commercial markets focus only on a limited number of varieties as for example in the case of the avocados *(Persea americana)* where cultivar 'Hass' dominates the market, or in case of *Agave (Agave tequilana)*. Strict phytosanitary restrictions enhance this development. In addition, the small-scale production cannot compete with the agroindustrial production of

national and international companies that sooner or later leads to the abandonment of local farm practices (Bellon *et al.* 2009).

2.8 Home gardens in Mexico

Next to shifting cultivation tropical home gardens are one of the oldest land use systems. They have developed through generations of gradual intensification of cultivation that was guided by increasing human pressure and corresponded to the shortage of arable land (Kumar & Nair 2004). In Mesoamerica home gardens are very abundant (Figure 9) and have a long tradition.

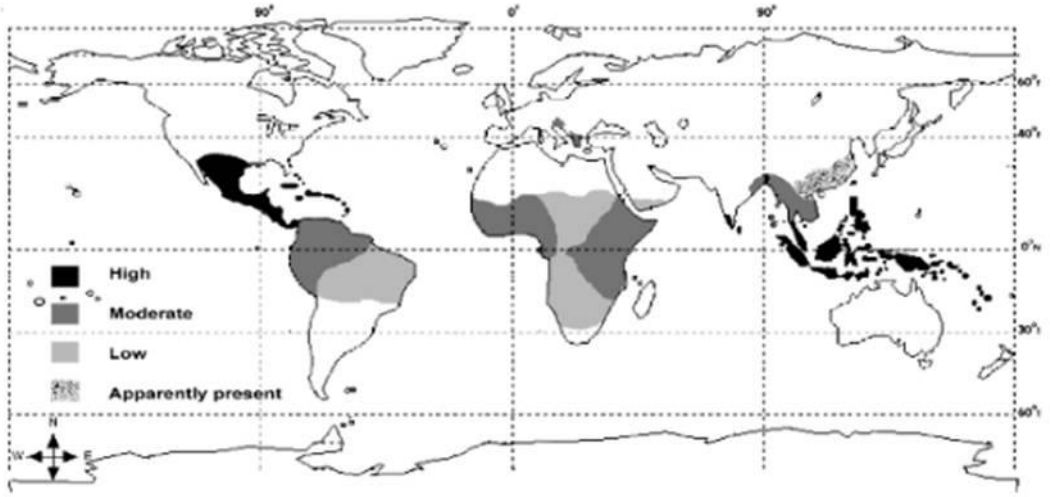

Figure 9: The global distribution of home gardens (Source: Nair & Kumar 2006)

The history of home gardens in Mexico dates back a long time. It is widely known that the ancient Mexicans had valued and admired nature and were successful to manage, propagate and maintain plant species. Unfortunately, information about the origin of home gardens in Mexico is scarce, but still, there exist some evidence of the pre-colonial existence (Mariaca Méndez *et al.* 2010). The Mayas had developed similar land use systems to home gardens nowadays (González-Jacóme 2007, García de Miguel & October 2000) and it is assumed that home garden could have been developed from pre-hispanic tree culture system (Caballero 1992). There exist archeological evidences from excavations in Quintana Roo that document

the presence of home gardens in the years 900-400 BC, as well as some as some linguistic sources. For example the term "kuchil" that refers to home garden like land use system appears in antique literature sources from the 16th century (Mariaca Méndez *et al.* 2010). About the home gardens in Tehuacán (Southern central Mexico) during 9000-6500 BC, is known that they were established in places with abundant vegetation and new plants from other regions were introduced to them in order to complement the diet of the humans at that time e.g. mesquite (*Prosopis sp.*), chupandilla (*Cyrtocarpa sp.*), nopal (*Opuntia* sp.), nanche (*Byrsonimia* sp.), avocado (*Persea* sp.) and native plum (*Spondias* sp.). They were not irrigated or intensively managed. To implement a home garden usually sites with fertile soil were selected. Over the while their management got improved and first simple irrigation systems were established. In some cases fences were constructed to protect and limit the garden plots. Later on, in 6500- 5000 BC more and more plants, whether cultivated, inducted or wild, found their way into the home gardens. Most focus was put on food plants. Different records exist about squash (*Curcubita moschata* and *Cucurbita mixta)* frijol (*Phaseolus* sp.) and chile (*Capsicum* sp.). Examples of plants that were inducted are avocado (*Persea Americana)*, bule (*Lagenaria* sp.), maguey (*Agave* sp.), coyol (*Acrocomia mexicana*), zapote blanco (*Casimiroa edulis)*, zapote negro (*Diospyros digyna)*, pochote (*Ceiba parvifolia*) and cosahuico (*Sideroxylon* sp.).

In the period 3500-2300 BC, when people started to settle down, an increasing amount of cultivated plants and varieties can be recognized e.g. frijol tépari (*Phaseolus acutifolius)* and frijol brincador (*Phaseolus coccineus*) (González- Jacome 2007).

A more complete list of plant species used in home garden during the pre-hispanic time is provided by Mariaca Méndez *et al.* (2010) that shows a range of plants that according to archeological evidences and antique sources in literature, could have been expected be found in Maya home gardens in Yucatan (Appendix I).

From the 16th century on, when the Spanish conquerors arrived to Mexico, the existing land use systems became strongly influenced. Old world and new world experiences were combined and complemented to each other, which opened the way to create a lot of different systems of tropical home gardens. New plants from the old world were introduced and new management practices such as grafting were adapted (Mariaca Méndez *et al.* 2010).

During the epoch of Spaniard colony the agricultural practices to satisfy basic food needs were often realized in home gardens. The monks of the convent gardens contributed a lot to the evolution of the existing traditional home gardens. They exchanged and shared knowledge with the indigenous people about how to cultivate introduced species such as banana, citrus and cereals and how to improve the cultivation of corn. Most of the introduced species become adapted rapidly, such as apple (*Malus domestica)*, peach (*Prunus persica*), ficus (*Ficus carica)*, olives *(Olea europaea)* and pear (*Pyrus communis)* (Gónzalez Jacome 2007). The most abundant fruit plant species that could be found in that time were peach (*Prunus persica)* and walnut *(Juglans regia)*. The list in Appendix II shows a selection of plants that were introduced by the Spanish conqueror to the Maya home gardens in Yucatan. As the plants usually arrived through central Mexico to Yucatan the year of introduction is also a viable reference for other regions of Mexico.

The Spanish people also introduced a range of domesticated animals such as pigs (*Sus scrofa domestica*), chickens (*Gallus gallus)*, dogs (*Canis familiaris*, different landraces from the Mesoamerican dog), cats (*Felis catus)* doves (*Columba* sp.), horses (*Equus caballus*), dunkeys *(Equus asinus),* cows (*Bos taurus taurus, B. taurus indicus*), sheep (*Ovis aries*) and goats (*Capra aegagrus hircus*). Not all of them were accepted equally by the natives and not all of the animals brought to Mexico were adapted sufficiently to the new environment, but presently all of the mentioned animals can be found in Mexican home gardens (Mariaca Méndez *et al.* 2010). The Spanish conqueror not only influenced the species composition of home gardens, but also their structure and arrangement. New legislations (Law of the Congregation of Indigenous Settlements[6]) promoted and forced a more rectangular shape of the home gardens and their limitation by stone walls or woody fences (VanDerwarker 2006, Mariaca Méndez *et al.*, 2010).

It can be summarized that the home gardens in Mexico have a long tradition and already existed in pre-Hispanic times. Home gardens are dynamic land use systems. They changed

[6] These leys were created to concentrate indigenous population in some selected spaces and to separate them from the rest and facilitate control and governance by the Spanish. The main phase of congregation was between the end of 16th century and the beginning of 17th century (Sullivan 1996).

over the time in composition, structure and management and were strongly influenced by the arrival of the Spanish conqueror.

3 Objectives

The main objective of this study is to present a complete record of the plant agrobiodiversity of home gardens in the in tropical region (warm humid and sub- humid region) of Mexico.

3.1 Particular, accompanying objectives

The particular objectives of this study are:

(1) To verify most representative species, genus and plant families and to represent information about infraspecific varieties.
(2) To determine the geographic origin of plants that have been registered in home gardens in the tropical region of Mexico.
(3) To determine the use of the plants and their growth habit.
(4) To analyze the complementary data that has been obtained from the home gardens studies in the tropical region of Mexico.
(5) To provide information about the management, gender aspects, production, reproduction, seed dispersal, structure and home garden elements in the tropical region of Mexico.

4 Methods

4.1 Area of research focus

As it would be too complex to study the whole range of agrobiodiversity that can be found, the focus was put on home gardens in the tropical region (warm humid and sub- humid region) of Mexico (Figure 10), where most of the studies concerning home gardens in the past have been realized.

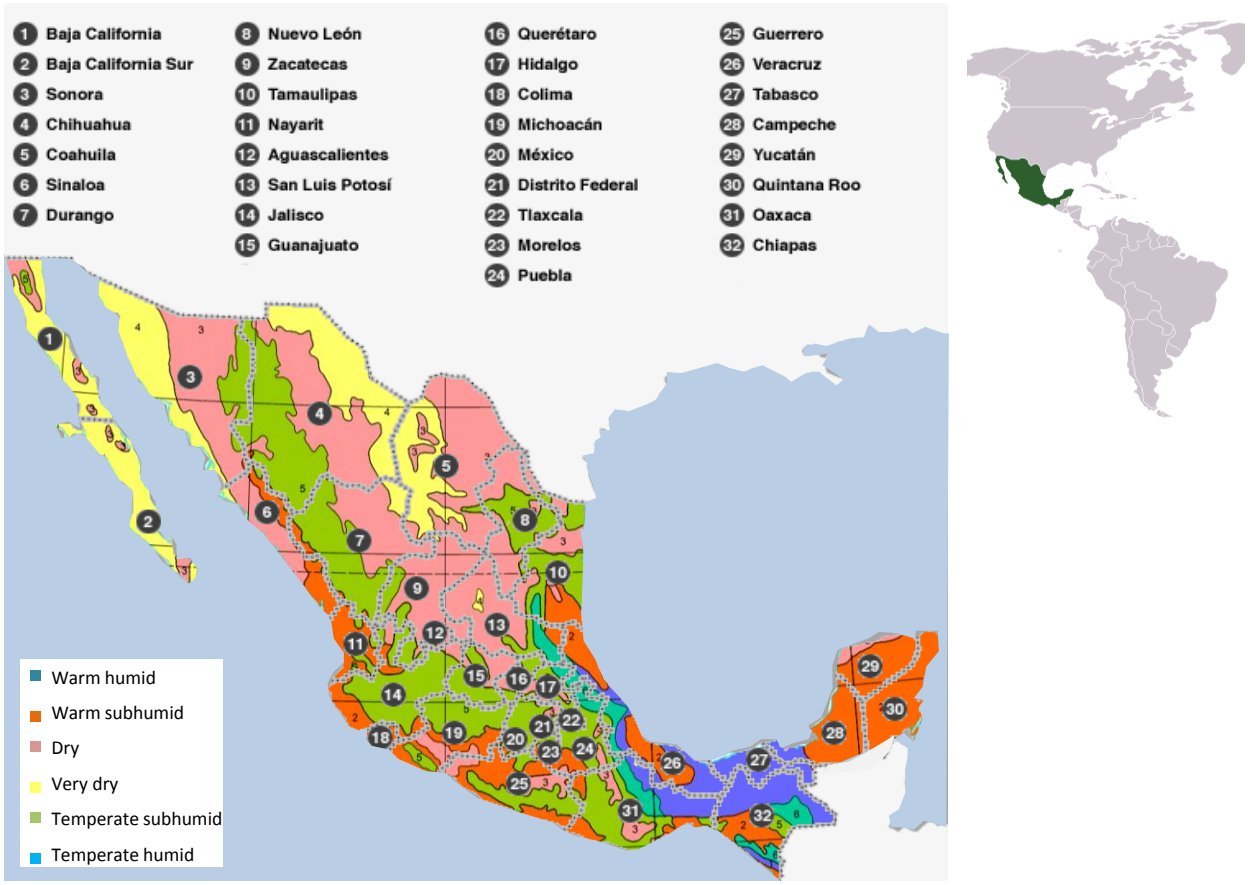

Figure 10 : Climatic map of Mexico (Source: www.inegi.org, www.wikipedia.org, modified)

4.2 Data compilation

4.2.1 Internet research

At the beginning of the investigation a profound internet research was realized to gather general information about the research topic and to allocate institutions and organizations that were necessary to contact and to plan further steps where to obtain relevant data.

4.2.2 Visits of research centres, institutions and other activities

Not all information in order to gain a representative data set was easy to access (e.g. through internet). For that reason, several excursions to libraries and scientific institutions had to be realized to obtain sufficient and viable data that coincided with the research objective. Visited locations were:

Universities

- National Autonomous University of Mexico (Universidad Nacional Autónoma de México- UNAM), Faculty of Political and Social Science, Department of Biology and the library of the Faculty of Science, Botanical Garden and Central Library. Mexico City.
- Autonomous University of Chapingo (Universidad Autónoma Chapingo- UACH), Central Library. Texcoco, Mexico state.
- Autonomous University of Yucatan (Universidad Autónoma de Yucatán- UADY), Campus of Agricultural and Veterinary Science and Central Library. Merida, Yucatan.
- Autonomous University of San Luis Potosi (Universidad Autónoma de San Luis Potosí), Library of Institute of Research in Desert Zones (Instituto de Investigación en Zonas Desérticas- IIZD). San Luis Potosi, San Luis Potosi.

Research centers

- Postgraduated College of Agricultural Science Texcoco (Colegio de Posgraduados). Texcoco, Mexico State

- Cientific Reserach centre of Yucatan (Centro de Investigación Científica de Yucatán- CICY), Phytotecnic Department, Agro- Botanical garden and Central Library. Merida, Yucatan.
- Regional University Centre of the University of Chapingo in the Peninsula of Yucatan (Centro Regional Universitario Peninsular de Yucatán de la Universidad Autónoma Chapingo- CRUPY), Ethnobotanical Garden. Merida, Yucatan.
- El Colegio de la Frontera Sur, Unidad Campeche (ECOSUR). Campeche, Campeche.
- The National Commission for Knowledge and Use of the Biodiversity (Comisión Nacional para el Conocimiento y Uso de la Biodiversidad- CONABIO), Mexico City.
- Centre for Research and Advanced Studies of the National Polytechnic Institute (Centro de Investigación de Estudios Avanzados- CINESTAV). Merida, Yucatan.

During the visits, scientists and expert groups were requested and interviewed. Additionally, selected persons were contacted via e-mail and telephone in order to increase the possibility to obtain data from regions that could not be visited during the investigation period. Moreover, conferences and presentations were attended to scoop all the possibilities to acquire useful data. In addition, excursions to home gardens as well as visits to local markets were undertaken to get closer to the practice and to be able to link theoretical information with practice.

4.3 Data selection and characterization

With the information obtained from thesis, dissertation, scientific publication, informs and books about botanical or ethnobotanical aspects of home gardens, a floristic list was elaborated that served as a database for the analysis of the agrobiodiversity. Only studies with a detailed plant list were considered.

4.3.1 Geographical distribution

Basically 14 federal states of Mexico have areas of tropical climate (Figure 10). However, the research efforts on home gardens in Mexico are usually concentrated on a few states, like

for example Veracruz and Chiapas. Very impressive is the amount of research about home gardens in the Peninsula of Yucatan (mainly in the state of Yucatan). In other regions a research lack could be noticed e.g. in Nayarit, San Luis Potosi and Oaxaca. It was impossible to obtain studies that were realized in tropical areas of Jalisco, Michoacan, Hidalgo and Colima. This might have to do with the relatively small area of tropical climate in these states (Figure 10), or because the research undertaken has not been published and, therefore, is not accessible. The selected studies usually present information about the tropical climate according to the classification of Köppen[7]. Some studies were realized in regions covering different climate types. In that case the plant list was reviewed to locate indicator species from tropical climate such as *Musa* sp*., Coffea* sp*., Manilkara* sp., *Spondias* sp., *Annona* sp., or *Inga* sp., that are almost exclusively cultivated in tropical regions. If they were included in the plant list, the study was used for the data set. In total 31 studies were selected (Figure 11). It would have been possible to include more scientific works from Yucatan but the most suitable seven studies were considered to be enough in order to avoid a concentration of data for a particular region.

The different studies cover a wide range of different climatic conditions within in the tropical region and vary from drier areas with for example an average annual rainfall of 700 mm in Yucatan (Celestun) to areas with very high rainfalls that can reach more than 3000 mm per year (Balzapote, Veracruz). The natural environment changes as well, from the dry tropical and deciduous forests to the tropical evergreen forest.

More background information of about each investigation and the area were the research was undertaken, can be obtained from Appendix III.

[7] Köppen created five climate groups. Group A includes the tropical climate (warm and humid, warm and subhumid; the temperature of the coldest month is more than 18°C) (García 1988)

YUCATÁN
1 Cadena Cisneros 2006: Celestún and Telchac Puerto
2 Herrera Castro 1994: Communities of Eastern Yucatán
3 Mézquita Ruiz 2010: Izamal and Tunkás
4 Montanez Escalante 1998: Hocabá and Sacabá
5 Novelo Chan 2007: Around city of Valladoild
6 Rico-Gray *et al.* 1990: Tixpeul and Tixcacaltuyub
7 Xuluc Tolosa 1995: Sacabá, Yucatán

CAMPECHE
8 Canul Montanez 2002: Campeche
9 Neulinger 2009: Campeche

QUINTANA ROO
10 Fedick *et al.* 2008: Naranjal, Yalahua Region
11 Osorio Hernandez 1997: Maya Zone
12 De Clerck & Negreros-Castillo 2000: Maya Zone

TABASCO
13 Hernández Burela 2001: Huimanguillo, Tabasco
14 Vidal Barahona 2008: Cárdenas, Tabasco

CHIAPAS
15 Gasco, J. 2008: Soconuco Region
16 Gutiérrez Miranda, L. 2003: Municipality of San Fernando
17 Osorio Hernández, C. 2000: Francisco I. Madera

OAXACA
18 Aguilar-Støen, M. *et al.* 2009: Candelaría Loxicha
19 Garcia Ramos, Y. 2010: Putla district
20 López Márquez, E. 1996: Cerro Clarín, low Mazateca region

GUERRERO
21 Cano Ramírez, M. 2003: Tepango
22 Witrago Amezcua, M. 1997: La Esperanza, Municip. Martir de Cuilapan

MORELOS
23 Pliego Aradero, C. 2006: Tepalcingo

PUEBLA
24 Espejel Espejel, C. 1993: San Juan Epatlán
25 Basurto Pena 1982: Yancuictalpan y Cuauhtapanaloyan

VERACRUZ
26 Alvarez-Buylla Roces, M *et al.*, 1989: Balzapote
27 Arévalo Vizaíno, V. P. 1999: Municipality of Tlapacoyán
28 De La Cruz Osorio, J. 2009: Community Francisco Villa
29 García Burgos, M. 2003: Main Municipality Tihuatlán

SAN LUIS POTOSI
30 Alcorn, J. B. 1984: Huasteca

NAYARIT
31 Ruenes Morales, R. 1993: Ejidos El Ahucate, Adolfo Lopez

Figure 11: Location of the data set

4.3.2 Different terms of home garden

As described before (section 2.6.2) there exists not sufficient clarity or dominance of one term representing the typical home garden, which could derive from the fact that the characteristics of home gardens are not sufficiently sharp defined (e.g. size, strata, and diversity). Nevertheless, in order to avoid the incorporation of false data, it was important to decide whether the research objects fit into the concept of home garden. Self- defined criteria in according to common descriptions in literature (Soemarwoto 1987, Nair 1993, Kumar & Nair 2006, Montagnini 2006) helped to evaluate critically whether to include an investigation or not (Table 1).

Table 1: Self- defined criteria of a home garden

Structure	Multi- canopy structure
Floristic composition	Annual and perennial crops with trees and shrubs
Production	No focus on commercial production
Size	Maximum 2 ha
Infrastructure	Not necessarily important
Agrochemical use	Limited use
Proximity to dwelling	In close surrounding of the house

4.3.3 Time frame

In order to obtain actual data about the species composition more recent works were preferred (Table 2). However, not in all cases it was possible to choose between the studies, because in some regions exist only a few of them that reduces the choice whether the data should be selected or not.

Table 2: Year of publication of the different investigations that served as a database

Year	State		Year	State
2010	Yucatan		2000	Quintana Roo
2010	Oaxaca		2000	Chiapas
2009	Campeche		1999	Veracruz
2009	Oaxaca		1998	Yucatan
2009	Veracruz		1997	Quintana Roo
2008	Quintana Roo		1997	Guerrero
2008	Tabasco		1996	Oaxaca
2008	Chiapas		1995	Yucatan
2007	Yucatan		1994	Yucatan
2006	Yucatan		1993	Puebla
2003	Chiapas		1993	Nayarit
2003	Guerrero		1990	Yucatan
2003	Oaxaca		1984	San Luis Potosí
2003	Veracruz		1983	Veracruz
2002	Campeche		1982	Puebla
2001	Tabasco			

4.3.4 Number of observed home gardens and other aspects

The number of visited home gardens of the different investigations varies from 2 to >155 (Table 3). The total number of home gardens is > 850. If in all cases a detailed floristic inventory was realized remains uncertain. Not all investigations point it out clearly. Further doubts exist about the data quality (e.g. exact taxonomic determination of the plants) and complexity of the floristic inventory, which depends on the personal ability, research objectives, the motivation of the investigator and the time frame. Therefore, it was chosen carefully which information is viable and what plants to include in the list and which should be excluded.

To facilitate the taxonomic identification and to increase the amount of species that probably can be found in the investigation plots, it is necessary to cover all seasons throughout the year. The average of the author's field work time was between six and seven months (amplitude from two to eighteen months). Table 3 shows that the majority of the

investigations fulfil this aspect. In some cases no information towards the investigation period was available but they were still included as they convinced with other attributes (e.g. location, research complexity).

Table 3 : Number of observed home gardens and time frame of the investigations

	Investigation	No. observed	Time period
1	CADENA CISNEROS 2006	>155	November 2002- February 2003 and September 2003
2	HERRERA CASTRO 1994	9	March 1988- July 1989
3	MÉZQUITA RUIZ 2010	33	-
4	MONTANEZ ESCALANTE 1998	10	August 1996 to July 1997
5	NOVELO CHAN 2007	120	May to November 2002
6	RICO-GRAY *et al.* 1990	42	March and April 1988
7	XULUC TOLOSA 1995	10	October 1993 to May 1994
8	CANUL MONTANEZ 2002	53	August to October 1999
9	NEULINGER 2009	20	June to October 2008
10	FEDICK *et al.* 2008	14	-
11	OSORIO HERNÁNDEZ 1997	14	From April 1996 to March 1997
12	DE CLERCK & NEGREROS CASTILLO 2000	80	May to October 1999
13	HERNÁNDEZ BURELA 2001	162 (interviews)	-
14	VIDAL BARAHONA 2008	95	-
15	GASCO 2008	12	January 2006- 2007 and July to August 2007
16	GUTIÉRREZ MIRANDA 2003	17	18 months
17	OSORIO HERNÁNDEZ 2000	12	March to June 1999
18	AGUILAR-STØEN *et al.* 2009	31	January to March 2006 and January to April 2007
19	GARCIA RAMOS 2010	13	April 2008 to June 2009
20	LÓPEZ MÁRQUEZ 1996	-	-
21	CANO RAMÍREZ 2003	10	2000- 2001 (1,5 years)
22	WITRAGO AMEZUCA 1997	21	-
23	PLIEGO ARADERO 2006	-	July to December 2004 and January to June 2005
24	ESPEJEL ESPEJEL 1993	2	-
25	BASURTO PENA 1982	7	March 1980 to April 1982
26	ALVAREZ-BUYLLA ROCES *et al.* 1989	8	November 1980- December 1982
27	ARÉVALO VIZAÍNO 1999	10	-
28	DE LA CRUZ OSORIO 2009	8	July to September 2009
29	GARCÍA BURGOS 2003	25	June 2001 to April 2002
30	ALCORN 1984	-	-
31	RUENES MORALES 1993	20	November 1989 to July 1992

4.4 Data preparation and analysis

To analyze the agrobiodiversity, following information was considered:

4.4.1 Information about different taxa

Botanical varieties, accepted by the International Plant Name Index (IPNI) were included in the final plant list. Other, non listed varieties were excluded. Synonyms were replaced by the officially accepted name. Hybrids and subspecies remained included in the plant list. To determine taxon synonyms, experts from the Institute of Research in Desert Zones of the Autonomous University of San Luis Potosi (IIZD) were consulted. Additionally, literature and internet sources helped to update the plant records of the different investigations (e.g. The Plant List (www.theplantlist.org), World Checklist of Selected Plant Families (www.kew.org), USDA Planta Database (www.plants.usda.gov), Missouri Botanical garden (www.mobot.org), Bailey & Bailey 1976)). After updating of the information about of the plants records, the most frequent species (including botanical varieties, hybrids and subspecies) was determined as well as information about the plant genus.

4.4.2 Plant families

In some cases plant families have changed and synonyms remain existing (e.g. Eupatoriaceae = Asteraceae or Alliaceae = Amaryllidaceae). For that reason, the different listed families were reviewed and actualized. There exist a range of different sources that give information about changes towards plant families. Following the suggestion of taxonomist experts from the Institute of Research in Desert Zones of the Autonomous University of San Luis Potosi, the classification of Cronqist (1981) was taken as basis in order to actualize the information about registered plant families. In case that plants families were not included in the list of Cronquist (1981) changes were made according to the information provided by Villaseñor (2004). As a last choice information was requested from the website of the Missouri Botanical Garden (www.mobot.org).

4.4.3 Information about infraespecific varieties

One aim of this work is to present the infraspecific variety of the home garden vegetation. Nevertheless it is a difficult approach because as already mentioned in the introductory chapter (2.2., 2.2.1), there exist constraints towards the application of the terms "variety/cultivar" and "landrace". Botanical varieties might be more clearly to identify from literature data, because they have defined botanical names. But records of cultivars are difficult to find and may have different names in different languages. That makes it complicated to decide whether a plant is considered as a cultivar or a landrace. For example, Chile huajillo in one publication could be considered as a landrace (Baral & Bosland) and in another as a cultivar (Barreiro Perera *et al.* 1991).

This work is based on inventory work. The inventory of landraces is a challenge for each investigator because of the fact that they are hard to define (Villa *et al.* 2005). In the field landraces can be recognized by morphological characters and can be identified by their local names (FAO 1998). In some cases the same local name refers to different landraces and vice versa. That may lead to false conclusions. But still, from the protection point of view it is worth to make the effort to show the infraspecific differences.

Therefore seven genus, that show a high infraspecific diversity, were selected (*Persea*, *Capsicum*, *Spondias*, *Phaseolus*, *Musa* and *Citrus)* to present detailed exemplary information about different local names and cultivars. The different local names are adopted from the different investigations. The reader is informed that the data will not present the state of infraspecific diversity in home gardens. But the variety of presented names that are used for the same species may give an indication about the infraspecific variants (landraces, cultivar) of plants that can be found in home gardens.

Additionally, without further analysis, local names that are provided by the investigators are attached to the complete plant list.

4.4.4 Plant use

Records from different investigations served as a database to give information about the plant use. In total 16 of the 31 investigation provided suitable plant use records.

Due to the fact that the categories of the plant use vary from investigation to investigation proper categories were established.

Following types of plants use are distinguished:

1. Food (including beverages)
2. Medicine (including veterinary use)
3. Ornamental
4. Spice
5. Ceremonial (including religious, protection and ritual use)
6. Construction (including timber wood)
7. Fence (no difference between live fence and common "wood fence")
8. Combustible
9. Handicraft and Utensil
10. Shade
11. Others (that do not fit into the other groups and are too seldom to create a new category e.g. manure use, hygiene, fibre, toy, insecticide)

4.4.5 Region of origin (natural distribution):

To determine the origin of the plants, information was taken from the different investigations and supplemented with data from literature (e.g. Bailey & Bailey 1976) and the internet (e.g. www.kew.org, www.plants.usda.gov).

Following criteria for the plant origin were established:

- Native of Mexico
- South America and Centro America (excluding Mexico)
- North America (excluding Mexico)
- Europe and Near East (Iran, Turkey and the Arabic Peninsula)

- Asia
- Africa
- Australia and Oceania
- Unknown

Not always exists viable information about the plant origin or a plant belongs to the cultigens and does not occur naturally (e.g. *Allium fistulosum)*. Therefore the category "Unknown" was created.

4.4.6 Growth habit

The information about the growth habit was obtained to get an impression about the vertical structure of the home gardens. If the data was not provided by the different authors (mayority of the cases), other sources were consulted (e.g. www.plants.usda.gov, www.mobot.org).

For the distribution of growth habitat of plants of home garden following options were created:

- Herb
- Tree
- Epiphyte
- Shrub
- Climber (includes liana and creeper)

However, shrubs, trees and climbers, depending on their age or on the site characteristics, could be find in different strata. In this investigation the growth habit of mature plants was taking into account. That means that the plant structure of a more mature home garden will be presented. According to the data quality more a tendency, than a *status quo,* is shown.

4.4.7 Complementary data

The different investigations that served as a database include complementary data that give valuable information about influencing factors towards agrobiodiversity. To facilitate the

analysis of the complementary information, a data frame in Excel was created and the different information attached. Latter, the sorted data provided information about the following points:

- Size and age of home gardens
- Home garden elements
- Structure and zonation
- Destination of production
- Labour force and gender aspects
- Management activities
- Reproduction and distribution
- Problems

Each investigation had a different objective (Appendix Ⅲ) and therefore not all points respond to the same amount and quality of information. To give a broader overview about the above mentioned points, additional information from other investigations was included.

5 Results and Discussion

5.1 Plant Information

5.1.1 Number of plant species records and frequency

In the 31 investigations that served as a database, about 1347 plant species[8] (including 13 subspecies, 24 botanical varieties and 22 hybrids) have been recorded (Appendix IV, Appendix V). Zeven & de Wet (1982), mentions that 225 species have been domesticated in Mesoamerica. The number is significantly lower compared to the quantity of species that have been found in home garden, which can be explained by the fact that the list includes a high number of plants from other regions of the world. Furthermore, apart from the domesticated species, also wild species have been registered.

Some investigators also provided data about the species richness of each home garden (Table 4). According to the data, the number of species varies from 12 to the maximum of 141 species per home garden.

Table 4: Number of species per home garden

Source	Location	No. of species	Average
Aguilar Støen 2009	Candelaría Loxicha (Oaxaca)	-	38
Cano Ramírez (2003)	Tepango (Guerrero)	19- 35	29
Osorio Hernández (1997)	Francisco I. (Chiapas)	-	43
De La Cruz Osorio (2009)	Francisco Villa (Veracruz)	-	43
Gasco (2008)	Soconuco Region (Chiapas)	28- 93	64
Lazos & Alvarez-Buylla (1983)	Balzapote (Veracruz)	12- 98	52
Neulinger (2009)	Calakmul (Campeche)	32-141	70
Novelo Chan (2007)	Valladolid (Yucatan)	31- 71	50

[8] The use of the term "plant species", if not exclusively mentioned, refers to all the plant records and includes botanical varieties, hybrids and subspecies

The most characteristic plants of home gardens are fruit trees, such as *Musa acuminata x M. balbisiana* (29 records), followed by *Carica papaya* (28 records) and *Psidium guajava* (27 records). Appendix VI provides a list of the most frequent plants.

The majority of the plants have only been recorded once (Figure 12). This is a valuable information towards the conservation of selected vulnerable and underutilized species that only remain in a few traditional land use systems and, therefore, should receive special attention.

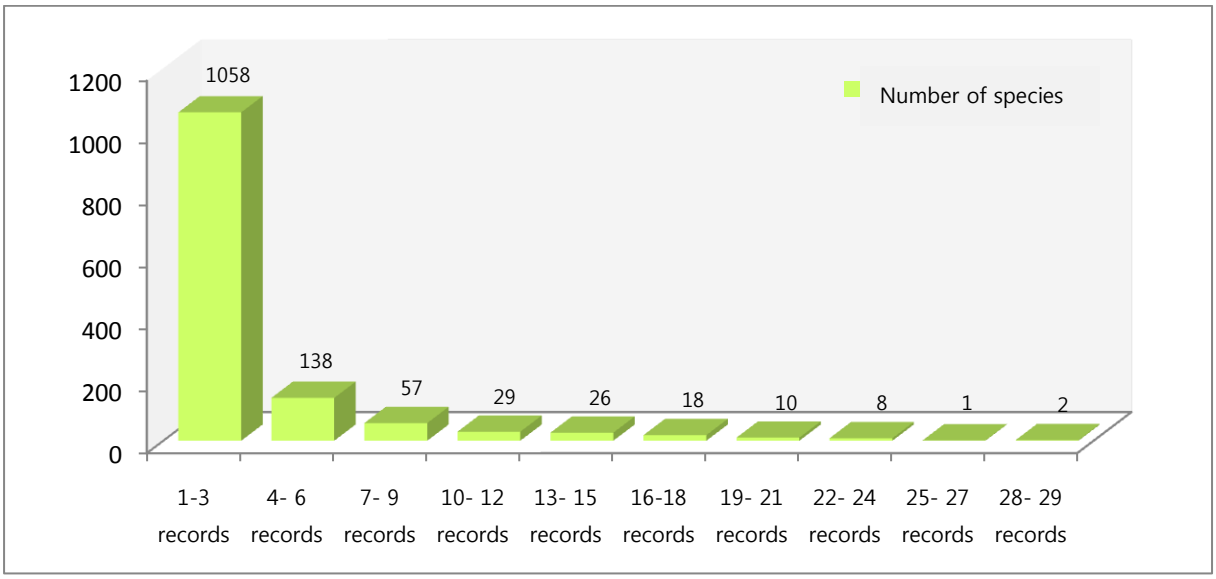

Figure 12: Number of species per record

5.1.2 Plant family and genus

The 1347 recorded plants species correspond to 149 different families and 736 different genus. The richest plant family of the home gardens, with 95 plant species, is the Asteraceae, followed by Fabaceae (73 species), Euphorbiaceae (54 species) and Solanaceae (53 species). Comparing the data with the families that contain highest number of cultivated plants worldwide (Khoshbakht & Hammer 2008) some similarities can be observed. Nine of the most important plant families in the home gardens belong to the 15 most important plant families of cultivated plants worldwide (Table 5). The Astercaceae family with 95 species is the most important plant family of the home gardens and, concerning the cultivated plants,

the third most important worldwide (284 species). The Fabaceae family consists of the second highest amount of cultivated species worldwide (653 species) and it was also the second most important family (73 species) in the tropical home gardens. The family Euphorbiaceae belongs to the third most important family (55 species) in the home garden and to the 5th worldwide (172 species). However, some exception presents for example the family Apiaceae. With only 10 species it is a less important family (24th rank) in home gardens, but on the global scale it contains the eight highest amount of cultivated plants (108). Most species of the Apiaceae family are distributed in the temperate region (Menglan *et al.* 2005) and, therefore, less present in the tropical home gardens. In contrast, the family Malvaceae with 33 species (7th rank) in tropical home gardens is more important than the Malvaceae family worldwide (69 species, 17th rank). Species belonging to the Malvaceae can be found all over the world, in tropical or temperate climate (Tang Ya *et al.* 2007). The Agavaceae family can be considered as a characteristic family of the home gardens in the tropical region of Mexico. It includes 21 species (including one subspecies) that correspond to 7% of the total number species (300) of the Agavaceae family. The complete list of the plant families in tropical home gardens is presented in Appendix VII.

Table 5: Fifteen Worldwide most important plant families of cultivated plants and 15 most Important plant families in tropical home gardens of Mexico

Worldwide (Source: Khoshbakht & Hammer 2008)				Homegardens tropical region of Mexico			
Rank	**Family**	**nSp**	**% TN**	**Rank**	**Family**	**nSp**	**% TN**
1	POACEAE	**725**	1,14%	**1**	ASTERACEAE	**95**	0,38%
2	FABACEAE	**653**	3,38%	**2**	FABACEAE	**73**	0,38%
3	ASTERACEAE	**284**	1,14%	**3**	EUPHORBIACEAE	**55**	0,87%
4	ROSACEAE	**263**	7,74%	**4**	SOLANACEAE	**53**	1,51%
5	EUPHORBIACEAE	**172**	2,73%	**5**	LAMIACEAE	**39**	0,57%
6	LAMIACEAE	**169**	2,46%	**5**	RUBIACEAE	**39**	0,30%
7	SOLANACEAE	**130**	3,71%	**6**	MIMOSACEAE	**35**	--
8	APIACEAE	**108**	3,0%	**7**	MALVACEAE	**33**	1,65%
9	MRYTACEAE	**95**	1,64%	**8**	VERBENACEAE	**34**	2,7%
10	APOCYNACEAE	**91**	1,65%	**9**	APOCYNACEAE	**30**	0,55%
11	RUTACEAE	**86**	5,06%	**9**	POACEAE	**30**	0,3%
12	CHENOPODIACEAE	**85**	7,08%	**10**	ARECACEAE	**28**	1,4%
13	POLYGONACEAE	**80**	7,27%	**11**	ROSACEAE	**25**	1,79%
14	ZINGIBERCEAE	**77**	5,92%	**12**	CAESALPINIACEAE	**24**	--
15	RUBIACEAE	**74**	0,56%	**13**	ARACACEAE	**23**	0,72%
				14	BIGNONACEAE	**22**	--
				14	BORAGINACEAE	**21**	0,78%
				15	AGAVACEAE	**21**	7%
				15	AMARANTHACEAE	**21**	2,1%

nSp= number of species; **%, TN** = Percentage of the total number of species belonging to the plant family

The Figure 13 demonstrates that the total number of cultivated species belonging to the Verbenaceae and Amaranthaceae family does not differ significantly from the total number of species that have been reported in the home gardens. The number of species that are included in the Poaceae family is significantly lower compared to the total amount of cultivated species that can be assigned to this plant family (Khoshbakht & Hammer 2008).

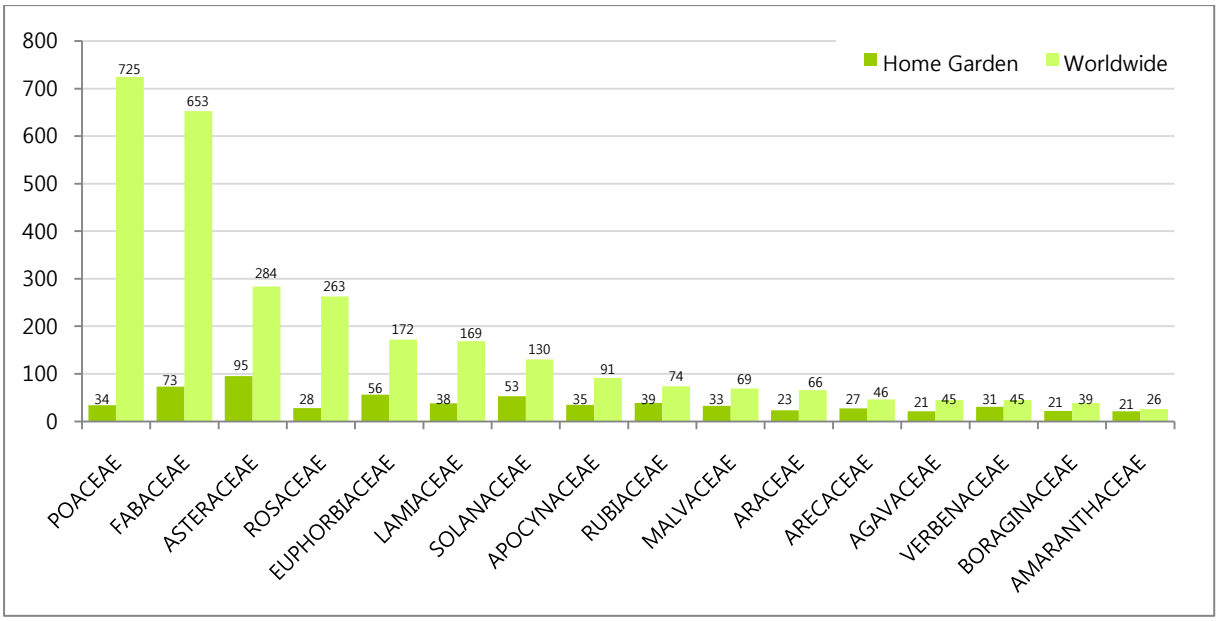

Figure 13: Comparison number cultivated species/ plant family worldwide (Source: Khoshbakht & Hammer 2008) and number of species/ plant family in home gardens

According to Zeven & De Wet (1982) the five most important plants families of cultivated plants in Mexico and Centro America consist of Cactaceae (36), Solanaceae (36), *Poaceae* (20), Agavaceae (17) and Malavaceae (9).

In the tropical home gardens of Mexico the Cactaceae family with 16 species (19th rank) is far less important, probably due to the increased humidity in the area of research focus. The family Agavaceae with 21 species (15th rank) and Poaceae with 30 species (9th rank) contain more species but are less important compared to the rest of the families. Solanaceae (4th rank, 53 species) and Malavaceae (7th rank, 33 species) are similar important but contain more reported species. The elevated number of species can be explained by the fact that Zeven de Wet (1982) only included the species native to Mexico and Centro America.

Concerning the genus, *Solanum* is the most important and consists of 21 species. The next are *Euphorbia* with 15 species and *Begonia* and *Ipomea* with respectively 13 species each. *Euphorbia* and *Solanum* and *Ipomea* belong also to the 20 most important genus of wild plants in Mexico. The other genus are less represented (Villaseñor 2004). A list of the most important genus that have been reported in the tropical home gardens can be found in Appendix VIII.

5.1.3 Plant origin

Most of the total recorded plants (65%) and 70% of the most 50 frequent species are native to Mexico (Fig. 14, 15). These include plants such as *Carica papaya* (28 records, 2nd most important species), *Psidium guajava* (27 records, 3rd rank) and one of the 4th most frequent species, *Persea americana* (24 records). From the conservation point of view it shows the importance of the tropical home garden because they serve a gene pool for many native crop species.

Most plants from other parts of the world derive from Asia (11%) and Central and South America (8%) and Africa (6%). A range of the most 50 frequent plants (24%) have Asian origin (Figure 15). Among them, the most important home garden plant *Musa acuminata* x *Musa balbisiana* (29 records), can be found, followed by the other 4th most important species *Mangifera indica* and *Tamarindus indica* with 24 records each. Frequent plants with South American origin are *Manihot esculenta* (19 records, 9th rank) and *Ananas comosus* (16 records, 12th rank). *Aloe vera* (18 records, 10th rank) and *Coffea arabica* (17 records, 11th rank) are important plants of African origin. The dominance of plants from these three parts of the world might have to do with the similar climatic conditions of the tropical region in Mexico and the region of plant origin as well as with the plants ability to become adapted to the site conditions. In this context Rzedowski & Huerta (1978) mention that the Mexican floristic composition resembles with Centro American flora and which, and from his point of view, could also be considered as one pythogeographic region. Moreover, the similarity of floristic elements of Mexican origin and Centro and South American origin is remarkable. Floristic elements of East Asia and Africa and that of the southern, more warm and humid part of

Mexico show also parallels (Morrone 2005, Rzedowski & Huerta 1978). Besides, the adoption of plants from more temperate areas like Europe or more arid areas like Near East is less (4%). *Nerium oleander* (15 records, 13th rank) is the only plant of European origin that is contained in the group of the 50 most frequent plants in the home gardens. Plants from temperate North America are even more sparsely adopted to the home gardens (1%). Mexican floristic elements present also some analogies with flora of Canada and U.S.A. but which is limited to the more temperate regions (Rzedowski & Huerta 1978). It explains why the percentage of plants from that part of the world is considerably low. Likewise is the proportion of plants from Oceania (1%).

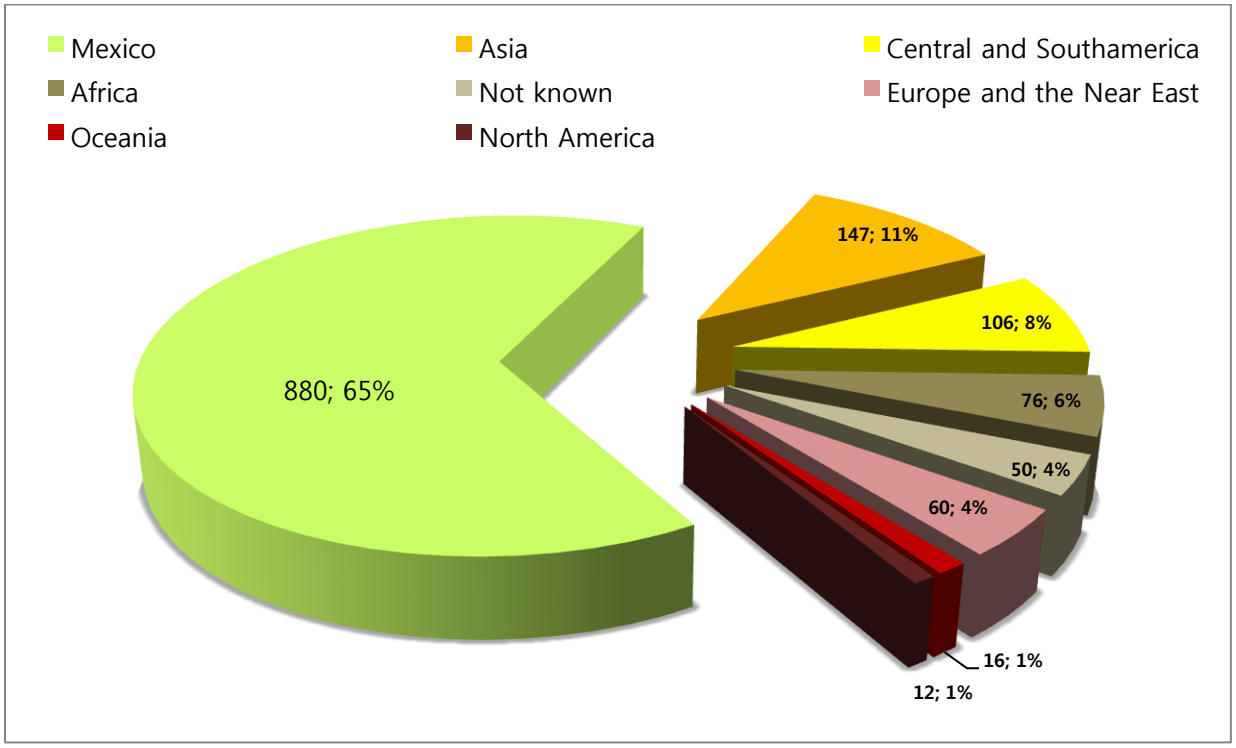

Figure 14: Records of plant origin

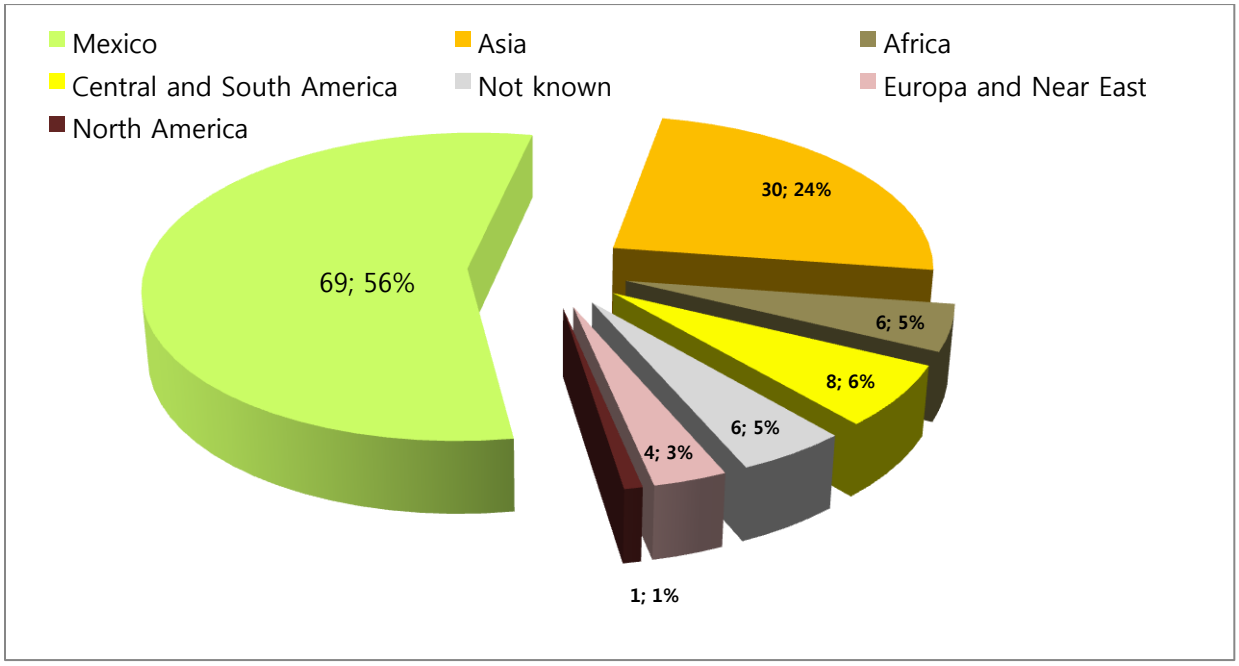

Figure 15: Plant origin of the 50 most important plants

The complete list of the geographic origin of the most frequent plants can be found in Appendix VI.

5.1.4 Plant use

Out of the 31 investigations, 16 provided data about the use of 952 different plants. The total records of use (3159) shows that the majority of the plants (68%) is used for food (794), ornamental (704) and medicinal purpose (669) (Figure 13).

Most important food providers are fruit trees such as banana (*Musa acuminata x Musa balbisiana*), mango (*Mangifera indica*) guava (*Psidium guajava*) and citrus (*Citrus sinsensis).* Hibiscus (*Hibiscus rosa- sinensis)*, Oleander (*Nerium oleander)* and Tempel tree (*Plumeria rubra) are especially valued as ornamental plants. Frequently used medicinal plants include Guava (*Psidium guajava)*, Firebush (*Hamelia patens)* and Jesuit's tea (*Chenopodium ambrosioides)*.

For almost every plant at least one use has been recorded. Only a few exceptions present no use (38; 1%). A lot of plants are used in multiple ways. An average of 3,3 different uses for

each plant could be determined. Lists about the most important species according to the different use categories can be found in Appendix IX- Appendix XVIII.

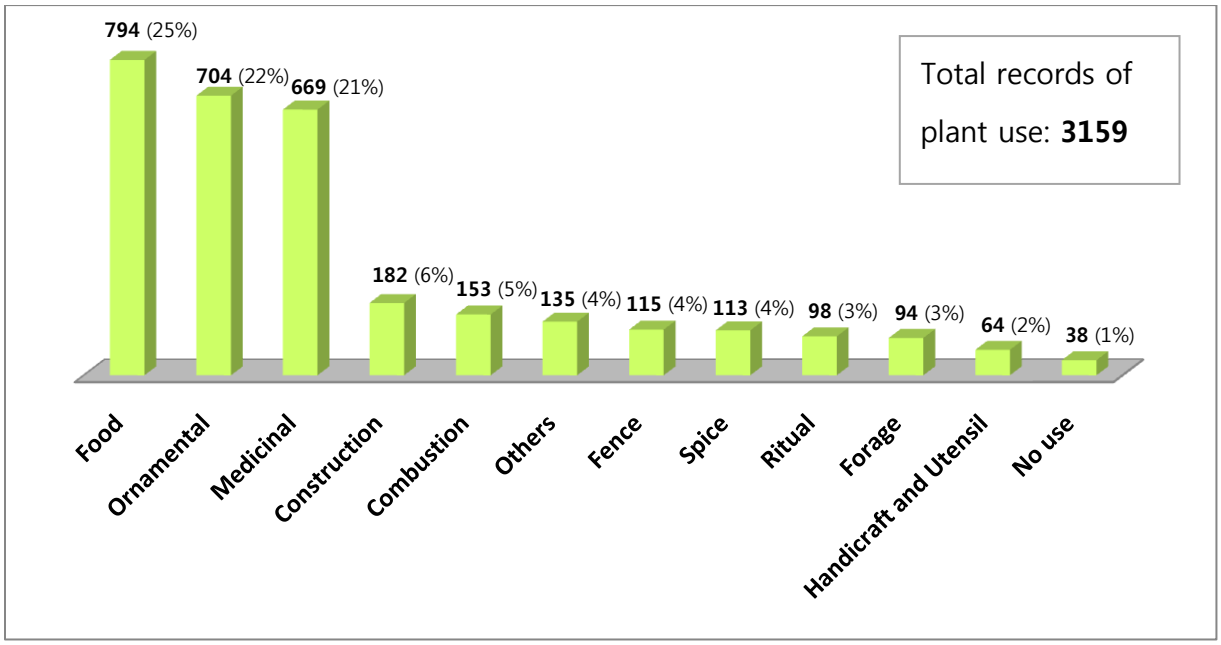

Figure 16: Plant use in home gardens

5.1.5 Growth habit

Most of the plants that can be found in home gardens grow as herbs (40%) (Fig. 16), followed by species that grow as trees (28%). 271 species develop to shrubs. The number of climbers, creepers and lianas, with 143 species, is still very high. The epiphytes are the less represented group in the home gardens. According to the data, it can be concluded that the home garden consist of various layers (vertical and horizontal) and the herb stratum is expected to contain the majority of the species. The dominance of herbs in home gardens may be explained by the limited space available. Nevertheless, trees are also frequent vegetative components in home gardens, probably because of their important function towards food provision and random functions such as shade provision and their importance towards wood and timber supply.

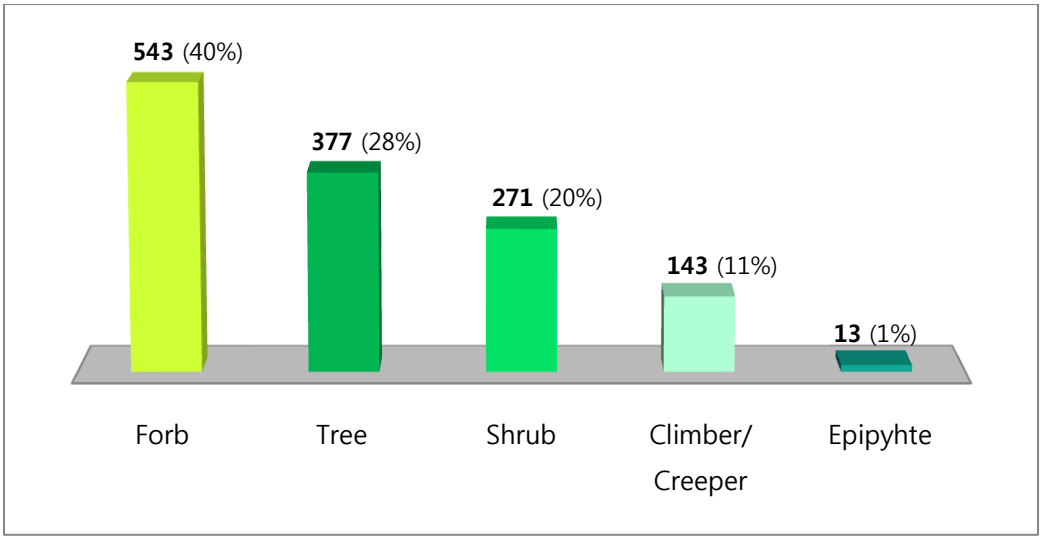

Figure 17: Growth habit of recorded species

5.2 Examples of infra- and interspecific diversity

5.2.1 Avocado (*Persea* sp.)

The Avocado diversity in Mexico is remarkable and the country counts as one of the world's leading avocado producers (Cuiris-Pérez *et al.* 2009). There exist three botanical cultivars which may have already existed in pre-Columbian time: *Persea americana* Mill. var. *drymifolia* (Mexican variant), *Persea americana* var. *americana* (Antillean variant) and *Persea americana* var. *guatemelensis* (Guatemalan variant) (Bellón *et al.* 2009). Out of them only *Persea americana* var. *drymnifolia* has been recorded in the different investigations (Table 6). Possibly, species that have been recorded as *Persea americana* also include the other two botanical varieties.

The *Persea americana* 'Hass' is a hybrid between *Persea americana* var. *guatemelensis* and *Persea americana* var. *drymnifolia*. The 'Hass' cultivar is very popular and often replaces local landraces. About this cultivar exist only three records. Probably they can be found more frequently, but were not always recognized as 'Hass cultivar' in the different inventories. *P. americana* is the most frequently reported *Persea* specie (24 records). The variety of different local names that give information about morphological differences may refer to the existence of different landraces or cultivars (Table 6). Another *Persea* specie that has been

reported is *P. schiedeana* which is considered as an under-recognized and under-studied fruit (Bost 2011). If the different local names of *P. schiedeana* (Aguacate chinin/a, Pagua and Aguatillo) refer to the same variants remains uncertain. Moreover, one hybrid of *P. schiedena* and *P. americana* has been recorded. *P. liebmaniii*, a further species, has been registered once only. According to the IUCN categories (IUCN 2011), *P. schiedeana* and *P. liebmanii* belong to the vulnerable species. Habitat destruction and the popularity of the **'**Hass**'** cultivar threatens the variety of avocado landraces (Bellón *et al.* 2009).

Table 6: *Persea* variants

Botanical name	Indigenous name	Local names (Reference for possible variants)	nR
Persea americana Mill.	- oom, on, oon, xka ya nima (20) - xicalahuacat (25)	- Aguacate (20)(9) - Aguacate oloroso (27)(29)(28) - Aguacate rugoso (21) - Aguacate verde (13) - Aguacate morado (13)(26)(29) - Aguacate misanteco (27) - Ahacuate criollo (31) - Ahuacate corriente (31) - Aguacate fuerte (31) - Aguacate verde, grande o Aguacate criollo (29)	24
Persea americana Mill. 'Hass'		- Aguacate Hass (29)(9)(31)	
Persea americana Mill. var. *drymifolia* (Schlecht. & Cham.) Blake		- Aguacate del cerro (30)	1
Persea liebmannii Mez		- Tepehuacate (31)	2
Persea schiedeana Nees	- pahua (25)	- Aguacate chinine (26) - Aguacatillo (20) - Aguacate chinina (27)(25) or Pagua (25)	4
Persea schiedeana x P. americana		- Aguacate negro (26)	1
Persea sp.		- Aguacate grande (28)	-

(1…31): Record reference, in according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.2 Bean (*Phaseolus* sp.)

The bean has its origin in America. Mexico is considered as the centre of domestication and genetic diversity of *Phaseolus* sp. (McClean *et al.* 2004). The most important species of the *Phaseolus* in Mexico are *P. vulgaris* (common bean), *P. coccineus* (Ayocote bean), *P. lunatus*

(Lima bean) and *P. acutifolius* (tépari bean) (Rosales *et al*. 2005, cited in Bellón *et al*. 2009). Apart from the latter species, all of them have been recorded in the different home gardens. *P. vulgaris* was the most reported (10 records) (Table 7). The mixture of 19 indigenous and local names that refer for example to different colors (e.g. amarillo- yellow, rojo- red, rosada- rose) are some indications for the presence of different landraces. Some names have a similar meaning (frijol mateado, frijol mata). The names refer to bush like beans with unlimited growth (www.conabio.gob.mx). Possibly these names refer to the same variants.

P. lunatus is the second most recorded species and shows also a range of different names. *P. coccineus* and its subspecies, *polyanthus*, are less common.

The beans varieties are not sufficiently studied yet (Bellón *et al.* 2009) and should be more promoted. Some wild beans are resistant to certain plagues (Cardona *et al*. 1990, cited in Bellón *et al.* 2009) and scientific findings to this may become economically important. Some *Phaseolus* variants are underutilized and can only be found on local markets (Bellón *et al.* 2009).

Table 7: *Phaseolus* variants

Botanical Name	Ind. Name	Local names (Reference for possible variants)	nR
Phaseolus coccineus L.	k'oolonii' (30)		1
Phaseolus coccineus subsp. *polyanthus* (Greenm.) Marechal & al.	paluw ot'ool (30)	- Piel suave (30)	1
Phaseolus lunatus L.	ibo'ob (11)	- Frijol blanco (9) - Frijol xpelón (9) - Frijol patlacho (31)(29) - Ibes (3)(11) - Patashete (16) - Frijol lima (12)	10
Phaseolus vulgaris L.	xpelon (11) tiltiket (25) emecat (25)	- Frijol tapiche (18) - Frijol (11) - Frijol negro (27)(25)(9) - Frijol enredador (25) - Frijol mateado (25) - Frijol mulato (9) - Fijol Nayarit (25) - Frijol de muerto (29) - Frijol de mata (17) - Frijol de chicharo (16) - Frijol de castilla (16) - Frijol de bejuco (16) - Frijol rojo, rosado y amarillo (16) - Frijol michito o gateadito (16)	14
Phaseolus sp.		- Frijol de chichimeca (28) - Frijol milet (22)	-

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31), **nR:** Number of total records

5.2.3 Hog Plum (*Spondias* sp.)

Three *Spondias* species are native to Mexico: *Spondias purpurea*, *Spondias mombin* and *Spondias radlkoferi* (Ruenes-Morales *et al.* 2010). The latter specie is rarely cultivated. There are also no records about this specie in the different home garden studies. However, the two other species were quite frequent (11, 12 records) (Table 8). *Spondias purpurea*, known as "jocote" or "ciruela Mexicana", is native to the tropical dry forest of Mexico. There exist at least 180 local names for *S. purpurea,* a reference for the existence of many variants. Deforestation activities threaten the remaining wild populations of "jocote" (Miller 2005). The other *Spondias* species*, S. mombin,* is home to the tropical wet forests. It is occasionally cultivated for its fruits or used as living fence.

During the domestication process, *Spondias* has been altered genetically due to the preference of trees with large fleshy fruits with sweeter taste and that can easily be propagated from cutting. The genetic appearance of the *Spondias* species is still not well-understood (Miller 2005). Both, *S. mombin* and *S. pupurea*, show some different names that give an indication of different landraces and cultivars (Table 8).

Table 8: *Spondias* variants

Botanical name	Ind. Name	Local names (Reference for possible variants)		nR
Spondias purpurea L.	- tuxilo abal (2)	- Ciruela campechana (29)(25)	- Ciruela roja	17
	- chi abal (2)(11)	- Ciruelo (1)(27)	- Jocote (16)	
	- San Juan abal (2)	- Ciruelo amarillo (31)	- Ciruelo rojo (31)	
	- campech (2)	- Ciruelo jobo (31)	- Ciruela amarilla (7)	
	- tuxilo abal (2)	- Ciruela tuxpana (7)		
Spondias mombin L.	- k'an abal (11)	- Ciruela roja (21)	- Jobo (20)(29)(25)	12
	- cuauhxocot (25)	- Ciruela amarilla (11)	- Ciruela (9)	

(1…31): Record reference, in according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.4 Squash (*Cucurbita* sp.)

The family *Cucurbitaceae* contains 20 species and subspecies. The five cultivated species include of the genus *Cucurbita* include *C. pepo, C. argyrosperma, C. moschata, C. ficifolia* and *C. maxima* (Whitaker 1956). Each species has been recorded in the different home gardens. With the exception of *C. maxima,* whose center of origin is South America, all the other species have been domesticated in Mesoamerica (Whitaker 1956, Hernández Bermejo & León 1994). Mexico is the center of diversity and many variants can still be found there. Some of the wild *Cucurbita* are endemic to some regions of Mexico (Lira Saade 1998).

The most popular cultivated *Cucurbita* species is *C. pepo*. It was also one of the first domesticated species in America. There exist two groups of *C. pepo*, one that grows in the Mayan lowlands and which is called 'tsool' or 'mensejo' and can be found in Chiapas and Yucatan. It has also been recorded in one of the investigations that were included in the dataset (Table 9). The other group grows in higher elevations, more than 2000 m in the Mixteca Area, and is called 'güiche' or 'güicha' (Lira Saade *et al.* 1992). With 13 records *C. pepo* was also the most popular *Cucurbita species* (13 records), followed by *C. moschata* (6 records).

C. moschata is cultivated in whole America and is extremely variable towards its fruit and seed morphology (Lira Saade *et al.* 1992). Unfortunately, the listed local names give not a lot indication towards morphological varieties.

The third one, *C. agryosperma* (pipián) is mainly used for its seed. About this species, only sparse information exists. Variants of *C. ficifolia* are used for the preparation of sweets (cabellos de ángel) where as the other ones are used for its fruit (chilacayote) (Lira Saade 1998).

C. moschata and *C. maxima* show resistance towards some viral diseases that could be interesting for genetic improvement of cultivated *Cucurbita*. However, the diversity of cultivated *Cucurbita* is threatened due to the focus on only a few varieties (Lira Saade *et al.* 1992) and abandonment of cultivation (Montes-Hernández *et al.* 2005).

Table 9: *Cucurbita* variants

Botanical name	Indigenous name	Local names (Reference for possible variants)	nR
Curcubita argyrosperma Huber	- chihua (9), k' alam (30)	- Calabaza chompola (12)	3
Cucurbita ficifolia Bouché	- chilacayot (kaniyo, triqui) (19)		1
Curcubita maxima Duch.	- nachun aaa (20)	- Calabaza (20)(18)	1
Cucurbita moschata Duch.	- k'uum, k'u'um, sikil (10)(9) - ch'ujm, chu'um (17)(9) - ayot (25)	- Calabaza (25) - Calabaza (11)(9) - Calabaza de pepita menuda (10)	6
Cucurbita pepo L.	- ka', ts'ol, ts'ool, to'op', top, xtop (10) - ayohuacax (25)	- Calabaza (22)(3)(10) - Calabazilla (11) (26) - Calabaza pipián (25) - Calabazita (31)	13
Cucurbita sp. L.	- nachunda (20)	- Calabaza (27) - Pipian (29) - Calabaza dulce (29) - Calabazillo, calabaza melón (27)	

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.5 Chile (*Capsicum* sp.)

Chile is one of the oldest cultivated plants in Mesoamerica and its domestication had already started ~6000 years ago (Perry & Flannery 2007). Together with cacao and tomate, chile it is considered as one of the basic spices of the Aztecaean dishes (Castillo Mendoza *et al.* 2006). Until now, many varieties have been developed. Mexico shows the highest diversity of Chile. The five domesticated chile species include *Capsicum pubescens*, *Capsicum baccatum*, *Capsicum annum*, *Capsicum chinense* and *Capsicum frutescens*. Four of them are currently cultivated in Mexico (Perry & Flannery 2007). All five Chile species have been recorded in the home gardens as well as one botanical variety (*C. annuum* L. var. *glabriusculum*).

C. annum is expected to be the most diverse chile species. About 25 different local and indigenous names have been reported and two cultivars have been listed (Table 10). There might exist more cultivars but sources from literature gave no clarity about which local names refer to a landrace and those that refer to cultivars.

According to the range of different names, the infraspecific variety of *C. frutescens* is expected to be high as well. However, there exist quite a lot double listings and the same

names refer to different species. The taxonomic determination and classification of Chile species remains problematic (Sitthiwong *et al.* 2005).

Table 10: *Capsicum* variants

Botanical Name	Ind. Name	Local names (Reference for possible variants)	nR
Capsicum frutescens L.	- xtunich (9) - x-max ik (11)	- Chiltepin (22)(25) - Chiltepin boludo (25) - Chile nanche (19) - Chile habanero (11)(9) - Chile veneno (26) - Chile Max (1)(3) - Chile pico de pájaro (25) - Chile mirasol (18) - Chile santanera (26)	6
Capsicum annuum L.var. *glabriusculum* (Dunal) Heiser & Pickersgill	- tsakam ist (30) - nia kandu (20)	- Chile bolita (21)(26) - Chile Max (7) - Chiltepín de pico de pájaro (27) - Chile piquín (21)(20)(29) - Chiltepín de bola (27)	6
Capsicum annum L.	- xcat ik (1) (11) - ich, mulision, colen ich (9) - kamab uut', na'a kando skua (20)	- Chile max (12) - Chile Chiltipin (9) - Chile cuarismeño (29) - Chile pico de pájaro (29) - Chile pasilla (31) - Chile pico paloma (13) - Chile tabaquero (13) - Chili (12) - Chile chilpajaya (20) - Chile chocolate (15) - Chile chiquito (28) - Chile verde(27)(1) - Chile de bola (29) - Chile dulce (1) - Chile huajillo (13)(22) - Chile pico parriba (13) - Chile cola de rata (31) - Chile gordo (31) - Chile seco (18),	15
Capsicum annum L. 'Serrano'		- Chile Serrano (22)(9)(27)(31)	
Capsicum annum L. 'Jalapeño'		- Chile Jalapeno (11)(7)(9)	
Capsicum chinense Jacq. `habanero'		- Chile habanero (3)(12)(1)(7)	1
Capsicum baccatum L.		- Chile de árbol (21) - Chile piquín (31)	1
Capsicum pubescens Ruiz & Pav.	- ich (17) - cojo iaa murunoo, triqui (19)	- Chile tusta (18) - Chile habanero (19) - Chile manzano (19)(17)	3
Capsicum sp.	- ich (17) - naycue (20)	- Chile largo (21)(17) - Chile verde (20)	

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.6 Banana (*Musa* sp.)

The banana has its origin in Southeast Asia and currently belongs to the most important food plants of the world (Nelson *et al.* 2006). The oldest record of cultivation derives from India (500- 600 BC). First records of banana in Mexico go back to the year 1518 (Mariaca Méndez *et al.* 2010). Even though the genus *Musa* is not of Mexican origin it is worth to mention the variants due its consumer importance in the home gardens (Appendix IX). Furthermore, in some cases, the conservation of introduced species becomes also important because they are threatened in the region where they originate from. More than half a century ago, the cultivar 'Gros Michel' got seriously infected by the fungal pathogen *Fusarium oxysporum*. The fungi dispersed extremely rapidly all over the world. As a consequence the popular 'Gros Michel' had to be replaced by 'Cavendish', a resistent *Musa* cultivar, but with less favorable characteristics. Until now, efforts are made to improve 'Gros Michel' genetically and to reintroduce this important cultivar (Davis 2005). The cultivar 'Gros Michel' (syn. 'Roatán') was also found in tropical Mexican home gardens and remaining cultivars may play a role in future genetic improvement.

The genus *Musa* of the cultivated bananas is divided into four groups *(Emusa*, *Rhodochlamys*, *Australismus* and *Callismusa)*. The *Emusa* includes most of the edible bananas and, among them, the most important banana species: *Musa acuminata* (Genom AA) and *Musa balbisiana* (Genom BB). All cultivated bananas derive from them. (Robinson & Saúco 2010). From crossbreeding of *Musa balbisiana* and *Musa acuminata* a lot of triploid forms have developed. The common practice of propagation of *Musa sp*. is cloning (Valmayor & INIBAP 2000).

Musa sapientum and *Musa paradisiaca* are still commonly used terms, but they are actually products of crossbreeding between *Musa acuminata* and *Musa balbisiana.* They should not be listed as separate species anymore. (Valmayor & INIBAP 2000). The Musa x paradisiaca remains listed in the table below, because many investigations referred to that name. In the final plant table, species named as *Musa x paradisiaca* are counted as *M. acuminata* x *M. balbisiana*. Seven different cultivars have been found and there exist many different local names that give further reference about the intraspecific variety (Table 11).

Table. 11: *Musa* variants * Sinomyms identified by Gobierno de Estado de Colima (2005)

Botanical name/ Cultivar	Ind. Name	Local names (Reference for possible variants)	nR
Musa acuminata Colla *x M. balbisiana* Colla 'Manzano' ('Piña', 'Silo Fig')*	- lobol (17) - ha'as (11) - nacha elia (20)	- Plátano manzana (20) - Plátano piña (25) - Plátano manzano (11)(26)(1)	29
Musa acuminata Colla *x M. balbisiana* Colla 'Macho' ('Bellaco', Criollo, 'Harton', 'Tipo' 'Horn Plantain')*	- nacha macho (20)	- Plátano macho (21)(20)(29)	
Musa acuminata Colla *x M. balbisiana* Colla 'Morada' ('Tafetán', 'Red')*		- Plátano morada (20)(27)(26)(29)(25)	
Musa acuminata Colla *x M. balbisiana* Colla 'Pera' ('Cuadrado', 'Cuatro Filos', 'Cachaco', 'Topocho' 'Verde', 'Bluggoe')*		- Plátano pera (27) - Plátano cuadrado (26) - Plátano morado verde (25)	
Musa acuminata Colla *x M. balbisiana* Colla 'Roatan' ('Tabasco', 'Roatan','Cuyaco', 'Gros Michel') *		- Plátano Tabasco (29)(27)(25) - Plátano Roatán (20)(27)(26)(29)(25)	
Musa acuminata Colla *x M. balbisiana* Colla 'Datil' ('Dominico', 'Ciento en Boca', 'Bocadillo', 'Sucrier')*	- nacha ciento en boca (20)	- Plátano Dominico (27)(26)(29) - Plátano Ciento en boca (26)	
Musa acuminata Colla *x M. balbisiana* Colla 'Enano chaparro' ('Enano Mil', 'Enano', 'Enano Chaparro', 'Pigmeo', 'Pineo', 'Enano', 'Dwarf Cavendish')*		- Plátano enano gigante (26) - Plátano enano (29) - Plátano chaparro (27)(29)	
Musa acuminata Colla *x M. balbisiana* Colla 'Valeri' ('Robusta')*		- Plátano valeri (13)	
Musa acuminata Colla *x M. balbisiana* Colla		- Plátano de castilla (29) - Plátano delgado (25) - Plátano manila (25) - Plátano tuna (25) - Plátano pina (25) - Plátano blanco (27)(25) - Plátano bolsa (27) - Plátano perón (20) - Plátano portalimón (31) - Plátano cuino (25)	
Musa x paradisiaca L.		- Plátano (1) - Plátano Roatán (16)(25)(9) - Plátano pera (31) - Plátano guinea (16)(29) - Plátano grande (31) - Plátano portalimon (31) - Plátano enano (9) - Plátano manzano (9) - Plátano cuadrado (28)(9) - Plátano bolsa (19)(9) - Plátano de siente boca (28) - Plátano chino (31) - Plátano de manzano (28) - Plátano de castilla (28) - Plátano guinea (26) - Plátano barbaro, Ha'as (11) - Plátano macho (13)(16)(27)(9)	

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.7 Mango (*Mangifera* sp.)

Mexico is one of the five most important Mango producers of the world. Its origin is Asia where it was already cultivated 4000 years ago. In the 18th century the Spanish brought the first Mango cultivar (Mango 'Manila') to Acapulco. Other mango cultivars arrived in the 19th century. They entered from the Antilles to the Mexican Gulf coast. In 1950 some mango cultivators brought germplasm material of some landraces to Florida in the U.S.A.. From there they dispersed to the Middle and North Pacific region and latterly to the tropics of Mexico. These cultivars included 'Tommy Atkins', 'Kent' 'Keitt', 'Irwin' and 'Zill'. The 'Ataulfo' mango is a Mexican Mango cultivar. It is supposed that it has developed through natural mutation. They probably derive from some trees in Chiapas that have been found on the property of Ataulfo Morales and Manuel Rodríguez. (Infante *et al.* 2011). The Ataulfo Mango is does not occur in the table 11 below. One reason might be that it was considered as the frequently reported Mango 'Manila'. In some literature they are wrongly treated as synonyms. In total three different Mango cultivars could be identified (Table 12). The other local and indigenous names can only be treated as references to different landraces because no viable information about more cultivars was found.

Table. 12: *Mango* variants

Botanical name/cultivar	Ind. Name	Local names (Reference for possible variants)	nR
Mangifera indica L.	- tzapot (25) - mango cha (20)	- Mango (31) - Mango zapote (25) - Mango de piña (16)(29) - Mango corazón (29) - Mango resina (27) - Mango nima (20) - Mango criollo (20)(29) - Mango corriente (25) - Mango copal (29) - Mango manililla (29) - Mango manzano (29) - Mango trinchete (29)	24
Mangifera indica L. 'Manila'		- Mango Manila (20)(27)(29)(25)(9)	
Mangifera indica L. 'Tomi Aktins'		- Mango Petacón (27)(29) - Mango Tomi (29)(27)	
Mangifera indica L. 'Oro'		- Mango 'Oro' (29)	

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

5.2.8 Citrus (*Citrus* sp.)

The majority of the species that belong to the genus *Citrus* has its origin in Southeast Asia (Himalayan region, South China). The taxonomic classification of the genus *Citrus* and the distinction between different cultivars faces constraints due their high variability in certain regions of the world (Spiegel-Roy & Goldschmidt 1996, Davies & Albrigo 1994).

Table. 13: *Citrus* variants

Botanical name	Local names (Reference for possible variants)		nR
Citrus aurantiifolia (Christm.) Swingle	- Limón (20)(16)(26) - Limón(17) - Lima chichi (27) - Limón criollo (15)(29(28) - Mandarina (20) - Lima (22)(16)(23)	- Limon persa (3) - Limón agrio chico (26) - Limón canario (29) - Limón indio/ingerto (9) - Limon agrio (21) - Lima limón (1)	23
Citrus aurantium L.	- Naranja criolla (29) - Naranja agria (20)(1)(3)(31)(9) - Naranja agrio (26) - Naranja reina (26)(29), - Manderina tangerina (26) - Naranja injertada (29) - Naranja nave (29) - Naranja temprana (29) - Mandarina (28)	- Cajel (21) - Naranja cucha (27) - Mateca (26) - Naranja china (26) - Naranja delicia (29) - Naranja Mónica (29) - Naranja tardia (29) - Chata (28) - Naranja grey (9)	13
Citrus maxima (Burm.) Osbeck	- Pomelo (9) - Toronjo (31)	- Toronja (21)(26)	7
Citrus aurantiifolia var. *latifolia* Tanaka ex Yu. Tanaka	- Limón persa (27)		1
Citrus limetoides Tan	- Lima (3)(5)	- Toronja (9)	3
Citrus medica L.	- Lima de limón (26)(29) - China lima (3) - Cidra (11) - Lima de chichi (28)	- Lima (26), - Lima de ombligo (22) - Limón dulce (26) - Lima dulce (7)(19)	11
Citrus limon (L.) Burm. f.	- Limón agrio (27	- Limón (19)	8
Citrus × limon (L.) Osbeck	- Limón indio (3) - Limón cabario (26) - Limón real (26)	- Limón dulce (21)(13)(22) - Limón agrio grande (26)	9
Citrus × microcarpa Bunge	- Naranjita de San Jose (4)(7)		2
Citrus paradisi Macf.	- Toronja (3)(5)(4) - Toronja rosa (29)	- Toronja blanca (29) - Pomela (26)(29)	9

Citrus reticulata Blanco	- Mandarina (21)(1)(3)(20) - Naranja clavo (3) - Naranja tangerina (3) - Naranja reina (27) - Naranja Mónica (27)	20
Citrus sinensis (L.) Osbeck	- Naranja (22)(21) - Naranja de Valencia (28) - Naranja dulce (25)(26)(7) - Naranja criolla (20)(25) - Naranja dulce (1) - Naranja Valencia tardia (27) - Naranja Valencia temprana (27) - Naranja de azúcar (27) - Naranja tardia (25) - Naranja china (3)	24
Citrus sp.	- Naranja ombligo (20) - Naranja Monica (28) - Naranja de Licia (28)	

(1…31): Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

nR: Number of total records

According to the Swingle classification, which is the most common one (Khan 2007), it can be distinguished between *C. medica* (citrons), *C. limon* (lemons and rough lemons), *C. aurantiifolia* (sour limes), *C. limetta* (sweet limes), *C. aurantium* (sour orange) and *C. sinensis* (sweet orange). All of them have been found in the home gardens (Table 13). *C. sinsensis* (24 records), *C. aurantifolia* (23) and *C. reticulata* (20) have been reported most frequent.

The range of names for the different *Citrus* species is impressive. However, quite a few double listings of names according to different botanical variants exist. For example both, Naranja Monica and Limón dulce, refer to more than one different botanical variety. Once again it exemplifies the difficulty of managing data about infraspecific varieties from different sources.

To conclude, many of the reported names refer to different morphological characteristics such as form, taste and color. These are all possible references for different infraspecific varieties. But complementary and viable information from other sources is rare and sometimes contradictory. Hence, a detailed analysis of the infraspecific variants remains difficult.

However, more recorded local and indigenous names for different plants can be taken from the plant list in Appendix IV. Simple counting of the documented names shows that for 1010 different plants 1792 different local names exist and more than 765 different indigenous

names for about 475 different plants. It demonstrates the huge variety of names that might refer to landraces and cultivars that have not been reported apart. Still it has to be considered that plant names vary from region to region and therefore could refer to the same species. The 765 different indigenous names also include different languages and dialects. But nevertheless, the numbers give an idea about the possible intraspecific diversity. And the different genus discussed give a more detailed insight about the infra- and interspecific variety that can be found in the home gardens.

5.3 Analysis of the complementary data

5.3.1 Size of home gardens

Regarding the information of the 31 reviewed investigations, the home garden size ranges from 9,8 m² to 10000 m² (Table 10). Certainly, the size of 10000 m² is an exception. All the other home gardens fall into the range of Fernandes & Nair (1986), who compared various home garden systems from different ecological and geographical regions from all over the world and concluded that the size usually does not exceed 0,5 ha. De la Cruz Osorio (2009) mentions that the home gardens dimension depends on the wealth of the family. Furthermore, in smaller home gardens the plants are rather exchanged than added to the home garden system because of the limited planting space available. It can be expected that the species diversity even decreases in smaller home gardens. Despite, Gasco (2008) assums that the garden size not necessarily influences the species richness but more detailed investigation would be necessary to show a clear tendency. Cano Ramírez (2003) mentions that the reduced size influences the vertical structure of the home garden and the smaller home gardens show more herb strata.

Indeed, home garden size and species richness and diversity correlate and has been mentioned in other investigations as well. For instance Abdoellah *et al.* (2002) and Das & Ashesh (2005) observed that with increased home garden size more variations and species can be found. Nevertheless it does not necessarily mean that the diversity per land unit is

increased as well. Applying the density based Shannon Weaver Index the species diversity per unit of land might be decreased in larger home gardens and a more uniform planting pattern could be a result (Peyre *et al.* 2006). Similar conclusions towards diversity and home garden size were made by Kumar *et al.* (1994) that demonstrate a raise of species diversity in smaller home gardens, due to denser planting and an optimum use of space for plant arrangement. Fortanelli Martínez *et al.* (2007) made comparable observations in small home gardens for commercial production. However, Abdoellah *et al.* (2002) could not approve a positive correlation between home garden size and species richness or diversity.

Table 14: Home garden size

Localities	Home garden size	Reference
Celestún and Telchac Puerto, Yucatan	24- 675 m²	Cadena Cisneros 2006
Sacabá, Yucatan	avg. 2434 m²	Xuluc Tolosa 1995
Tlapacoyan, Veracruz	avg. 1920 m²	Arévalo Vizaíno 1999
Tihuatlán, Veracruz	avg. 714 m² 80- 3000 m²	García Burgos 2003
Balzapote, Veracruz	225- 3400²	Lazos & Alvarez-Buylla 1983
Francisco Villa, Veracruz	avg. 1024 m² 600- 2250 m²	De la Cruz Osorio 2009
Soconusco, Chiapas	625- 10000 m²	Gasco 2008
Zona Maya, Quintana Roo	avg. 1560 m^2 584- 2580 m²	Osorio Hernández 1997
Cerro Clarín, Oaxaca	200- 2500 m²	López Márquez 1996
Putla, Oaxaca	100- 250 m²	Garcia Ramos 2010
La Esperanza, Guerrero	9,8- 826,6 m²	Witrago Amezcua 1997
Tixpeual Tixoacaltuyub, Yucatan	400- 5000 m²	Rico-Gray *et al.* 1990

avg.= average

5.3.2 Age and home garden

In the reviewed studies about the home gardens in the tropical region of Mexico, it was observed that older home gardens tend to have more species (Ruenes Morales 1993, De Clerck 2000) and that in mature home garden the number of trees is increased, whereas younger home gardens represent mainly species in the herb and shrub strata (De la Cruz

Osorio 2009). García Ramos (2010) shares the statement, as he found out that more ornamental plants (mainly herbs) can be found in the younger home gardens.

Similar observations were made in other investigations as well. For example Coomes & Ban (2004) state that home garden age and species diversity are strongly related to each other and older home gardens show more diversity. In this context, Kehlenbeck *et al.* (2007) reports that usually, after establishing the home garden, the gardeners add a small number of crops to the remaining vegetation. Over the years more and more species are incorporated and resprout from the existing vegetation. Fortanelli Martínez *et al.* (2007) mentions that older gardeners cultivate a higher number of species. Still, not always an older garden represents more species as it was shown by Holder *et al.* 1999 (cited in Kehlenbeck *et al.* 2007). The home garden age has an effect on species composition as well. Species composition shift for example from non fruit staples to perennial and fruits staples and later to trees and shrubs. The structure of younger home gardens shows often a lack of the upper strata Coomes & Ban 2004).

5.3.3 Home garden elements

The typical elements that can be found in home gardens in the tropical region of Mexico are the housing complex and yard, bathroom, laundry area, kitchen area, latrine, stable for the animals, water and seed storage (Cadena Cisneros 2006, Herrera Castro 1994, Neulinger 2009, García Burgos 2003, De la Cruz Osorio 2009). Some gardeners have integrated bee stocks from the nearby forest to complement human diet (Xuluc Tolosa 1995). In Yucatan some typical elements such as ka' an che' (elevated seed beds) or cha wool kot, wool kot, koolol 'che (fenced planting and seedling spaces of different size) can be found (Herrera Castro 1994, Cadena Cisneros 2006, Xuluc Tolosa 1995) (Fig. 16). Another particularity of the home gardens in the Maya lowlands are the lime stone bedrock cavities that are used as plant holes (Fedick *et al.* 2008) (Figure 19).

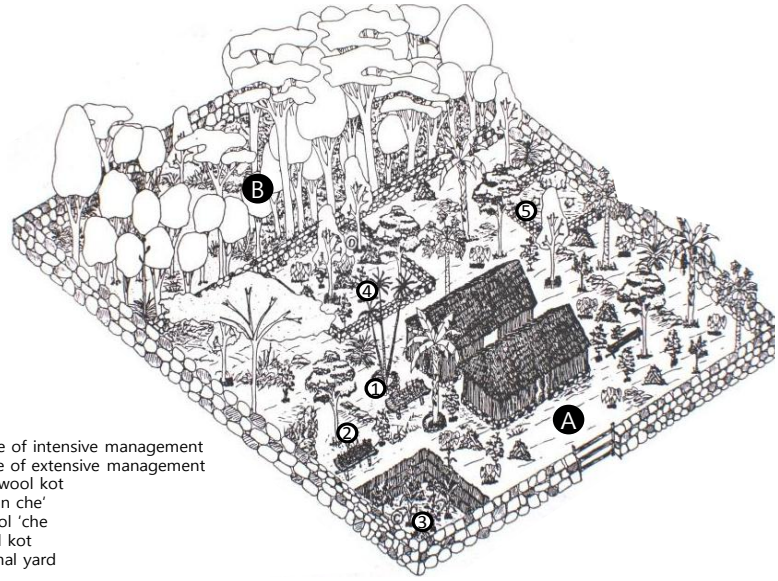

Figure 18: Elements and zonation of a tropical home garden in Yucatan (Source: Castro 1994, modified)

Figure 19: Example of a lime stone bedrock cavity (Source: Fedick 2008)

5.3.4 Structure and Zonation

At first view, home gardens might give the impression of an unordered and chaotic arrangement of plants. Soemarwoto (1987) describes it as a "…to the casual observer look haphazard". Contrary to the apparent disorder, home gardens are well planned and carefully structured where every element occupies a specific place and has a specific function (Fernandes & Nair 1986).

In fact the majority of the reviewed works about home gardens in the tropical regions of Mexico that give information about the structure and zonation point out a specific spatial arrangement of the home garden plants (Lazos & Alvarez-Buylla 1983, De la Cruz Osorio 2009, García Burgos 2003, López Márquez 1996, Gutiérrez Miranda 2003). It is most common to find the ornamental plants in front of the house where they decorate the place and welcome the visitors. Valuable species that are more often irrigated and fertilized, as well as species of frequent use are usually located in small plots close to the house (selected fruit trees, medicinal plants, ornamental plants). Greater trees and shrubs occupy the random

spaces of the home garden, where they also function as live fences. Shrubs and small trees can be found everywhere in the home garden.

Some authors divide the home garden into zones of intensive management and extensive management (Cadena Cisneros 2006, Osorio Hernández 1997, Herrera Castro 1994). The intensive zone refers to the area close to the house where the more attended species can be found. The zone of extensive management is located more far away from the house where the tree stratum is dominant (Figure 18).

Similar zonations can be found worldwide. Kumar & R. Nair (2004) summarize that, in general, food and fruit producing species are dominant close to the housing complex and working spaces. Small plots of annual vegetable crops are established between the zone of the housing complex and the timber species in the more distant area. Neulinger (2009), instead, did not observe an exact zonation and plants are introduced where place is available.

Home gardens in humid regions are sometimes compared to a tropical forest imitating their vertical and horizontal structure (Azurdia & López 2000). In an harmonic way, ecologic functions of the forest are used to meet socioeconomic needs of the people (Niñez 1985). The vertical arrangement agrees with plants requirement (Soemarwoto 1987).

Towards the arrangement in the tropical home garden can be observed that it is the also determined by natural conditions. For example, the soil quality and depth influence the plant and site selection. The most suitable place is selected for the most interesting species. Furthermore plants are arranged in that order to avoid competition (García Burgos 2003). The structure mainly consists of at least three vertical strata (herb, shrub, tree) (García Burgos 2003, Cadena Cisneros 2006). Usually most species can be found in the herb stratum[9] and the trees form the dominant stratum. De Clerck & Negreros-Castillo (2000) distinguish between five vertical strata (herb- 0,5 m, low shrub- 0,5-1 m, tall shrub- 1-3 m, low tree- 3-6 m and tall tree- 6-12 m) and one horizontal strata that includes the vines.

[9] The information corresponds also to the expected vertical structure that was determined in section 5.1.5.

5.3.5 Destination of production

The statement that home garden are mainly focused on subsistence production (Kumar & Nair 2004, Alayón-Gamboa & Gurri-García 2007) can be strengthened, because 100% of the investigation reviewed, clarify that the home garden production is mainly dedicated to subsistence. Herrera Castro (1994) points out that the production is diverse, but less in quantity and there exist no market tradition. Nevertheless, in some cases fruits are sold occasionally, for example when exists overproduction (Osorio Hernández 1997, Vidal Barahona 2008, De la Cruz Osorio 2009, Aguilar-Støen *et al.* 2009), or on special events (Neulinger 2009). Sometimes, selected fruits, which are more frequently planted, as for example *Citrus sinensis* are offered on the local markets (Lazos & Alvarez-Buylla 1983, De Clerck & Negreros-Castillo 2000, Espejel Espejel 1993).

Animals, next to subsistence use, provide additional income (Neulinger 2009, Lazos & Alvarez-Buylla 1983, Vidal Barahona 2008, García Burgos 2003). The animal production, in contrary to the plant production, seems to be slightly more market oriented. It is also a kind of payment for working labour (López Márquez 1996).

5.3.6 Gender aspects, labour force and production

Some authors gave following information about activities and gender in the home garden (Table 11). The reviewed works show that the home garden in Mexico is managed by the family members and usually no external working labour is acquired. But in case if needed other community members or neighbours will be requested (López Márquez 1996). Very often women are considered as the most responsible for the home garden (e.g. Arévalo Vizaíno 1999, Espejel Espejel 1993, Xuluc Tolosa 1995, Cadena Cisneros 2006), which becomes enhanced when the men work outside the communities (Gasco 2008, Xuluc Tolosa 1995). That home gardens are mainly managed by the family members and that women, hereby, play the most important role is a widely shared opinion (Chávez- García 2009, Kumar & Nair 2004, Engels 2002b). It also has been affirmed in several parts of the world, like

Ghana (Bennett- Lartey 2002), Ethiopia (Asfaw 2002), Nepal (Shreshta *et al.* 2002), Austria (Vogl- Lukasser & Vogl 2002), Bangladesh (Ali 2005) and Latin America (Howard 2006).
Nevertheless, not in all cases the woman is dominant towards home garden management and the work between gender is shared equally (Osorio Hernández 1997, Gasco 2008). Due to the information that is presented in Table 15 it can be concluded that men do more physical intensive work, whereas the woman does less power intensive work. Concerning specific activities it was mentioned that men are more responsible for the fruit trees and women take mainly care of the ornamental and medicinal plants.
The information coincides with data from other works. Cabrera *et al.* (2001) also mentions that men do more the labour intensive work and women spend more time in pre-harvesting activities. However, they are strongly involved in all aspects of production and decision-making. Women also have a key function towards the transmission and exchange of knowledge. They have a strong influence in species composition and selection (Akhter *et al.* 2010) and commercialization of garden products (Bravo Orta *et al.* 2008). Because they are most responsible for processing, preparing, and preserving food, they are also especially interested in the types of crops grown and decide about the adoption of new varieties as well as the persisting of others (Oakley 2005, Pérez 2009). Perea Mercado (2010) highlights the importance role of the women towards biodiversity and reports that the home gardens are more diverse when women are taking the decision about the plant composition.

Regarding the involvement of children in home garden management it was mentioned that children usually share the work with the women. The male teenager does similar work as the fathers do and the female teenagers support the mother in the home garden (Neulinger 2009, Lazos & Alvarez-Buylla 1983).

Table 15: Gender and home garden activities

Men activity	Source	Women Activity	Source
Construction	Herrera Castro (1994), Neulinger (2009)	Irrigation	García Burgos (2003)
Wood cutting	Herrera Castro (1994), Neulinger (2009)	Sowing	Herrera Castro (1994), López Márquez (1996)
Pruning	Osorio Hernández (1997) García Burgos (2003) Lazos & Alvarez-Buylla (1983)	Feeding animals	Herrera Castro (1994), Xuluc Tolosa (1995), Lazos & Alvarez-Buylla (1983)
Fencing	Herrera Castro (1994), García Burgos (2003), López Márquez (1996)	Selling plants on local markets	Aguilar-Støen *et al.* (2009)
Responsible for fruit plants	Osorio Hernández (1997), Lazos & Alvarez-Buylla (1983), Ruenes Morales (1993)	Responsible for ornamental and medicinal plants	Herrera Castro (1994), Aguilar-Støen *et al.* (2009), Vidal Barahona (2008), Ruenes Morales (1993)
Propagation of fruit trees	Osorio Hernández (1997)	Honey production	Herrera Castro (1994)
Selection of fruit plants	Cano Ramírez (2003)	Seed selection	Osorio Hernández (1997), Aguilar-Støen *et al.* (2009),Vidal Barahona (2008)
Clearing	Osorio Hernández (1997)	Fencing of small seed beds	Lazos & Alvarez-Buylla (1983)
Weed control	López Márquez (1996)	Propagation	López Márquez (1996)
Fertilization	López Márquez (1996)	Arrangement of plants	Osorio Hernández (1997), Vidal Barahona (2008)
Castration, vaccination	Lazos & Alvarez-Buylla (1983)	Conservation	Espejel Espejel (1993)
Establishment of the home garden	Lazos & Alvarez-Buylla (1983), Ruenes Morales (1993)		
Sowing	Osorio Hernández (1997)		

5.3.7 Management activities

In the tropical region of Mexico the gardeners have developed creative strategies to improve the productivity of their home gardens. Tables 15 and 16 give an overview about all the mentioned activities. The application of manure and organic material as well as burning waste and plant rests seem to be a common practice to increase soil fertility. In some cases even chemical fertilizers are applied. One another possibility to enrich the soil is the translocation of organic matter from the natural environment to selected areas of the home garden (e.g. to seedbeds of vegetables).

The dense vegetation in home gardens can influence plant growth and productivity. To avoid the competition for nutrients and water between the plants and to select non- desired and desired species, mechanical weed control as an activity is frequently mentioned. Weeding frequency and intensity can differ among the different home garden zones (Lazos & Alvarez-Buylla 1983). In one investigation (De la Cruz Osorio 2009) it is reported that even agrochemicals are applied to extinguish the weed in the home garden. The domestic animals, if they are free ranged, also contribute to the weed control in the home garden. To avoid that the animals feed utile plants, vulnerable plants can be fenced.

Even though home gardens are multi-diverse systems that limit the occurrence and the transmission of pests, several home gardens suffer from presence of vermin insects like for example ants (*Formica* sp.) and the white fruit fly (probably *Aleurothrixus floccosus*). In some cases they are combated with agrochemicals. It is mentioned that even DDT, which was forbidden in 2002[10], is applied. Nevertheless alternative methods are more common which include the use of fire in order regulate and eliminate the pests or paint the trees with lime dissolved water or calc to protect them of harming insects.

With the objective to enhance the production of fruit trees, or to optimize radiation entrance to the lower strata, selected trees are pruned. In order to accelerate the fructification and to combine plants with desired characteristics fruits trees are grafted. Furthermore, irrigation is

[10] The production and use of DDT (dichlorodiphenyltrichloroethane) has been abolished in Mexico in according to the North American Regional Action Plan (NARAP) negotiated by the three signatory countries (Mexico, Canada, U.S.A.) to the North American Agreement on Environmental Cooperation (NAAEC) CEC (Commision for Environmental Cooperation of North America) (2003).

practiced which is, according to the reviewed articles, one of the most common activities, especially in the Peninsula of Yucatan. Mostly plants of special interest (mainly ornamental plants and vegetables) depend on additional water supply. To ensure a healthy development of the more valued plants, seeds can be placed in seed beds and the small seedlings are latterly transplanted. All the mentioned activities do not require heavy machinery.

In literature home gardens are considered as sustainable low input land use systems (Kumar & Nair 2004) which may lead to the idea that more age old technologies are applied and modern agricultural practices are quite unusual. Nevertheless, the information about the home gardens in the tropical region of Mexico shows that the technical management also includes the application of chemical and biological fertilizers and artificial irrigation. On this Hoogerbrugge *et al.* (1993) give a short literature overview about home garden techniques and mention similar activities as reported in the Mexican home gardens. For example, likewise in Mexican home gardens irrigation, especially during dry season, is a common practice. Soil fertilization can be maintained through the application of organic material, but also through the use of chemical fertilizers. Soil preparation activities in the home garden include for example seed bed preparation and digging plant holes. Fencing is also a common activity to protect the plants from the animals. Besides, mechanical pest control is realized, but the application of pesticide is not so common. Weeding as an activity, in contrary to the information obtained from the Mexican home garden studies, is not frequently reported and is counted as a marginal activity. Other home garden techniques include planting, transplanting, thinning, pruning, staking, grafting, rationing and mulching.

Table 16: Mentioned management activities

Activity	Source
Irrigation	De la Cruz Osorio (2009), Neulinger (2009), Cadena Cisneros (2006), Cano Ramírez (2003), Arévalo Vizaíno (1999), (López Márquez (1996), Xuluc Tolosa (1995), Herrera Castro (1994)
Planting	Xuluc Tolosa (1995)
Transplanting	Arévalo Vizaíno (1999), Herrera Castro (1994),
Sowing	Neulinger (2009), García Burgos (2003), Xuluc Tolosa (1995), Lazos & Alvarez-Buylla (1983)
Grafting	Lazos & Alvarez-Buylla (1983), Herrera Castro (1994)
Pruning	De la Cruz Osorio (2009), Neulinger (2009), Cano Ramírez (2003), García Burgos (2003), (Arévalo Vizaíno (1999), Osorio Hernández (1997), Espejel Espejel (1993)
Harvest	Neulinger (2009), García Burgos (2003), De Clerck & Negreros-Castillo (2000), Herrera Castro (1994), Arévalo Vizaíno (1999), Lazos & Alvarez-Buylla (1983)
Construction of seed beds	Herrera Castro (1994), Lazos & Alvarez-Buylla (1983)
Seed bed preparation	Herrera Castro (1994) , Lazos & Alvarez-Buylla (1983)
Cutting wood	García Burgos (2003), Arévalo Vizaíno (1999), Herrera Castro (1994)
Clearing/ Cleaning	Cano Ramírez (2003), García Burgos (2003), Herrera Castro (1994)
Burning waste and organic material	Neulinger (2009), Vidal Barahona (2008), Cadena Cisneros (2006), García Burgos (2003), Arévalo Vizaíno (1999), Castro (1994)
Soil enrichment/ translocation	Cano Ramírez (2003), De Clerck & Negreros-Castillo (2000), Castro (1994), Lazos & Alvarez-Buylla (1983)
Fertilization (organic)	De la Cruz Osorio (2009), Fedick *et al.* (2008), Vidal Barahona (2008), Arévalo Vizaíno (1999), López Márquez (1996), Lazos & Alvarez-Buylla (1983), García Burgos (2003), López Márquez (1996)
Fertilization (chemical)	García Burgos (2003), Arévalo Vizaíno (1999)
Taking care of the animals	Arévalo Vizaíno (1999)
Fence maintenance	De la Cruz Osorio (2009), García Burgos (2003), Arévalo Vizaíno (1999)
Protection from pest	De la Cruz Osorio (2009), (Neulinger (2009), Cano Ramírez (2003), García Burgos (2003), Arévalo Vizaíno (1999), Lazos & Alvarez-Buylla (1983)
DDT/ Insecticide application	De la Cruz Osorio (2009), Cano Ramírez (2003), Lazos & Alvarez-Buylla (1983)
Weed control	De la Cruz Osorio (2009), Cano Ramírez (2003), García Burgos (2003), Arévalo Vizaíno (1999), Xuluc Tolosa (1995), Lazos & Alvarez-Buylla (1983)
Weed control (chemical)	De la Cruz Osorio (2009)

Referring again to the Mexican home gardens, the literature shows that not all the activities are undertaken regularly and with same intensity. The home garden produces constantly

fruits and utile plant material. Hence, there exist no fix time for harvesting. It is harvested nearly all year around (García Burgos 2003), (Arévalo Vizaíno 1999, De Clerck & Negreros-Castillo 2000). Irrigation is mainly realized during the dry season (Xuluc Tolosa 1995, Cadena Cisneros 2006, De la Cruz Osorio 2009, López Márquez 1996). Some selected species are irrigated throughout the whole year, basically medicinal and ornamental plants (Castro 1994). The weed growth is enhanced during the raining season, when weed control is mainly realized (Ruenes Morales 1993). Concerning the pest control, no information about a fixed schedule is given. It is practiced when their population is exceeded and harm the plants notable. The application of calc and lime dissolved water, instead, can be considered as a prevention method. The moon phases also have influences on the home garden owner's decision when to realize pruning, when to sow the plants, graft and to harvest (Osorio Hernández 1997, Herrera Castro 1994, Lazos & Alvarez-Buylla (1983).

5.3.8 Reproduction and distribution

Home gardens can be considered as plant introduction and distribution centres (Engels 2002 a). In a certain way, home gardens are constantly in contact to each other due to the exchange of plants and varieties between neighbours and friends.

The countertrade of plant material seems to be frequently practiced in the Mexican home gardens, as it is mentioned by Vidal Barahona (2008), Herrera Castro (1994), De la Cruz Osorio (2009), Osorio Hernández (2000) and Arévalo Vizaíno (1999). Seeds and seedlings can also be bought from the neighbours (Espejel Espejel 1993).

Besides, the market has an important function towards plant transfer and distribution from different regions (Engels 2002a). This has also been mentioned about the home garden in Mexico. The market place of the community or neighbour villages is an important exchange point, where plant material, even from further regions, is purchased or sold (De la Cruz Osorio 2009, Arévalo Vizaíno 1999, Ruenes Morales 1993). In this context García Burgos (2003) and Arévalo Vizaíno (1999) commented that only some selected plant material (e.g. Tomato, Mango and Citrus) is purchased.

Furthermore, home gardens serve as nurseries for seedlings that later are transplanted or vegetatively propagated. Each farmer makes personal decisions due to their preferences and needs about what to plant, which size a population should reach, and what material will be saved for the next season (Engels 2002b). Home garden farmers can be highly interested in reproduce their own seeds as shown in a study from Cuba where 80% of the reproductive material is used for the next season (Castineiras *et al.* 2002).

Similar observations have been made in Mexican home gardens as well. The use of proper seed material that derives from the home garden itself is reported by Lazos & Alvarez-Buylla (1983) and López Márquez (1996). Seed material can also be gained from food consumed by the family (Cadena Cisneros 2006). Regarding the directed induction of plants, García Burgos (2003) found out that plantation is the most important practice (78%), followed by transplantation (45%) and sowing (40%). Lazos & Alvarez-Buylla (1983) observed that 66% of the species are planted and 33% developed through vegetative reproduction.

Not less important are the wild plants that enter to the home garden and coexist with the cultivated material. If the farmers consider entering wild species as useful, at first, they are tolerated and later might be managed to a certain level (Watson & Eyzaguirre 2002).

The adoption of naturally propagated plants in the production system is mentioned by García Burgos (2003), Lazos & Alvarez-Buylla (1983), and De la Cruz Osorio (2009). In this context García Burgos (2003) reports that the protection of upcoming vegetation is frequently practiced (42%), followed by the toleration (25%). Novelo Chan (2007) mentions that 19% are tolerated and 22% are promoted and 60% are cultivated.

Moreover, plant species from the natural surrounding are intentionally collected in order to integrate them in the home gardens. Herrera Castro (1994) reports the collection from seeds from out of the forest and Lazos & Alvarez-Buylla (1983) comment that it is mainly realized with valued lumber species such as the cedar (*Cedrella odorata)*. Aguilar-Støen (2009) mentions that farmers collect vanilla plants from the forest. By planting them on different trees and confront them with distinct conditions (height, shade degree) in the home garden, farmers also experiment what factors influence the plant's development. In conjunction they share their proper experience with neighbours and intend to develop the best cultivation methods.

Despite from the intentional integration out of the nearby ecosystems (anthropocory), seeds also enter through wind dispersal (anemochory) or can be brought by birds and other wild and domestic animals (zoochory). Even children make their contribution and bring seeds from playgrounds into the home garden (De la Cruz Osorio 2009).

Besides, social economic and demographic factors influence where the seeds originate from and how many new varieties and species are incorporated (Castineiras *et al.* 2002). In this context, it has been observed that in cases where the man work outside the community plant material is obtained from very distanced places (López Márquez 1996). Furthermore, migrants from other regions (Lazos & Alvarez-Buylla 1983) and migration workers take new plant material (Xuluc Tolosa 1995, López Márquez 1996) to the home gardens. Garcia Ramos (2010) observed that mestizo home gardens show more plant diversity. Besides, Novelo Chan (2007) assumes that a better access to infrastructure and less distance to urban centres enhances the exchange of seed material. The home gardens close to streets and cities showed more diversity.

Also TV and radio promotion (Cano Ramírez 2003) influences seed selection and governmental programs enhance the integration of improved crops (Aguilar-Støen *et al.* 2009). However, the introduction of new species and cultivars is not always prosperous. Sometimes the plants are not sufficient adapted to the new places. For instance unfavourable soil conditions limit the successful integration of crops (Osorio Hernández 1997). Moreover, Aguilar Stoen (2009) comments that home gardens serve as a reservoir for plant material which is not used anymore and is stored in the home garden in order to become reintroduced in another moment. For example after the introduction of the new sugarcane (*Saccharum officinarum)* cultivar, that showed better characteristics in taste but, unfortunately, was more susceptible to pests. Hence, people began to reintroduce the traditional cultivars that have been conserved in the home gardens. Similar occurred to new cultivars of corn (*Zea mays* L.) that have been promoted by the government. Although the new cultivar showed higher yields, people went back to the traditional cultivars that were regained from home gardens. The new cultivar required a higher chemical input and technical equipment which was not affordable for the farmers. (Aguilar-Støen *et al.* 2009).

Figure 20 gives a general overview of the seed dispersal and exchange.

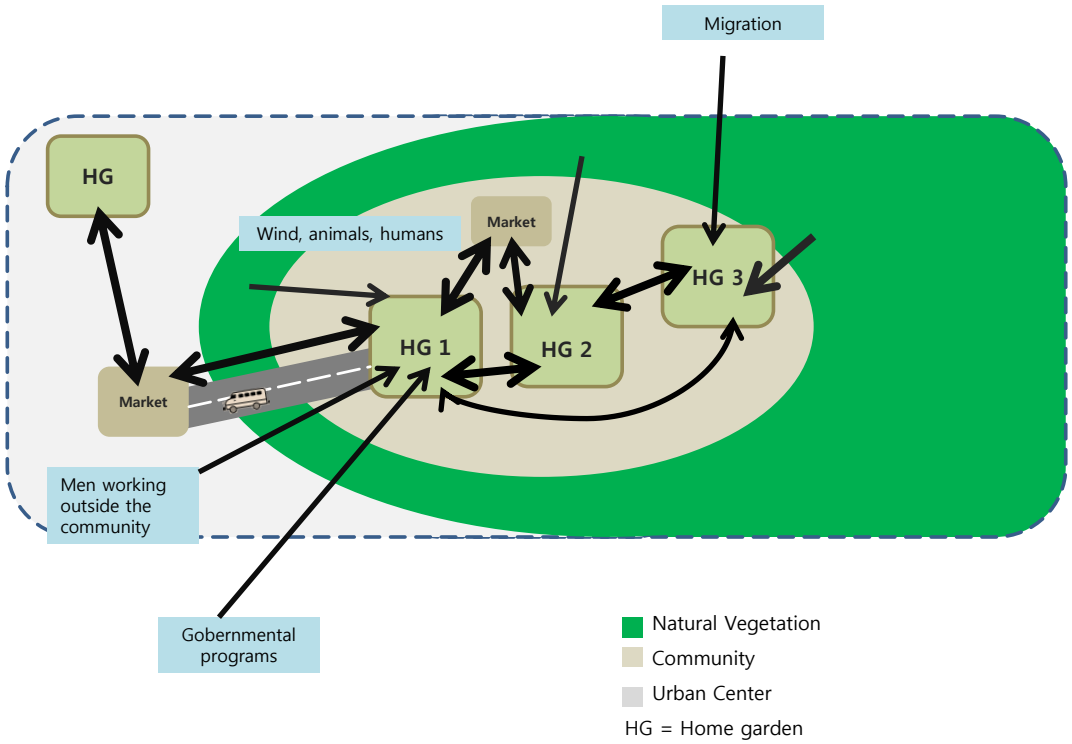

Figure 20: Overview about seed dispersal and exchange (bolt strength reflects the intensity)

5.3.9 Problems of home gardens and (agro)biodiversity

The marginalization of villages and the access to markets are widely observed factors that influence the (agro)biodiversity. Home gardens in villages, close to urban areas dependent less on their own production what leads to a decreasing number of plant species in the home gardens (Abdoellah *et al.* 2002, Shreshta *et al.* 2002, Peyre *et al.* 2006).

Concerning the home gardens investigation in the tropical region of Mexico the contrary has been observed. Novelo Chan (2007) observed instead that home garden close to urban centres and a better access to infrastructure show higher biodiversity. It is probably explained by the fact that the transit of persons enhances the exchange of plants and related knowledge. However, a change towards plant use could be recognized. The use of medicinal plants in home gardens closer to medical centres becomes less important and more plants have ornamental function. In addition, Gasco (2008) mentions that urban gardens show fewer amounts of medicinal and lumber plants but consist of more

ornamental plants. Rico-Gray (1990) also observed that home gardens closer to urban centres consist of more ornamental and commercial species. García Burgos (2003) reports that modernization, a close distance to the city and a better access to infrastructure cause that more ornamental plants are integrated and traditional plants are neglected.

Migration and abandonment of home gardens (Rugalema *et al.* 1994) and, as a consequence, the loss of knowledge threatens home gardens' agrobiodiversity equally (Asfaw 2002, Fernandes *et al.* 1985). Migration is a common tendency in Mexico and the abolishment of land threatens the survival of diverse homegardens (Gutiérrez Miranda 2003). The loss of traditional knowledge, that is necessary to manage the variety of species successfully, is a problem (Cano Ramírez 2003). It has been commented that especially younger people loose knowledge about medicinal plants (Xuluc Tolosa 1995).
López Márquez (1996) supposes that knowledge loss is linked with migration but also with the distinction of native languages. Capacity building initiatives and technical assistance in order to buffer social economic tendencies that lead to the loss of home garden agrobiodiversity are missing (Xuluc Tolosa 1995, Espejel Espejel 1993, Cadena Cisneros 2006). Espejel Espejel (1993) also comments problems towards the commercialization of fruits. Market prices are low and technical support for commercialization is lacking. Additionally the middlemen take high prices (Lazos & Alvarez-Buylla 1983).

However, not only man made constraints but also agro ecological factors such as humidity, soil type and altitude have influences on home garden agrobiodiversity (Hoogerbrugge & Fresco 1993).
In the tropical region of Mexico erosion is mentioned as problem (Aguilar-Støen 2009, Cano Ramírez 2003, Gutiérrez Miranda 2003). Furthermore it could be observed that natural disasters, as for example hurricanes and inundations, can destroy family's home garden from one moment to another (Aguilar-Støen *et al.* 2009, Cadena Cisneros 2006). After such disasters people show less interest in their home gardens. The salinization of soils is a further challenge for some garden owners in the Yucatan Peninsula (Cadena Cisneros 2006). Furthermore the lack of water seems to be a serious factor that inhibits home garden

productivity and development. It was the most mentioned problem in the literature (Cadena Cisneros 2006, Neulinger 2009, Gutiérrez Miranda 2003, Cano Ramírez 2003, Herrera Castro 1994) but is generally concentrated to the area of the Peninsula Yucatan.

In addition it was mentioned that credits and labour are lacking and it is difficult to invest in more in production (Xuluc Tolosa 1995, Osorio Hernández 2000). In this context Gasco (2008) observed that home gardens are less diverse when men work outside the community and the labour force is missing. Gutiérrez Miranda (2003) points out that poorer people cannot afford to spend much time in garden work and their home gardens show lower plant richness. To this Lazos & Alvarez-Buylla (1983) report that families in a strong and stable economic condition, but also families for whom the home garden is the only production alternative are those with larger and more diverse home gardens. But with the difference that home gardens of wealthier families consist of more ornamental species.

Moreover, Arévalo Vizaíno (1999) mentions that the main problems in the production process are caused by the fall of fruits, the rapid putrescence of some plants, the contamination of water and price fluctuation. The destruction of fruits by the animals can be problem as well (Cano Ramírez 2003, Lazos & Alvarez-Buylla 1983)

One another threat can be seen in the adoption of new technologies and improved varieties that substitute traditional landraces (Abdoellah *et al.* 2006, Fernandes *et al.* 1985). Also the adoption of modern agricultural practices as for example the application of agrochemicals can lead to loss of biodiversity in home gardens (Castineiras *et al.* 2002).

Similar constraints were also mentioned in the reviewed home gardens studies of Mexico. Aguilar- Stoen (2009) reports that governmental programs in order to promote new varieties have a negative impact on the species diversity in home gardens. Sometimes the new varieties require an increased use of agrochemicals, because they are not locally adapted. Novelo Chan (2007) mentions that the governmental promotion of citrus caused a replacement of traditional food crops.

The fragmentation of home garden units, the lack of local seed material on the markets and deforestation are further threats to biodiversity in home gardens (Sunwar *et al.* 2006). Although these problems were not specifically mentioned in the home garden studies they

can also be considered as important factors towards the conservation of agrobiodiversity as they threaten the provision of seed material that enters the home garden, which is necessary to assure a constant evolution of crops and the development of biodiversity.

To summarize, the observations that have been discussed, together with the recorded plant data show, that home garden still meet the principal needs of the families (basically food production) (5.1.4.) and serve as a reserve for a lot of traditional cultivars and landraces (5.2.). Nevertheless home gardens are flexible and adaptive land use systems and vary from each other. Their composition corresponds to different environmental conditions but also to the individual livelihood strategy of the farmers. Home gardens in a more modern environment fulfil other functions as home gardens in a more marginalized environment and where people highly depend on their production. In this context a shift from medicinal plants to ornamental plants is mentioned. Management practices are changing as well. Although the majority of home gardens is still managed in a traditional way, people are open to adopt modern practices and incorporate modern cultivars.

Generally, a tendency to changes in functionality and a partial modernization of home gardens, which affects the plant composition and diversity, can be observed. Nevertheless, studies to compare home garden composition along a period of time in the same region would be necessary to clarify and to affirm this tendency.

6 Conclusions

- Home gardens of the tropical regions of Mexico are rich of agrobiodiversity. In total 1347 species (including 22 hybrids, 24 botanical varieties, and 13 subspecies) were recorded that belong to 149 plant families. The number of plants for each home garden varies from 12 to the maximum of 141 species.

- The most characteristic plants of the home gardens are fruits trees and the most frequent species include banana (*Musa accuminata x Musa balbisiana)*, followed by papaya *(Carica Papaya*) and guava *(Psidium guajava*).

- The most frequent plant families are Asteraceae (95 species), Fabaceae (73 species), Euphorbiaceae (55 species) and Solanaceae (53 species). Agavaceae which is represented by 7% of the total number of species that can be assigned to that family can be considered as a characteristic family of tropical home gardens in Mexico.

- The most representative genus are *Solanum* (21sp.), *Euhphorbia* (15 sp.), *Ipomea* (13 sp.) and *Begonia* (13 sp.). The total number of different genus is 732.

- The portion of native plant is very high (65%). The rest of the plants originate mainly from parts of the world that show climatic similarity and analogies in floristic composition. This includes the group of plants deriving from Asia (11%), Central and South America (8%) and Africa (6%).

- The plants that are cultivated in home gardens satisfy the basic needs of the family and have also an aesthetic function. The majority of the plants are dedicated to food provision, followed by ornamental and medicinal purpose.

- Home gardens consist of various strata and according to the information about the growth habit most plants are expected be found in the herb strata.

- The determination of the infraspecific diversity remains difficult but the variety of local names can give indications about the existence of a high infraspecific diversity, especially of some selected crop species.
- Home garden size and home garden age affect species richness and diversity in a certain way.

- Home gardens are managed by family members. Women have an important function towards home garden management. Nevertheless gardening is not only a female activity and it would be better to examine the labour input between genders more carefully.

- The home gardens consist of similar elements and plants are arranged in that way to facilitate their management and assure their successful development. More frequently used species and herbs can be found closer to the housing area and. Trees occupy more the random areas. Home gardens usually consist of three and more strata.

- The species composition is a result of the active exchange of plant material and unintentional integration of species through natural dispersion and propagation. The home garden farmers are open to integrate species from other regions and distinct parts of the world. At the same time the home garden is an important reservoir of plant genetic material that helps to conserve remaining traditional varieties. A fluent and constant germplasm exchange can be observed that opens the possibility for a unique genetic diversity to evolve.

- There exist certain problems that affect home garden agrobiodiversity. One of the main constraints is for example insufficient water supply for irrigation. Also socio economic factors influence home garden species composition (wealth of the family, work location), as well as demographic changes such as migration and urbanization. In some cases traditional crops are threatened to be replaced by improved cultivars.

References

ABDOELLAH, O., B. PAREKESIT, AND H. HADIKUSUMAH. 2002. Home gardens in the Upper Citarum Watershed, West Java: a challenge for in situ conservation of plant genetic resources1. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems: proceedings of the second International Home Gardens workshop, 17-19 july 2001, Witzenhausen, Federal Republic of Germany, pp. 140–160. International Plant Genetic Resources Institute, Rome, Italy.

ABDOELLAH, O., H.Y., HADIKUSUMAH, K. TAKEUCHI, S. OKUBO, AND PARIKESIT. 2006. Commercialization of homegardens in an Indonesian village: vegetation composition and functional changes. Agroforestry Systems 68: 1–13.

ADAMS, C., AND M. EARLY. 2004. Principles of horticulture. Elsevier Butterworth-Heinemann. Burlington, U.S. 218p.

AKHTER, S., M. ALAMGIR, M. ISLAM SOHEL, M. RANA, S. AHMED, AND M. HOSSAIN CHOWDHURY. 2010. The role of women in traditional farming as practiced in home gardens: a case study in Sylhet Sadar Upazila, Bangladesh. Tropical Conservation Science 10: 17–30.

ALAYÓN-GAMBOA, J. A., AND F.D. GURRI-GARCÍA. 2007. Home Garden Production and Energetic Sustainability in Calakmul, Campeche, Mexico. Human Ecology 36: 395- 407.

ALI, A. M. S. 2005. Homegardens in Smallholder Farming Systems: Examples From Bangladesh. Hum Ecol 33: 245–270.

ARNDORFER, M., B. KAJTNA, AND B. VORDERWÜLBECKE. 2009. Integrating Ex situ and On- farm Conservation Approaches in the management of local vegetable diversity in Austria. Acta Horticultura (ISHS): 333–340.

ARNOLD, M.L. 2007. Evolution through genetic exchange. Oxford University Press. Oxford, UK. 252p.

ASFAW, Z. 2002. Home gardens in Ethopia: some observations and generalizations. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home

gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 125–139. International Plant Genetic Resources Institute, Rome, Italy.

AZURDIA C., J., AND E. LÓPEZ. 2000. Contribución de los huertos familiares para la conservación in situ de recursos geneticos vegetales. II. Caso de la región de Alta Verapaz, Guatemala. Tikalia 18: 35–78.

BAILEY, L. H., AND E. Z. BAILEY. 1976. Hortus third. A concise dictionary of plants cultivated in the United States and Canada. MacMillan, New York. 1290p.

BARAL, J. B., AND P. W. BOSLAND. Genetic Diversity of Chile (Capsicum Annuum Var. Annuum L.) Landraces from Northern New Mexico, Colorado, and Mexico. Economic Botany 59: 8–17.

BARREIRO PERERA, M., H. FANGHANEL HERNÁNDEZ, AND C. MONTANEZ VILLAFANA. 1991. De nuestra cosecha. Abriendo surcos. Claridades Agropecuarias. SAGARPA, Mexico City, Mexico, 36p.

BELLÓN, M. R., A.F. Barrientos- Priego; P. Colunga-GarcíaMarín; H. Perales; J.A. Reyes-Agüero; R. Rosales S.; D. Zizumbo-Villarreal. 2009. Diversidad y conservación de recursos genéticos en plantas cultivadas. En: J. Sarukhán (Coord.); R. Dirzo, R. González y I. March (Eds.). Capital natural de México. Vol. II. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad. México, D.F. 355-382.

BENNETT- LARTEY, S., G. AYERNOR, C. MARKWEI, I. ASANTE, D. ABBIW, S. BOATENG, A. ANCHIRINAH, AND P. EKPE. 2002. Contribution of home gardens to in situ conservation of plant genetic resources farming systems in Ghana. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems: proceedings of the second Internacional Home Gardens workshop, 17-19 july 2001, Witzenhausen, Federal Republic of Germany, pp. 83–96. International Plant Genetic Resources Institute, Rome, Italy.

BISBY, F. A. 1994. Plant names in botanical databases. Published for the International Working Group on Taxonomic Databases for Plant Sciences by the Hunt Institute for Botanical Documentation, Carnegie Mellon University, Pittsburgh, US. 34p.

BMELV (Bundesministerium für Ernährung, Landwirtschaft und Verbaucherschutz). 2007. Agrobiodiversität erhalten, Potenziale der Land-, Forst- und Fischereiwirtschaft

erschließen und nachhaltig nutzen. Eine Strategie des BMELV für die Erhaltung und nachhaltige Nutzung der biologischen Vielfalt für die Ernährung, Land-, Forst- und Fischereiwirtschaft. BMELV, Berlin, Germany. 84p.

BRAVO ORTA, M. G., AND J. FORTANELLI MARTÍNEZ. 2007. Identidad y género. Trabajo e interacción social de las horticulturas de Mexquitic, San Luis Potosí. El Colegio de San Luis, San Luis Potosi, Mexico. 91p.

BRICKELL, C. 2009. International code of nomenclature for cultivated plants. (I.C.N.C.P. or Cultivated Plant Code) incorporating the rules and recommendations for naming plants in cultivation: adopted by the International Union of Biological Sciences, International Commission for the Nomenclature of Cultivated plants. International Society for Horticultural Science, Leuven, Belgium. 184p.

CABALLERO, J. 1992. Maya hoemgardens: Past, present and future. Etnoecológica 1: 35–54.

CABRERA, I. R., E. Z. MARTELO, AND V. V. GARCÍA. 2001. Agriculture and Human Values 18: 85–93.

CAMACHO- ESCOBAR, M., I. LIRA- TORRES, L. RAMÍREZ- CANCINO, R. LÓPEZ- POZOS, AND J. ARCOS-GARCÍA. 2006. La avicultura de traspatio en la costa de Oaxaca, México. Ciencia y Mar 4: 3–11.

CASTILLO MENDOZA, M., P. RAMÍREZ VALLEJO, F. CASTILLO GONZÁLEZ, AND S. MIRANDA COLÍN. 2006. Diversidad morfológica de poblaciónes nativas de frijol Común y frijol Ayocote del oriente de México. Revista Fitotecnia Mexicana 29: 111–119.

CASTINEIRAS, L., Z. FUNDORA MAYOR, T. SHAGARODSKY, V. MORENO, L. FERNÁNDEZ, AND R. CRISTÓBAL. 2002. Contribution of home gardens to in situ conservation of plant resources in framing systems- Cuban component. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems: proceedings of the second Internacional Home Gardens workshop, 17-19 july 2001, Witzenhausen, Federal Republic of Germany, pp. 42–55. International Plant Genetic Resources Institute, Rome, Italy.

CEC (COMMISION FOR ENVIRONMENTAL COOPERATION OF NORTH AMERICA). 2003. DDT no longer used on North America. CEC. Factsheet 2003. Montréal, Canada. 3p.

CHAUVET, M. 1993. In situ Conservation and the formal sector. In F. Begemann and K. Hammer (Eds.). Integration of Conservation Strategies of plant genetic Resources in Europe, International Symposium on Plant Genetic Resources in Europe 6- 8 December pp. 158-154., ZADI, Gatersleben, Germany.

CHÁVEZ- GARCÍA, E. 2009. Mujer y agroecosistema: El papael de genero en el manejo del huerto familiar en una comunidad del Plan Chontalpa, Tabasco, México. Revista Brasileira de Agroecologia 2009: 4038–4041.

COE, F. G., AND G. J. ANDERSON. 1996. Ethnobotany of the garífuna of Eastern Nicaragua. Economic Botany 50: 71–107.

COLLINS, W. W., AND C. O. QUALSET. 1999. Biodiversity in agroecosystems. CRC Press, Boca Raton, U.S.A. 334p.

COMERFORD, S. C. 1996. Medicinal plants of two Mayan Healers from San Andres, Peten, Guatemala. Economic Botany 50: 327–336.

COOMES, O., AND N. BAN. 2004. Cultivated plant species diversity in home gardens of an Amazonian Peasant village in Northeastern Peru. Economic Botany 2004: 420–434.

CORREA NAVARRO, P. 1997. La agricultura de solar en la zona henequenera yucateca. Su evolución y sus posibilidades de mejoramiento productivo. Master Thesis. Faculty of Phytotechnology. Autonomous University of Chapingo. 153p.

CRONQUIST, A. 1981. An integrated system of classification of flowering plants. Columbia University Press, New York, US. 1262p.

CUIRIS- PÉREZ, H., H. GUILLÉN- ANDRADE, M. PEDRAZA- SANTOS, J. LÓPEZ- MEDINA, AND I. VIDALES- FERNÁNDEZ. 2009. Genetic variability within Mexican race Avocado (Persea americana Mill.) Germplasm Collections determined by ISSRs. Revista Chapingo. Serie horticultura 15: 169–175.

DAS, T., AND K. D. ASHESH. 2005. Inventorying plant biodiversity in homegardens. A case study in Barak Valley, Assam, North East India. Current Science 2005: 155–163.

DAVIES, F., AND L. ALBRIGO. 1994. Citrus. CAB International. Oxfordshire, UK. 254p.

DAVIS, J., R. BROWNSON, AND R. GARCIA. 1992. Family pesticide use in the home, garden, orchard, and yard. Archives of Environment Contamination Toxicology 22: 260-266.

DAVIS, R. 2005. Fusarium wilt (Panama desease) of Banana. Pest Advisory Laeflet No. 42, Agdex, Pacific Island. 4p.

DE CLERCK, F., AND P. NEGREROS-CASTILLO. 2000. Plant species of traditional Mayan homegardens of Mexico as analogs for multistrata agroforests. Agroforestry Systems: 303–317.

DULLOO, M., V. RAMANTHA RAO, F. ENGELMANN, AND J. ENGELS. 1998a. Complementary conservation of coconuts. In P. Batugal, V. Rao and J. Oliver (Eds.). Coconut Genetic Resources, pp. 75–90. IPGRI-APO, Serdang, Indonesia.

ENGELS, J. 2002a. Home gardens- a genetic resources perspective. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 3–10. International Plant Genetic Resources Institute, Rome, Italy.

ENGELS, J. 2002b. Managing plant genetic diversity. CABI Pub. Wallingford, UK. 487p.

ESQUINAS ALCAZAR, J. 1981. Genetic resources of tomatoes and wild relatives. A global report. IBPGR, Rome, Italy, 73p.

EYZAGUIRRE, P. B., AND O. F. LINARES. 2004. Home gardens and agrobiodiversity. Smithsonian Books, Washington, US. 296p

EYZAGUIRRE, P., AND J. WATSON. 2002. Home gardens and agrobiodiversity: an overview across regions. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 10–14. International Plant Genetic Resources Institute, Rome, Italy.

FAO. 1998. The state of the world's plant genetic resources for food and agriculture. FAO. Italy, Rome. 511p.

FAO. 1999. Agricultural Biodiversity, Multifunctional Character of Agriculture and Land. Conference, Background Paper 1, Maastricht, Netherlands. 42p.

FEDICK, S. L., M. de LOURDES FLORES DELGADILLO, S. SEDOV, E. S. REBOLLEDO, AND S. P. MAYORGA. 2008. Adaptation Of Maya Homegardens By "Container Gardening" In Limestone Bedrock Cavities. Journal of Ethnobiology 28: 290–304.

FERNANDES, E., A. OKTINGATI, AND J. MAGHEMBE. 1985. The Chagga homegardens: a multistoried agroforestry cropping system on Mt. Kilimanjaro (Northern Tanzania). Agroforestry Systems 2: 73-86.

FERNANDES, E., AND P. NAIR. 1986. An evaluation of the structure and function of tropical home gardens. Agricultural Systems 21: 279–310.

FISCHBECK, G. 2002. Opening remarks. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 1–9. International Plant Genetic Resources Institute, Rome, Italy.

FORTANELLI MARTÍNEZ, J., J. LOZA L., C. CARLÍN F., AND R. AGUIRRE J.R. 2007. Jardines en el desierto. Agricultura de riego, tradicional y moderna, en el altiplano potosino. Universidad Autonoma de San Luis Potosi, Instituto de Investigacion de Zonas Deserticas, San Luis Postosí, Mexico. 291p.

GALLUZZI, G., P. EYZAGUIRRE, AND V. NEGRI. 2010. Home gardens: neglected hotspots of agro-biodiversity and cultural diversity. Biodiversity Conservation 19: 3635–3654.

GARCÍA DE MIGUEL, J. October 2000. Etnobotanica Maya: Origen y evolución de los huertos familiares de la Peninsula de Yucatan, México. Dissertation. Instituto de Sociología y Estudios Campesinos. Universidad de Córdoba, Spain. 247p.

GARCÍA, E. 1988. Modificaciones al sistema de clasificación climática de Köppen. UNAM, Mexico City, Mexico. 246p.

GAYTÁN AVILA, C., H. VIBRANS, H. NAVARRO GARZA, AND M. JIMÉNEZ VELÁZQUEZ. Manejo de huertos familiares periurbanos de San Miguel Tlaiypan, Texcoco, Estado de Mexico. Boletín de la Sociedad Botánica de México 2001: 39–62.

GOBIERNO DE ESTADO DE COLIMA. 2005. Paquete tecnológico para el cultivo del Plátano. Paquetes tecnológicos para cultivos agrícolas, en el estado de Colima. Colima, Mexico. 72p.

GONZÁLEZ- JACÓME, A. 2007. Agroecosistemas mexicanos: pasado y presente. Itenerarios Revista de estudios lingüísticos, literarios, históricos y antropológicos 2007: 55–80.

GTZ. 2003. Home gardens - treasure troves of diversity. Issue Papers People & Biodiversity. GTZ, Eschborn, Germany. 6p.

GUERRA MUKUL, R. 2005. Factores sociales y económicos de produccion de traspatio en una comunidad rural de Yucatan, México. Centro de Investigación y de estudios avanzados del Instituto Politécnico Nacional Unidad Mérida Master Thesis. Department of Human Ecology. Mérida, Yucatan. 128p.

GUTIÉRREZ- RUIZ, E., R. GOUGH, AND D. ZAPATA- VILLALOBOS. 1998. Caracterización antigénica de un virus de la bronquitis infecciosa, aislado en pollos de traspatio en Yucatan, México. Veterinaria. Méx 4: 350–358.

HARLAN, J. 1992. Crops and Man. Second Edition. American Society of Agronomy and Crop Science Society of America, Wisconsin, US. 284p.

HERNÁNDEZ BERMEJO, J. E., AND J. LEÓN. 1994. Neglected crops. 1492 from a different perspective. Food and Agriculture Organization of the United Nations, Rome, Italy. 341p.

HEYWOOD, V. H. (Ed.). 1995. Global biodiversity assessment. Published for the United Nations Environment Programme. Cambridge Univ. Press, Cambridge, UK. 1140p.

HOOGERBRUGGE, I., AND L. FRESCO. 1993. Homegarden Systems. Agricultural characteristics and Challenges. Gatekeeper Series No. 39. IIED, London, UK. 23p.

HOWARD, P. 2006. Gender and social dynamics in swidden and homegardens in Latin America. In B. M. Kumar and P. K. R. Nair (Eds.) In Tropical Homegardens. A Time-Tested Example of Sustainable Agroforestry, pp. 159–182. Springer, Dordrecht, Netherlands.

INFANTE, F., J. QUILANTÁN, H. ESQUINCA, A. CASTILLO, G. IBARRA NUNEZ, AND V. PALACIO. 2011. Mango Atulfo: Orgullo chaipaneco. Biodiversitas: 1–5.

JACKSON, L., K. BAWA, U. PASCUAL, AND C. PERRINGS. 2005. Agrobiodiversity. A new science agenda for biodiversity in support of sustainable agroecosystems. Diversity Report No. 4. Diversitas. Abington, UK. 44p.

JACKSON, L., U. PASCUAL, AND T. HODGKIN. 2007. Utilizing and conserving agrobiodiversity in agricultural landscapes. Agriculture, Ecosystems & Environment 121: 196–210.

JEFFREY, C. 2003. Theoretical and practical problems in the classification and nomenclature of cultivated plants, with examples from Cucurbitaceae and Compositae. In H. Knüpffer and J. Ochsmann (Eds.). Schriften zu genetischen Ressourcen. Schriftenreihe der Zentralstelle für Agrardokumentation und -information, Informationszentrum Biologische Vielfalt (IBV). Vol. 22, pp. 51–60. ZADI, Bonn, Germany.

JIMÉNEZ-OSORNIO, J., M. RUENES MORALES, AND P. MONTAÑEZ ESCALANTE. 1999. Agrodiversidad de los solares de la península de Yucatan. Red, Gestión de Recursos Naturales 14: 33-40.

KEHLENBECK, K., AND B. MAASS. 2004. Crop diversity and classification of homegardens in Central Sulawesi, Indonesia. Agroforest Syst 63: 53–62.

KEHLENBECK, K., H. ARIFIN, AND B. MAASS. 2007. Plant diversity in homegarden in a socio-economic and agro- ecological context. In T. Tscharntke (Ed.). Stability of tropical rainforest margins: linking ecological, economic and social constraints of land use and conservation, pp. 296–317. Springer, Dordrecht Netherlands.

KHAN, I. 2007. Citrus genetics, breeding and biotechnology. CABI. Oxfordshire, UK. 370p.

KHOSHBAKHT, K., AND K. HAMMER. 2008. Species richness in Relation to the presence of Crop Plants in Families of higher plants. Journal of Agriculture and Rural Development in the Tropics and Subtropics 109: 181–190.

KUMAR, B., AND P. NAIR. 2004. The enigma of tropical homegardens. Agroforestry Systems 61: 135-152.

KUMAR, M.B., S. J. GEORGE, AND S. CHINNAMANI. 1994. Diversity, structure and standing stock of wood in the homegardens of Kerala in peninsular India. Agroforestry Systems 25: 243–262.

LADIZINSKY, G. 1998. Plant evolution under domestication. Kluwer Academic Publishers, Dordrecht. Netherlands. 220p.

LEUSCHNER, W. A., AND K. KHALEQUE. 1987. Homestead agroforestry in Bangladesh. Agroforestry Systems 5: 139–151.

LIRA SAADE, R., S. MONTES HERNÁNDEZ, AND Y S. MONTES HERNÁNDEZ (CIFAP, SARH, CELAYA, GUANAJUATO, MEXICO). 1992. Cucúrbitas. Sección La Agricultura en Mesoamérica. In Hernández Bermejo. J.E and J. León (Eds.). Cultivos marginados. Otra perspeciva. de 1992 /J.E. Hernández Bermejo y J.León, pp. 63-67. FAO, Roma, Italy.

MARIACA MÉNDEZ, R., A. GONZÁLEZ JÁCOME, AND L. M. ARIAS REYES. 2010. El huerto maya yucateco en el siglo XVI. Ecosur; CINVESTAV, Unidad Mérida; FOMIX, Fondos Mixtos, CONACYT-Gobierno del Estado de Yucatán; UIM Qintana Roo, Universidad Intercultural Maya de Quintana Roo; CONCYTEY, Consejo de Ciencia y Tecnología del Estado de Yucatán, Chiapas, Mexico, Mérida, Quintana Roo, Mérida, Mexico. 180p.

MARTÍNEZ M. 1994. Catálogo de nombres vulgares y científicos de plantas mexicanas. Fondo de Cultura Económica. Mexico city. Mexico. 1220p.

MCCLEAN, P., J. KAMI, AND P. GEPTS. 2004. Genomics and Genetic Diversity in common Bean. In R. F. Wilson, H. T. Stalker and E. C. Brummer (Eds.). Legume crop genomics, pp. 61–81. AOCS Press, Champaign, US.

MEILLEUR, B. A. 2004. In situ conservation of crop wild relatives: status and trends. Biodiversity and Conservation 2004: 663–684.

MENGLAN, S., P. FADING, P. ZEHUI, M. WATSON, J. CANNON, I. HOLMES- SMITH, E. KLJUYKOW, L. PHILLIPPE, AND M. PIMENOV. 2005. Apiaceae (Umbelliferae). Flora of China 14: 1–205.

MILLER, A. 2005. Domestication of a Mesoamerican cultivated fruit tree, Spondias purpurea. Proceedings of the National Academy of Sciences 102: 12801–12806.

MOHAN, S. 2004. An Assessment of the ecological and socialeconomic benefits provided by home gardens: A case study of Kerala, India. Dissertation. Faculty of Philosophy. University of Florida, 220p.

MONTAGNINI, F. 2006. Homegardens of Mesoamerica: Biodiversity, food security, and nutrient management. In B. M. Kumar and P. K. R. Nair (Eds.). Tropical Homegardens. A Time-

Tested Example of Sustainable Agroforestry, pp. 61–84. Springer, Dordrecht, Netherlands.

MONTES-HERNÁNDEZ, S., L. C. MERRICK, AND L. E. EGUIARTE. 2005. Maintenance of Squash (Cucurbita spp.) Landrace Diversity by Farmers' Activities in Mexico. Genetic Resources and Crop Evolution 52: 697–707.

MORRONE, J. 2005. Hacia una síntesis biogeográfica de Mexico. Revista Mexicana de Biodiversidad 76: 207–252.

NAIR, K. 1993. Homegardens. In P. Nair (Ed.). An Introduction to Agroforestry, pp. 83–97. Kluwer Academic Pub. Dordrecht, Netherlands.

NAIR, P., AND B. KUMAR. 2006. Introduction. In B. M. Kumar and P. K. R. Nair (Eds.). Tropical Homegardens. A Time-Tested Example of Sustainable Agroforestry, pp. 1–10. Springer, Dordrecht, Netherlands.

NELSON, S., R. PLOETZ, AND A. KEPLER. 2006. Musa species (banana and plantain).ver.2.2. In: In: Elevitch, C.R. (ed.). Species Profiles for Pacific Island Agroforestry. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'I, US. 33p.

NIÑEZ, K. 1985. Household gardens: Theoretical considerations on an old survival strategy. International Potato Center, Lima, Peru. 40p.

OAKLEY, E., AND J. H. MOMSEN. 2005. Gender and agrobiodiversity: a case study from Bangladesh. Geographical J 171: 195–208.

OAKLEY, E., AND J. HENSHALL MOMSEN. Gender and agrobiodiversity:. a case study from Bangladesh. The Geographical Journal 2005: 195–208.

OCHSMANN, J. 2003. Some notes on problems of taxonomy and nomenclature of cultivated plants. In H. Knüpffer and J. Ochsmann (Eds.). Schriften zu genetischen Ressourcen. Schriftenreihe der Zentralstelle für Agrardokumentation und -information, Informationszentrum Biologische Vielfalt (IBV). Vol. 22, pp. 42–51. ZADI, Bonn, Germany.

OKAFOR, J. C., AND E. C.M. FERNANDES. 1987. Compound farms of southeastern Nigeria. Agroforest Syst 5: 153–168.

PEREA MERCADO, S. 2010. Influencia del empoderamiento de las mujeres sobre la diversidad vegetal de solares en Campeche, México. Bachelor Thesis. Autonomous University of Mexico State. Faculty of Anthropology. Mexico. 82p.

PÉREZ, B., AND G. POLANCO EXPÓSITO. 2011. La avicultura de traspatio en zonas campesinas de la provincia de Villa Clara, Cuba. Livestock Research for Rural Development, Havanna, Cuba. 15p.

PÉREZ, J., J. GUTIÉRREZ CEDILLO, M. BADERAS PLATA, AND X. NÉMIGA. 2009 La mujer campesina y el manejo de huertos. Una estrategia para la alimentación de las familias mexicanas. LEISA- La revista de agroecologia 09: 31–33.

PERRINO, P. 1993. Plant Genetic Resources Activities in Italy. In F. Begemann and K. Hammer (Eds.). Integration of Conservation Strategies of plant genetic Resources in Europe. International Symposium on Plant Genetic Resources in Europe 6- 8 December. pp. 35– 49, ZADI, Gatersleben, Germany.

PERRY, L., AND K. V. FLANNERY. 2007. Precolumbian use of chili peppers in the Valley of Oaxaca, Mexico. PNAS 104: 11905–11909.

PEYRE, A., A. GUIDAL, K. F. WIERSUM, AND F. BONGERS. 2006. Dynamics of Homegarden Structure and Function in Kerala, India. Agroforest Syst 66: 101–115.

POUSSIEL, W., R. SAUNIER, AND R. MEGANCK. 1995. Chapter 2. In-situ conservation of biodiversity. In R. E. Saunier and R. A. Meganck (Eds.). Conservation of biodiversity and the new regional planning, pp.25-35. Dept. of Regional Development and Environment, Executive Secretariat for Economic and Social Affairs, General Secretariat, Organization of American States, Washington, D.C., US.

RAMEL, C. 1998. Biodiversity and intraspecific genetic variation. Pure & Applied Chemistry 70: 2079–2084.

REBOLLAR-DOMÍNGUEZ, S., V. SANTOS- JIMÉNEZ, N. TAPIA-TORRES, AND C. DE LA PAZ PÉREZ-OLVERA. Huertos familiares, una experiencia en Chancah Veracruz, Quintana Roo. Polibotánica 2008: 135–154.

REDFORD, K. H., AND B. D. RICHTER. 1999. Conservation of Biodiversity in a World of Use. Conservation Biology 13: 1246–1256.

REILEY, H., AND C. SHRY. 2002. Introductory horticulture. Delmar/Thomson Learning. Albany. Sharma, US. 564p.

ROBINSON, J., AND V. SAÚCO. 2010. Bananas and Plantains. CABI, Oxforshire, UK. 311p.

RUENES- MORALES, M., A. CASAS, J. JIMÉNEZ- OSORNIO, AND J. CABALLERO. 2010. Etnobotánica de Spondias purpurea L. (ANACARDIACEAE) en la Península de Yucatán. Interciencia 35: 247–254.

RUGALEMA, G. H., F. H. JOHNSEN, AND J. RUGAMBISA. 1994. The homegarden agroforestry system of Bukoba district, North-Western Tanzania. 2. Constrainsts to farm productivity. Agroforestry Systems 26: 205–214.

RZEDOWSKI, J., AND L. HUERTA M. 1978. Vegetación de México. Editorial Limusa, Mexico City, Mexico. 432p.

SARUKHÁN, J., J. SOBERÓN, P. KOLEFF, J. CARABIAS, R. DIRZO, J. LLORENTE- BOUSQUETS, G. HALFFTER, R. GONZÁLEZ, I. MARCH, A. MOHAR, S. ANTA, AND J. DE LA MAZA. 2009. Capital natural de México. Síntesis: conocimiento actual, evaluación y perspectivas de sustentabilidad. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, Mexico City, Mexico. 100p.

SCHERF, B. 2000. World watch list for domestic animal diversity. Food and Agriculture Organization of the United Nations, Rome, Italy. 726p.

SHARROCK, S., AND J. ENGELS. 1997. Complementary Conservation. In INIBAP (Ed.). INIBAP annual report, pp. 6–9. INIBAP, Montpellier France.

SHRESHTA, P., R. GUATAN, R. BAHADUR, AND B. STHAPIT. 2002. Home gardens in Nepal: status and scope for ressearch and development. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 105–125. International Plant Genetic Resources Institute, Rome, Italy.

SITTHIWONG, K., T. MATSUI, AND S. SUKPRAKARN. 2005. Classification of Pepper (Capsicum annum L.) Accessions by RAPD Analysis. Biotechnology 4: 305–309.

SMEKALOVA, T. 2003. Development of Vavilov's concept of the intraspecific classification of cultivated plants: case studies in genera of the Fabaceae family. In H. Knüpffer and J. Ochsmann (Eds.). Schriften zu genetischen Ressourcen. Schriftenreihe der Zentralstelle für Agrardokumentation und -information, Informationszentrum Biologische Vielfalt (IBV). Vol. 22, pp. 60–71. ZADI, Bonn, Germany.

SOEMARWOTO, O. 1987. Homegardens: a traditional agroforestry system with a promising future. In H. A. Steppler and P. K. R. Nair (Eds.). Agroforestry, a decade of development, pp. 141–157. International Council for Research in Agroforestry, Nairobi, Kenya.

SPIEGEL-ROY, P., AND E. GOLDSCHMIDT. 1996. Biology of citrus. Cambridge University Press., Cambridge, UK. 230p.

SPOONER, D., R. VAN DEN BERG, W. HETTERSCHEID, AND W. BRANDENBURG. 2002. Plant Nomenclature and Taxonomy. Horticultural and Agronomic Perspective. In J. Janick (Ed.). Horticultural reviews. An Horticultural and Agronomic Perpective, pp. 1–60. Wiley, New York Chichester, UK.

STEPPLER, H. 1987. ICRAF and a decade of agroforestry development. In H. A. Steppler and P. K. R. Nair (Eds.). Agroforestry, a decade of development, pp. 3–13. International Council for Research in Agroforestry, Nairobi, Kenya.

SULLIVAN J. 1996. La Congregación como technología disciplinaria en el siglo XVI. Courtesy of Estudios de Historia Novohispana: 33-54.

SUNWAR, S., C.-G. THORNSTRÖM, A. SUBEDI, AND M. BYSTROM. 2006. Home gardens in western Nepal: opportunities and challenges for on-farm management of agrobiodiversity. Biodivers Conserv 15: 4211–4238.

TANG YA, M. GILBERT, AND L. DORR. 2007. Malvaceae. In W. Zhengyi and P. Raven (Eds.). Flora of China. 12, Hippocastanaceae through Theaceae, pp. 264–298. Science Press, Beijing, China.

THRUPP, L. A. 1998. Cultivating Diversity. Agrobiodiversity and Food Security. World Resources Institute, Washington, US. 80p.

TORQUEBIAU, E. 1992. Are tropical agroforestry homegardens suatainable? Agriculture, Ecosystems & Environment: 189–207.

UNDP, AND C. ROSEN. 2000. World resources 2000-2001: people and ecosystems. The fraying web of life. Elsevier Science, Washington, US. 398p.

UPRETI, B. R., AND Y. G. UPRETI. 2002. Factors leading to agro-biodiversity loss in developing countries: the case of Nepal. Biodiversity and Conservation 11: 1607–1621.

VALMAYOR, R., AND INTERNATIONAL NETWORK FOR IMPROVEMENT OF BANANA AND PLANTAIN. ASIA AND THE PACIFIC OFFICE. 2000. Banana cultivar names and synonyms in Southeast Asia. INIBAP, Asia and the Pacific Office. Los Banos, Lagunas, Phillipines. 24p.

VANDERWARKER, A. M. 2006. Farming, hunting, and fishing in the Olmec world. University of Texas Press, Austin, US. 244p.

VILLA, T. C. C., N. MAXTED, M. SCHOLTEN, AND B. FORD-LLOYD. 2005. Defining and identifying crop landraces. Plant Genetic Resources: characterization and utilization 3: 373–384.

VILLASEÑOR, J. 2004. Los géneros de plantas vasculares de la flora de México. Boletín de la Sociedad Botánica de México 75: 105-135.

VOGL- LUKASSER, B., AND C. VOGL. 2002. Temperate home gardens of small alpine farmers in Eastern Tyrol (Austria): their value for maintaining and enhancing biodiversity. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 163–167. International Plant Genetic Resources Institute, Rome, Italy.

WATSON, AND EYZAGUIRRE. 2002. In situ conservation strategies for home gardens as components of complementary conservation and use strategies for plant genetic resources. In J. W. Watson and P. B. Eyzaguirre (Eds.). Home gardens and in situ conservation of plant genetic resources in farming systems. Proceedings of the second international home gardens workshop, 17-19, July 2001, Witzenhausen, Federal Republic of Germany, pp. 151–155. International Plant Genetic Resources Institute, Rome, Italy.

WHITAKER, T. W. 1956. The origin of cultivated Cucurbita. The American Naturalist 90: 171–176.

WILKEN, G. 1976. Integrating forest and small-scale farm systems in Middle America. Forest Ecology and Management 1: 223–234.

WOOD, D., AND J. M. LENNÉ. 1999. Agrobiodiversity. Characterization, utilization, and management. CABI Pub., Wallingford, UK. 490p.

YOUNG, A. 1991. Agroforestry for soil conservation. CAB International, Wallingford, UK. 286p.

ZAIZHI, Z. 2000. Landscape changes in a rural area in China. Landscape and Urban Planning 47: 33–38.

ZEVEN, A. 1998. Landraces: A review of defintions and classifications. Euphytica 104: 127–139.

ZEVEN, A. C., AND J. M.J. De WET. 1982. Dictionary of cultivated plants and their regions of diversity. Excluding most ornamentals, forest trees and lower plants. Centre for Agricultural Pub. and Documentation, Wageningen, Netherlands. 263p.

References of the literature used as database

AGUILAR-STØEN, M., S. R. MOE, AND S. L. CAMARGO-RICALDE. 2009. Home Gardens Sustain Crop Diversity and Improve Farm Resilience in Candelaria Loxicha, Oaxaca, Mexico. Hum Ecol 37: 55–77.

ALCORN, J. B. 1984. Huastec Mayan ethnobotany. University of Texas Press, Austin. US. 894p.

ALVAREZ-BUYLLA ROCES, M., E. LAZOS CHAVERO, AND J. GARCÍA-BARRIOS. 1989. Homegardens of a humid tropical region in Southeast Mexico: an example of an agroforestry cropping system in a recently established community. Agroforestry Systems: 133–156.*

ARÉVALO VIZAÍNO, V. P. 1999. Potencial de los huertos caseros para la seguridad alimentaria y el desarollo sostenible. Master Thesis. Faculty of Plant Science. Autonomous University of Chapingo. Chapingo, Mexico State, Mexico. 109p.

BASURTO PEÑA, F. A. 1982. Huertos familiares en dos comunidades nahuas de la Sierra Norte de Puebla: Yancuictalpan y Cuauhtapanaloyan. Bachelor Thesis. Faculty of Science. Autonomous University of Mexico. Mexico City, Mexico. 140p.

CADENA CISNEROS, A. 2006. Diagnóstico de los solares de dos comunidades costeras Celestún y Telchac Puerto, Yucatán. Bachelor Thesis. Faculty of Veterinary Medicine and Zoology. Autonomous University of Yucatan. Mérida, Yucatan, Mexico. 77p.

CANO RAMÍREZ, M. 2003. Los huertos familiares de Tepango. Bachelor Thesis. Faculty of Science. Autonomous University of Mexico. Mexico City, Mexico. 95p.

CANUL MONTAÑÉZ, M. 2002. Uso del recurso vegetal en solares de immigrantes indígenas, al sur del municipio de Calakmul, Campeche, México. Bachelor thesis. Faculty of Veterinary Medicine and Zoology. Autonomous University of Yucatan. Mérida, Yucatan, Mexico. 68p.

DE CLERCK, F., and P. NEGREROS-CASTILLO. 2000. Plant species of traditional Mayan homegardens of Mexico as analogs for multistrata agroforests. Agroforestry Systems: 303–317.

DE LA CRUZ OSORIO, J. 2009. El huerto familiar como sistema agroforestal en Francisco Villa, Tihuatlán, Veracruz. Professional Thesis. Faculty of Plant Science. Autonomous University of Chapingo. Chapingo, Mexico State, Mexico. 105p.

ESPEJEL ESPEJEL, C. 1995. Los huertos familiares como sistemas agroforestales en la comunidad de San Juan Epatlan, Puebla. Revista Chapingo. Serie: Ciencias Forestales 1: 91-95.*

ESPEJEL ESPEJEL, C. 1993. Los huertos familiares como sistemas agroforestales en la comunidad de San Juan Epatlan, Puebla. Professional Thesis. Division of Forest Science. Autonomous University of Chapingo. Mexico State, Mexico. 91p.

FEDICK, S. L., M. DE LOURDES FLORES DELGADILLO, S. SEDOV, E. S. REBOLLEDO, AND S. P. MAYORGA. 2008. Adaptation of Maya Homegardens By "Container Gardening" In Limestone Bedrock Cavities. Journal of Ethnobiology 28: 290–304.

GARCÍA BURGOS, M. 2003. Estudio etnobotánico de los solares de la cabecera municipal de Tihuatlán en la Huasteca Veracruzana, México. Bachelor Thesis. Faculty of Advanced Studies. Iztacala. National Autonomous University of Mexico. Mexico State, Mexico. 163p.

GARCIA RAMOS, Y. 2010. Etnobotánica de huertos familiares de distrito de Putla, Oaxaca. Bachelor Thesis. Faculty of advanced Studies. National Autonomous University of Mexico. Zaragoza. Mexico City, Mexico. 156p.

GASCO, J. 2008. 'Le Da Alegría Tener Flores' Homegardens In The Soconusco Region Of Chiapas, Mexico. Journal of Ethnobiology 28: 259–277.

GUTIÉRREZ MIRANDA, L. 2003. Etnobotánica de huertos familiares o solares en el poblado de Gabriel Esquinca Municipio de San Fernando, Chiapas. Bachelor Thesis. Faculty of science. National Autonomous University of Mexico. Mexico city, Mexico. 114p.

HERNÁNDEZ BURELA, A. 2001. Uso y manejo de los huertos familiares en Huimanguillo, Tabasco. Professional Thesis. Agricultural College of the State of Guerrero. Guerrero, Mexico. 57p.

HERRERA CASTRO, N. 1994. Los huertos familiares mayas en el oriente de Yucatan. Autonomous University of Yucatan. Mérida, Yucatan, Mexico. 169p.

LAZOS E. and ALVAREZ-BUYLLA E. 1983. Un estudio etnobotánico en Balzapote, Veracruz: Los solares. Professional Thesis. Faculty of Science. National Autonomous University of Mexico. Mexico city, Mexico. 255p.

LÓPEZ MÁRQUEZ, E. 1996. Los huertos familiares en la comunidad Cerro Clarín de la región Mazateca Baja, Oaxaca, México. Professional Thesis. Faculty of Forestry Science. Autonomous University of Chapingo. Chapingo, Mexico State, Mexico. 77p.

MÉZQUITA RUIZ, A. 2010. Análisis florístico y uso de las plantas en los huertos familiares de Izamal y Tunkás, Yucatán, México. Master Thesis. Faculty of Veterinary Medicine and Zoology. Autonomous University of Yucatan. Mérida, Yucatan, Mexico. 120p.

NEULINGER, K. 2009. Ehtnobotanische Betrachtung von tropischen Hausgärten in Calakmul, Campeche, Mexiko. Diplom Thesis, Faculty of Landscape Planning. University of Vienna. Austria. 90p.

NOVELO CHAN, V. 2007. Influencia de la cercanía de la ciudad Valladolid, Yucatán a los huertos familares sobre el manejo de recurso vegetal. Bachelor Thesis. Faculty of Veterinary Medicine and Zoology. Autonomous University of Yucatan. Mérida, Yucatan, Mexico. 63p.

OSORIO HERNÁNDEZ, C. 1997. El solar en la zona Maya de Quintana Roo. Bachelor Thesis. National Autonomous University of Mexico. Campus Itztalaca, ECOSUR. Mexico city, Mexico. 65p.

OSORIO HERNÁNDEZ, C. 2000. Caracterización etnobiológica y económica de los solares en Francisco I. Madero, Chiapas. Master Thesis. ECOSUR. San Cristobal de las Casas, Chiapas, México.

PLIEGO ARADERO, C. 2006. Estudio etnobotánico en el ejido de Tepalcingo, Morelos. Professional Thesis. Agroecologic departament. Autonomous University of Chapingo. Chapingo, Mexico State, Mexico. 31p.

RICO-GRAY, V., J. G. Garcia-Franco, A. Chemas, A. Puch, and P. Sima. 1990. Species composition, similarity, and structure of mayan homegardens in Tixpeual and Tixcacaltuyub, Yucatán, Mexico. Econ Bot 44: 470–487.

RUENES MORALES, R. 1993. Estudio de los huertos familiares en los ejidos "El aguacate" y "Adolfo López Mateos" de la Sierra de S. Juan, Nayarit. Master Thesis. Faculty of Science. Autonomous University of Mexico. México city, Mexico 156p.

VIDAL BARAHONA, A. 2008. Sistemas de producción y diversidad agrícola en Cárdenas, Tabasco, Montecillo, Mexico. Master Thesis. Post Graduate School. Instiute of teaching and research in agricultural sciences. Montecillo, Texcoco, Mexico State, Mexico. 150p.

WITRAGO AMEZCUA, M. 1997. Analisis del manejo de los huertos familiares de la comunidad La Esperanza, Municipio de Martir de Cuilapan, Guerreo, México. Professional Thesis. Autonomous University of Chapingo. Chapingo, Mexico State, Mexico. 69p.

XULUC TOLOSA, J. 1995. Caracterización del componente vegetal de los solares de la comunidad de Sahcabá, Yucatán, México. Bachelor Thesis. Faculty of Veterinary Medicine and Zoology. Autonomous University of Yucatan. Merida, Yucatan, Mexico. 55p.

* Publicated articles of thesis works

Internet Sources

BOST, J.: Persea schiedeana (Chinene) - an under-recognized Mesoamerican food. http://www.underutilizedspecies.org/Documents/PUBLICATIONS/perseaschiedeana.pdf (12.07.2011)

CONABIO. Ficha informativa: Phaseolus vulgaris. http://www.conabio.gob.mx/malezasdemexico/fabaceae/phaseolus-vulgaris/fichas/ficha.htm (12.07.2011)

FAO: GIAHS. Globally important agricultural heritage system. http://www.fao.org/nr/giahs/candidatesystem/candidate/milpa-solar-systems/milpa-solar-detailed/en/ (26.07.2011).

FAOSTAT: Agricultural Production: http://faostat.fao.org/site/339/default.aspx (12.07.2011).

INEGI: Los principales climas de México. http://mapserver.inegi.gob.mx/geografia/espanol/datosgeogra/climas/climas.cfm (18.07.2011)

LIRA SAADE, R. 1998: Calabazas de México, México. http://www.ejournal.unam.mx/cns/no42/CNS04210.pdf. (18.07.2011)

IUCN: IUCN Red ist. Persea liebmanni. http://www.iucnredlist.org/apps/redlist/details/30754/0 (20.07.2011).

THE PLANT LIST: A working list of all plant species http://www.theplantlist.org/tpl/search?q=Musa+acuminata+Colla+x+M. balbisiana (18.07.2011).

USDA PLANTS DATABASE: The plants database. http://plants.usda.gov/java/ (18.07.2011)

WIKIPEDIA: Mexico. http://en.wikipedia.org/wiki/Mexico (18.07.2011)

WSCSPF: World Checklist of Selected Plant Families: Royal Botanic Gardens, Kew.
http://apps.kew.org/wcsp/prepareChecklist.do?checklist=selected_families%40%40200190720110226853
(18.07.2011)

MOBOT: Missouri Botanical Garden.
http://www.mobot.org/
(12.07.2011)

APPENDIX

Appendix I: Plants used in Maya home gardens (data adapted from Mariaca Méndez *et al.*, 2010)

#	Scientific name	Maya name	Local name	Use
1	*Acrocomia mexicana* Karw. ex Mart.	Tuk'	Cocoyol, Coyol	Food
2	*Agave sp.*	Ki', kij	Henequen	Fiber
3	*Annona muricata* L.	Tak'oop	Guanábana	Food
4	*Annona sp.*		Anona	Food
5	*Annona squamosa* L.	Ts'almuy,oop, salmuy, surumuy, ts'almuy, ts'aramuy	Saramuyo	Food
6	*Anonna reticulata* L.	Oop, poox, ts'ulmuy, ts'ulil poox	Cabeza de negro, anona roja	Food
7	*Bixa orellana* L.	Ilisil, kiwi', k'uxub	Achiote	Spice, body war color, colorant, food
8	*Brosimum alicastrum* Swartz	Ox	Ramón	Food
9	*Bursera simaruba* (L.) Sarg.	Chaka'	Palo mulato	Timber, firewood
10	*Capsicum annum* L.	Aj max iik, chawal iik, chawa' iik, ch' ujuk iik, maax, maxiik, putun iik, sak iik, xchawa', xkat iik, xmax iik, xmuk iik, ya'ax iik	Chile	Spice
11	*Cestrum nocturnum* (L.)	Ak'ab yon	huele de noche, galán de noche	Ornamental
12	*Cnidoscolus aconitifolius* (Mill.) I. M. Johnston	Ch'iinch'in chay, saj, tsaaj	Chaya	Food
13	*Cnidoscolus chayamansa* Mc Vaugh	Chaay, chaay kool, k'eek en chaay, xe'tel	Chaya	Food
14	*Crescentia alata* Kunth	Wasluch, lolo luch	Jícara pequeña	Ceremony, Repository
15	*Crescentia cujete* L.	Joma, luuch	Jícaro	Repository
16	*Cucurbita pepo* L.; *Cucurbita argyrosperma* C. Huber; Cucurbita moschata Duchesne	Poir, tso'ol, xka'o xtoop', k'uum		Food
17	*Ehretia tinifolia* L.	Bek', beek	Roble	Firewood, shade
18	*Enterolobium cyclocarpum* (Jacq.) Griseb.	Pich, piich che'	Guanacaste, orejón	Timber, firewood
19	Ficus cotinifolia Kunth	Kopo';		Ornamental, shade
20	*Gossypium hirsutum* L.. G. *barbadense* L., *G. schottii* Watt, y *G. punctatum* Schum. & Thonn	Jtaman, piits', piits' il taman, taman, jtaman, piits', tsiin, chub, taman, xchub	Algodón	Fiber
21	*Hylocereus undatus* (Haw) Britton & Rose	Chakam, sakam, chak wob		Food
22	*Indigofera suffruticosa* Miller	Ch'ooj, plátano xiw	Añil, platanillo	Food

23	*Ipomoea batatas* (L.) Lam.	Lis	Camote	Food
24	*Lagenaria siceraria* (Molina) Standley	Joma, leek o chuu	Calabazo	Repository
25	*Lonchocarpus yucatanensis* Pittier	Balché, xul, xu'ul	Balché	Ceremony, drink
26	*Malpighia glabra* L.	Chi', kib che', box wayakte', k'aan sibin che', siip che'	Pico de paloma, grosella	Food
27	*Mammea americana* L.., *Pouteria sapote* L.	Ha'as	Mamey	Food
28	*Manihot esculenta* Crantz	Tsim, ts'iin, ts'iim	Yuca	Food
29	*Manilkara sapote* (L.) Van Royen	Ya'	Chicozapote	Post
30	*Nopalea cochenillifera* (L.) Salm-Dyck.	Tsakam	Nopal	Food, host plant for cochinilla
31	*Pachyrhizus erosus* var. *palmatilobus* (Moc. & Sessé ex DC.) R. T. Clausen	Chi'ikam, xjuk chi'ikam	Jícama	Food
32	*Parmentiera aculeata* (Kunth Seem.)	Kaat, kat ku'uk, xkat xnuuk	Pepino kat, pepino de árbol, cuajilote	Food
33	*Persea americana* Mill.	On	Aguacate	Food
34	*Phaseolus lunatus* L.	Beech'iib, box ibes, chak sak iib, iib, iib keej, jicho', kanan joolnaj iib, ssak iib, xmehen iib, xmuunlisyoon	Ibes	Food
35	*Phaseolus vulgaris* L.	Bu'ul, choy, iib, ix bu'ul, kolil bu'ul, mejen bu'ul, tsama' , xma' yuum	Frijol	Food
36	*Phyllostylon brasiliense* Capan. ex Benth y Hook.f.	Ka'anche'		
37	*Pithecellobium albicans* (Kunth.) Benth.	Chukum, ch'I'may		Firewood, shade
38	*Plumeria sp.*	Nicte'	Flor de mayo	Food
39	*Pouteria campechiana* (Kunth) Baehni.	Kaniste'		Food
40	*Protium copal* (Schltdl. & Cham.) Engl.	. Poom, poom te'	Copal	Incense
41	*Solanum amazonium* Ker Gawl.	K'on-yaax-nik		
42	*Solanum lycopersicum* L.		Jitomate	Food
43	*Spondias mombin* L.	K'inim	Jobo	Food
44	*Spondias sp.*	Abal	Ciruela	Food
45	*Stemmadenia galeottiana* (A. Rich.) Miers.	Xlaul, laul	Cojón de toro, Huevo de burro, Huevo de puerco	Food
46	*Talisia oliviformis* Kunth (Radlk.)	Wayam, wayum	Guaya	Food
47	*Xanthosoma yucatanense* Engler.	Kukut makal, makal, xkukut makal, xmakal	Macal	Food
48	Zea mays L	Ixim, nal	Maíz	Food

Appendix II: Plant from the old world introduced to Mayan home gardens (Data adapted from Mariaca Méndez *et al*., 2010)

Year of introduction	Local name	Scientific name
1518	Naranja dulce	*Citrus sinensis*
1531	Naranja agria	*Citrus aurantium* var. *amara*
1531	Lima	*Citrus aurantiifolia*
1531	Limón	*Citrus aurantiifolia*
1531	Sidra	*Citrus medica*
1530	Granada	*Punica granatum*
No dataavailable	Dátil	*Phoenix dactylifera*
No data available	Plátano	*Musa paradisica*
No data available	Ceutí	*Citrus aurantifolia*
No data available	Rábano	*Raphanus sativus*
1526	Lechuga	*Lactuca sativa*
No data available	Berza	*Brassica oleracea*
1538	Repollo	*Brassica oleraceae* var. *viridis*
1526	Nabo	*Brassica rapa*
before 1580	Perejil	*Petroselinum crispum*
No data available	Cilantro	*Coriandrum sativum*
No data available	Hierbabuena	*Mentha spicata*
before 1580	Cebolla	*Allium cepa*
1526	Zanahoria	*Daucus carota*
before 1580	Borraja	*Borago officinalis*
No data available	Espinaca	*Spinacia oleracea*
1530	Melón	*Cucumis melo*
No data available	Cohombro o cogombro o	*Cucumis* sp.
1530	Ajo	*Allium sativum*
No data available	Mostaza	*Brassica* sp.

Appendix III: Information about the Dataset

C: Clima, **T:** Temperature, **P:** Precipitation, **R:** Raining season

(Climate information corresponds to classification of Köppen and modified by Garcia (Garcia 1988)

	Author, Year, Location	Study objects and objectives	Climate information	Soil information	Vegetation	Listed species
1	**Cadena Cisneros 2006:** Celestún and Telchac Puerto, Yucatan	- Floristic composition - Plant use - Problems of the subsystems - Species richness, frequency size - Most common plant species	C: Warm sub- humid T: 23,2°c- 27,6°c P: 700 mm R: June-September	- Regosol	- Mangrove forest and swampland - Low evergreen forest - Low tropical deciduous forest - Thorn woodland	- 109
2	**Herrera Castro 1994:** Eastern Yucatan	- Management - Floristic composition - Ecologic importance - Typology of home gardens - Influence of social economic Factors	C: Warm humid Aw1, Aw2, Aw1"ig, Aw1" (i') T: 25,8°c -26,2°c P: 1253- 1210 mm R: Summer months	- Litosol - Luvisol	- High tropical evergreen forest - Medium tropical evergreen forest - Secondary vegetation	- 387
3	**Mézquita Ruiz 2010:** Izamal and Tunkás, Yucatan	- Floristic composition - Plant use - Vertical structure	C: Warm sub- humid Aw0 T: 26°c P: 1050-1200 R: May- October	- Rendzina - Litosol	- Low tropical deciduous forest - Medium tropical deciduous forest	- 148
4	**Montanez Escalante 1998:** Hocabá and Sacabá, Yucatan	- Floristic composition - Foliage production - Nutrients	C: Warm sub- humid T: 24,5°c- 27,2°c P: 1000-1200 mm R: May- October	- Rendzina	- Low tropical deciduous forest	- 55 - 58
5	**Novelo Chan 2007:** Valladoild, Yucatan	- Influence of urban distance - Management - Floristic composition	C: Warm sub- humid T: 25,8°c P: 1200-1500 mm R: -	-	- Medium tropical deciduous forest	- 108
6	**Rico-Gray *et al*. 1990:** Tixpeul and Tixcacaltuyub, Yucatan	- Floristic composition - Similarity of HG - Structure	C: Warm sub- humid T: 26°c and 27,5°c P: 800-900 mm and 900- 1000 mm R: -		- Low tropical deciduous forest - Median tropical deciduous forest"	- 135 - 133
7	**Xuluc Tulosa 1995:** Sacabá, Yucatan	- Floristic composition - Management - Comparison of composition and structure - Improvement	C: Warm sub- humid Aw0"(x')(i') T: 25,4°c- 27,2°c P: 1000-1200 mm R: May- October	- Rendzina	- Low tropical deciduous forest - Lots of secondary vegetation	- 171
8	**Canul Montañez 2002:** Calakmul, Campeche	- Floristic composition - Home gardens of different indigenous immigrant groups - Species origin - Plant use	C: Warm sub- humid Aw, Aw1(i')g T: 22°c-26°c P: 1100-1500 mm R: May- November	- Regosol - Rendzina - Vertisol	- Tropical evergreen - Medium tropical deciduos forest - Low tropical deciduous forest - Swamp forest - Savannah	- 121
9	**Neulinger 2009:** Calakmul, Campeche	- Floristic composition and diversity - Plant use - Knowledge - Function - Cultural background	C: warm humid T: 24,6°c P: 1100 mm R: July- November (Hurricanes)	-Litosol -Gleysol -Rendzina -Vertisol	- Tropical deciduous forest - Medium tropical deciduous forest - Dry tropical deciduous forest - Thorn forest - Palm vegetation - Savannah - Secondary vegetation	- 310

10	**Fedick *et al.* 2008:** Naranjal, Yalahua Region, Quintana Roo	-	C: - T: - P: variable R: -	- Litosol (less 10cm)	- Evergreen wetland	- 35
11	**Osorio Hernández 1997:** Maya Zone, Quintana Roo	- Structure and Function - Floristic composition - Relation between home garden and family	C: semi- warm and humid (Aw1), (Aw2), (Aw0) T: 22°c P: 1500-1200 mm R: -	- Luvisol	- Pasture land - Pine oak forest	- 138
12	**De Clerck *et al.* 2000:** Maya zone, Quintana Roo	- Floristic composition as base for an analogue agroforestry system - Vertical and horizontal structure	C: - T: - P: - R: May – October	-	-	- 150
13	**Hernández Burela: 2001:** Huimanguilo, Tabasco	- Plant use - Management	C: warm humid T: 26°c P: 2400 mm R: Summer months	- Vertisol	- Tropical evergreen forest - Tropical Savannah	- 148
14	**Vidal Barahona, A. 2008:** Cárdenas, Tabasco	- Floristic composition - Plant use - Management	C: warm humid T: 26°c P: 2400 mm R: -	- Vertisol	- Tropical evergreen forest - Savannah - Pasture land	- 138
15	**Gasco, J. 2008:** Soconuco Region, Chiapas	- Description of home gardens - Size - Plant frequency - Diversity - Plant use	C: Dry warm, warm humid, sub- humid T: P: R:		- Palm forest (coast) - Savannah - Tropical deciduous forest - Semi evergreen and evergreen seasonal forest - Pasture land and Coffee plantations	- 240
16	**Gutiérrez Miranda, L. 2003:** Municipality of San Fernando, Chiapas	- Plant knowledge - Floristic composition and richness - Plant use - Social and cultural function	C: semi warm and sub humid (A)C(w")(i)g T: 18°c- 22°c P: R: Summer	- Litosol - Rendzina	- Lots of secondary vegetation - Tropical deciduous forest - Low tropical deciduous forest - Quebrachales - Hard pine oak forest - Pasture land and grassland	- 209
17	**Osorio Hernández 2000:** Francisco, Chiapas	- Economic analysis - Ethnobotanical analysis - Differences between home Gardens	C: semi- warm humid (A)C(m) T: 22°c P: 1200- 1500 mm R: Summer months	- Luvisol	- Oak forest - Pasture land	- 138
18	**Aguilar Støen M. *et al.* 2008:** Loxicha, Oaxaca	- Integration of home gardens in local farming systems - Management - Biodiversity	C: semi warm humid T: 22°c- 18°c P: 2500 mm R: -		- Tropical deciduous forest - Cloud forest - Tropical evergreen seasonal forest - Coffee plantations	- 233
19	**Garcia Ramos, Y. 2010:** Putla, Oaxaca	- Floristic composition - Difference/ similarity different home gardens of ethnic groups - Comparison home garden vegetation and natural vegetation - Plant use	C: temperate- warm humid T: 20°c P: R: Summer- autumn	- Luvisol - Cambisol	- Cloud forest - Medium tropical deciduous forest - Pine Oak forest - Secondary vegetation	- 285
20	**López Márquez, E. 1996:** Cerro Clarín, Oaxaca	- Structure - Function - Floristic composition - Plant use	C: warm humid Aw(w")(i")g T: > 18°c P: 2857 mm R: Summer	- Acrisol - Regosol - Vertisol - Litosol	- Tropical evergreen seasonal forest	- 150

21	**Cano Ramírez 2003:** Tepango, Guerrero	- Diversity of Mixtec community - Plant use - Structure - Influence social cultural factors	C: warm sub- humid Aw"0(W)ig) T: 24°c P: 1400 mm R: July- September	- Granitic soils	- Low tropical deciduous forest	- 129
22	**Witrago Amezcua 1997:** Martir de Cuilapan, Guerrero	- Plant use and importance - Management Analysis - Diversity - Structure - Economic role - Cultural and social aspects	C: warm humid T: 18°c -22°c P: 920 mm R: June-September		- Low tropical deciduos forest	- 103
23	**Pliego Aradero 2006:** Tepalcingo, Morelos	-Plant use in different agroecosystems	C: warm sub- humid Aw0(w)(i')gw" T: 22,6°c P: 864,5 mm R: May and October		- Tropical deciduous forest - Low tropical deciduous forest	- 67
24	**Espejel Espejel 1993:** San Juan Epatlan, Puebla	- Function - Management - Economic importance - Floristic composition	C: warm sub humid T: >18°c- 22°c P: - R: - Summer months	- Vertisol	- Tropical deciduous forest	- 60
25	**Basurto Peña 1982:** Yancuictalpan and Cuauhtapanaloyan, Puebla	- Conceptualization of the home garden - Floristic Composition - Plant use - Structure - Zonation - Management - Knowledge	C: warm humid Am(f), A(C), A(C)m, (A)C(m), A(C)f(m), (A)C(fm) T: 22°c- 26°c P: 3000- 4000 mm R: Summer months	- Molisol	- Tropical evergreen forest - Pasture land - Secondary vegetation	- 87
26	**Lazos & Alvarez-Buylla 1983:** Balzapote, Veracruz	- Production processes - Management - Labour - Economic differences	C: warm humid T: 22-26°c P: 4500 mm R: June- Februrary	- Andosol - Luvisol	- Tropical evergreen forest - Secondary vegetation	- 338
27	**Arevalo Vizaíno 1999:** Tlapacoyán, Veracruz	- Alimentation Potential - Food security - Structure - Function - Management	C: warm humid T: 18°c P: 1500 mm R: Summer months	- Luvisol	- Medium tropical evergreen forest	- 137
28	**De la Cruz Osorio 2009:** Francisco Villa, Veracruz	- Structure - Function - Management - Importance - Floristic composition	C: warm subhumid Aw2 T: 33°c in summer, 24°c in winter	- Regosol - Vertisol	- Tropical deciduos forest	- 149
29	**García Burgos 2003:** . Tihuatlán, Veracruz	- Structure - Management - Plant use - Floristic composition	C: warm-subhumid Aw2 T: 24°c (winter), 33°c (summer) P: 1200-1400 mm R:	- Regosol - Vertisol	- Tropical evergreen forest - Secondary vegetation	- 262
30	**Alcorn: 1984:** Huasteca Potosina, San Luis Potosi	- Ethnobotanic study of the Huasteca	C: warm humid Cwag, Awg, Amwg T: 23,5°c P: 1137- 3567 mm R: June- September	- Rendzina	- Pine oak forest - Tropical evergreen forest - Cloud forest - Thorn forest	- 148
31	**Ruenes Morales: 1993**: San Juan,	- Social, economic and cultural importance	C: semi warm, temperate sub-humid	- Andosol - Regosol	- Tropical decisous - Pine/ Oak forest	- 201 - 181

	Nayarit	- Floristic composition - Plant use	in the mountains Aw2(w) T: 18°c- 20°c P: 700-800 mm R: Summer months	- Acrisol - Cambisol	- Cloud forest	

Appendix IV: List of total plant records

Ind. Name = indigenous name
Ocurrence: -**CHI**= Chiapas, -**GUE**= Guerrero -**HU**= Huasteca, -**OA**= Oaxaca -**PUE**= Puebla, -**QR**= Quintana Roo -**YU**= Yucatan

g= Growth habit
c= climber
e= epiphyt
h= herb
s= shrub
t= tree

OR= Origin
Af= Africa
As= Asia
CSA= Central & South America
Eu= Europa and Near East
M= Mexico
NA= North America (excl. Mexico)
NK= Not known
Oc= Oceania

R= Number of Records
FR= Frequency
***** References, according to Figure 11 (1- 31), (Maximum of. five references)

#	Plant Family	Species	Ind. Name	Local name	R	FR	g	OR	References*
1	ACANTHACEAE	*Aphelandra aurantiaca* (Scheidw.) Lind.			1	0,00074	h	M	29
2	ACANTHACEAE	*Elytraria bromoides* Oerst.		Arlomo macho	1	0,00074	h	M	31
3	ACANTHACEAE	*Elytraria imbricata* (Vahl.) Pers.			1	0,00074	h	M	8
4	ACANTHACEAE	*Graptophyllum pictum* (L.) Griff.		Agua roja	1	0,00074	s	Oc	9
5	ACANTHACEAE	*Justicia aurea* Schlecht.		Cola de zorra (ammarilla)	1	0,00074	h	CSA	25
6	ACANTHACEAE	*Justicia brandegeana* Wassh. et. Smith		Camarón	2	0,00148	s	M	25, 29
7	ACANTHACEAE	*Justicia carnea* Lindl.			1	0,00074	h	CSA	25
8	ACANTHACEAE	*Justicia spicigera* (Schlecht.) L.H.		Muicle, Mohuite	5	0,00371	s	M	19, 23,25,27,31
9	ACANTHACEAE	*Odontonema cuspidatum* (Nees) Kuntze			1	0,00074	h	M	19
10	ACANTHACEAE	*Odontonema strictum* O. Kuntze			1	0,00074	s	M	29
11	ACANTHACEAE	*Pachystachis lutea* Ness.		Camarón	1	0,00074	s	M	27
12	ACANTHACEAE	*Pseudoarenthemum atropurpureum* L.H. Bailey			1	0,00074	s	Oc	9
13	ACANTHACEAE	*Ruellia brittoniana* Leonard		Té negro	2	0,00148	s	M	29, 23
14	ACANTHACEAE	*Ruellia ciliosa* Pursh.			1	0,00074	h	M	19
15	ACANTHACEAE	*Ruellia inundata* Kunth		Mariquita	1	0,00074	h	M	9
16	ACANTHACEAE	*Ruellia lactea* Cav.		Campanita morada	1	0,00074	h	M	31
17	ACANTHACEAE	*Ruellia nudiflora* (Engelm. & Gray) Urban	sisic nich te', eem muuw (HU)	Mariquita	2	0,00148	s	M	9, 30
18	ACANTHACEAE	*Sanchezia parvibracteata* Sprague & Hutch.		Hoja pinta	1	0,00074	h	M	25
19	ACANTHACEAE	*Thunbergia alata* Bojer. ex Sims.		Ojo de venado	2	0,00148	c	Af	19, 31
20	ACANTHACEAE	*Thunbergia fragrans* Roxb.		Puerto Rico	2	0,00148	c	As	19, 25
21	ACTINIDIACEAE	*Saurauia scabrida* Hemsl.	ajot (CHI)	Bava de toro	1	0,00074	t	M	17
22	ADIANTACEAE	*Adiantum villosum* L.		Helecho	1	0,00074	h	M	3
23	AGARICACEAE	*Schizophyllum commune* Fr.	tsikinte' (HU)	Hongo	1	0,00074	h	NK	30
24	AGAVACEAE	*Agave americana* L.		Maguey	2	0,00148	h	M	19, 31
25	AGAVACEAE	*Agave americana* ssp. *americana*			1	0,00074	h	M	19
26	AGAVACEAE	*Agavezapupe* Trel.	weey (HU)	Henequén	1	0,00074	h	M	30
27	AGAVACEAE	*Agave fourcroydes* Lem.	sak kij (YU)	Henequén	3	0,00223	h	M	6,7,8
28	AGAVACEAE	*Agave potatorum* Zucc.		Maguey	1	0,00074	h	M	14
29	AGAVACEAE	*Agave scaposa* Grenty			1	0,00074	h	M	19
30	AGAVACEAE	*Agave tequilana* F.A.C. Weber		Agave azul	1	0,00074	h	M	9
31	AGAVACEAE	*Agave vivipara* var. v*ivipara*		Zapupe, Maguey, Henequén, Mezcal	4	0,00297	h	M	2,3,23,29
32	AGAVACEAE	*Beaucarnea pliabilis* (Baker)		Despeinada	1	0,00074	t	M	3
33	AGAVACEAE	*Cordyline fruticosa* Comm. Ex Juss		Monterrey, Tepejilote, Galatea blanca, Morada, Palmita	6	0,00445	h	Oc	9,15,18,25,31
34	AGAVACEAE	*Cordyline rubra* Otto & A.Dietr.		Dracaena	1	0,00074	h	Oc	3
35	AGAVACEAE	*Cordyline stricta* Endl.		Glataea delgado	1	0,00074	h	Oc	25
36	AGAVACEAE	*Dracaena americana* Donn. Smith			1	0,00074	h	M	6
37	AGAVACEAE	*Dracaena fragrans* (L.) Ker Gawl.		Don Julio, Maixera	1	0,00074	s	Af	9
38	AGAVACEAE	*Polianthes tuberosa* L.		Alzucena, Nardi, Nardo	4	0,00297	h	M	1,9,16,19
39	AGAVACEAE	*Sanseviera hyacinthoides* (L.) Druce			1	0,00074	h	Af	6
40	AGAVACEAE	*Sanseviera thyrsifolia* Thunb.			1	0,00074	h	Af	19
41	AGAVACEAE	*Sansevieria trifasciata* Prain.		Cola de zorro, Maguey pinto, Oreja de burro, Curarina	4	0,00297	h	Af	9,16,29,31
42	AGAVACEAE	Sansevieria zeylanica (L.) Willd.			1	0,00074	h	Af	8

43	AGAVACEAE	*Yucca aloefolia* L.		Iczote	1	0,00074	t	M	25
44	AGAVACEAE	*Yucca filamentosa* L.			1	0,00074	h	M	14
45	AIZOACEAE	*Mesembryanthemum crystallinum* L.		Tapetito	1	0,00074	c	Eu	31
46	AIZOACEAE	*Lamphrantus roseus* L.		Rayito	1	0,00074	h	Af	31
47	AIZOACEAE	*Trianthema portulacastrum* L.	shanamocui (YU)	Verdolaga bronca, Verdolaga	2	0,00148	h	M	9, 1
48	ALOEACEAE	*Aloe vera* (L.) Burm.f.	petk'inki (QR)	Sábila, Aloe	18	0,01336	h	Af	1,6,9,12,18
49	ALSTROEMERIACEAE	*Bomarea edulis* (Tussac) Herb.	san miguel wits (HU)	Flor de San Miguel	1	0,00074	c	M	30
50	AMARANTHACEAE	*Achyranthes aspera* L.			1	0,00074	h	M	29
51	AMARANTHACEAE	*Alstroemeria aurea* Graham		Lirio amarillo	1	0,00074	h	CSA	31
52	AMARANTHACEAE	*Alternanthera bettzickiana* (Regel) G.Nicholson		Periquito, Coqueta	3	0,00223	h	M	18, 25, 29
53	AMARANTHACEAE	*Alternanthera caracasana* Kunth.		Verdolaga	1	0,00074	h	Af	21
54	AMARANTHACEAE	*Alternanthera sessilis* (L.) R.Br. ex DC.			1	0,00074	h	M	8
55	AMARANTHACEAE	*Amaranthus caudatus* L.	huajquilit (PUE)	Quelite morado, Quiltonil	2	0,00148	h	M	25, 27
56	AMARANTHACEAE	*Amaranthus cruentus* L.			1	0,00074	h	M	16
57	AMARANTHACEAE	*Amaranthus hybridus* L.	tes, tesquish, ts'ulitaj (CHI), xtés (YU), chithal tooro, de tucma tibo (OA)	Quelite, Amarantho, Quelite blanco, Quintonil verde, Quelite de alegria, Bledo, Quintonil , Chithal tooro	12	0,00891	h	M	9,17,27,28,29
58	AMARANTHACEAE	*Amaranthus hypocondriacus* L.	chith (HU)	Amaranto	2	0,00148	h	M	22, 30
59	AMARANTHACEAE	*Amaranthus spinosus* L.	Xtés (YU), Huajiquilit (PUE)	Bledo, Quelite de puerco, Quiltonil spinoso	4	0,00297	h	M	3, 9, 25, 29
60	AMARANTHACEAE	*Amaranthus tricolor* L.		Quelite	1	0,00074	h	M	13
61	AMARANTHACEAE	*Celosia argentea* L.	abanico tes (YU), selaxochitl (PUE)	Cresta de gallo, Mano de león, Flor de seda, Flor de tercipelo	13	0,00965	h	M	1, 17, 19, 27,29
62	AMARANTHACEAE	*Celosia paniculata* L.		Fruta de nigua	1	0,00074	c	M	29
63	AMARANTHACEAE	*Celosia virgata* Jacq.		Mano de león	1	0,00074	h	M	9
64	AMARANTHACEAE	*Gomphrena decumbens* Jacq.		Dalia	2	0,00148	h	M	18, 19
65	AMARANTHACEAE	*Gomphrena globosa* L.	muul (YU), oloxchitl (PUE), toyol (HU)	Siempreviva, Amor seco, Flor de cacahuatzín, Flor de Olote, Clavellina	10	0,00742	h	M	3,7,9,16,22
66	AMARANTHACEAE	*Gomphrena nitida* Rothr.		Rodilla de guajolote	2	0,00148	h	M	2, 23
67	AMARANTHACEAE	*Gomphrena pilosa* (Mart. & Gal) Moq.			1	0,00074	h	M	2
68	AMARANTHACEAE	*Iresine celosia* L.	chachaakan (CHI)	Arlomo	5	0,00371	c	M	2,17,24,29,31
69	AMARANTHACEAE	*Iresine diffusa* Humb. & Bonpl. ex Willd			1	0,00074	h	M	8
70	AMARANTHACEAE	*Iresine herbistii* Hook.		Púrpura	1	0,00074	c	CSA	25
71	AMARYLLIDACEAE	*Agapanthus africanus* (L.) Hoffmanns			2	0,00148	h	Af	19, 24
72	AMARYLLIDACEAE	*Allium aplatunense* B. Fedtsch		Shakira	1	0,00074	h	As	9
73	AMARYLLIDACEAE	*Crinum amabile* Donn.		Lirio jacinto, Palenque	2	0,00148	h	As	9, 16
74	AMARYLLIDACEAE	*Crinum americanum* L.			1	0,00074	h	M	19
75	AMARYLLIDACEAE	*Crinum erubescens* L.f. ex Aiton		Lirio	1	0,00074	h	M	16
76	AMARYLLIDACEAE	*Eucharis × grandiflora* Planch. & Linden		Estrella de Japón	1	0,00074	h	CSA	31
77	AMARYLLIDACEAE	*Hippeastrum elegans* (K. Spreng.) H.E. Moore		Lirio blanco	1	0,00074	h	CSA	25
78	AMARYLLIDACEAE	*Hippeastrum puniceum* (Lam.) Voss		Lirio, Lirio rojo	5	0,00371	h	CSA	2,6,25,28,29
79	AMARYLLIDACEAE	*Hippeastrum striatum* H.E. Moore		Lirio, Lirio de Chiapas	1	0,00074	h	CSA	9
80	AMARYLLIDACEAE	*Hippeastrum vittatum* (L'Hér.) Herb.		Lirio rojo	1	0,00074	h	CSA	31
81	AMARYLLIDACEAE	*Hymenocallis littoralis* (Jacq.) Salisb.	lirio k'aax (YU)	Lirio	4	0,00297	h	CSA	1,3,9,29
82	AMARYLLIDACEAE	*Sprekelia formosissima* (L.) Herb.		Lirio	2	0,00148	h	CSA	13, 21
83	AMARYLLIDACEAE	*Zephyranthes carinata* Herb.		Brujitas	3	0,00223	h	M	1,3,25
84	AMARYLLIDACEAE	*Zephyranthes citrina* Baker	x-wi'lu'um (YU)	Brujita (flor amarilla)	2	0,00148	h	M	1, 9
85	ANACARDIACEAE	*Amphipterygium adstringens* (Schtdl.) Schiede ex Standl.		Cuachalalate	1	0,00074	t	M	23
86	ANACARDIACEAE	*Anacardium occidentale* L.		Maranón, Jocote	4	0,00297	t	CSA	8, 13,15,18,
87	ANACARDIACEAE	*Astronium graveolens* Jacq.	x'kulinche (YU)		4	0,00297	t	M	2,4,5,8,
88	ANACARDIACEAE	*Comocladia palmeri* Rose		Tatatián	2	0,00148	t	M	1
89	ANACARDIACEAE	*Cyrtocarpa procera* Kunth.		Chupandilla, Coco	2	0,00148	t	M	23
90	ANACARDIACEAE	*Mangifera indica* L.	tzapot (PUE), mango	Mango, Mango criollo	24	0,01782	t	As	3,4,7,9,18

			cha (OA)						
91	ANACARDIACEAE	*Metopium browneii* (Jacq.) Urb.	ixte' (YU)	Chechén	2	0,00148	t	M	2, 9
92	ANACARDIACEAE	*Pistacia mexicana* Kunth		Achin	1	0,00074	t	M	16
93	ANACARDIACEAE	*Pistacia vera* L.		Pistache	2	0,00148	t	As	14, 29
94	ANACARDIACEAE	*Pseudosmodingium perniciosum* (Kunth) Engl.		Cuajiote	1	0,00074	h	CSA	23
95	ANACARDIACEAE	*Spondias mombin* L.	luluy, poom (YU), cuauhxcocot (PUE), ya cha (OA), k'aan abal	Jobo, Ciruela, Ciruela roja, Palo de fruta, Arbol de fruta, Ciruela amarilla	12	0,00891	t	M	6,9,26,28,29
96	ANACARDIACEAE	*Spondias purpurea* L.	chi'abal (QR), xacampech (YU), abal (YU)	Ciruela campechana, Ciruelo, Ciruela, Ciruela roja, Jocote, Ciruela de cerro	17	0,01262	t	M	1,18,27,28,29
97	ANACARDIACEAE	*Tapirira mexicana* Marchand.	cacate (PUE)	Bienvenido	1	0,00074	t	M	25
98	ANNONACEAE	*Annona cherimola* L.	ek'mul, op, pox, k'ewex (CHI), cuatzapot (PUE)	Cherimoya, Anona, Zapote corona	6	0,00445	t	CSA	9,10,17,22,25
99	ANNONACEAE	*Annona diversifolia* Saff.	chak oop (YU)	Chirimoya	3	0,00223	t	M	7,16,27
100	ANNONACEAE	*Annona globifera* Schltd.			2	0,00148	t	M	15, 18
101	ANNONACEAE	*Annona muricata* L.	tak'ob, c'atsats (tila), tak'ob (YU, QR), chiscoma (OA)	Guanábana	22	0,01633	t	M	1,6,9,10,15
102	ANNONACEAE	*Annona purpurea* Moc. & Sessé ex Dundal	chak oop, poox, pool boox (YU), chi ani (OA)	Soncoya	6	0,00445	t	M	3,5,6,8,10
103	ANNONACEAE	*Annona reticulat*a L.	c´Atsats (Tila), q´ewex, X-oi ka'ax (YU) kewex, Oop (YU, QR)	Anona, Anona morada, Anono, Guanabano	17	0,01262	t	M	3,4,7,9,28
104	ANNONACEAE	*Annona squamosa* L.	ts'almuy (Yu), ts'aramuy (QR)	Saramuyo, Anona, Llama	13	0,00965	t	M	1,3,4,6,7,10
105	ANNONACEAE	*Malmea depressa* (Baillon) R.E. Fr.	yaya, eklemuy, ya ts'ea (OA)	Arbol de nazareno	3	0,00223	t	M	9,11,20
106	ANNONACEAE	*Rollinia rensoniana* Standl.	chinaya (OA)	Monotzapot, Zapote mono	2	0,00148	t	M	20, 25
107	APIACEAE	*Apium graveolens* L.		Apio	1	0,00074	h	Eu	21
108	APIACEAE	*Apium leptophyllum* (DC.) F. Muell.		Cilantro de zopilote	1	0,00074	h	Eu	29
109	APIACEAE	*Coriandrum sativum* L.	culanta, kulaantun (HU)	Cilantro	14	0,01039	h	As	1,2,8,12,18
110	APIACEAE	*Daucus carota* L.		Zanahoria	1	0,00074	h	NK	9
111	APIACEAE	*Eryngium beecheyanum* Hook. & Arn.		Hierba del sapo	1	0,00074	h	M	23
112	APIACEAE	*Eryngium foetidum* L.	perejin, laab kulaantu (HU)	Cilantro extranjero, Perejil, Cimarrón, Todo el año, Cilantro perejil, Cilantrón	6	0,00445	h	M	9,16,25,28,29
113	APIACEAE	*Eryngium scaposum* Turcz.	chisculantú (CHI)	Cilantro Cimarron	1	0,00074	h	M	17
114	APIACEAE	*Foeniculum vulgare* Mill.		Hinojo	2	0,00148	h	Eu	16
115	APIACEAE	*Petroselinum crispum* (Mill.) Nym. Ex A.W. Hill		Perejil	4	0,00297	h	Eu	14,19,25,31
116	APIACEAE	*Rhodosciadium longipes* (Rose) Math. & Smith		Espico	1	0,00074	h	M	25
117	APOCYNACEAE	*Acokanthera oppositifolia* (Lam.) Codd			1	0,00074	s	Af	19
118	APOCYNACEAE	*Allamanda blanchetii* A. DC.			1	0,00074	s	M	19
119	APOCYNACEAE	*Allamanda cathartica* L.		Copa de oro	5	0,00371	s	M	9,13,19,25,31
120	APOCYNACEAE	*Cascabela gaumeri* (Hemsl.) Lippold	pich kutz (YU), akits (QR)	Campanilla	3	0,00223	t	M	2,6,11
121	APOCYNACEAE	*Cascabela thevetia* (L.) Lippold		Arbusto, San Diego, Ayoyote	5	0,00371	s	M	2,9,19,23,29
122	APOCYNACEAE	*Cascabela thevetioides* (Kunth) Lippold			1	0,00074	s	M	19
123	APOCYNACEAE	*Catharanthus roseus* (L.) G. Don	x- mikaria(YU)	Belén, Balsamina, Juanita, Impatiens, Conejito, Clavito, Jabonera morada, Vicaria, Indita, Chulita, Ninfa, Jabonera, Maravilla, Ninfa	14	0,01039	h	M	1,6,9,18,29
124	APOCYNACEAE	*Echites tuxtlensis* Standl.	tsank' ub ts' aah (HU)		1	0,00074	c	M	30
125	APOCYNACEAE	*Echites umbellata* Jacq.			1	0,00074	c	M	2

126	APOCYNACEAE	*Echites yucatanensis* Mill.ex. Standl.			1	0,00074	c	M	12
127	APOCYNACEAE	*Fernaldia pandurata* (DC.) Woodson	t' obts' i' (HU)	Bajo de wey	1	0,00074	c	M	30
128	APOCYNACEAE	*Huernia schneideriana* A. Berger			1	0,00074	h	Af	9
129	APOCYNACEAE	*Marsdenia macrophylla* (Humb. & Bonpl.) Fourn.			1	0,00074	c	CSA	2
130	APOCYNACEAE	*Matelea trachyantha* (Greenm.) W.D.		Cacache	1	0,00074	s	M	23
131	APOCYNACEAE	*Nerium oleander* L.		Laurel, Clavel, Laurel rosa, Narciso, Trinitaria, Adelfa, Delfina	15	0,01114	s	Eu	1,6,9,18,28,29
132	APOCYNACEAE	*Pentalinon andrieuxii* (Müll.Arg.) B.F.Hansen & Wunderlin		Vivorín	1	0,00074	s	M	9
133	APOCYNACEAE	*Plumeria acutifolia* L.	xacalzontzin (YU)		1	0,00074	h	M	22
134	APOCYNACEAE	*Plumeria alba* L.	sak nikte' (YU)	Flor de mayo	3	0,00223	t	M	4, 7
135	APOCYNACEAE	*Plumeria obtusa* L.			1	0,00074	s	M	8
136	APOCYNACEAE	*Plumeria rubra* L.	xnichimte, Chak nikte', sak nikte' (QR), cacalaxochitl rojo (GUE), sak nikte (YU)	Flor de mayo, Cacalosúchil, Cuetlazochiltl, Flor de cuervo	16	0,01188	t	M	2,3,7,9,28
137	APOCYNACEAE	*Rauwolfia tetraphylla* L.			3	0,00223	s	NK	2,29,24
138	APOCYNACEAE	*Stemmadenia donnell-smithii* (Rose ex J.D.Sm.) Woodson	ya tutijo (OA)	Huevos de burro, Cojón de toro, Bertha	5	0,00371	t	M	8,18,20,21,26
139	APOCYNACEAE	*Tabernaemontana alba* Mill.	chichihualayot (PUE), t' abat'(HU), yatonchi'jo (OA)	Lecherillo, Cojón de agua, Cójon de gato, Cojón de perro	7	0,00520	t	M	26,27,28,29,30
140	APOCYNACEAE	*Tabernaemontana amygddalifolia* Jacq.	ut'sup pek, utsumpek (YU)	Jazmín de la India, Flor de la India	8	0,00594	s	M	4,6,9,11,19
141	APOCYNACEAE	*Tabernaemontana citrifolia* L.		Lecherillo	1	0,00074	s	M	26
142	APOCYNACEAE	*Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schult.		Clavel, Clave de la India, Gardenia, Jazmín	7	0,00520	s	As	3,6,11,25,31
143	APOCYNACEAE	*Thevetia ahouai* (L.) A.DC.		Cojón de perro, Huevos de gato, Colcochi	5	0,00371	s	M	2,9,16,19,29
144	APOCYNACEAE	*Tonduzia stenophylla* (Donn.Sm.) Pittier			1	0,00074	h	M	19
145	APOCYNACEAE	*Vinca major* L.		Siempre viva	1	0,00074	h	NK	18
146	APOCYNACEAE	*Vinca minor* L.		Teresita	1	0,00074	h	Oc	21
147	ARACEAE	*Alocasia macrorrhizos* (L.) G.Don			1	0,00074	h	M	9
148	ARACEAE	*Amorphophallus konjac* K.Koch		Plantania	2	0,00148	h	As	22, 25
149	ARACEAE	*Anthurium scandens* (Aubl.) Engl.		Mazorquita	1	0,00074	s	M	25
150	ARACEAE	*Anthurium schlechtendalii* Kunth		Hoja de piedra, Cola de chancho	3	0,00223	s	M	2, 9, 31
151	ARACEAE	*Caladium bicolor* (Aiton) Vent.	xca indu (OA)	Coranzón de Maria, Garra de León, Corazón de Cristo, Papagayo, Banderilla, Colomito rojo	8	0,00594	h	CSA	1, 3, 7, 25,29
152	ARACEAE	*Chryssalidocarpus lutescens* Wendl.			1	0,00074	t	Af	13
153	ARACEAE	*Colocasia esculenta* (L.) Schott.		Malango, Malanga, Quequeste	5	0,00371	h	As	12,16,21,22,28
154	ARACEAE	*Dieffenbachia seguine* (Jacq.) Schott		Hoja matizada, Hoja de picta	4	0,00297	h	M	19,20,25,31
155	ARACEAE	*Epipremnum aureum* (Linden & André)			1	0,00074	c	As	29
156	ARACEAE	*Monstera adansonii* Schott.			1	0,00074	c	M	19
157	ARACEAE	*Monstera deliciosa* Liebm.	juc'utun, ponch'ox, notsenho (OA)	Piñanona, Monstera	4	0,00297	c	M	9, 18, 20,27
158	ARACEAE	*Philodendron curvilobum* Schott		Cuernos de chivo	1	0,00074	c	CSA	31
159	ARACEAE	*Philodendron radiatum* Schott		Rabo de mono	1	0,00074	c	M	29
160	ARACEAE	*Philodendron scandens* K. Koch & Sello.		Teléfono	1	0,00074	c	M	21
161	ARACEAE	*Philodendron tripartitum* (Jacq.) Schott		Pitaya	1	0,00074	c	M	25
162	ARACEAE	*Spathipyllum patinii* N.E. Br.			1	0,00074	h	CSA	19
163	ARACEAE	*Syngonium hoffmannii* Schott		Colomito	1	0,00074	c	CSA	31
164	ARACEAE	*Syngonium neglectum* Schott	tachavis (PUE)	Bejuco, Yeto, Chavis de tierra	2	0,00148	c	M	18, 25
165	ARACEAE	*Syngonium podophyllum* (L.) Schott		Poma rosa, Enredadora	4	0,00297	c	M	2,9,18,19

166	ARACEAE	*Xanthosoma robustum* Schott	quiquichilit (PUE)	Malango comestible, Tetescamote, Malanga, Quequespo, Hoja elegante, Mafafa blanca, Quelite amargo, Colomo	6	0,00445	s	M	13,16,21,25,29,31
167	ARACEAE	*Xanthosoma sagitifolium* (L.) Schott	kukut makal (QR), luum (HU), nukjua ani'i (YU), netzonquilit (PUE)	Malanga, Mafafa pinta, Hoja elegante, Makal, Tetescamote,Tarangutín, Malanga, Malanga morada	9	0,00668	s	NK	13,16,21,25,31
168	ARACEAE	*Xanthosoma yucatanense* Engl.	juc', makal (Yu), kukut makal (YU)	Makal, Malanga	4	0,00297	h	M	1,7,8,9
169	ARACEAE	*Zantedeschia aethiopica* (L.) Spreng		Alcatraz, Cartucho	6	0,00445	h	Af	14,16,17,18,22
170	ARALIACEAE	*Dendropanax arboreus* (L.) Dec & Planch.		Palo de agua	3	0,00223	t	M	26,28,29
171	ARALIACEAE	*Hedera helix* L.		Hoja de uva	1	0,00074	c	Eu	25
172	ARALIACEAE	*Hydrocotyle umbellata* L.		Sombrilla	1	0,00074	h	M	13
173	ARALIACEAE	*Oreopanax peltatus* Linden ex Regel			1	0,00074	t	M	19
174	ARALIACEAE	*Polyscias guilfoylei* (Bull.) L.H. Bailey		Arbol de la suerte, Mestiza	3	0,00223	t	As	16,17,29
175	ARALIACEAE	*Schefflera actinophylla* (Endl.) Harms	te' (HU)		1	0,00074	t	Oc	9
176	ARAUCARIACEAE	*Araucaria excelsa* W.T. Aiton			1	0,00074	t	Oc	19
177	ARECACEAE	*Acrocomia aculeata* (Jacq.) Lodd. Ex Mart.	tuk (QR), ya tonatiu cando (OA)	Coyol de bolita, Coyol, Cocoyol, Palma de coyol	9	0,00668	t	M	5,6,11,12,28
178	ARECACEAE	*Aglaonema commutatum* Schott	yapote'(YU)	Hoja pinta	1	0,00074	h	As	9
179	ARECACEAE	*Astrocaryum mexicanum* Liebm. ex Mart.		Chapoi, Chapai	1	0,00074	s	M	9
180	ARECACEAE	*Attalea butyraceae* (Mutis ex L.f.) Wess. Boer		Corozo, Palma de corozo, Coyo real	2	0,00148	t	CSA	14
181	ARECACEAE	*Brahea dulcis* (Kunth) Mart.		Palma	1	0,00074	s	M	22
182	ARECACEAE	*Caryota urens* L.	xate(YU)	Palma de pescado	1	0,00074	s	Oc	9
183	ARECACEAE	*Chamaedorea elegans* Mart.	xiat (YU)	Palma	3	0,00223	s	M	3,21,25
184	ARECACEAE	*Chamaedorea graminifolia* H. Wendl.	mojtoy, ch'ib(YU)	Palma	1	0,00074	s	CSA	9
185	ARECACEAE	*Chamaedorea neurochlamys* Burret			1	0,00074	s	M	9
186	ARECACEAE	*Chamaedorea oblongata* Mart.	ch'ib(YU)	Palmilla, Palma, Xate, Cuajilote, Tepejilote	5	0,00371	s	M	9,18,25,28,29
187	ARECACEAE	*Chamaedorea pochutlensis* Liebm.		Quihuite	1	0,00074	s	M	31
188	ARECACEAE	*Chamaedorea seifrizii* Burret	ch'ib(YU)	Xiaté	3	0,00223	s	M	2,8,9
189	ARECACEAE	*Chamaedorea tepejilote* Liebm.		Palma cacayo	1	0,00074	s	M	16
190	ARECACEAE	*Cocos nucifera* L.	, coco (YU), ya natiu coco (OA)	Cocal, Coco, Plama de coco	22	0,01633	t	As	1,3,6,7,18
191	ARECACEAE	*Cryosophila argentea* H. Bartlett			1	0,00074	t	M	8
192	ARECACEAE	*Cryosophila nana* (Kunth) Blume ex Salomon		Zoyamiche	1	0,00074	t	M	18
193	ARECACEAE	*Desmoncus schippii* Burret			3	0,00223	c	CSA	8,9,12
194	ARECACEAE	*Elaeis guineensis* Jacq.		Plama aceitera	1	0,00074	t	Af	9
195	ARECACEAE	*Orbignya cohune* (Mart.) Dahlgr. Ex Standl.	i wuu (YU)	Coquito, Corozo, Palma	3	0,00223	t	M	9,12,18
196	ARECACEAE	*Phoenix canariensis* Chabaud		Palma de dátiles	1	0,00074	t	Af	27
197	ARECACEAE	*Phoenix dactylifera* L.			1	0,00074	h	As	12
198	ARECACEAE	*Pseudophoenix sargentii* H. Wendl. Ex Sarg	kuka (YU)		2	0,00148	c	M	1, 3
199	ARECACEAE	*Ptychosperma elegans* (R.Br.) Blume			1	0,00074	t	Oc	19
200	ARECACEAE	*Roystonea regia* (Kunth) O.F. Cook	xan(YU)	Palma real	2	0,00148	t	M	3, 9
201	ARECACEAE	*Sabal mauritiiformis* (H. Wendt ex H. Karst) Griseb. &Wendt.	xani otiot(YU)	Hoja de Guano, Palma de Guano	1	0,00074	s	M	9
202	ARECACEAE	*Sabal mexicana* Mart.	xan, xani otiot, xlechento(YU)	Palma real, Palma redonda, Guano, Hoja de Guano	7	0,00520	t	M	9,12,17,18,28
203	ARECACEAE	*Sabal yapa* C. Wright ex Beccari 1,2	xa'an (YU, QR)	Guano, Palma de guano	7	0,00520	t	M	2,3,5,6,7,8
204	ARECACEAE	*Thrinax radiata* Lodd. ex Schult. & Schult.f.	chiit (YU, QR)		4	0,00297	h	M	2,5,11,12
205	ARISTOLOCHIACEAE	*Aristolochia maxima* Jacq.	xchawa'ic(YU)	Guaco	1	0,00074	c	M	9
206	ARISTOLOCHIACEAE	*Aristolochia orbicularis* Duchr.	ohob ilaal (HU)		1	0,00074	c	M	30
207	ARISTOLOCHIACEAE	*Aristolochia pentandra* Sessé & Moç.		Guaco	1	0,00074	c	M	13
208	ARISTOLOCHIACEAE	*Aristolochia ringens* Vahl.			1	0,00074	c	CSA	2
209	ARISTOLOCHIACEAE	*Aristolochia styoglossa* Pfeifer		Tlacopacle	1	0,00074	c	M	23

210	ARISTOLOCHIACEAE	*Aristolochia taliscana* Hook. & Arn.		Lacopaile	1	0,00074	c	M	31
211	ASCLEPIADACEAE	*Asclepias angustiflolia* Schweig.			1	0,00074	h	M	19
212	ASCLEPIADACEAE	*Asclepias curassavica* L.	zuchuy, tzcajal chu'momol (CHI), puunchiix wits (HU)	Flor de río, Mata caballo, Rompe muella, Monte, Chuzpugüis, Quiebra muelas, Soldadillo, Florecitos, Venenillo	12	0,00891	h	M	12,18,28,30,31
213	ASCLEPIADACEAE	*Asclepias glaucescens* Kunth.		Oreja de liebre, Catalina	2	0,00148	h	M	23
214	ASCLEPIADACEAE	*Ceropegia woodii* Sch.		Teléfono	1	0,00074	h	Af	20
215	ASCLEPIADACEAE	*Cryptostegia madagascariensis* Bojer ex Decne			2	0,00148	c	Af	2, 9
216	ASCLEPIADACEAE	*Gonolobus niger* (Cav.) R. Br.		Cahuayote	2	0,00148	c	M	28, 29
217	ASCLEPIADACEAE	*Hoya carnosa* (L) R. Br.		Rosa cerca	1	0,00074	c	As	29
218	ASPLENIACEAE	*Tectaria heracleifolia* (Willd.) L. M. Underw.	pesma (PUE)		1	0,00074	h	M	25
219	ASTERACEAE	*Acmella oppositifolia* (Lam.) R.K. Jansen	kanalnich (CHI)		1	0,00074	h	M	17
220	ASTERACEAE	*Ageratina muelleri* (Sch.Bip. ex Klatt) R.M.King & H.Rob	kanal Ok (CHI)		1	0,00074	h	M	17
221	ASTERACEAE	*Ageratina pichinchensis* (Kunth) R.M.King & H.Rob.			2	0,00148	h	M	17, 30
222	ASTERACEAE	*Alloispermum integrifolium* (DC.) Rob.	isbonchuch (CHI)		1	0,00074	h	M	17
223	ASTERACEAE	*Argyranthemun frutescens* L.		Margarita	1	0,00074	h	Eu	16
224	ASTERACEAE	*Artemisia absinthium* L.		Ajenjo	5	0,00371	h	Eu	16,23,24,25,29
225	ASTERACEAE	*Artemisia dracunculus* L.		Anis, Pericón	1	0,00074	h	M	9
226	ASTERACEAE	*Artemisia ludoviciana* Nutt.		Estafiate, Artemisia	2	0,00148	h	M	9, 17
227	ASTERACEAE	*Artemisia ludoviciana* ssp. *mexicana* (Willd.) Keck		Estafiate	8	0,00594	h	M	9,11,16,25,31
228	ASTERACEAE	*Artemisia vulgaris* L.	nich'te' (YU)		2	0,00148	h	M	9, 12
229	ASTERACEAE	*Aster novi-belgii* L.			1	0,00074	h	Eu	19
230	ASTERACEAE	*Baccharis conferta* Kunth		Chamizo	1	0,00074	s	M	18
231	ASTERACEAE	*Baccharis trinervis* (Lam.) Pers.	sakil vala xik (CHI), thintsiil (HU)	Hoja de Pescado	3	0,00223	h	M	17,18,30
232	ASTERACEAE	*Bidens odorata* Cav.	matas (CHI)	Mozote blanco, Zeta	3	0,00223	h	M	17,23,27
233	ASTERACEAE	*Bidens pilosa* L.	kelem (HU)	Mozote blanco, Margarita	4	0,00297	h	M	13,29,30,31
234	ASTERACEAE	*Bidens squarrosa* Kunth		Mozote de burro	2	0,00148	h	CSA	2, 29
235	ASTERACEAE	*Calea urticifolia* (Mill.) DC.		Hierba del perro, Tacote amarillo	4	0,00297	h	M	2, 16,19,31
236	ASTERACEAE	*Calendula officinalis* L.			1	0,00074	h	Eu	19
237	ASTERACEAE	*Calyptocarpus vialis* Less.			1	0,00074	h	M	29
238	ASTERACEAE	*Calyptocarpus wenlandii* Sch.-Bip.	xjovel (CHI)		1	0,00074	h	CSA	17
239	ASTERACEAE	*Centaurea pulcherrima* Willd.		Trompita de león, Dalia, Juana	1	0,00074	h	As	18
240	ASTERACEAE	*Chromolaena collina* (DC.) R.M.King & H.Rob	ehek witsiim (HU)		1	0,00074	s	M	30
241	ASTERACEAE	*Chromolaena odorata* (L.) R.M.King & H.Rob	cruzalob, tok'aban (YU, QR), krus tok' te' (HU)	Hierba de espanto	3	0,00223	s	M	3,11,30
242	ASTERACEAE	*Chrysanthemum maximum* L.		Magaritón blanco	1	0,00074	h	As	31
243	ASTERACEAE	*Chrysanthemum morifolium* Ramat.		Margaritas Campechana, Crisantema morada	5	0,00371	h	As	2,19,25,29,31
244	ASTERACEAE	*Chrysanthemum parthenium* (L.) Bernh.		Campechana, Santa María, Artamisa	4	0,00297	h	Eu	9,19,22,31
245	ASTERACEAE	*Cichorium intybus* L.		Chicoria	1	0,00074	h	NK	16
246	ASTERACEAE	*Conyza coronopifolia* Kunth	sakpat (CHI)		1	0,00074	h	M	17
247	ASTERACEAE	*Cosmos sulphureus* Cav.		Escobilla	1	0,00074	h	M	23
248	ASTERACEAE	*Critonia aromatisans* (DC.) R.M.King & H.Rob.			1	0,00074	h	M	8
249	ASTERACEAE	*Critonia quadrangularis* (DC.) R.M.King & H.Rob.		Lengua de vaca	1	0,00074	s	M	18
250	ASTERACEAE	*Dahlia imperialis* Roezlex-Ortgies	cho'lib (CHI)		2	0,00148	s	M	17, 31
251	ASTERACEAE	*Dahlia pinnata* Cav.		Dahlia	7	0,00520	h	M	2,9,19,25,27
252	ASTERACEAE	*Delilia biflora* (L.) DC.			1	0,00074	h	M	2
253	ASTERACEAE	*Dendrothema* x *grandiflorum*		Crisantemo	1	0,00074	h	As	16

254	ASTERACEAE	*Dimorphoteca pluvialis* (L.) Moench			1	0,00074	h	Af	19
255	ASTERACEAE	*Erechtites hieracifolia* (L.) Raf.	malil koy (HU)		1	0,00074	h	M	30
256	ASTERACEAE	*Erigeron speciosus* DC.			1	0,00074	h	M	19
257	ASTERACEAE	*Fleischmannia arguta* (Kunth) B.L. Rob.		Pastilleja	1	0,00074	h	M	23
258	ASTERACEAE	*Gazania rigens* (L.) Gaertn.		Margaritón Amarillo	1	0,00074	h	Af	31
259	ASTERACEAE	*Gnaphalium americanum* Miller	maconchic(CH)	Gordolobo	2	0,00148	h	M	16, 17
260	ASTERACEAE	*Grindelia inuloides* Willd.			1	0,00074	h	M	19
261	ASTERACEAE	*Gynura aurantiaca* (Bl.) DC.		Terciopelo	1	0,00074	h	As	31
262	ASTERACEAE	*Helenium quadridentatum* Labill.		Escoba de pulga	1	0,00074	h	M	29
263	ASTERACEAE	*Helianthus annuus* L.	hirasool (HU)	Girasol	3	0,00223	h	M	16,22,30
264	ASTERACEAE	*Helichrysum bracteatum* (Vent.) Andr.		Inmortal	1	0,00074	h	As	31
265	ASTERACEAE	*Heterotheca inuloides* Cass.		Arnica	1	0,00074	h	M	31
266	ASTERACEAE	*Isocarpha oppositifolia* var. *achyranthes* (DC.) Keil & Stuessy			1	0,00074	h	M	2
267	ASTERACEAE	*Lactuca sativa* L.	kulix(CH)	Lechuga	3	0,00223	h	As	9,17,19
268	ASTERACEAE	*Matricaria recutita* L.		Manzanilla	2	0,00148	h	Eu	16, 17
269	ASTERACEAE	*Melampodium divaricatum* (L. Rich. ex Pers.) DC.	wal oyo' (HU)	Acahual Amarillo	3	0,00223	h	M	3,27,30
270	ASTERACEAE	*Melanthera nivea* (L.) Small			1	0,00074	h	M	2
271	ASTERACEAE	*Montanoa atriplicifolia* (Pers.) Schultz Bip.			1	0,00074	c	M	6
272	ASTERACEAE	*Montanoa grandiflora* Alaman ex DC.	tlapaneca (GUE)	Teresita, Cuernavaca, Tacote de jardín	10	0,00742	s	M	3,7,9,11,29
273	ASTERACEAE	*Montanoa speciosa* DC.		Cuilote	1	0,00074	s	M	23
274	ASTERACEAE	*Parthenium hysterophorus* L.		Chuchoyate, Altaniza	5	0,00371	h	M	3,11,16,17,29
275	ASTERACEAE	*Pluchea odorata* (L.) Cass.	sitit (CHI), chalche' (YU)	Santamaría, Hoja de cihuapatl	7	0,00520	s	M	3,6,7,17,29
276	ASTERACEAE	*Pluchea salicifolia* (Mill) S.F. Blake		Cachanque	1	0,00074	s	M	21
277	ASTERACEAE	*Pluchea symphytifolia* (Mill.) Gillis	chalché (QR)	Santa Maria	1	0,00074	s	M	11
278	ASTERACEAE	*Porophyllum calcicola* B.L. Rob & Greenm.		Pipizca	1	0,00074	h	M	23
279	ASTERACEAE	*Porophyllum ruderale* (Jacq.) Cass	mithith (HU)	Quelite	2	0,00148	h	M	21, 30
280	ASTERACEAE	*Porophyllum seemanii* Schultz Bip.			1	0,00074	h	M	19
281	ASTERACEAE	*Porophyllum tagetoides* Kunth	xka papalo (OA)	Barbas de chivo	2	0,00148	h	M	23
282	ASTERACEAE	*Pseudelephantopus spicatus* (B.Juss. ex Aubl.) Rohr ex Gleason		Chicoria	1	0,00074	h	M	31
283	ASTERACEAE	*Pseudognaphalium semiamplexicaule* (DC.) Anderb.		Gordolobo	1	0,00074	h	M	31
284	ASTERACEAE	*Sanvitalia procumbens* Lam.		Ojo de gallo	2	0,00148	h	M	3, 23
285	ASTERACEAE	*Schkuhria pinnata* (Lam.) Kuntze		Escoba verde	1	0,00074	h	CSA	23
286	ASTERACEAE	*Sclerocarpus uniserialis* (Hook.) Bentham var. *frutescens* (Brandeg.) Feddema	maan wits (HU)	Mozote	2	0,00148	h	M	29, 30
287	ASTERACEAE	*Senecio chenopodioides* Kunth			1	0,00074	h	M	25
288	ASTERACEAE	*Senecio confusus* Britt.		Llamarada de jardín	1	0,00074	h	M	31
289	ASTERACEAE	*Senecio praecox* var. *morelensis (Miranda) McVaugh*		Candelerillo	1	0,00074	t	M	23
290	ASTERACEAE	*Senecio salignus* DC.		Azumiate, Jarilla	3	0,00223	s	CSA	19,22,23
291	ASTERACEAE	*Simsia lagascaeformis* DC.		Chinámil	1	0,00074	h	M	23
292	ASTERACEAE	*Smallanthus maculatus* var. *maculatus* (Cav.) H.Rob.	mili' kw'alaal (HU)		1	0,00074	h	M	30
293	ASTERACEAE	*Sonchus oleraceus* L.	tsepenon (CHI)	Lechuga cimarrona, Colmillo de León	3	0,00223	h	NK	31,17,29
294	ASTERACEAE	*Tagetes erecta* Willd.	xtinjol, Potzdem nichim (CHI), xpuhuhuk (QR), cempoalxochitl (GUE, PUE), santoorom wits	Flor de muerto, Cempatzuchil, Musa, Tiscoque	18	0,01336	h	M	11,13,16,22,23

			(HU), shuko (OA)						
295	ASTERACEAE	*Tagetes filifolia* (Lag.)	tsits womol (CHI)	Anisillo, Anis	3	0,00223	h	M	16,17,31
296	ASTERACEAE	*Tagetes lucida* Cav.		Pericón	4	0,00297	h	M	16, 23,25,29
297	ASTERACEAE	*Tagetes micrantha* Cav.			1	0,00074	h	M	19
298	ASTERACEAE	*Tagetes nelsonii* Greenman	tsits chauk (CHI)		1	0,00074	h	M	17
299	ASTERACEAE	*Tagetes patula* L.		Clemolitos	2	0,00148	h	M	2, 23
300	ASTERACEAE	*Tanacetum parthenium* (L.) Sch.Bip.		Santa Maria	1	0,00074	h	Eu	26
301	ASTERACEAE	*Taraxacum officinale* Weber		Diente de león	1	0,00074	h	Eu	13
302	ASTERACEAE	*Tithonia diversifolia* (Hamsley) A. Gray	cha'pimel, chaksum'um (QR)	Arnica, Tajonal, Cuernavaca amarilla	7	0,00520	h	M	3,9,11,16,29
303	ASTERACEAE	*Tithonia rotundifolia* (Mill.) S.F.Blake		Arnica cimarrona, Flor grande	2	0,00148	h	M	16, 19
304	ASTERACEAE	*Tithonia tubiformis* (Jacq.) Cass.		Acagual, Girasol amarillo	2	0,00148	h	M	21, 23
305	ASTERACEAE	*Tridax mexicana* Powell		Pata de buey	1	0,00074	h	M	23
306	ASTERACEAE	*Trixis inula* Crantz	pub kw'ahiil (HU)	Gobernadora, Arnica	3	0,00223	h	M	2, 29,30
307	ASTERACEAE	*Verbesina crocata* (Cav.) Less.		Capitaneja	2	0,00148	c	M	23, 24
308	ASTERACEAE	*Verbesina persicifolia* DC.	witsiim (HU)	Guichin, Huichín	4	0,00297	s	M	25,27,29,30
309	ASTERACEAE	*Viguiera dentata* (Cav.) Spreng	thapil bichim (HU)		1	0,00074	h	M	30
310	ASTERACEAE	*Zinnia angustifolia* Kunth			1	0,00074	h	M	19
311	ASTERACEAE	*Zinnia elegans* Jacq.		Mercadela, Bella, Carolina, Virginia, Molinillo, Zinia	7	0,00520	h	M	2,7,17,25,29
312	ASTERACEAE	*Zinnia peruviana* (L.) L.		Carolina	1	0,00074	h	CSA	16
313	ASTERACEAE	*Zinnia violacea* Car.		Nymphia, Carolina, Sanmiguelito, Virginia, San Nicolás	3	0,00223	h	M	9, 21,27
314	BALSAMINACEAE	*Impatiens balsamina* L.		Balsamina, Melamelindro, Chinita, Belén, Chinos	9	0,00668	h	As	2,3,7,9,11,16
315	BALSAMINACEAE	*Impatiens glandulifera* Royle			1	0,00074	h	As	19
316	BALSAMINACEAE	*Impatiens walleriana* Hook. f.		Chino de sombra, Gloria, Gachupina, Belen siempre dando	5	0,00371	h	Af	2,16,25,29,31
317	BASELLACEAE	*Anredera vesicaria* (Lam.) C.F.Gaertn.	ix tuyuum (HU)	Sacacil	1	0,00074	c	M	30
318	BASELLACEAE	*Basella alba* L.			1	0,00074	c	Af	12
319	BEGONIACEAE	*Begonia* × *albopicta* W.Bull		Ala de ángel	1	0,00074	h	CSA	25
320	BEGONIACEAE	*Begonia acutifolia* Jacq.		Ala de ángel	1	0,00074	h	CSA	31
321	BEGONIACEAE	*Begonia cucullata* var. *hookeri* (A.DC.) L.B.Sm. & B.G.Schub.		Begonia doble	1	0,00074	h	CSA	31
322	BEGONIACEAE	*Begonia cucullata* Willd.		Encerada	1	0,00074	h	CSA	25
323	BEGONIACEAE	*Begonia fischeri* Schrank			1	0,00074	h	M	19
324	BEGONIACEAE	*Begonia gracilis* Kunth			1	0,00074	h	M	2
325	BEGONIACEAE	*Begonia heracleifolia* Schletch. & Cham.		Begonia	2	0,00148	h	M	25, 29
326	BEGONIACEAE	*Begonia incarnata* Link & Otto		Ala de ángel	1	0,00074	s	M	29
327	BEGONIACEAE	*Begonia lindleyana* Walp.			1	0,00074	h	M	9
328	BEGONIACEAE	*Begonia maculata* Raddi		Ala de ángel	1	0,00074	h	CSA	25
329	BEGONIACEAE	*Begonia nelumbiifolia* Schlecht. & Cham.	xocoyolli (PUE)	Corazón agrio	2	0,00148	h	M	25, 29
330	BEGONIACEAE	*Begonia rex* Putz		Mano de león	1	0,00074	h	As	9
331	BEGONIACEAE	*Begonia sanguinea* Raddi			1	0,00074	h	CSA	31
332	BETULACEAE	*Alnus acuminata* Kunth			1	0,00074	t	M	19
333	BIGNONIACEAE	*Amphilophium paniculatum* (L.) Kunth			1	0,00074	c	M	2
334	BIGNONIACEAE	*Astianthus viminalis* (Kunth) Baill.		Axúchil	1	0,00074	t	M	23
335	BIGNONIACEAE	*Bignonia corymbosa* (Vent.) L.G.Lohmann			1	0,00074	h	CSA	19
336	BIGNONIACEAE	*Catalpa ovata* G. Don		Plátano izote	1	0,00074	t	As	18
337	BIGNONIACEAE	*Crescentia alata* Kunth		Bule, Cuatecomate, Kuhteskomatl, Jicara	4	0,00297	t	M	18,21,22,23
338	BIGNONIACEAE	*Crescentia cujete* L.	tsima, stsimajite, lu'uch (YU, QR), waas (YU), sihuacal (PUE), ya nisú (OA)	Jícara, Jicaral, Güiro, Jícaro, Guaje, Jicara cuchara	18	0,01336	t	M	3,4,7,18,28
339	BIGNONIACEAE	*Fridericia floribunda* (Kunth) L.G.Lohmann			2	0,00148	c	M	2, 12

340	BIGNONIACEAE	*Fridericia podopogon* (DC.) L.G.Lohmann			1	0,00074	c	M	2
341	BIGNONIACEAE	*Godmania aesculifolia* (Kaith) Standl.		Cacho Borrego	2	0,00148	t	M	19, 21
342	BIGNONIACEAE	*Handroanthus chrysanthus* (Jacq.) S.O.Grose		Roble amarillo, Roble	1	0,00074	t	M	9
343	BIGNONIACEAE	*Handroanthus guayacan* (Seem.) S.O.Grose		Guayacan	1	0,00074	t	M	13
344	BIGNONIACEAE	*Jacaranda mimosifolia* D. Don		Jacaranda, Tabachín azul	4	0,00297	t	CSA	19,22,23,31
345	BIGNONIACEAE	*Mansoa hymenaea* (DC.)A. Gentry		Ajillo, Bejuco de ajo o ajillo	2	0,00148	c	M	28, 29
346	BIGNONIACEAE	*Parmentiera aculeata* (Kunth)	kaat (YU, QR), x-kat, kat (YU), cuaxilot (PUE), tsoote' (HU)	Guajilote, Monte, Chote, Pepino de arbol, Pepino kat, Cuajilote	16	0,01188	t	M	4,6,7,11,22,23
347	BIGNONIACEAE	*Parmentiera millspaughiana* L.O.W.	kat kut (YU)		2	0,00148	t	M	7, 2
348	BIGNONIACEAE	*Pyrostegia venusta* (Ker- Gawler) Miers.			2	0,00148	c	CSA	18, 19
349	BIGNONIACEAE	*Spathodea campanulata* P. Beauv.		Tulipán africano	5	0,00371	t	Af	4,5,7,9,19
350	BIGNONIACEAE	*Spathodea campanulata* P.Beauv.			1	0,00074	t	Af	19
351	BIGNONIACEAE	*Stizophyllum riparium* (Kunth) Sandwith			2	0,00148	c	M	12, 2
352	BIGNONIACEAE	*Tabebuia heterophylla* (DC.) Britton	ya unxka (OA)	Roble	1	0,00074	t	CSA	20
353	BIGNONIACEAE	*Tabebuia rosea* (Bertol.) Bertero ex A.DC.	mak'ulis(YU)	Palo rosa, Roble, Maculis, Fresno, Matilisguate, Amapa, Macuil	11	0,00817	t	M	8,16,18,19,31
354	BIGNONIACEAE	*Tecoma stans* (L.) Juss.	Xkanlol (YU)	San Francisco, Tronadora, Estoncle, Listoncle, San Pedro	10	0,00742	s	M	6,7,9,16,22
355	BIXACEAE	*Bixa orellana* L.	k'uxub (YU), jo'ox, kiwi (QR), Ya toba'a	Annato, Achiote	16	0,01188	t	M	6,9,10,15,18
356	BOMBACACEAE	*Bernoullia flammea* Oliv.			1	0,00074	t	M	16
357	BOMBACACEAE	*Ceiba aesculifolia* (Kunth) Britten & Baker	yaxte', yixte', yaxché (QR)	Seiba, Mosmot, Pochote	6	0,00445	t	M	2, 6, 9, 11, 16
358	BOMBACACEAE	*Ceiba pentandra* (L.) Gaertn.	chix te' (YU), pochot (PUE), ya xunindu'u (OA)	Ceiba, Seiba (espina), Pochota	9	0,00668	t	M	8, 9, 11, 26, 28
359	BOMBACACEAE	*Pachira aquatica* Aubl.	xiloxochitl (PUE)	Zapote reventador	1	0,00074	t	M	25
360	BOMBACACEAE	*Pseudobombax ellipticum* Kunth	k'uyche (YU), xiloxochitl (PUE)	Amapola, Rosal, Flor de jilote	6	0,00445	t	M	2, 4, 6, 7, 23
361	BOMBACACEAE	*Quararibea funebris* (La Llave) Vischer		Molinillo	2	0,00148	t	M	13, 26
362	BORAGINACEAE	*Borago officinalis* L.		Borraja	1	0,00074	h	Eu	22
363	BORAGINACEAE	*Bourreria pulchra* Millsp.	bakalche (YU)	Bacache	4	0,00297	s	M	2,4,5,7
364	BORAGINACEAE	*Cordia megalantha* S.F. Blake			1	0,00074	h	M	2
365	BORAGINACEAE	*Cordia bullata* (L.) Roem.& Schult.	xop che' (YU)		2	0,00148	t	M	4, 7
366	BORAGINACEAE	*Cordia curassavica* (Jacq.) Roem & Schum.			1	0,00074	h	M	2
367	BORAGINACEAE	*Cordia dodecandra* DC.	k'oopte (YU, QR), chak k'opté (YU)	Ciricote, Cupapé	11	0,00817	t	M	3,4,6,7,8
368	BORAGINACEAE	*Cordia gerascanthus* L.			2	0,00148	s	CSA	3, 6
369	BORAGINACEAE	*Cordia morelosana* Standl.		Nacahuite	1	0,00074	t	M	23
370	BORAGINACEAE	*Cordia spinescens* L.		Vara prieta	1	0,00074	s	M	26
371	BORAGINACEAE	*Cordia stellifera* I.M. Johnst.			1	0,00074	h	CSA	19
372	BORAGINACEAE	*Ehretia anacua* (Berl.)I. M. Johnst.	thathup (HU)	Manzanita	1	0,00074	t	M	30
373	BORAGINACEAE	*Ehretia tinifolia* A.D.C.	beek bek (YU)	Roble, Palo prieto, Mandibo	12	0,00891	t	M	2,3,4,7,23
374	BORAGINACEAE	*Heliotropium angiospermum* Murray	thiniy ts' ohool (HU)	Alacrancillo	4	0,00297	h	M	2,23,19,30
375	BORAGINACEAE	*Heliotropium fruticosum* L.		Tromentil	1	0,00074	h	CSA	16
376	BORAGINACEAE	*Heliotropium indicum* L.			1	0,00074	h	As	29
377	BORAGINACEAE	*Lithodora postrata* (Loiseleur) Grisebach			1	0,00074	h	Af	18
378	BORANGINACEAE	*Nama jamaicense* L.		Parietaria	1	0,00074	c	CSA	23
379	BORAGINACEAE	*Tournefortia glabra* L.		Palo de agua	1	0,00074	h	M	26
380	BORAGINACEAE	*Tournefortia hartwegiana* Steud.		Hierba rasposa, Tlachichinole	1	0,00074	s	M	23
381	BORAGINACEAE	*Tournefortia hirsutissima* L.		Nigüilla	1	0,00074	s	CSA	29
382	BORAGINACEAE	*Tournefortia volubilis* L.			1	0,00074	h	M	2
383	BRASSICACEAE	*Brassica juncea* (L.) Czern	kulix, xculix, pimel (CH)	Mostaza	2	0,00148	h	As	9, 17
384	BRASSICACEAE	*Brassica oleracea* L.		Lechuguilla, Coles, Repollo	3	0,00223	h	Eu	3, 11,29
385	BRASSICACEAE	*Erysimum cheiranthoides* L.		Chatilla, Periguite, Paraguite	1	0,00074	h	Eu	18

386	BRASSICACEAE	*Lepidium oblongum* Small.	tz'il'lel (CH)	Manzanilla cimarrona	1	0,00074	h	M	17
387	BRASSICACEAE	*Lepidium virginicum* L.		Lentejilla	2	0,00148	h	M	29, 31
388	BRASSICACEAE	*Nasturtium officinale* R. Br.		Berro	1	0,00074	h	Eu	31
389	BRASSICACEAE	*Raphanus sativus* L.		Rábano	9	0,00668	h	Eu	1,2,12,16,25
390	BROMELIACEAE	*Aechmea bracteata* (Sw.) Grisch	x- cinta ku'uk (YU)	Maguey morado	1	0,00074	e	M	1
391	BROMELIACEAE	*Ananas comosus* (L.) Merr.	matza (PUE), chabcham wits (HU), ningunsen (OA)	Piña	16	0,01188	h	CSA	1,6,9,18,20
392	BROMELIACEAE	*Bromelia karatas* L.			1	0,00074	h	M	6
393	BROMELIACEAE	*Bromelia pinguin* L.	t´utspajch´(Tila), xch´ix pajch, Ch'om (YU)	Pita, Pinuela	4	0,00297	h	M	7,8,9,25
394	BROMELIACEAE	*Catopsis sessiliflora* (Ruiz & Pav) Mez		Magueycito, Pipinita	1	0,00074	e	M	25
395	BROMELIACEAE	*Tillandsia brachycaulus* Schlecht	chuk (YU)		1	0,00074	e	M	7
396	BROMELIACEAE	*Tillandsia recurvata* L.		Gallitos	2	0,00148	e	M	23, 31
397	BROMELIACEAE	*Tillandsia schiedeana* Steud.		Gallitos	1	0,00074	e	M	23
398	BROMELIACEAE	*Tillandsia usneoides* L.		Heno	1	0,00074	e	M	16
399	BURSERACEAE	*Bursera bicolor* (Willd. & Schlecht.) Engler		Ticumaca	1	0,00074	t	M	23
400	BURSERACEAE	*Bursera bipinnata* (Moç. & Sessé ex DC.) Engl.		Copal, Copal chino	2	0,00148	t	M	16, 23
401	BURSERACEAE	*Bursera copallifera* (Sesse & Moc. Ex. DC.) Engler		Copal manso	1	0,00074	t	M	23
402	BURSERACEAE	*Bursera denticulata* McVaugh & Rzed.		Papelillo	1	0,00074	t	M	31
403	BURSERACEAE	*Bursera fagaroides* Engl.		Cuasical, Cuajiote	2	0,00148	t	M	22, 23
404	BURSERACEAE	*Bursera grandiflora* (Schl.) Engl.		Palo mulato	1	0,00074	t	M	23
405	BURSERACEAE	*Bursera graveolens* Kunth Triana & Planch.		Alzafraz	2	0,00148	t	M	28, 29
406	BURSERACEAE	*Bursera linanoe* (La Llave) Rzed.		Olinolué	1	0,00074	t	M	23
407	BURSERACEAE	*Bursera pennicilata* (Sesse et Moc) Engl.			1	0,00074	t	M	2
408	BURSERACEAE	*Bursera schlechtendalii* Engl.		Aceitillo	1	0,00074	t	M	23
409	BURSERACEAE	*Bursera simaruba* (L.) Sarg.	chΛcajl, chΛclunte´, Chaka', Chakaj (YU), tsaka (HU)	Palo mulato, Chaca, Mulato, Chacá	21	0,01559	t	M	2,6,9,12,25
410	BURSERACEAE	*Bursera submoniliformis* Engl.		Copal	1	0,00074	t	M	22
411	BURSERACEAE	*Protium copal* (Scletch & Cham.) Engl.	copalhijiac (PUE)	Copal	3	0,00223	t	M	28, 29
412	CACTACEAE	*Acanthocereus tetragonus* (L.) Hummelinck		Cactus, Cruzetta	3	0,00223	c	M	6, 9, 29
413	CACTACEAE	*Epiphyllum phyllanthus* (L.) Haw.		Moquillo	1	0,00074	h	M	9
414	CACTACEAE	*Hylocereus undatus* (Haw.) Britt. & Rose	wob, nijin, chak-ob (QR)	Pitaya, Pitahaya	12	0,00891	e	M	6, 9, 10,12,28
415	CACTACEAE	*Myrtillocactus geometrizans* (C. Mart.) Console		Garambullo	1	0,00074	h	M	23
416	CACTACEAE	*Nopalea cochenillifera* (L.) Salm-Dyck	pak'ak' (HU)	Nopal	3	0,00223	s	M	13, 29, 30
417	CACTACEAE	*Nopalea gaumeri* Britton & Rose	tsakam(QR)	Nopal	2	0,00148	h	M	2, 11
418	CACTACEAE	*Opuntia ficus-indica* (L.) Miller		Tuna, Nopal con tuna, Nopal manso	5	0,00371	s	M	9, 14, 16, 21, 31
419	CACTACEAE	*Opuntia auberi* Pfeiff.		Nopal	2	0,00148	s	M	18, 25
420	CACTACEAE	*Opuntia decumbens* Salm- Dyck		Tuna de Mayo	1	0,00074	s	M	23
421	CACTACEAE	*Opuntia microdasys* (Lehm.) Pfeiff.		Nopalillo	1	0,00074	h	M	31
422	CACTACEAE	*Opuntia stricta* (Haw.) Haw.		Nopal	1	0,00074	h	M	3
423	CACTACEAE	*Opuntia velutina* F.A.C. Weber		Nopal	1	0,00074	h	M	23
424	CACTACEAE	*Rhipsalis baccifer*a (J. Miller) Stearn	nigüilla (PUE)	Niuas, Lluvia	3	0,00223	e	M	25, 28, 29
425	CACTACEAE	*Selenicereus spinulosus* (DC.) Britt. & Rose			1	0,00074	c	M	12
426	CACTACEAE	*Stenocereus pruinosus* (Otto ex Pfeiff.) Buxb.		Cactus	1	0,00074	s	M	3
427	CACTACEAE	*Stenocereus stellatus* (Pfeiffer) Riccob.		Pitayo	2	0,00148	s	M	23
428	CAESALPINIACEAE	*Bauhinia chapulhuacania* Wunderlin		Pata de vaca	1	0,00074	t	M	25
429	CAESALPINIACEAE	*Bauhinia divaricata* L.	ts'ulub took (YU), tsurontok (QR)	Pata de vaca, Orquidea, Pata de cabra	11	0,00817	t	NK	3, 4, 5 6, 28
430	CAESALPINIACEAE	*Bauhinia variegata* L.			2	0,00148	t	As	6, 8
431	CAESALPINIACEAE	*Caesalpinia gaumeri* Greenm.	kitimche (YU), kitinche (YU), kitamché (QR)		5	0,00371	t	M	2, 3, 4 7, 11

432	CAESALPINIACEAE	*Caesalpinia mollis* (Kunth) Spreng.	chekél(YU)	Chekél	1	0,00074	t	M	9
433	CAESALPINIACEAE	*Caesalpinia pulcherrima* (L.) Schwartz	chak sikin (YU), naxú tsinha (OA)	Caballero, San José, Camarón, Espuela, Barbona, Flor de camarón	12	0,00891	s	M	6, 9, 23, 27, 29
434	CAESALPINIACEAE	*Caesalpinia vesicaria* L.	kaan pokol kuum (YU)		2	0,00148	t	M	6, 7
435	CAESALPINIACEAE	*Caesalpinia yucatanensis* Greenm.	kaan pokol kuum (YU)		2	0,00148	s	M	4, 2
436	CAESALPINIACEAE	*Cassia fistula* L.		Lluvia de Oro	1	0,00074	t	As	9
437	CAESALPINIACEAE	*Chamaecrista glandulosa* (L.) Greene			1	0,00074	t	M	2
438	CAESALPINIACEAE	*Conzattia multiflora* (Robinson) Standl.		Guayacán	1	0,00074	t	M	23
439	CAESALPINICEAE	*Dialium guianense* (Aubl.) Sandw.		Paqui	1	0,00074	h	M	26
440	CAESALPINIACEAE	*Haematoxylum brasiletto* H.Karst.		Palo de Brasil	1	0,00074	t	M	23
441	CAESALPINIACEAE	*Haematoxylum campechianum* L.			1	0,00074	t	M	8
442	CAESALPINIACEAE	*Parkinsonia aculeata* L.		Retama	1	0,00074	t	M	23
443	CAESALPINIACEAE	*Poeppigia procera* C.Presl		Guaje	1	0,00074	t	M	18
444	CAESALPINIACEAE	*Senna alata* (L.) Roxb.	te', kanlol (YU)	Secreto, Coqueta	6	0,00445	t	M	5, 7, 9 19, 25
445	CAESALPINIACEAE	*Senna atomaria* (L.) Roxburgh	tujache', tu jabín (YU)		5	0,00371	t	M	2, 4, 5, 7, 19
446	CAESALPINIACEAE	*Senna fruticosa* (Mill.) H.S.Irwin & Barneby		Quelite	1	0,00074	t	Oc	9
447	CAESALPINIACEAE	*Senna occidentalis* (L.) Link	Chenec té(YU)	Guajillo	2	0,00148	s	CSA	17, 23
448	CAESALPINIACEAE	*Senna racemosa* (Mill.) Irwin & Barneby	kanlol (YU)		3	0,00223	s	M	2, 5, 6
449	CAESALPINIACEAE	*Senna skinneri* (Benth.) Irwin & Barneby		Patsipocá, Paraca	2	0,00148	t	M	16, 23
450	CAESALPINIACEAE	*Senna wislizenii* (A.Gray) H.S.Irwin & Barneby		Palo chino	1	0,00074	s	M	23
451	CAESALPINIACEAE	*Swartzia cubensis* (Britton & Wilson) Standl.		Katalox	1	0,00074	t	M	9
452	CANNACEAE	*Canna glauca* L.			1	0,00074	h	M	29
453	CANNACEAE	*Canna indica* L.	i shuat (PUE)	Bandera, Chilalaga, Papatla roja, Papatla, Papatlilla	7	0,00520	h	M	2,3,9,13,27
454	CANNACEAE	*Canna* x *generalis* Bailey		Papatla de maceta, Platanillo	4	0,00297	h	NK	1,7,27,31
455	CAPPARIDACEAE	*Cleome lutea* Hook.			1	0,00074	h	M	19
456	CAPPARIDACEAE	*Cleome pilos*a Benth.		Alcachofa	2	0,00148	h	M	16, 17
457	CAPPARIDACEAE	*Cleome spinosa* Jacq.		Volantín	1	0,00074	h	CSA	31
458	CAPPARIDACEAE	*Cleoserrata speciosa* (Raf.) Iltis	tenzoxochitl(PUE)	Barbona, Flor de bigote, Hoja de Zorillo	3	0,00223	h	M	2, 20, 25
459	CAPPARIDACEAE	*Crataeva tapia* L.	kolok ma'ax (YU)		3	0,00223	t	M	4, 6, 7
460	CAPPARIDACEAE	*Forchhammeria trifoliata* Radlk.		Tres Marias	2	0,00148	t	M	6, 11
461	CAPRIFOLIACEAE	*Sambucus canadensis* L.			1	0,00074	s	NA	19
462	CAPRIFOLIACEAE	*Sambucus mexicana* Presl.	chijité (CHI), ya naxú (OA)	Sauco	11	0,00817	s	M	9,13,16,17,27
463	CAPRIFOLIACEAE	*Sambucus pubens* Michx.			1	0,00074	s	NA	19
464	CAPRIFOLIACEAE	*Sambucus racemosa* L.			1	0,00074	s	Eu	19
465	CARICACEAE	*Carica papaya* L.	puut, put, uchunte', chich puut, put ch'iich (YU), utsun (HU), nanha kinha (OA)	Papaya, Papaya roja, Papaya dulce	28	0,02079	t	M	1,3,7,12,18
466	CARICACEAE	*Jacaratia mexicana* DC.	k'uunche, kuumche (YU), naxu nhana (OA)	Bonete, Papaya criolla	6	0,00445	t	M	2,4,7,20,23
467	CARICACEAE	*Vasconcellea cauliflora* (Jacq.) A.DC.		Papaya algodoncillo, Papaya bola	1	0,00074	t	CSA	25
468	CARYOPHYLLACEAE	*Dianthus barbatus* L.		Clavelina	1	0,00074	h	NK	27
469	CARYOPHYLLACEAE	*Dianthus carthusianorum* L.		Pensamiento	1	0,00074	h	Eu	25
470	CARYOPHYLLACEAE	*Dianthus caryophyllus* L.		Clavel, Clavel blanco	4	0,00297	h	Eu	13,16,20,25
471	CARYOPHYLLACEAE	*Dianthus chinensis* L.			1	0,00074	h	As	2
472	CARYOPHYLLACEAE	*Dianthus deltoides* L.		Clavelito	1	0,00074	h	Eu	31
473	CARYOPHYLLACEAE	*Silene coronaria* (Desr.) Clairv. ex Rchb.		Sangre de criado	1	0,00074	h	N	20
474	CASUARINACEAE	*Casuarina cunninghamiana* M.	ya pino (OA)	Pino	1	0,00074	t	Eu	20
475	CASUARINACEAE	*Casuarina equisetifolia* L.		Casuarina, Pino	3	0,00223	t	Oc	16, 22, 27
476	CECROPIACEAE	*Cecropia obtusifoli*a Bertol.		Chancarro, Guarumbo	3	0,00223	t	M	13,19,26

477	CECROPIACEAE	*Cecropia peltata* L.	c'oloc', ya stuya (OA)	Guarumbo, Chancarro, Monte	2	0,00148	t	M	9, 20
478	CELASTRACEAE	*Crossopetalum gaumeri* (Loes.) Lundell	anal ché (QR)		2	0,00148	s	M	2, 11
479	CELASTRACEAE	*Salacia eliptica* (Mart.) G. Don		Gogo dulce, Guago	1	0,00074	t	M	14
480	CHENOPODIACEAE	*Chenopodium album* L.			1	0,00074	h	Eu	19
481	CHENOPODIACEAE	*Chenopodium ambrosioides* L.	koko'on, kukum (QR), tihtsan (HU)	Epazote	17	0,01262	h	M	1,9,18,27,29
482	CHENOPODIACEAE	*Chenopodium graveolens* Laq.	nedju (OA)	Epazote	1	0,00074	h	M	20
483	CHENOPODIACEAE	*Dysphania ambrosioides* (L.) Mosyakin & Clemants		Epazote	3	0,00223	h	M	19, 21, 23
484	CHRYSOBALNANCEAE	*Chrysobalanus icaco* L.	cocoplum(PUE)	Icaco	3	0,00223	s	M	15, 19, 21
485	CHRYSOBALNANCEAE	*Couepia polyandra* (Kunth) Rose	olopio (PUE)	Olote de pollo, Uspi	3	0,00223	t	M	14, 19, 25
486	CHRYSOBALNANCEAE	*Moquilea platypus* Hemsl.	tzontzapot (PUE), yana chascha (OA)	Zapote cabello, Caca de niño	4	0,00297	t	M	19, 20, 25, 28
487	CLETHRACEAE	*Clethra mexicana* DC.		Jicarrilo	1	0,00074	h	M	31
488	CLUSIACEAE	*Clusia flava* Jacq.			1	0,00074	t	M	6
489	CLUSIACEAE	*Garcinia intermedia* (Pittier) Hammel		Limoncillo	1	0,00074	t	CSA	26
490	CLUSIACEAE	*Mammea americana* L.		Zapote domingo, Zapote, Zapote Santo Domingo	6	0,00445	t	CSA	6,9,26,28,29
491	COCHLOSPERMACEAE	*Cochlospermum vitifolium* (Willd.) Spreng.	tonalxochitl (PUE)	Pochote, Flor de Abril, Flor de sol	3	0,00223	t	M	3, 22, 25
492	COMBRETACEAE	*Combretum indicum* (L.) DeFilipps			1	0,00074	s	As	19
493	COMBRETACEAE	*Terminalia catappa* L.	ya ntu (OA)	Almendro, Almendra	21	0,01559	t	NK	1,3,4,7,18
494	COMMELINACEAE	*Commelina coelestis* Willd.		Sanguino, Tripa de pollo	1	0,00074	h	As	21
495	COMMELINACEAE	*Commelina diffusa* Burm.			2	0,00148	h	As	24, 29
496	COMMELINACEAE	*Commelina erecta* L.	utek' (HU)	Siempre viva	2	0,00148	h	As	29, 30
497	COMMELINACEAE	*Dichorisandra mosaica* Linden ex K.Koch			1	0,00074	h	CSA	19
498	COMMELINACEAE	*Gibasis pellucida* (M. Martens & Galeotti) D.R. Hunt.		Siempre viva	1	0,00074	h	M	13
499	COMMELINACEAE	*Tinantia erecta* (Jacq.) Fenzl		Hierba de pollo	2	0,00148	h	M	25, 29
500	COMMELINACEAE	*Tradescantia fluminensis* Vell.		Unita	1	0,00074	h	CSA	31
501	COMMELINACEAE	*Tradescantia pallida* (Rose) D.R.Hunt, Kew Bull.		Suegra navegando, Sanguino morado	6	0,00445	h	M	2, 19, 21,25,31
502	COMMELINACEAE	*Tradescantia spathacea* (Sw.) Stearn		Varquilla, Magey morado, Magey rojo, Barquilla	6	0,00445	h	M	3, 8, 9, 28, 29
503	COMMELINACEAE	*Tradescantia zebrina* Bosse	ts'iwi' (YU)	Hierba del polla, Amor del hombre, Matalín, Matalín Morado, Moradilla, Chuy	5	0,00371	h	M	9, 16, 18, 25, 29
504	COMMELINACEAE	*Tradescantia zebrina* var. *zebrina* G. Don		Matalin, Matalin morado, Sinvergüenza	2	0,00148	h	M	25, 31
505	COMMELINACEAE	*Tripogandra serrulata* (Vahl) Handlos	Tzemani (CHI)		1	0,00074	h	M	17
506	CONVOLVULACEAE	*Dichondra argentea* Humb. & Bonpl. ex Willd.			1	0,00074	c	M	29
507	CONVOLVULACEAE	*Ipomoea batatas* (L.) Lam.	lis, is, ajkum (YU), sajalisak (CHI), ith (HU)	Camote	12	0,00891	c	M	3,8,14,28,29
508	CONVOLVULACEAE	*Ipomoea bracteat*a Cav.		Empanadita	1	0,00074	c	M	23
509	CONVOLVULACEAE	*Ipomoea dumosa* (Benth.) L.O. Williams	thuuyu' (HU)	Suyu	1	0,00074	c	M	30
510	CONVOLVULACEAE	*Ipomoea fistulosa* Mart. ex Choisy		Campanilla rosada, Quiebra plato	3	0,00223	c	M	7, 9, 27
511	CONVOLVULACEAE	*Ipomoea jalapa* (L.) Pursh.	yahwal (HU)		1	0,00074	c	M	30
512	CONVOLVULACEAE	*Ipomoea murucoides* Roem. & Schult.		Casahuate amarillo	1	0,00074	t	M	23
513	CONVOLVULACEAE	*Ipomoea pandurata* G. Mey.			1	0,00074	c	M	19
514	CONVOLVULACEAE	*Ipomoea purpurea* (L.) Roth.	chin ak' (CHI)		1	0,00074	c	M	17
515	CONVOLVULACEAE	*Ipomoea quamoclit* L.		Ecuela de venus, Manuelito, Clavelillo	2	0,00148	c	M	13, 25
516	CONVOLVULACEAE	*Ipomoea rubriflora* O'Donell		Campanita de jardín	1	0,00074	c	M	31
517	CONVOLVULACEAE	*Ipomoea tricolor* Cav.	ulumj'a(YU)	Camote blanco	1	0,00074	c	M	1
518	CONVOLVULACEAE	*Ipomoea tuxtlensis* H.D. House.			1	0,00074	c	M	2

519	CONVOLVULACEAE	*Ipomoea wolcottiana* Rose		Cacahuate prieto	1	0,00074	c	M	23
520	CONVOLVULACEAE	*Jaquemontia penthanta* (Jacq.) G. Don.			1	0,00074	c	M	2
521	CONVOLVULACEAE	*Merremia quinquefolia* (L.) Hallier	akan k' athaw (HU)		1	0,00074	c	M	30
522	CONVOLVULACEAE	*Operculina pinnatifida* (Kunth) O'Donell		Bejuco	1	0,00074	c	M	29
523	CONVOLVULACEAE	*Turbina corymbosa* (L.) Raf.			1	0,00074	c	M	2
524	COSTACEAE	*Costus pictus* D. Don		Cana de jabalí	2	0,00148	h	M	28, 29
525	COSTACEAE	*Costus pulverulentus* C.Presl		Cana de venado	1	0,00074	h	M	25
526	COSTACEAE	*Costus spicatus* (Jacq.) Sw.	pajto'(YU)	Cana agria	2	0,00148	h	M	9, 31
527	CRASSULACEAE	*Bryophyllum pinnatum* (Lam.) Oken	siisal xiw (CH)	Siempre viva, Hoja del aire	10	0,00742	h	M	7, 8, 12,21,25
528	CRASSULACEAE	*Echeveria gibbiflora* DC.			1	0,00074	h	M	9
529	CRASSULACEAE	*Kalanchoe blossfeldiana* Poclln.	Pinilanal (CHI)	Siempre viva, San Nicolás, Bella donna, Jalisquena	8	0,00594	h	Af	9, 11, 12, 17,29
530	CRASSULACEAE	*Kalanchoe daigremontiana* Raym.-Hamet & H. Perrier		Siempre viva, Bella donna	1	0,00074	h	Af	9
531	CRASSULACEAE	*Kalanchoe fedtschenkoi* Raym.-Hamet & H. Perrier			2	0,00148	h	Af	25, 29
532	CRASSULACEAE	*Kalanchoe integra* (Medik.)Kuntze		Belladona	1	0,00074	h	M	3
533	CRASSULACEAE	*Kalanchoe laciniata* D.C.	sempril (CHI)	Siempre viva	2	0,00148	h	Af	11, 17
534	CRASSULACEAE	*Sedum moranense* Kunth		Cordoncillo	1	0,00074	h	M	31
535	CRASSULACEAE	*Sedum rubrotinctum* R.T. Clausen		Cola de borrego	1	0,00074	h	M	31
536	CUCURBITACEAE	*Citrullus lanatus* (Thunb.) Matsum. & Nakai		Sandía	7	0,00520	h	Af	1, 3, 9, 11, 21
537	CUCURBITACEAE	*Cucumis melo* L.		Melón	4	0,00297	h	As	9, 11, 21, 25
538	CUCURBITACEAE	*Cucumis sativus* L.	yalomelon (PUE)	Pepino	4	0,00297	c	As	3, 9, 12, 18
539	CUCURBITACEAE	*Cucurbita ficifolia* Bouche			1	0,00074	h	M	19
540	CUCURBITACEAE	*Cucurbita maxima* Duch.		Calabaza	2	0,00148	c	CSA	18, 20
541	CUCURBITACEAE	*Cucurbita moschata* Duch.	k'uum, k'u'um, sikil, ch'ujm, chu'um (CHI), ayot (PUE)	Calabaza de pepita menuda, Calabaza, Calabaza tamalayota	6	0,00445	h	M	2, 9, 10, 11, 17
542	CUCURBITACEAE	*Cucurbita pepo* L.	ka', ts'ol, ts'ool, to'op', top, ch'ujm(YU) ayohuacax (PUE)	Calabaza, Calabacilla, Calabaza melonera, Calabaza pipián	13	0,00965	h	M	3, 10,11,27,29
543	CUCURBITACEAE	*Curcubita argyrosperma* Huber		Calabaza chompola	3	0,00223	h	M	9,23,30
544	CUCURBITACEAE	*Lagenaria siceraria* (Molina) Standley	po'k, luch, lek (QR), xical (PUE), Xomom, kweentu' (HU)	Lek, Calabazo, Pumpo, Bule, Jicaro	9	0,00668	c	NK	9,11,12,23,25
545	CUCURBITACEAE	*Luffa cylindrica* (L.) Roem.	chimol, limpión (QR)	Mata estropajo, Estropajo, Pashte	10	0,00742	c	M	2, 9, 12, 13. 29
546	CUCURBITACEAE	*Luffa operculata* L.		Estropajo	1	0,00074	c	M	21
547	CUCURBITACEAE	*Melothria pendula* L.	baleeyail an t' eel (HU)	Sandía montés, Sandía de raton	3	0,00223	t	M	12, 29, 30
548	CUCURBITACEAE	*Mormodica balsamina* L.			1	0,00074	c	Af	19
549	CUCURBITACEAE	*Mormodica charantia* L.	áh calit chuu, tulu, loi-much (YU)	Andiamor, Sandia, Cunde amor, Juan de amor, Cundiamor	7	0,00520	h	As	2, 9,10,28,29
550	CUCURBITACEAE	*Sechium edule* (Jacq.) Sw.	ch'ijchum, ni'uc' (Tumb.), Chu'umté (CHI), huiztic (PUE), tsiw' (HU)	Chayote, Erizo, Chayote espinoso	14	0,01039	c	M	9,12,18,27,29
551	CUCURBITACEAE	*Sicana odorifera* (Vell.) Naud			1	0,00074	c	M	12
552	CUPRESSACEAE	*Cupressus lusitanica* L.		Ciprés, Cedro blanco Ciprés	5	0,00371	t	M	16, 17, 19, 22
553	CUPRESSACEAE	*Platycladus orientalis* (L.) Franco		Pino	2	0,00148	t	As	6, 9
554	CUPRESSACEAE	*Taxodium huegelii* C. Lawson		Sabino	1	0,00074	t	M	16
555	CUPRESSACEAE	*Thuja occidentalis* L.		Dulias	1	0,00074	t	NA	25
556	CYPERACEAE	*Cyperus alternifolius* L.		Cebollín de monte, Papyrus	1	0,00074	h	Af	9
557	CYPERACEAE	*Cyperus articulatus* L.		Zontule	1	0,00074	h	NK	29
558	CYPERACEAE	*Cyperus ochraceus* Vahl.		Pasto, Zacate	1	0,00074	h	M	23
559	DAVALLIACEAE	*Nephrolepis exaltata* CL. Iscott		Helecho corriente	1	0,00074	h	NK	31

560	DAVALLIACEAE	*Nephrolepis exaltata* var. Roseveltii plumosa		Helecho fino	1	0,00074	h	NK	31
561	DAVALLIACEAE	*Nephrolepis pectinata* (Willd.) Schott		Helechos	1	0,00074	h	NK	3
562	DIOSCOREACEAE	*Dioscorea alata* L.	aak'il makal, ak'makal (QR), laab ith (HU)	Makal de raiz, Borrador, Boronsos	5	0,00371	c	As	9, 10, 11, 12, 30
563	DIOSCOREACEAE	*Dioscorea bulbifera* L.		Papa voladora, Camote de China, Papa cimarrona, Extranjera, Papa de guia	8	0,00594	c	As	3,10,13,25,31
564	DIOSCOREACEAE	*Dioscorea esculenta* (Lour.) Burkill			1	0,00074	c	As	12
565	DIOSCOREACEAE	*Dioscorea matagalpensis* Uline	xmakal, k'uuch (YU)		1	0,00074	c	M	7
566	DIOSCOREACEAE	*Dioscorea mexicana* Scheidw.	panil book (HU)		1	0,00074	c	M	30
567	DIOSCOREACEAE	*Dioscorea polystachya* Turcz.	nutse'a (OA)	Camote	1	0,00074	c	As	
568	EBENACEAE	*Diospyros anisandra* Blake	kakalche' (YU)		2	0,00148	s	M	2, 7
569	EBENACEAE	*Diospyros cuneata* Standley	t'silil (YU)		5	0,00371	t	M	2, 4, 6, 7
570	EBENACEAE	*Diospyros digyna* Jacq.	i´ic´ way ja´as, tauch (YU), tiltzapot (PUE)	Zapote, Zapote negro	7	0,00520	t	M	3, 5,9, 18, 27
571	EBENACEAE	*Diospyros ebenum* J.König ex Retz.		Zapote prieto	1	0,00074	t	As	23
572	EBENACEAE	*Diospyros verae-crucis* (Standl.) Standl.		Silil, Zapotillo	2	0,00148	t	M	3, 16
573	ELAEOCARPACEAE	*Muntingia calabura* L.		Púan, Capulín	6	0,00445	t	M	8, 9, 16, 19, 28
574	EQUISETACEAE	*Equisetum hyemale* L.		Cola de caballo	1	0,00074	h	M	16
575	EQUISETACEAE	*Equisetum hyemale* var. *affine* (Engelm.) A.A. Eaton		Carrizo	1	0,00074	h	M	22
576	ERICACEAE	*Rhododenron simsii* Planch.		Azalea	2	0,00148	h	As	19, 25
577	ERYTHROXYLACEAE	*Erythroxylon rotundifolium* Lunan			2	0,00148	s	M	2, 6
578	EUPHORBIACEAE	*Acalphya wilkesiana* Müll. Arg.		Cerco, Siempre me veras asi, Croto, Cobre	6	0,00445	s	NK	7, 9, 19, 25, 31
579	EUPHORBIACEAE	*Acalypha aristata* Kunth	sajalok (CHI)	Cadillo	3	0,00223	h	M	16, 17, 29
580	EUPHORBIACEAE	*Acalypha diversifolia* Jacq.			1	0,00074	h	M	2
581	EUPHORBIACEAE	*Acalypha hispida* Burm.	nej miis (YU)	Cola de gato, Gusano, Moco de guajolote	6	0,00445	h	As	7, 8, 13,18, 19
582	EUPHORBIACEAE	*Acalypha schiedeana* Schlecht.			1	0,00074	s	M	1
583	EUPHORBIACEAE	*Acalypha setosa* A. Rich.			1	0,00074	h	M	29
584	EUPHORBIACEAE	*Adelia barbinervis* Schlecht &Cham.		Espino blanco, Pino blanco	1	0,00074	t	M	29
585	EUPHORBIACEAE	*Alchornea latifolia* Sw.	xicalcuahuit (PUE)	Palo de xicale	1	0,00074	t	M	25
586	EUPHORBIACEAE	*Astrocasia tremula* (Griseb.) G.L.Webster		Pixtón	2	0,00148	t	M	5, 7
587	EUPHORBIACEAE	*Cnidoscolus aconitifolius* (Mill.) I.M.Johnst.	chinchin chay (YU), tsah (QR)	Chaya de monte, Chaya silvestre	5	0,00371	s	M	6,7,11,12,16
588	EUPHORBIACEAE	*Cnidoscolus aconitifolius* ssp. *aconitifolius* Breckon	chay, chaay, ec', chaya (YU)	Chaya	16	0,01188	s	M	6,9,10,12,18
589	EUPHORBIACEAE	*Cnidoscolus multilobus* (Pax) I. M. Johnston	tetsonquilit (PUE)	Ortiga, Mala mujer, Quelite que muerde	3	0,00223	s	M	25,28,29
590	EUPHORBIACEAE	*Cnidoscolus souzae* Mc Vaugh			1	0,00074	s	M	2
591	EUPHORBIACEAE	*Cnidoscolus tepiquensis* (Costantin & Gallaud) Lundell		Chilte blanco, Chicle	1	0,00074	s	M	31
592	EUPHORBIACEAE	*Codiaeum variegatum* (L.) Rumph. ex A.Juss.	ndinsin chunda's (OA)	Cola de gallo, Siempre viva, Carambola, Crotouvia de oro, Ll, Croton, Croton fideo, Croton de colores, Española, Lluvia de oro	15	0,01114	s	As	3,7,6,9,28
593	EUPHORBIACEAE	*Croton draco* Schlecht	Eucuahuit (PUE)	Palo de sangre, Llora sangre	3	0,00223	t	M	19, 20, 25
594	EUPHORBIACEAE	*Croton flavens* L.			1	0,00074	s	M	2
595	EUPHORBIACEAE	*Croton fragilis* Kunth	taanche' (YU)		1	0,00074	t	M	7
596	EUPHORBIACEAE	*Croton gaumeri* Millsp.			1	0,00074	s	M	2
597	EUPHORBIACEAE	*Croton glabellus* L.	perezkutz (QR)	Cascarillo	3	0,00223	t	M	2, 5, 26

598	EUPHORBIACEAE	*Croton humilis* L.			1	0,00074	s	M	2
599	EUPHORBIACEAE	*Croton reflexifolius* Kunth	pedezkuch (QR), xca nninda (OA)	Hoja de hueso	2	0,00148	s	M	11, 20
600	EUPHORBIACEAE	*Croton schiedeanus* Schltdl.		Cascarillo	1	0,00074	t	M	26
601	EUPHORBIACEAE	*Croton soliman* Schlecht. & Cham.		Soliman	1	0,00074	h	M	29
602	EUPHORBIACEAE	*Drypetes lateriflora* (Sw.) Krug & Urb	ximche (YU)		1	0,00074	t	M	5
603	EUPHORBIACEAE	*Euphorbia graminea* Jacq.	kamchú (CH)		1	0,00074	h	M	17
604	EUPHORBIACEAE	*Euphorbia heterophylla* L.			1	0,00074	h	M	2
605	EUPHORBIACEAE	*Euphorbia hirta* L.		Hierba de la golondrina	3	0,00223	h	M	2, 23, 31
606	EUPHORBIACEAE	*Euphorbia hypericifolia* L.		Golondrina	2	0,00148	h	M	2, 31
607	EUPHORBIACEAE	*Euphorbia hyssopifolia* L.		Hierba de la golondrina	1	0,00074	h	M	23
608	EUPHORBIACEAE	*Euphorbia lactea* Haw.			1	0,00074	s	As	19
609	EUPHORBIACEAE	*Euphorbia leucocephala* Lotsy		Punupunú	1	0,00074	s	M	16
610	EUPHORBIACEAE	*Euphorbia maculata* L.			1	0,00074	h	M	19
611	EUPHORBIACEAE	*Euphorbia marginata* Pursh.			1	0,00074	h	M	9
612	EUPHORBIACEAE	*Euphorbia milii* Des Moul.		Corona de christo	4	0,00297	h	Af	2, 9, 25, 29
613	EUPHORBIACEAE	*Euphorbia milii* var. *splendens* (Bojer ex Hook.) Ursch & Leandri		Corona de christo	1	0,00074	h	Af	13
614	EUPHORBIACEAE	*Euphorbia personata* (Croizat) V.W.Steinm.	yaxjalal'che (YU)		1	0,00074	h	M	3
615	EUPHORBIACEAE	*Euphorbia pulcherrima* Willd.	xela te' (YU), cuetcuetaxotchitl (PUE)	Noche buena, Navidad, Flor de listón, Flor de Pascua, Flor que ruda	11	0,00817	h	M	3, 9, 18, 27, 29
616	EUPHORBIACEAE	*Euphorbia schlechtendalii* Boiss.		Ixtomeca	2	0,00148	s	M	2, 23
617	EUPHORBIACEAE	*Euphorbia tirucalli* L.		Dedito de dios	2	0,00148	h	As	5, 31
618	EUPHORBIACEAE	*Euphorbia tithymaloides* L.		Cerco, Suelda, Zapatito, Mayorga, Flor de cera	5	0,00371	s	M	8, 9, 13, 21, 29
619	EUPHORBIACEAE	*Euphorbia tithymaloides* ssp. *parasitica* (Boiss. ex Klotzsch) V.W.Steinm.	jalal ché, ya'ax jalal che' (QR)		2	0,00148	h	M	1, 11
620	EUPHORBIACEAE	*Euphorbia trigona* Mill.		Abrazarme si puedes, Cactus	1	0,00074	h	Af	9
621	EUPHORBIACEAE	*Hevea brasilensis* M.	yandi chon (OA)	Hule	1	0,00074	t	CSA	20
622	EUPHORBIACEAE	*Jatropha curcas* L.	bʌcch´umté (CAM) x-gunté, X-kakalché, sikilte' (YU), pomolche (YU),	Piñon, Pinoncillo, Aiste Piñon	11	0,00817	t	M	4, 5, 7, 9, 28
623	EUPHORBIACEAE	*Jatropha gaumeri* Greenm.	xmapola, xpomolche', pomolche (YU)	Amapola	4	0,00297	s	M	2, 5, 7, 9,
624	EUPHORBIACEAE	*Manihot aesculifolia* (Kunth) Pohl		Mango oro	1	0,00074	s	M	9
625	EUPHORBIACEAE	*Manihot esculenta* Crantz.	ts'iin (YU), cuahcamot (PUE), t' inche', nuya'a (OA)	Camote de palo, Yuca, Manioc cassava	19	0,01411	h	CSA	6, 9, 10, 12, 18
626	EUPHORBIACEAE	*Phyllanthus acidus* (L.) Poit.		Grosella	7	0,00520	t	CSA	1, 3, 6, 7, 9
627	EUPHORBIACEAE	*Phyllanthus adenodiscus* Muell. Arg.	pok' thoot (HU)	Cascabel	1	0,00074	s	M	30
628	EUPHORBIACEAE	*Phyllanthus glaucescens* Kunth.	P'ixtoon (YU)		3	0,00223	t	M	2, 4, 7
629	EUPHORBIACEAE	*Plukenetia penninervia* Müll.Arg.			1	0,00074	c	M	12
630	EUPHORBIACEAE	*Ricinus communis* L.	ch'upujc, Chu'upak' (CHI), xk'o'och (YU), aceitecahuit (PUE),	Higuera, Higuerilla, Palo de aceite	14	0,01039	s	Af	6, 7, 9, 11, 17
631	EUPHORBIACEAE	*Sapium lateriflorum* Hemsl.		Higo	1	0,00074	t	M	29
632	EUPHORBIACEAE	*Sapium macrocarpum* Müll.Arg.		Amate capulín, Chile amate, Veneno	3	0,00223	t	M	16, 23, 26
633	FABACEAE	*Abrus precatorius* L.			1	0,00074	c	M	2
634	FABACEAE	*Acosmium panamense* (Benth.) Yakolev		Chalté	1	0,00074	t	M	13
635	FABACEAE	*Andira inermis* (Sw) Kunth		Cuartololote	2	0,00148	t	M	19, 21
636	FABACEAE	*Apoplanesia paniculata* Presl.	choluul (YU)		4	0,00297	t	M	4, 6, 7
637	FABACEAE	*Arachis hypogaea* L.		Cacahuate	3	0,00223	h	NK	11, 23, 25

638	FABACEAE	*Brongniartia podalyrioides* Kunth			1	0,00074	t	M	23
639	FABACEAE	*Cajanus cajan* (L.) Millsp.	x- leenteha (YU), cuauhet (PUE), nigma yasha (OA)	Frijol lanteja, Lenteja, Chícharo de arbusto, Chícharo cimarrón, Frijol de árbol	8	0,00594	s	NK	11, 16, 25, 29, 30
640	FABACEAE	*Canavalia ensiformis* (L.) DC.		Canavalia	2	0,00148	h	M	8, 9
641	FABACEAE	*Centrosema galeottii* Fantz		Gallito, Coyuntla	1	0,00074	h	M	29
642	FABACEAE	*Centrosema plumieri* (Pers.) Benth.			1	0,00074	s	M	2
643	FABACEAE	*Chloroleucon mangense* var. *mangense* (Jacq.) Britton & Rose	yax ek (YU)		1	0,00074	s	CSA	5
644	FABACEAE	*Cicer arietinum* L.		Garbanzo	1	0,00074	h	As	16
645	FABACEAE	*Clitoria ternatea* L.		Trepadora	3	0,00223	c	As	2, 9, 19
646	FABACEAE	*Cojoba arborea* (L.) Britton & Rose		Frijolillo	1	0,00074	t	M	27
647	FABACEAE	*Coursetia glandulosa* A. Gray		Chipil, Guachipil	1	0,00074	t	M	23
648	FABACEAE	*Crotalaria longirostrata* Hook. & Arn.		Chepil, chipilín, Chipilín del monte	6	0,00445	s	As	9, 14, 15, 16, 19,
649	FABACEAE	*Crotalaria pumila* Ortega		Chepil, Hoja de chipilincillo	3	0,00223	s	M	16, 18, 23
650	FABACEAE	*Dalbergia glabra* (Mill.) Standl.			1	0,00074	t	M	2
651	FABACEAE	*Dalbergia glomerata* Hemsl.		Chagane	1	0,00074	t	M	26
652	FABACEAE	*Dalea carthagenensis* (Jacq.) J.F.Macbr.			1	0,00074	t	M	2
653	FABACEAE	*Dalea foliolosa* var. *foliolosa* (Aiton) Barneby		Escoba de bola	1	0,00074	h	M	23
654	FABACEAE	*Dalea leptostachya* D.C.		Vara de escoba	1	0,00074	s	M	23
655	FABACEAE	*Delonix regia* (Hook.) Raf.	maskabché (QR)	Jacaranda, Flamboyán, Tabachín	15	0,01114	t	Af	1, 6, 9, 11, 18
656	FABACEAE	*Desmanthus virgatus* (L.) Willd.		Guaje de laguna, Guajito	1	0,00074	s	M	23
657	FABACEAE	*Desmodium incanum* DC.		Tortilla de ratón	1	0,00074	c	M	29
658	FABACEAE	*Desmodium tortuosum* (Sw.) DC.			1	0,00074	s	M	2
659	FABACEAE	*Diphysa americana* (Mill.) M.Sousa		Guachipilin	1	0,00074	t	M	16
660	FABACEAE	*Diphysa carthagenensis* Jacq.	tsutsuk (YU)		2	0,00148	t	M	2, 5
661	FABACEAE	*Diphysa robinoides* Benth.	chichath (HU)	Chipile, Majo	4	0,00297	t	M	19, 26, 27, 30
662	FABACEAE	*Erythrina americana* Mill.	equimit (PUE), hutukuu' (HU), ya ninguig (OA)	Pichoco, Gasparito, Semilla roja, Chacarro , Chaparro, Moté, Colorín, Chompancle, Zopantle	9	0,00668	t	M	9, 14, 22, 23, 28
663	FABACEAE	*Erythrina caribae* Krukoff & Barneby		Equimit	1	0,00074	t	M	25
664	FABACEAE	*Erythrina chiapasana* Krukoff	Ukun (CHI)	Colorín	1	0,00074	t	M	17
665	FABACEAE	*Erythrina goldmanii* Standl.		Flor de machetillo	1	0,00074	t	M	16
666	FABACEAE	*Erythrina standleyana* Krukoff	tsamnek hutukuu (HU)	Colorín	4	0,00297	t	M	2, 8, 9, 30
667	FABACEAE	*Eysenhardtia adenostylis* Baill.		Taray	1	0,00074	t	M	16
668	FABACEAE	*Eysenhardtia polystacha* (Ortega) Sarg.		Palo dulce	1	0,00074	t	M	23
669	FABACEAE	*Galactia striata* (Jacq.) Urb.		Frijolillo campechano	1	0,00074	c	Af	2
670	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.	chante', xchante', sakya'ab, sac yaj (YU), ya suntio (OA)	Cacaguanano, Cocuite, Palo de sol, Cocohuite, Chanté, Mata ratón, Chuchunuc, Cacahuananche	16	0,01188	t	M	7, 9, 16, 18, 26
671	FABACEAE	*Havardia albicans* (Kunth) Britton & Rose	chucum (YU)		2	0,00148	t	M	6, 7
672	FABACEAE	*Indigofera platycarpa* Rose.		Vara colorada	1	0,00074	t	M	23
673	FABACEAE	*Lablab purpureus* (L.) Sweet		Frijol	1	0,00074	c	Af	23
674	FABACEAE	*Lennea melanocarpa* (Schltdl.) Harms		Mapícil	1	0,00074	t	M	25
675	FABACEAE	*Leucaena esculenta* (Sessé & Mocino) Benth.	cempasuchil (YU)	Palo de guaje, Guaje, Flor de todos Santos, Guaje colorado, Guaje rojo	7	0,00520	t	M	9, 18, 21, 22, 23
676	FABACEAE	*Leucaena glauca* (L.) Bent		Guaje verde	2	0,00148	t	M	19, 22
677	FABACEAE	*Leucaena leucocephala* (Lam.) De Wit.	waxiim, waxin (YU), uaxin (YU), huaxi (PUE)	Guaje blanco	13	0,00965	t	M	3,4, 7,8, 11
678	FABACEAE	*Leucaena macrophylla* Benth.		Guaxpelón	1	0,00074	t	M	23

679	FABACEAE	*Lonchocarpus andrieuxii* M. Sousa		Cuacualixtle	1	0,00074	t	M	23
680	FABACEAE	*Lonchocarpus castilloi* Standl.		Machiché	2	0,00148	t	M	8, 9
681	FABACEAE	*Lonchocarpus guatemalensis* Benth.		Palo de gusano	3	0,00223	t	M	2, 9, 26
682	FABACEAE	*Lonchocarpus santarosanus* Donn. Smith		Palo de gusano	1	0,00074	t	M	26
683	FABACEAE	*Lonchocarpus violaceus* (Jacq.) DC.			1	0,00074	t	M	11
684	FABACEAE	*Lonchocarpus yucatanensis* Pittier	xu'ul (YU)		2	0,00148	t	M	2, 4
685	FABACEAE	*Marina scopa* Barneby		Escoba colorada, Escoba morada	2	0,00148	h	M	23, 31
686	FABACEAE	*Medicago sativa* L.		Alfalfa	1	0,00074	h	As	23
687	FABACEAE	*Mucuna argyrophylla* Standl.		Nescafé	1	0,00074	c	M	9
688	FABACEAE	*Mucuna pruriens* var. *pruriens* (L.) DC.			1	0,00074	c	M	2
689	FABACEAE	*Pachyrrhizus erosus* (L.) Urban	kobeem (HU)	Jícama	5	0,00371	e	M	2, 3, 12, 23,30
690	FABACEAE	*Phaseolus coccineus* L.	k'oolonii' (HU)		1	0,00074	c	M	30
691	FABACEAE	*Phaseolus coccineus* ssp. *polyanthus* (Greenm.) Marechal & Gal.	paluw ot'ool (HU)	Piel suave	1	0,00074	c	M	30
692	FABACEAE	*Phaseolus lunatus* L.	pech buul, ibo'ob (QR), weet' (HU)	Frijol blanco, Frijol pelón, Frijol patlacho, Ibes, Patashete, Frijol milet	10	0,00742	c	CSA	3, 8, 9, 12, 30
693	FABACEAE	*Phaseolus vulgaris* L.	bu'ul, yoque bu'ul akil, xpelon (QR), et (PUE), tsanakw' (HU) malte' (HU)	Frijol tapiche, Frijol, Frijol negro, Frijol mulato, Frijol de muerto, Frijol michito o gateadito, Frijol de chicharo, Frijol de castilla, Frijol de bejuco, rojo, rosado y amarillo, Ejote	14	0,01039	c	M	7, 9, 10, 11, 18
694	FABACEAE	*Piscidia piscipula* (L.) Sarg.	Ja'abin (YU), ts' ihol (HU)	Chijol, Jabin	11	0,00817	t	As	6, 8, 9 11, 28
695	FABACEAE	*Pisum sativum* L.	xte'bu'ul (YU)	Chícharo	2	0,00148	h	As	9, 25
696	FABACEAE	*Platymiscium dimorphandrum* Donn.Sm.		Hormiguillo	1	0,00074	t	CSA	16
697	FABACEAE	*Platymiscium yucatanum* Standl.			1	0,00074	t	M	8
698	FABACEAE	*Sesbania herbacea* (Mill.) Mc Vaugh.		Cerbatana	1	0,00074	h	M	23
699	FABACEAE	*Tamarindus indica* L.	pach'uhuk, tú marindo (OA)	Tamarindo, Tamarinto	24	0,01782	t	As	1, 3, 4, 6, 7
700	FABACEAE	*Tephrosia cinerea* (L.) Pers.	choj xiw (YU)	Mañanitas	1	0,00074	h	M	1
701	FABACEAE	*Trifolium pratense* L.		Trébol	1	0,00074	h	Eu	14
702	FABACEAE	*Vicia faba* L.			1	0,00074	h	M	19
703	FABACEAE	*Vigna mungo* (L.) Hepper		Frijol arroz	1	0,00074	h	As	16
704	FABACEAE	*Vigna unguiculata* (L.) Walp.	caxlaan buul (YU), laab tsanakw' (HU)	Frijol peló, Frijol x'pelón, Frijol carita, Firjol chino, Frijol de toro, Sarabanda	5	0,00371	h	As	9, 23, 25, 27, 30
705	FABACEAE	*Vigna vexilata* (L.) A.Rich.	itzraquet (PUE)	Frijol blanco	1	0,00074	h	Af	25
706	FLACOURTIACEAE	*Casearia arborea* (Rich.) Urb.			1	0,00074	t	M	19
707	FLACOURTIACEAE	*Casearia corymbosa* Kunth		Vara dura	1	0,00074	t	M	23
708	FLACOURTIACEAE	*Casearia nitida* Jacq.	chak tamav (YU)		2	0,00148	t	M	2, 7
709	FLACOURTIACEAE	*Homalium racemosum* Jacq.		Palo piedra	1	0,00074	t	M	18
710	FLACOURTIACEAE	*Pleuranthodendron lindenii* (Turcz.) Sleumer	tabolcuahuit (PUE)	Maicillo	1	0,00074	t	M	25
711	FLACOURTIACEAE	*Samyda yucatanensis* Standley			1	0,00074	s	M	7
712	FLACOURTIACEAE	*Xylosma flexuosum* (Kunth) Hemsl.		Capulín, Chatay	1	0,00074	t	M	25
713	FLACOURTIACEAE	*Zuelania guidonia* (S.) Britt. & Millsp.		Nopotapeste, Palo volador, Zapote volador	3	0,00223	t	M	2, 26, 29
714	GERANIACEAE	*Pelargonium inquinans* Air.		Malvón	2	0,00148	h	M	29. 21
715	GERANIACEAE	*Pelargonium* x *hortorum*	capote (PUE)	Geranio de enredadera, Geranio, Malva	4	0,00297	h	Af	16, 22, 25, 31
716	GERANIACEAE	*Pelargonium zonale* (L.) L'Hér.		Geranio	1	0,00074	h	Af	16
717	GESNERIACEAE	*Achimanes longoflora* DC		Flor morada	1	0,00074	h	M	21
718	GESNERIACEAE	*Episcia cupreata* Hanst.		Terciopelo	1	0,00074	s	CSA	13
719	GESNERIACEAE	*Kohleria elegans* (Decne.)Loes.			1	0,00074	h	M	17
720	GESNERIACEAE	*Sinningia speciosa* (Lodd.) Hiern		Gloxinia	1	0,00074	h	CSA	25

721	HAEMODORACEAE	*Xyphidium caeruleum* Aubl.		Lirio del monte	1	0,00074	h	M	9
722	HAMAMELIDACEAE	*Liquidambar styraciflua* L.	tsosté (PUE)	Liquidámbar	1	0,00074	t	M	17
723	HYDRANGEACEA	*Hydrangea macrophylla* (Thunb.) Ser.		Hortensia	4	0,00297	s	As	19, 20, 25, 31
724	ICACINACEAE	*Oecopetalum mexicanum* (Greenm. & Thomps.)		Cachichín, Cacaté	1	0,00074	t	M	16
725	IRIDACEAE	*Eleutherine bulbosa* (Mill.) Urb.	tsakam apats' (HU)		1	0,00074	h	CSA	30
726	IRIDACEAE	*Crocosmia × crocosmiiflora (Lemoine) N.E.Br.*		Anaranjadita, Azucena corriente	2	0,00148	h	Eu	25, 31
727	IRIDACEAE	*Gladiolus hortulanus* L.H. Bailey		Gladiola	1	0,00074	h	Af	16
728	IRIDACEAE	*Gladiolus liliaceus* Houtt.		Gladiola	1	0,00074	h	Af	22
729	IRIDACEAE	*Iris* x *germanica* (*bulbosa*)		Lirio morado	1	0,00074	h	Eu	31
730	JUGLANDACEAE	*Juglans pyriformis* Liebm.		Nogal	1	0,00074	t	M	22
731	LAMIACEAE	*Agastache mexicana* (Kunth) Lint & Epling			1	0,00074	h	M	12
732	LAMIACEAE	*Clinopodium brownei* (Sw.) Kuntze	ts' ots' on ts' ohool (HU), chuajil vomol (CHI)	Albahaca	2	0,00148	h	M	3, 17
733	LAMIACEAE	*Hedeoma costatum* A. Gray		Poleo	1	0,00074	h	M	31
734	LAMIACEAE	*Hedeoma drummondii* Benth	maal t'eel (HU)	Polello	1	0,00074	h	M	30
735	LAMIACEAE	*Hedeoma pulegioides* (L.) Pers.		Poleo	1	0,00074	h	NA	25
736	LAMIACEAE	*Holmskioldia sanguinea* Retz.		Bugambilia japonesa, Sombrillita	2	0,00148	s	As	25, 29
737	LAMIACEAE	*Hyptis stellulata* Benth.		Hierba del golpe	1	0,00074	s	NK	23
738	LAMIACEAE	*Hyptis verticillata* Jacq.	tiumbʌ pimel (CAM), tihtsan ts' ohool (HU)	Yerba del negro, Hierba Martin	5	0,00371	h	M	8, 9, 28, 29, 30
739	LAMIACEAE	*Leonotis leonurus* (L.) R.Br.		Terciopelo gris	1	0,00074	s	Af	31
740	LAMIACEAE	*Marrubium vulgare* L.		Marrubio	1	0,00074	h	NK	22
741	LAMIACEAE	*Mentha × piperita* L.	arraweno, x'araweno, xak'ilxiw (QR)	Toronjil, Yerbabuena, Toronjil criollo	9	0,00668	h	Eu	3, 8, 9, 11, 12
742	LAMIACEAE	*Mentha × verticillata* L.		Yerba buena, Menta, Trebol	4	0,00297	h	Eu	1, 9, 14, 22
743	LAMIACEAE	*Mentha arvensis* L.		Hierba buena	2	0,00148	h	NK	13, 25
744	LAMIACEAE	*Mentha pulegium* L.		Poleo	2	0,00148	h	Eu	3, 24
745	LAMIACEAE	*Mentha spicata* L.	shuska (OA)	Yierbabuena, Poleo	8	0,00594	h	Eu	16, 19, 20, 24, 27
746	LAMIACEAE	*Ocimum basilicum* L.	albuja'kar (QR)	Albahaca, Albacar, Albahaca de monte, Albahaca de la tierra	15	0,01114	h	As	1, 2, 8, 18, 28
747	LAMIACEAE	*Ocimum micranthum* Willd.	ichto pimel, xkakaltum (QR), tsin thekw'eel (HU), xca baqa (OA)	Albajaca, Albacón, Albahaca de monte, Albahaca cimarrona	11	0,00817	h	M	2, 9, 12, 28, 29
748	LAMIACEAE	*Ocimum selloi Benth.*		Mentha de monte, San Miguel, Hierba de cólico	2	0,00148	h	M	16, 17
749	LAMIACEAE	*Origanum majorana* L.		Mejorana	3	0,00223	h	NK	25, 27, 29
750	LAMIACEAE	*Origanum vulgare* L.	xka oregano (OA)	Orégano	6	0,00445	h	Eu	19, 20, 21, 25, 31
751	LAMIACEAE	*Plectranthus amboinicus* (Lour.) Spreng.		Orégano	1	0,00074	s	As	9
752	LAMIACEAE	*Plectranthus australis* R.B.		Planta en maceta	1	0,00074	h	Oc	9
753	LAMIACEAE	*Plectranthus scutellarioides* (L.) R.Br.	tzantzin (PUE)	Salvia, Bandera, Sangre de Cristo, Manto, Carola	9	0,00668	s	As	2, 7, 9, 29, 31
754	LAMIACEAE	*Plectranthus thyrsoideus* (Baker) B.Mathew			1	0,00074	h	Af	19
755	LAMIACEAE	*Plectranthus verticillatus* (L.f.) Druce		Monedita	1	0,00074	h	Af	31
756	LAMIACEAE	*Pogostemon cablin* (Blanco) Benth.		Pachuli, Perfume	1	0,00074	h	As	13
757	LAMIACEAE	*Prunella vulgaris* L.	Ponjonom (CHI)		1	0,00074	h	Eu	17
758	LAMIACEAE	*Rosmarinus officinalis* L.		Romero	5	0,00371	h	Eu	1, 3, 19, 24, 31
759	LAMIACEAE	*Salvia coccinea* Juss.	hut'ut' wits (HU)	Mirto	4	0,00297	h	M	2, 24, 29, 30
760	LAMIACEAE	*Salvia leucantha* Cav		Salvia real	1	0,00074	h	M	16
761	LAMIACEAE	*Salvia microphylla* Kunth	Mirto (PUE)	Mirto	4	0,00297	h	M	14, 25, 27, 31
762	LAMIACEAE	*Salvia misella* Kunth		Hierbabuenilla	1	0,00074	h	M	23
763	LAMIACEAE	*Salvia splendens* Sellow ex Roem. & Schult.		Tocotín	2	0,00148	h	CSA	19, 25
764	LAMIACEAE	*Scutellaria guatemalensis* Leonard		Maltanzin morado	1	0,00074	h	M	25

765	LAMIACEAE	*Scutellaria seleriana* Loes.			1	0,00074	h	M	2
766	LAMIACEAE	*Stachys agraria* Schtdl. & Cham.			1	0,00074	h	M	18
767	LAMIACEAE	*Stachys coccinea* Ortega	chorcobeth (CHI)		1	0,00074	h	M	17
768	LAMIACEAE	*Teucrium cubense* Jacq.	tihtsan kw'eet (HU)	Gallina ciega	2	0,00148	h	M	29, 30
769	LAMIACEAE	*Thymus vulgaris* L.		Tomillo	1	0,00074	h	Eu	25
770	LAURACEAE	*Beilschmiedia anay* (S.F. Blake) Kosterm	anay (PUE)		1	0,00074	t	M	25
771	LAURACEAE	*Cinnamomum arsenei* (C.K. Allen) Kosterm.		Aguacatillo	1	0,00074	t	M	25
772	LAURACEAE	*Cinnamomum triplinerv*e (Ruíz & Pav.) Kostern.		Aguatillo	1	0,00074	t	M	18
773	LAURACEAE	*Cinnamomum verum* J.Presl		Canela, Canelo	7	0,00520	t	As	13, 24, 26, 19, 20
774	LAURACEAE	*Nectandra ambigens* (S.F. Blake) C.K. Allen		Laurel aguacatillo	1	0,00074	t	M	26
775	LAURACEAE	*Nectandra globosa* (Aubl.) Mez			1	0,00074	t	M	19
776	LAURACEAE	*Nectandra salicifolia* (Kunth) Nees	trementinate', xpomte (YU)	Aguacatillo	1	0,00074	t	M	9
777	LAURACEAE	*Ocotea effusa* (Meisn.) Hemsl.		Palo de tejón	1	0,00074	t	M	18
778	LAURACEAE	*Ocotea heydean*a (Mez. & Don. Sm.) Bernardi		Laurel	2	0,00148	t	M	28, 29
779	LAURACEAE	*Ocotea sinuata* (Mez.) Rohwer		Palo de tejón	1	0,00074	t	M	18
780	LAURACEAE	*Persea americana* Mill.	oom, on, oon, xka yamina (OA)	Aguacate, Aguacate oloroso, Avacado, Aguacate Hass, Aguacate rugoso, Agucate morado	24	0,01782	t	M	3, 4, 7, 17, 18
781	LAURACEAE	*Persea liebmannii* Mez		Tepehuacate	2	0,00148	t	M	28, 31
782	LAURACEAE	*Persea schiedeana* Nees	pahua (PUE)	Aguacate chinina, Chinin	4	0,00297	t	M	14, 16, 25,27
783	LAURACEAE	*Persea schiedeana* x *americana*		Aguacate negro	1	0,00074	t	M	18
784	LAURACEAE	*Sassafras albidum* (Nutt.) Nees		Salsafras	1	0,00074	t	M	9
785	LILIACEAE	*Allium cepa* L.	kukut (QR)	Cebolla, Cebollina	8	0,00594	h	As	2, 9, 19, 23, 29
786	LILIACEAE	*Allium fistulosum* L.		Cebollín, Cebollita de monte	3	0,00223	h	As	13, 14, 21
787	LILIACEAE	*Allium glandulosum* Link & Otto		Chonacate, Cebollina	3	0,00223	h	M	27, 28, 29
788	LILIACEAE	*Allium longifolium* (Kunth) Spreng.	huum nakat (HU)	Cebolla del monte, Cebollín, Cebollina	3	0,00223	h	M	3,17, 30
789	LILIACEAE	*Allium neapolitanum* Cirillo		Cebollina	1	0,00074	h	Eu	25
790	LILIACEAE	*Allium sativum* L.	aaxux (HU)	Ajo	3	0,00223	h	As	11, 12, 30
791	LILIACEAE	*Allium schoenoprasum* L.	werux (HU)	Cebollín, Cebollina	4	0,00297	h	NA	7, 9, 11, 12
792	LILIACEAE	*Asparagus aethiopicus* L.		Jardinera	1	0,00074	h	Af	3
793	LILIACEAE	*Asparagus officinalis* L.		Ilusión	1	0,00074	h	Eu	29
794	LILIACEAE	*Asparagus scandens* Thunb.		Espárrago	2	0,00148	c	Af	19, 31
795	LILIACEAE	*Asparagus setaceus* (Kunth) Jessop		Velo, Cola de novia, Esparrago, Velo de novia	9	0,00668	c	Af	2, 3, 9, 18, 25
796	LILIACEAE	*Chlorophytum capense* (L.) Voss.		Arana, Flor de arana	2	0,00148	h	Af	25, 29
797	LILIACEAE	*Chlorophytum comosum* var. c*omosum*		Listón	1	0,00074	h	Af	31
798	LILIACEAE	*Echeandia reflexa* (Cav.) Rose	eem ts' ohool (HU)		1	0,00074	h	M	30
799	LILIACEAE	*Hemerocallis minor* Mill		Azucena amarilla	2	0,00148	h	As	19, 25
800	LILIACEAE	*Hemerocallis lillioasphodelus* L. sp. Pl.		Azucena amarilla	1	0,00074	h	As	17
801	LILIACEAE	*Lilium bulbiferum* L.		Azucena, Lirio	1	0,00074	h	Eu	3
802	LILIACEAE	*Lilium candidum* L.		Azucena blanca	2	0,00148	h	Eu	17, 20
803	LILIACEAE	*Lilium longiflorum* Thunb.		Azucena, Vara de San José	2	0,00148	h	As	16, 25
804	LILIACEAE	*Tulipa gesneriana* L.		Tulipán	1	0,00074	h	As	14
805	LINDERNIACEAE	*Torenia fournieri* Lind.		Perritos	1	0,00074	h	As	27
806	LOGANIACEAE	*Buddleia americana* L.	pulik elte' (HU)	Hoja de hueso, Mixpacle	3	0,00223	s	M	16, 23, 30
807	LOGANIACEAE	*Buddleia sessiliflora* Kunth		Lengua de vaca	1	0,00074	s	M	23
808	LOGANIACEAE	*Spigelia scabra Cham.* & Schltdl.	cuaxpaxihuit (PUE)	Lombricera	1	0,00074	h	CSA	25
809	LORANTHACEAE	*Psittacanthus calyculatus* (DC.) G.Don	xcubemba (PUE)	Injerto	4	0,00297	e	M	2, 9, 11, 23
810	LORANTHACEAE	*Struthanthus crassipes* (Oliv.) Eichl.		Seca palo, Injerto	2	0,00148	c	M	28, 29
811	LYTHRACEAE	*Cuphea aequipetala* Cav.	zoyleb vomol (CHI)	Mosquito	2	0,00148	h	M	16, 17

812	LYTHRACEAE	*Cuphea decandra* var. *purpusii* (Brandegee) Bacig.		Mosquito	1	0,00074	h	M	31
813	LYTHRACEAE	*Cuphea gaumeri* Koehne			1	0,00074	h	M	6
814	LYTHRACEAE	*Cuphea hyssopifolia* Kunth		Nubes, Lluvia de estrellas, Chisme	3	0,00223	h	M	13, 19, 29
815	LYTHRACEAE	*Cuphea micropetala* Kunth		Clavillo, Achanclán	2	0,00148	h	M	23, 25
816	LYTHRACEAE	*Cuphea sessiliflora* A.St.-Hil			1	0,00074	s	M	19
817	LYTHRACEAE	*Lafoensia punicifolia* DC.		Palo coquito	1	0,00074	t	M	18
818	LYTHRACEAE	*Lagerstroemia indica* L.		Astronómica, Estronómica, Instrumelia, Júpiter	13	0,00965	s	M	3, 7, 9, 21, 25
819	LYTHRACEAE	*Lawsonia inermis* L.		Resedón, Residan, Residón	7	0,00520	s	NK	3, 5, 9, 13, 28
820	MAGNOLIACEAE	*Magnolia grandiflora* L.		Magnolia	1	0,00074	t	M	20
821	MALPIGHIACEAE	*Bunchosia glandulosa* Cav.		Sipché	1	0,00074	t	M	3
822	MALPIGHIACEAE	*Bunchosia lindeniana* A.Juss.		Zapotillo, Hierba del coyote	3	0,00223	s	M	19, 23, 26
823	MALPIGHIACEAE	*Bunchosia swartziana* Griseb.			2	0,00148	s	M	2, 6
824	MALPIGHIACEAE	*Byrsonima bucidifolia* Standl.	pa'chi', sak paj (QR, YU)	Nance agrio, Sascab	4	0,00297	t	M	4, 5, 9, 11,
825	MALPIGHIACEAE	*Byrsonima crassifolia* (L.) Kunth	chi', nan che (YU)	Nanche, Nance, Nananche	20	0,01485	t	M	3, 6, 9, 15, 27
826	MALPIGHYACEAE	*Galphimia gracilis* Bartl.		Hierba de piojo, Flor de sope, Nochebuena	3	0,00223	s	M	16, 21, 29
827	MALPIGHIACEAE	*Heteropterys beecheyana* Juss.			1	0,00074	c	M	2
828	MALPIGHIACEAE	*Malpighia glabra* L.	siipche' (YU, QR), k' ak' al ilaal (HU)	Manzanita	6	0,00445	s	M	2, 4, 7, 26, 30
829	MALPIGHIACEAE	*Malpighia incana* Mill.		Aguaxocotl	1	0,00074	s	CSA	22
830	MALPIGHIACEAE	*Malpighia mexicana* Juss.		Guajocote, Guachocote	1	0,00074	t	M	23
831	MALPIGHIACEAE	*Stigmaphyllon lindenianum* A. Juss.	kabal jaw (YU)	Contrayerba	1	0,00074	h	M	11
832	MALVACEAE	*Abelmoschus esculentus* (L.) Moench	capee bombey (YU)	Café Bombay, Ocoro	3	0,00223	h	Af	2, 11, 30
833	MALVACEAE	*Abelmoschus manihot* (L.) Medik.		Santa Elena	1	0,00074	h	As	25
834	MALVACEAE	*Abelmoschus moschatus* Medik.	kwinim ilaal (YU)	Café de castilla	1	0,00074	h	As	30
835	MALVACEAE	*Abutilon trisulcatum* (Jacq.) Urban			1	0,00074	h	M	2
836	MALVACEAE	*Alcea rosea* (L.)		V. de San José, Mapola	3	0,00223	h	As	1, 22, 31
837	MALVACEAE	*Alcea rosea* ssp. *ficifolia* (L.) Govaerts		Tulipán	1	0,00074	s	As	9
838	MALVACEAE	*Anoda cristata* (L.) Schletch.	bakan ts'ohool (HU)	Campana, Alache, Violeta	3	0,00223	h	M	17, 23, 30
839	MALVACEAE	*Bakeridesia gaumeri* (Standl.) D.M.Bates			1	0,00074	h	M	2
840	MALVACEAE	*Gossypium arboreum* L.			1	0,00074	t	As	19
841	MALVACEAE	*Gossypium aridum* (Rose & Standl.) Skovsted			1	0,00074	s	M	19
842	MALVACEAE	*Gossypium barbadense* L.	tamán, Ixcat (PUE)	Algodón	1	0,00074	s	CSA	25
843	MALVACEAE	*Gossypium hirsutum* L.	thak kwinim, tsokoy (HU)	Algodón	11	0,00817	s	M	11, 12, 16, 21, 22
844	MALVACEAE	*Hampea nutricia* Fryxell			1	0,00074	s	M	26
845	MALVACEAE	*Hampea trilobata* Standl.	tas (PUE)	Mahagua	3	0,00223	s	M	2, 8, 9
846	MALVACEAE	*Hibiscus cannabinus* L.			1	0,00074	h	As	19
847	MALVACEAE	*Hibiscus mutabilis* L.		Cortejo	3	0,00223	s	As	2, 3, 19
848	MALVACEAE	*Hibiscus rosa-sinensis* var. c*ooperii*		Tulipán relleno	1	0,00074	s	NK	21
849	MALVACEAE	*Hibiscus rosa-sinensis* L.	naxú ntutse (OA)	Tulipán, Flor roja, Hibiscus relleno/simple/de canastita/ San José, Manzanita	19	0,01411	s	As	1, 6, 9, 17, 28
850	MALVACEAE	*Hibiscus rosa-sinensis* var. *rubra plena*		Tulipán relleno rojo	1	0,00074	s	NK	21
851	MALVACEAE	*Hibiscus sabdariffa* L.		Jamaica	7	0,00520	s	Eu	3, 9, 12, 25, 31
852	MALVACEAE	*Hibiscus schizopetalus* (Dyer) Hook.f.		Tulipan canasta, Canastita	2	0,00148	s	Af	19, 25
853	MALVACEAE	*Hibiscus syriacus* L.		Tulipán chino	2	0,00148	s	As	19, 25
854	MALVACEAE	*Malva parviflora* L.		Malva	1	0,00074	h	NK	16
855	MALVACEAE	*Malva sylvestris* L.E909			1	0,00074	h	As	14
856	MALVACEAE	*Malvaviscus arboreus* Cav.	nich pok'il momol (CHI)	Tulipán	3	0,00223	s	M	5, 17, 19

857	MALVACEAE	*Malvaviscus arboreus* var. *mexicanus* Schltdl.		Manzanita	2	0,00148	s	M	28, 29
858	MALVACEAE	*Pavonia schiedeana* Steud.		Cadillo, Cabeza de arriera	1	0,00074	t	M	25
859	MALVACEAE	*Robinsonella mirandae* Gomez Pompa		Manzanillo	1	0,00074	t	M	26
860	MALVACEAE	*Sida acuta* Burm. f.	satmes (CHI)	Escobilla	3	0,00223	s	M	2, 15, 17
861	MALVACEAE	*Sida acutifolia* Mill.		Malvavisco	1	0,00074	h	M	16
862	MALVACEAE	*Sida rhombifolia* L.	ye juo (OA)	Malvavisco, Escobilla, Babosilla	4	0,00297	s	M	18, 20, 27, 31
863	MALVACEAE	*Sida ulmifolia* Cav.		Malva	2	0,00148	h	NK	28, 29
864	MALVACEAE	*Taliparitiliaceum* var. *pernambucense* (Arruda) Fryxell		Tulipán simple	1	0,00074	s	Oc	21
865	MARANTACEAE	*Calathea affinis* Fenzl ex Regel			1	0,00074	h	CSA	25
866	MARANTACEAE	*Calathea lutea* (Aubl.) E. Mey. ex Schult.		Hoja blanca	1	0,00074	h	CSA	15
867	MARANTACEAE	*Maranta arundinacea* L.	t' aaw' (HU)	Sapito, Sagu, Papatlitla	3	0,00223	h	M	12, 30, 31
868	MARANTACEAE	*Maranta gibba* Sm.	t' aaw' ok (HU)		1	0,00074	h	M	30
869	MARANTACEAE	*Stromanthe macrochlamys* (Woodson & Standl.) H.A.Kenn. & Nicolson		Pluma de indio	1	0,00074	h	CSA	25
870	MELANTHIACEAE	*Anticlea virescens* (Kunth) Rydb.		Flor de mariposa	1	0,00074	h	M	18
871	MELASTOMATACEAE	*Bertolonia maculata* D.C.		Cucarachas	1	0,00074	h	NK	3
872	MELASTOMATACEAE	*Cliceria hirta* L.D. Don		Lila	1	0,00074	h	NK	21
873	MELASTOMATACEAE	*Conostegia xalapensis* (Bonpl.) D. Don		Mora	2	0,00148	s	M	19, 31
874	MELASTOMATACEAE	*Miconia guatemalensis* Cogn.	Pemchitom (PUE)		1	0,00074	s	NK	17
875	MELASTOMATACEAE	*Miconia minutiflora* (Bonpl.) DC.	Huaujcuahuit (PUE)	Pico de pájaro	1	0,00074	s	M	25
876	MELASTOMATACEAE	*Miconia trinervia* (Sw.) D. Don ex Loudon	teshuat (PUE)		1	0,00074	s	NK	25
877	MELASTOMATACEAE	*Tibouchina urvilleana (*DC.) Cogn.			2	0,00148	s	CSA	19, 25
878	MELIACEAE	*Azadirachta indica* A. Juss		Nim, Neem	2	0,00148	t	NK	3, 28
879	MELIACEAE	*Cedrela odorata* L.	ch'ujte', kinche (QR), k'uj che, ya occon (OA)	Cedro, Cedro rojo	23	0,01707	t	M	1, 3, 4, 7, 9, 26
880	MELIACEAE	*Cissampelos tropaeolifolia* DC.		Corazón sobre corazón	1	0,00074	c	M	31
881	MELIACEAE	*Guarea glabra* Vahl		Gaga	1	0,00074	t	M	26
882	MELIACEAE	*Melia azedarach* L.	Nim (PUE)	Nim, Piocho, Piocha, Paraiso	9	0,00668	t	As	2, 9, 16, 23, 27
883	MELIACEAE	*Swietenia humilis* Zucc.		Caoba, Caobilla, Zopilote	2	0,00148	t	M	16, 23
884	MELIACEAE	*Swietenia macrophylla* King	suts'uk, chacalté (QR)	Caoba, Palo de sonajo	7	0,00520	t	NK	8, 9, 11, 13, 27
885	MELIACEAE	*Trichilia havanensis* Jacq.	Ramatinaja, thokob saantu (HU)	Estribillo, Xopilxihuit	4	0,00297	t	M	19, 25, 29, 30
886	MENISPERMACEAE	*Cisampelos pareira* L.	tsutsuk (YU)	Hierba del ojo	3	0,00223	c	M	2, 3, 29
887	MENISPERMACEAE	*Cocculus diversifolius* DC.	lek' ab t' iim (HU)	Brillosa	1	0,00074	c	M	30
888	MIMOSACEAE	*Acacia acatlensis* Benth.		Palo blanco, Tepeguaje	1	0,00074	t	M	23
889	MIMOSACEAE	*Acacia angustissima* (Mill.) Kuntze			1	0,00074	t	M	6
890	MIMOSACEAE	*Acacia bilimekii* J.F. Macbr.		Tehuixtle	1	0,00074	t	M	23
891	MIMOSACEAE	*Acacia cochliacantha* Willd.		Cubata	1	0,00074	s	M	23
892	MIMOSACEAE	*Acacia collinsii* Safford	Subín (PUE)		3	0,00223	s	M	4, 7
893	MIMOSACEAE	*Acacia cornigera* (L.) Willd.	subin-ché (YU)	Cornizuelo, Cuernozuelo, Carnizuelo	4	0,00297	t	M	11, 26, 28, 29
894	MIMOSACEAE	*Acacia farnesiana* (L.) Willd.		Huizache	1	0,00074	t	M	23
895	MIMOSACEAE	*Acacia gaumeri* Blake	box catzim (YU), katzim (YU)		4	0,00297	t	M	2, 5, 6, 7
896	MIMOSACEAE	*Acacia macracantha* Willd.		Algarrobo	1	0,00074	t	CSA	3
897	MIMOSACEAE	*Acacia pennatula* (Schlecht. & Cham.) Benth.	chimay (YU)	Quebracho, Espino blanco	6	0,00445	t	M	2, 6, 7, 16, 22, 23
898	MIMOSACEAE	*Acacia riparioides* (Britton and Rose) Standley	katzim (YU), catzín (YU)		4	0,00297	s	M	2, 4, 7
899	MIMOSACEAE	*Calliandra calothyrsus* Meisn.		Cabellito de ángel	1	0,00074	h	As	29
900	MIMOSACEAE	*Calliandra houstoniana* (Mill.) Standley	wiit oot' (HU)	Cabello de ángel	2	0,00148	s	M	25, 30
901	MIMOSACEAE	*Enterolobium cyclocarpum* (Jacq.) Griseb.	piich, pich (YU, QR), ya xk'ua (OA)	Parota, Nacastle, Huanacastle, Guanacastle	9	0,00668	t	M	3, 4, 5, 7, 13
902	MIMOSACEAE	*Inga jinicuil* Schltdl.	talax (PUE), ya chintia (OA)	Chalahuite, Chalhuite negro, Jinicuil, Quiniciul	7	0,00520	t	M	14, 16, 19, 20, 25

903	MIMOSACEAE	*Inga latibracteata* Harms	cuamecaxalahuit (PUE)	Chalahuite blanco, Peludo	1	0,00074	t	M	25
904	MIMOSACEAE	*Inga laurina* Willd.		Caspirol	1	0,00074	t	M	15
905	MIMOSACEAE	*Inga paterno* Harms.		Chalahuite	1	0,00074	t	M	29
906	MIMOSACEAE	*Inga punctata* Willd.		Chalahuite verde, Chalahuite	3	0,00223	t	M	8, 25, 26
907	MIMOSACEAE	*Inga vera* ssp. *eriocarpa* (Benth.) Leon	cuajinicuil (NAY)		1	0,00074	t	M	31
908	MIMOSACEAE	*Inga vera* ssp. *spuria* (Willd.) J.Leon	atenxalahuit (PUE)		3	0,00223	t	CSA	14, 25, 27
909	MIMOSACEAE	*Lysiloma acapulcense* (Kunth) Benth.	ya cua (OA)	Tepeguaje colorado, Yepaquili	3	0,00223	t	M	20, 22, 23
910	MIMOSACEAE	*Lysiloma divaricatum* (Jacq.) J.F.Macbr.		Tlahuitol	1	0,00074	t	M	23
911	MIMOSACEAE	*Lysiloma latisiliquum* (L.) Benth.	t'salam (YU)	Salam, Saban	3	0,00223	t	M	4, 7, 9
912	MIMOSACEAE	*Mimosa albida* Willd.		Bejuco de uña de gato	1	0,00074	s	M	23
913	MIMOSACEAE	*Mimosa bahamensis* Benth.	sak catzim (YU)		3	0,00223	t	M	2, 6, 7
914	MIMOSACEAE	*Mimosa hondurana* Britton & Rose		Uña de gato	1	0,00074	c	CSA	16
915	MIMOSACEAE	*Mimosa lacerata* Rose		Espino rojo	1	0,00074	s	M	23
916	MIMOSACEAE	*Mimosa pigra* L.		Vergonzosa	1	0,00074	s	M	13
917	MIMOSACEAE	*Mimosa polyantha* Benth.		Uña de gato	1	0,00074	s	M	23
918	MIMOSACEAE	*Mimosa pudica* L.	x-mu'uts (YU)	Dormilona, Vergonzosa	3	0,00223	h	M	3, 13, 14
919	MIMOSACEAE	*Mimosa velloziana* L.	ya naya catu (OA)	Rabo lagarto	1	0,00074	h	M	20
920	MIMOSACEAE	*Pithecellobium dulce* (Roxb.) Benth.	dziuche, ts'inché, tsiwche' (YU)	Humo, Guamuchil, Guamochi, Patsahua, Umo, Guamúchil, Huamúchil	13	0,00965	t	M	5, 6, 8, 27, 28
921	MIMOSACEAE	*Pithecellobium leucospermum* Brandegee	Ya'ax ek (YU)		2	0,00148	t	M	2, 7
922	MIMOSACEAE	*Prosopis laevigata* (Willd.) M.C. Johnst.		Mezquite	2	0,00148	t	M	23, 24
923	MORACEAE	*Artocarpus altilis* (Parkinson ex F.A.Zorn) Fosberg		Castaña	2	0,00148	t	As	14, 19
924	MORACEAE	*Artocarpus communis* J.R. Forst & G. Forst	xcastana, ya tundi cho (OA)	Castaña	4	0,00297	t	As	8, 9, 13, 20
925	MORACEAE	*Artocarpus nitidus* ssp. *borneensis*		Pan de sopa	1	0,00074	t	As	14
926	MORACEAE	*Brosimum alicastrum* Sw.	ax, ox (YU)	Ojochi, Ojite, Ramón	13	0,00965	t	M	2, 5, 8, 26, 28
927	MORACEAE	*Castilla elastica* Sessé		Hule	2	0,00148	t	M	25, 29
928	MORACEAE	*Cecropia obtusifolia* Bertol	kooch (QR) azcatcuahuit (YU)	Guarumbo, Trompeta	8	0,00594	t	M	6, 7, 11, 16, 18
929	MORACEAE	*Dorstenia contrajerva* L.	matiel (YU)	Monte	2	0,00148	h	M	9, 25
930	MORACEAE	*Ficus aurea* Nutt.	ya totiba (OA)	Macahuite, Amate	3	0,00223	t	M	18, 22, 20
931	MORACEAE	*Ficus benjamina* L.	jun (CAM)	Ficus, Amate, Laurel	3	0,00223	t	NK	9, 21, 29
932	MORACEAE	*Ficus carica* L.			1	0,00074	s	NK	8
933	MORACEAE	*Ficus cotinifolia* Kunth		Higuero, Tlaligo	3	0,00223	t	M	6, 23, 29
934	MORACEAE	*Ficus goldmanii* Standl.		Amate prieto	1	0,00074	t	M	23
935	MORACEAE	*Ficus insipida* Willd.		Amate blanco	1	0,00074	t	M	23
936	MORACEAE	*Ficus padifolia* Kunth	ko'po (YU)	Alamo	2	0,00148	t	M	4, 7
937	MORACEAE	*Ficus pertusa* L.f.		Higo camarón, Higuillo	1	0,00074	t	M	29
938	MORACEAE	*Ficus retusa* L.		Laurel pinto	1	0,00074	t	As	3
939	MORACEAE	*Maclura tinctoria* (L.) Don ex Steud.		Palo Mora, Palo Moral	7	0,00520	t	M	4, 7, 9, 28, 29
940	MORACEAE	*Poulsenia armata* (Miq.) Standl.		Agabasgabi	1	0,00074	t	CSA	26
941	MORACEAE	*Pseudolmedia oxyphyllaria* Donn. Smith.		Tepetomate, Tomate del monte	2	0,00148	t	M	25, 27
942	MUSACEAE	*Canna indica* L.	tulch nichim (CHI)	Platanillo	1	0,00074	h	CSA	17
943	MUSACEAE	*Heliconia bihai* (L.) L.	chamaqui (CAM)		1	0,00074	s	CSA	25
944	MUSACEAE	*Heliconia schiedeana* Klotzsch		Papatlilla	2	0,00148	h	M	28, 29
945	MUSACEAE	*Musa acuminata Colla* x *M. balbisiana Colla*	ha'as (QR), it' ath (HU)	Plátano de castilla, Plátano, Plátano manzano, Plátano barbero, Plátano macho, Plátano grande	29	0,02153	t	As	1, 3, 7, 9, 29
946	MUSACEAE	*Strelitza alba* (L.f.) Skeels.			1	0,00074	t	Af	19
947	MUSACEAE	*Strelitza reginae* Banks	naxú dtute'a (OA)	Ave del paraíso, Flor de pepe	4	0,00297	h	Af	3, 7, 19, 20
948	MYRICACEAE	*Myrica cerifera* L.	satim (CHI)		1	0,00074	s	NA	17

949	MYRSINACEAE	*Ardisia compressa* Kunth		Capulín de mayo, Capulín agrio, Chagalapoli	4	0,00297	s	CSA	19, 25, 26, 27
950	MYRSINACEAE	*Ardisia escallonioides* Schtdl. & Cham.		Capulín del monte	1	0,00074	s	M	9
951	MYRSINACEAE	*Ardisia nigropunctata* Oerst.			1	0,00074	t	M	26
952	MYRSINACEAE	*Ardisia paniculata* Roxb.		Capulín agrio	2	0,00148	t	As	28, 29
953	MYRSINACEAE	*Ardisia revoluta* Kunth		Capulín	1	0,00074	s	CSA	31
954	MYRSINACEAE	*Myrsine coriacea* ssp. *coriacea*	atz'amté' (CHI)		1	0,00074	t	M	17
955	MYRSINACEAE	*Parathesis psychotrioides* Lundell		Capulín arenoso	1	0,00074	t	M	25
956	MYRTACEAE	*Callistemon speciosus* (Sims) Sweet.		Escobillón	1	0,00074	h	Oc	27
957	MYRTACEAE	*Eucalyptus globulus* Labill.		Eucalipto	3	0,00223	t	Oc	16, 19, 22
958	MYRTACEAE	*Eugenia capuli* (Schltdl. & Cham.) Hook. & Arn.	mapicil (PUE)	Capulín de pistillo, Pistillo	3	0,00223	s	M	25, 28, 29
959	MYRTACEAE	*Pimenta dioica* (L.) Merr.	ichto', nokochupol (QR), nukuch pool (YU), ti tsi'je (OA)	Pimienta, Pimiento	12	0,00891	t	M	5, 9, 18, 20, 25
960	MYRTACEAE	*Psidium friedrichsthalianum* (O.Berg) Nied.			1	0,00074	t	M	19
961	MYRTACEAE	*Psidium guajava* L.	pʌta (CaM) , Pajal poto' (CHI), Pichi' (YU, QR), xalcocot (PUE), Bek (HU), ntse (OA)	Guayaba, Guayaba amarilla, Guayabo	27	0,02004	t	M	3, 4, 7, 19, 24
962	MYRTACEAE	*Psidium guineense* Sw.	chi il poto' (CHI)	Guayaba agria, Guyaba corriente	3	0,00223	t	M	16, 17, 31
963	MYRTACEAE	*Psidium sartorianum* (O. Berg.) Nied.		Arrayan	2	0,00148	t	M	22, 31
964	MYRTACEAE	*Syzygium jambos* (L.) Alston		Pomarrosa	6	0,00445	t	As	14, 16, 25, 27, 29
965	NYCTAGINACEAE	*Boerhavia erecta* L.	shiu (CAM)		1	0,00074	s	M	10
966	NYCTAGINACEAE	*Bougainvillea glabra* Choisy		Bugambilia, Bugambilia china, Bugavilea	14	0,01039	c	CSA	1, 5, 8, 13, 16
967	NYCTAGINACEAE	*Bougainvillea spectabilis* Willd	naxú lixtu (OA)	Bugambilia, Bugambilia simple	5	0,00371	c	CSA	18, 20, 21, 22, 25
968	NYCTAGINACEAE	*Bougainvillea* x *buttiana* Holttum & Standl.		Bugambilia, Zalia roja	7	0,00520	c	M	1, 4, 7, 9, 31
969	NYCTAGINACEAE	*Mirabilis jalapa* L.	ch' uyeem (HU)	Maravilla	9	0,00668	h	M	2, 9, 16, 21, 29
970	NYCTAGINACEAE	*Neea psychotrioides* Donn. Smith	xtatsi (YU)		2	0,00148	s	M	2, 7
971	NYCTAGINACEAE	*Pisonia aculeata* L.		Huiscolote	3	0,00223	s	M	2, 6, 23
972	OCHNACEAE	*Ouratea nitida* (Sw.) Engl.		Monte	1	0,00074	h	M	9
973	OLEACEAE	*Fraxinus dubia* (Willd. ex Schult. & Schult.f.) P.S.Green & M.Nee			1	0,00074	s	M	19
974	OLEACEAE	*Jasminum azoricum* L.		Jazmín	1	0,00074	s	Eu	9
975	OLEACEAE	*Jasminum floridum* Bunge		Jazmín	1	0,00074	s	As	31
976	OLEACEAE	*Jasminum officinale* L.		Jazmín	5	0,00371	h	As	3, 6, 7, 14, 19
977	OLEACEAE	*Jasminum sambac* (L.) Aiton		Jazmín	5	0,00371	s	As	2, 16, 19, 28, 29
978	OLEACEAE	*Jasminun beesianum* Forrest & Diels		Jazmín	1	0,00074	c	As	18
979	OLEACEAE	*Ximenia americana* L.	napche (YU)		2	0,00148	s	M	2, 7
980	ONAGRACEAE	*Fuchsia* × *hybrida* Voss		Aretes de cora	2	0,00148	s	M	19, 31
981	ONAGRACEAE	*Fuchsia paniculata* Lindl.	coxté (CH)		1	0,00074	s	M	17
982	ONAGRACEAE	*Ludwigia octovalvis* (Jacq.) P.H.Raven		Clavillo	1	0,00074	h	M	23
983	ONAGRACEAE	*Ludwigia peploides* (Kunth) P.H.Raven			1	0,00074	h	NK	19
984	ONAGRACEAE	*Oenothera pubescens* Willd. ex Spreng.	sajalsatmes (CHI), chit ku'uk (YU)		3	0,00223	h	M	7, 17, 24
985	ORCHIDACEAE	*Encyclia rzedowskiana* Soto- Arenas			1	0,00074	e	M	19
986	ORCHIDACEAE	*Guarianthe aurantiaca* (Bateman ex Lindl.) Dressler & W.E.Higgins		Lirio	1	0,00074	e	M	31
987	ORCHIDACEAE	*Oncidium sphacelatum* Lindl.		Santa cruz, Flor de Santa Cruz, Flor de Mayo	2	0,00148	e	M	28, 29
988	ORCHIDACEAE	*Spiranthes odorata* (Nutt.) Lindl.		Orquídea	1	0,00074	h	M	14

989	ORCHIDACEAE	*Vanilla planifolia* Andrews	bayniya (HU), xu'uxitcha (OA)	Vainilla	6	0,00445	c	M	19, 20, 28, 29, 30
990	OXALIDACEAE	*Averrhoa carambola* L.		Carambola	4	0,00297	s	As	9, 14, 15, 29
991	OXALIDACEAE	*Oxalis articulata* Savigny		Agritos de jardin	1	0,00074	h	CSA	31
992	OXALIDACEAE	*Oxalis latifolia* Kunth	hilil ts'ohool (HU)		1	0,00074	h	M	30
993	PAPAVERACEAE	*Argemone mexicana* L.		Chicalote	3	0,00223	h	M	2, 23, 31
994	PAPAVERACEAE	*Bocconia frutescens* L.		Gordolobo	1	0,00074	s	M	25
995	PASSIFLORACEAE	*Passiflora antioquiensis* H. Karst.			1	0,00074	c	M	19
996	PASSIFLORACEAE	*Passiflora biflora* Lam.			1	0,00074	c	M	
997	PASSIFLORACEAE	*Passiflora ciliata* Aiton			1	0,00074	h	M	2
998	PASSIFLORACEAE	*Passiflora coriacea* Juss.		Ala de murciélago	2	0,00148	c	M	25, 27
999	PASSIFLORACEAE	*Passiflora edulis* f. *flavicarpa* O. Deg.		Maracuya	1	0,00074	c	CSA	27
1000	PASSIFLORACEAE	*Passiflora edulis* Sims	ch'um'ac (HU)	Maracuya, Flor de ceramulla	6	0,00445	c	M	8, 9, 18, 28, 29
1001	PASSIFLORACEAE	*Passiflora foetida* L.		Amapola, Amapola roja	2	0,00148	c	CSA	28, 29
1002	PASSIFLORACEAE	*Passiflora incarnata* L.			1	0,00074	c	M	19
1003	PASSIFLORACEAE	*Passiflora ligularis* A. Juss		Granada	1	0,00074	c	CSA	18
1004	PASSIFLORACEAE	*Passiflora quadrangularis* L.		Jujo	1	0,00074	c	M	13
1005	PASSIFLORACEAE	*Passiflora serratifolia* L.		Amapola de Monte	1	0,00074	c	M	29
1006	PEDALIACEAE	*Martynia annua* L.	chix ac, itsik' kuxkum (HU)	Uña de gato	4	0,00297	h	M	2, 8, 9, 30
1007	PEDALIACEAE	Sesamum indicum L.	jojolin, dtumili'i (OA)	Ajonjillo	4	0,00297	h	Af	9, 11, 12, 20
1008	PHYTOLACCACEAE	Agdestis clematidea Mocino & Sesse ex DC.	tuuwi' (HU)	Consuelo	1	0,00074	c	M	30
1009	PHYTOLACCACEAE	Petiveria alliacea L.		Pasan, Zorillo, Hierba de zorillo	4	0,00297	s	M	2, 9, 28, 29
1010	PHYTOLACCACEAE	Phytolacca icosandra L.	paluh akw' aal (HU)	Quelite	1	0,00074	h	M	30
1011	PHYTOLACCACEAE	*Phytolacca rivinoides* Kunth. & Bouche		Guaparrón	2	0,00148	h	M	25, 27
1012	PHYTOLACCACEAE	*Phytolacca rugosa* A. Br. & Bouche		Quelite	1	0,00074	h	M	29
1013	PHYTOLACCACEAE	*Rivina humilis* L.		Baja tripa, Chilacuaco	3	0,00223	h	M	25, 28, 29
1014	PINACEAE	*Pinus patula* Schld. & Cham		Pino	2	0,00148	t	M	18, 27
1015	PIPERACEAE	Peperomia blanda (Jacq.) Kunth	pinillacal (CHI)		1	0,00074	h	M	17
1016	PIPERACEAE	*Peperomia glabella* (Sw.) A. Dietr.			1	0,00074	h	M	25
1017	PIPERACEAE	*Peperomia major* C.DC	tsunya' (YU)		1	0,00074	h	M	7
1018	PIPERACEAE	*Peperomia rotundifolia* (L.) Kunth		Berrito, Caminante	1	0,00074	c	M	25
1019	PIPERACEAE	*Piper aduncum* L.		Hierba santa	1	0,00074	s	M	18
1020	PIPERACEAE	*Piper amalago* L.	xkeche' (YU)	Cordoncillo, Dama de noche	7	0,00520	s	CSA	8, 11, 23, 26, 28
1021	PIPERACEAE	*Piper auritum* Kunth	mak'olam, momoy, mumum (CHI), xmako'lan (QR), maculan (YU),	Hoja piper, Acuyo, Hoja santa, Hierba santa, Momo, Aguyo, Hierba santa, Acoyo	18	0,01336	s	M	5, 8, 12, 18, 26
1022	PIPERACEAE	*Piper hispidum* Swartz	xalcahuit (PUE)	Palo arenoso	1	0,00074	s	M	25
1023	PIPERACEAE	*Piper hispidum* var. *hispidum*	xalcahuit blanco (PUE)		1	0,00074	s	M	25
1024	PIPERACEAE	*Piper nigrum* L.		Pimienta	1	0,00074	c	As	14
1025	PIPERACEAE	*Piper sanctum* Miq.	xhuna (OA)	Hierba santa	2	0,00148	s	M	20, 22
1026	PIPERACEAE	*Piper schiedeanum* Steud.	taxcalishuat (PUE)	Hoja de tortilla	1	0,00074	s	M	25
1027	PIPERACEAE	*Piper umbellatum* L.		Cordoncillo	1	0,00074	h	M	25
1028	PITTOSPORACEAE	*Pittosporum tobira* (Thum) W.T. Aiton		Lila	1	0,00074	s	As	13
1029	PLANTAGINACEAE	*Plantago australis* Lam.		Lengua de perro	1	0,00074	h	M	17
1030	PLANTAGINACEAE	*Plantago major* L.		Llantén, Lanté	5	0,00371	h	NK	11, 12, 16, 19, 24
1031	PLANTAGINACEAE	*Pseudolysimachion spicatum* (L.) Opiz			1	0,00074	h	NK	19
1032	PLUMBAGINACEAE	*Plumbago auriculata* Lam.		Plumago, Nube	6	0,00445	s	Af	9, 19, 23, 25, 31
1033	PLUMBAGINACEAE	*Plumbago zeylanica* L.			1	0,00074	h	NK	23
1034	POACEAE	*Agrostis stolonifera* L.	jam (CAM)	Pasto	1	0,00074	h	NA	9
1035	POACEAE	*Aristida ternipes* Cav.			1	0,00074	h	M	2
1036	POACEAE	*Arundo donax* L.		Tarro, Carrizo, Canaveral blanco	4	0,00297	s	Af	18, 23, 24, 25

1037	POACEAE	*Bambusa vulgaris* Schrad.		Bambú	4	0,00297	t	As	5, 16, 18, 24
1038	POACEAE	*Bothriochloa saccharoides* (Sw.) Rydb.		Pasto, Zacate	1	0,00074	h	M	23
1039	POACEAE	*Bouteloua filiformis* (Fourn.) Griffiths.		Bramilla	1	0,00074	h	M	23
1040	POACEAE	*Brachiaria fasciculata* (Sw.) Parodi		Pasto, Zacate	2	0,00148	h	M	2, 23
1041	POACEAE	*Brachiaria mutica* (Forssk.) Stapf		Jipto	1	0,00074	s	Af	16
1042	POACEAE	*Chusquea liebmannii* E.Fourn.		Pasto, Zacate	2	0,00148	h	M	16, 23
1043	POACEAE	*Cymbopogon citratus* (DC.) Stapf	limoon toom (HU)	Zacate limón, Té limon	17	0,01262	h	As	3, 8, 9, 12, 18
1044	POACEAE	*Cynodon plectostachyus* (K.Schum.) Pilg.		Zacate estrella	2	0,00148	h	Af	16, 27
1045	POACEAE	*Digitaria eriantha* ssp. pentzii (Stent) Kok		Zacate pagola	1	0,00074	h	Af	27
1046	POACEAE	*Digitaria insularis* (L.) Mez ex Ekman		Taiwan	1	0,00074	h	M	3
1047	POACEAE	*Digitaria sanguinalis* (L.) Scop.		Pasto, Zacate	1	0,00074	h	Eu	23
1048	POACEAE	*Echinochloa colona* (L.) Link		Pasto, Zacate	1	0,00074	h	As	23
1049	POACEAE	*Eleusine indica* (L.) Gaertn.		Pasto	1	0,00074	h	Eu	29
1050	POACEAE	*Eragrostis reptans* (Michx) Nees		Alfombrilla	1	0,00074	h	NA	13
1051	POACEAE	*Guadua angustifolia* Kunth	yá sha (OA)	Cuaulote, Cualote, Otate	2	0,00148	t	CSA	18, 20
1052	POACEAE	*Heteropogon contortus* (L.) Beauv. Ex. Roem.		Zacate de casa	1	0,00074	h	M	23
1053	POACEAE	*Imperata brasiliensis* Trin.	ataa toom (HU)	Zacate de casa	1	0,00074	h	M	30
1054	POACEAE	*Ixophorus unisetus* (Presl) Schlecht		Paclaxcle	1	0,00074	h	M	23
1055	POACEAE	*Leptochloa mucronata* (Michx.) Kunth		Pasto, Zacate	1	0,00074	h	M	23
1056	POACEAE	*Melinis repens* (Willd.) Zizka		Pasto, Zacate	1	0,00074	h	Af	23
1057	POACEAE	*Oplismenus hirtellus* (L.) Beauv.		Gramas naturales	1	0,00074	h	M	29
1058	POACEAE	*Panicum maximum* Jacq.		Zacate privilegio, Zacate guinea	2	0,00148	h	Af	9, 27
1059	POACEAE	*Paspalum conjugatum* P.J.Bergius		Pasto de jardín, Pasto grama	2	0,00148	h	M	25, 29
1060	POACEAE	*Pennisetum purpureum* Schumach.		Gigante	1	0,00074	h	Af	16
1061	POACEAE	*Saccharum officinarum* L.	si'k'eb, pakab (HU), nde'e (OA)	Caña, Caña blanca, Caña de azucar	17	0,01262	h	As	9, 11, 13, 16, 28
1062	POACEAE	*Sorghum bicolor* L. (Moench)	laab eem (YU)	Sorgo, Alelón	3	0,00223	h	Af	22, 23, 30
1063	POACEAE	*Zea mays* L.	ixim, nal (YU), eem (HU)	Maíz, Maiz achoteno, Jolochi, Morado. Poblano, Olotillo, Cana maiz	15	0,01114	h	M	1, 3, 9, 23, 31
1064	POLEMONIACEAE	*Loeselia mexicana* (Lam.) Brand		Espinosilla	2	0,00148	h	M	25, 27
1065	POLEMONIACEAE	*Phlox drummondii* Hook.			1	0,00074	h	NA	25
1066	POLYGALACEAE	*Monnina xalapensis* Kunth	pitso'ts (CHI)	Tinta de lapicero	1	0,00074	s	M	17
1067	POLYGALACEAE	*Polygala floribunda* Benth.		Flor de candelaria	1	0,00074	s	M	16
1068	POLYGALACEAE	*Securidaca diversifolia* (L.) Blake	mamaal tsan (HU)		1	0,00074	c	M	30
1069	POLYGONACEAE	*Antigonon leptopus* Hook. & Arn.		Fulmina, Ramo de Maria	6	0,00445	c	M	2, 9, 23, 25, 29
1070	POLYGONACEAE	*Coccoloba acapulcensis* Standley			1	0,00074	t	M	2
1071	POLYGONACEAE	*Coccoloba barbadensis* Jacq.		Palo carnero, Cimarrón, Uvero	3	0,00223	t	M	13, 18, 26
1072	POLYGONACEAE	*Coccoloba reflexiflora* Standl.	ts'usub(YU)	Uvero	2	0,00148	t	M	2, 9
1073	POLYGONACEAE	*Coccoloba spicata* Lundell	bob (YU)		1	0,00074	t	M	5
1074	POLYGONACEAE	*Coccoloba uvifera* (L.)		Uva de mar, Flor de mar, Flor de playa	5	0,00371	t	M	1, 3, 5, 6, 9
1075	POLYGONACEAE	*Gymnopodium floribundum* Rolfe	ts'itsil che (YU)		6	0,00445	t	M	2, 4, 5, 6, 7,
1076	POLYGONACEAE	*Muehlenbeckia platyclados* (F.Muell.) Meisn.			1	0,00074	s	M	19
1077	POLYGONACEAE	*Neomillspaughia emarginata* (Gross.) Blake			2	0,00148	s	M	2, 6
1078	POLYGONACEAE	*Persicaria punctata* (Elliot) Small.	yail vomol (CHI)		1	0,00074	h	M	17
1079	POLYGONACEAE	*Rumex crispus* L.		Lengua de vaca	1	0,00074	h	Eu	25
1080	POLYGONACEAE	*Rumex obtusifolius* L.	yoktz'i (CHI)	Lentejilla, Lengua de vaca	2	0,00148	h	Eu	17, 22
1081	POLYGONACEAE	*Ruprechtia fusca* Fernald		Guayabillo	1	0,00074	t	M	23
1082	POLYGONACEAE	*Thelypteris pilosula* (Mett.) R.M. Tryon.			1	0,00074	h	M	19
1083	POLYPODIACEAE	*Microgramma nitida* (J.Sm.) A.R.Sm.		Lengua de ciervo	1	0,00074	h	M	25
1084	PONTEDERIACEAE	*Eichornia crassipes* (Mart.) Solms		Lirio del agua, Flor de agua	3	0,00223	h	CSA	3, 7, 9
1085	PORTULACACEAE	*Portulaca grandiflora* Hook.		Mananita, Flor de colores, Amor de	3	0,00223	h	CSA	16, 21, 25

				un rato					
1086	PORTULACACEAE	*Portulaca oleracea* L.	xukul (QR), pitsits wal (HU)	Verdolaga, Verdolarga morada, Verdolaga, Amor de un rato	12	0,00891	h	M	2, 9, 11, 13, 16
1087	PORTULACACEAE	*Portulaca pilosa* L.	xanab mukuy (QR)	Mañanita, Amor de un rato, Mañanita morada, Verdolaga	8	0,00594	h	M	3, 7, 9, 11, 21
1088	PORTULACACEAE	*Portulaca umbraticola* Kunth.		Mañanita	1	0,00074	h	M	9
1089	PORTULACACEAE	*Talinum paniculatum* (Jacq.) Gaertn.	tzun yail (QR)		2	0,00148	h	M	11, 30
1090	PORTULACACEAE	*Talinum triangulare* (Jacq.) Willd.			1	0,00074	h	M	2
1091	PUNICACEAE	*Punica granatum* L.	yan-u-ko (QR)	Granada, Granada roja	19	0,01411	s	As	1, 3, 7, 9, 12
1092	RANUNCULACEAE	*Clematis dioica* L.		Barba de viejo	2	0,00148	c	M	13, 23
1093	RESEDACEAE	*Reseda luteola* L.		Reseda	1	0,00074	t	Eu	21
1094	RHAMNACEAE	*Colubrina greggii* S.Watson	chak nich (YU)	Tatuán	3	0,00223	t	M	2, 5, 9
1095	RHAMNACEAE	*Frangula capreifolia* (Schltdl.) Grubov	c'anol (YU)		1	0,00074	t	M	17
1096	RHAMNACEAE	*Karwinskia humboldtiana* (Roem. & Schult.) Zucc.	lu'umche (YU)		2	0,00148	t	M	4, 7
1097	RHAMNACEAE	*Krugiodendron ferreum* (Vahl) Urban			1	0,00074	t	M	2
1098	RHAMNACEAE	*Ziziphus yucatanensis* Standley		Ciruela	1	0,00074	t	M	5
1099	ROSACEAE	*Alchemilla pectinata* Kunth	roxa (CHI)		1	0,00074	h	M	17
1100	ROSACEAE	*Eriobotrya japonica* Lindl.		Níspero, Ciruela japonesa, Ciruela	7	0,00520	t	As	16, 19, 22, 24, 29
1101	ROSACEAE	*Fragaria mexicana* Schltr.		Fresa	1	0,00074	h	M	17
1102	ROSACEAE	*Malus domestica* Borkh.		Manzana	1	0,00074	t	As	23
1103	ROSACEAE	*Malus pumila* Mill.		Manzana	1	0,00074	t	As	17
1104	ROSACEAE	*Potentilla* × *ananassa* (Duchesne ex Rozier) Mabb.			1	0,00074	h	Eu	19
1105	ROSACEAE	*Prunus domestica* L.		Ciruela	1	0,00074	t	As	14
1106	ROSACEAE	*Prunus persica* (L.) Batsch.	dtu' ruu noo (OA)	Durazno	11	0,00817	t	As	18, 19, 20, 27, 28
1107	ROSACEAE	*Prunus serotina* Ehrh.		Amacapulín	2	0,00148	t	NA	19, 22
1108	ROSACEAE	*Prunus spinosa* L.		Jocote, Ciruela	1	0,00074	s	Eu	18
1109	ROSACEAE	*Pyrus comunnis* L.		Pera	1	0,00074	t	Eu	17
1110	ROSACEAE	*Rosa* × *damascena* 144+(pro sp.)+			1	0,00074	s	Af	19
1111	ROSACEAE	*Rosa* × *rugosa* Thunb.			1	0,00074	s	As	19
1112	ROSACEAE	*Rosa canina* L.		Rosa	1	0,00074	s	NK	5
1113	ROSACEAE	*Rosa chinensis* Jacq.		Rosa de castilla, Rosa de guía, Rosa blanca, Rosa Isabelita	5	0,00371	c	As	6, 9, 13, 15, 25
1114	ROSACEAE	*Rosa moschata* Herrn.		Rosa	1	0,00074	s	As	16
1115	ROSACEAE	*Rosa multiflora* var. *cathayensis* Rehder & E.H. Wilson		Rosa chiquita, Rosa coloradita	1	0,00074	s	As	25
1116	ROSACEAE	*Rosa odorata* (Andrews) Sweet		Rosa blanca	2	0,00148	c	As	25, 31
1117	ROSACEAE	*Rosa pimpinellifolia* L.			1	0,00074	s	Eu	19
1118	ROSACEAE	*Rosa rubiginosa* L.		Mosqueta	1	0,00074	s	Eu	14
1119	ROSACEAE	*Rosa x alba* L.			1	0,00074	h	Eu	19
1120	ROSACEAE	*Rosa x centifolia* L. (blanca y roja)	naxú rosa ani'i (YU)	Rosa de castilla	5	0,00371	s	Eu	13, 19, 20, 23, 27
1121	ROSACEAE	*Rubus coriifolius* Liebm.	makom (CHI)	Mora	1	0,00074	s	Eu	17
1122	ROSACEAE	*Rubus idaeus* L.			1	0,00074	s	Eu	19
1123	ROSACEAE	*Spiraea x vanhouttei* (C. Briot) Carriere		Espira	1	0,00074	s	NK	25
1124	RUBIACEAE	*Antirhea lucida* (SW.) Benth & Hook		Palo llorón	1	0,00074	t	M	2
1125	RUBIACEAE	*Arachnothryx leucophylla* (Kunth) Planch.		Mimosa, Mosita, Huele de noche	3	0,00223	h	M	3, 7, 21
1126	RUBIACEAE	*Blepharidium mexicanum* Standl.		Pipiste, Popistli	1	0,00074	t	M	9
1127	RUBIACEAE	*Bouvardia cordifolia* DC.			1	0,00074	h	M	19
1128	RUBIACEAE	*Bouvardia longiflora* (Cav.) Kunth	naxú (OA)	Flor de San Juan	1	0,00074	h	M	20
1129	RUBIACEAE	*Calycophyllum candidisimum* (Vahl) DC.		Dagame	1	0,00074	t	M	26
1130	RUBIACEAE	*Cephalanthus* salicifolius Humb. & Bonpl.		Atopol	1	0,00074	t	M	23
1131	RUBIACEAE	*Chiococca alba* (L.) Hitchc.			1	0,00074	c	M	2

1132	RUBIACEAE	*Coffea arabica* L.	caipe', ya café texca (OA)	Café, Café árabe, Café caturra, Café iberia	17	0,01262	s	Af	5, 19, 20, 25, 31
1133	RUBIACEAE	*Coffea liberica* W. Bull ex Hiern		Café	2	0,00148	s	Af	18, 19
1134	RUBIACEAE	*Diodia brasiliensis* Spreng.	oxipahuas (PUE)	Escoba, Escobilla	1	0,00074	s	M	25
1135	RUBIACEAE	*Diodia sarmentosa* Sw. Bacigalupo & Cobral	wal to' ol (HU)		1	0,00074	h	M	30
1136	RUBIACEAE	*Faramea occidentalis* (L.) A. Rich			1	0,00074	s	M	7
1137	RUBIACEAE	*Gardenia jasminoides* J.Ellis	naxú tiba (OA)	Gardenia, Orjea de ratón, Suchi Gardenia	9	0,00668	h	As	1, 9, 19, 20, 25
1138	RUBIACEAE	*Genipa americana* L.			1	0,00074	t	M	19
1139	RUBIACEAE	*Guettarda combsii* Urban			1	0,00074	t	M	2
1140	RUBIACEAE	*Guettarda elliptica* Swartz			1	0,00074	t	M	2
1141	RUBIACEAE	*Hamelia longipes* Standl.		Coyolillo	1	0,00074	t	M	26
1142	RUBIACEAE	Hamelia patens Jacq.	x'obte, k'anan (YU, QR), huitziquitempil (PUE), tsak look' (HU)	Tres hojitas, Guazipinze, Coralillo, Arbusto, Chacloco, Yerba de Cuba, Bayatilla, Lengua de colibri	15	0,01114	h	M	3, 7, 9, 15, 28
1143	RUBIACEAE	Hintonia octomera (Hemsl.) Bullock			1	0,00074	s	M	2
1144	RUBIACEAE	*Ixora chinensis* Lam.			1	0,00074	s	As	19
1145	RUBIACEAE	*Ixora coccinea* L.		Llamarada, Antorcha, Argentina, Morir amando, Cocinera, Jalisco, Clavito, Morir amando a Jesús, Flor de Izoara, Isocalo	15	0,01114	s	As	5, 6, 9, 10, 18
1146	RUBIACEAE	*Ixora finlaysoniana* Wall. ex G. Don		Flor de novia, Ramo de novia, Reunión de señoritas	4	0,00297	s	As	11, 21, 28, 29
1147	RUBIACEAE	*Machaonia lindeniana* Baillon	ku'chel (YU)		3	0,00223	s	M	2, 4, 7
1148	RUBIACEAE	*Morinda citrifolia* L.		Noni	2	0,00148	t	As	9, 28
1149	RUBIACEAE	*Morinda panamensis* Seem.		Noni	1	0,00074	s	M	3
1150	RUBIACEAE	*Morinda yucatanensis* Greenm.			2	0,00148	s	M	2, 6
1151	RUBIACEAE	*Mussaenda erythrophylla* Schumach. & Thonn.			1	0,00074	s	Af	19
1152	RUBIACEAE	*Pentas lanceolata* (Forssk.) Deflers		Margarita	1	0,00074	t	Af	18
1153	RUBIACEAE	*Psychotria elegans* Ridl.			1	0,00074	s	As	19
1154	RUBIACEAE	*Psychotria galeotiana* Martens			1	0,00074	s	M	17
1155	RUBIACEAE	*Psychotria nervosa* Sw.	tse' tsem ts 'ohool (HU)		1	0,00074	h	M	30
1156	RUBIACEAE	*Randia aculeata* L.			2	0,00148	s	M	2, 7
1157	RUBIACEAE	*Randia cinerea* (Fernald) Standl.			1	0,00074	t	M	18
1158	RUBIACEAE	*Randia echinocarpa* Moc. & Sesse Ev. DC		Granjel	1	0,00074	h	M	23
1159	RUBIACEAE	*Randia longiloba* Hemsl.	xka'ax (YU), kaax (YU)		4	0,00297	s	M	2, 4, 5, 7
1160	RUBIACEAE	*Randia octomera* (Hemsl.)Fagerl			1	0,00074	s	Af	2
1161	RUBIACEAE	*Randia standleyana* L. Wms.			1	0,00074	s	CSA	6
1162	RUBIACEAE	*Spermacoce laevis* Lam.	sakilnich (CHI)		2	0,00148	h	M	17, 29
1163	RUTACEAE	*Amyris madrensis* S. Wats		Limonaria	2	0,00148	s	M	2, 18
1164	RUTACEAE	*Casimiroa edulis* Llave & Lex.		Zapote blanco	4	0,00297	t	M	19, 22, 23, 24
1165	RUTACEAE	*Casimiroa tetrameria* Mill.	yh'uy (YU)		1	0,00074	t	M	7
1166	RUTACEAE	*Citrus × limon* (L.) Osbeck	dtusa'ani (OA)	Limón indio, Limón dulce, Limón, Lmón mandarina	9	0,00668	t	As	3, 4, 14, 22, 24
1167	RUTACEAE	*Citrus × microcarpa* Bunge		Naranjita de San José	2	0,00148	t	As	4, 7
1168	RUTACEAE	*Citrus aurantiifolia* (Christm.) Swingle	pa limon, dtusa'a (OA)	Limón, Limón criollo, Limón indio/ingerto/mandarina, Limón persa, limón agrio, Lima, Limón real, Lima limón, Lima chichi	23	0,01707	t	As	3, 4, 7, 13, 28
1169	RUTACEAE	*Citrus aurantiifolia* var. *latifolia* Tanaka ex Yu. Tanaka		Limón persa	1	0,00074	t	As	27
1170	RUTACEAE	*Citrus aurantium* L.	luxa ndi (OA)	Naranja criolla, Cajel	13	0,00965	t	As	3, 5, 6, 9, 10

1171	RUTACEAE	*Citrus limetoides* Tan		Lima	3	0,00223	t	As	3, 5, 6
1172	RUTACEAE	*Citrus limon* (L.) Burm. f.		Limón agrio, Limón	8	0,00594	t	As	1, 13, 22, 24, 27
1173	RUTACEAE	*Citrus maxima* (Burm.) Osbeck	luxa ndji'i (OA)	Pomelo, Toronja, Pomela	7	0,00520	t	As	9, 20, 21, 24, 29
1174	RUTACEAE	*Citrus medica* L.		Lima amarga, Lima de limón, Lima, China lima, Lima de ombligo, Cidra	11	0,00817	t	As	3, 7, 17, 27, 28
1175	RUTACEAE	*Citrus paradisi* Macf.		Toronja, Toronja blanca, Toronja rosa	9	0,00668	t	As	4, 5, 6, 7, 29
1176	RUTACEAE	*Citrus reticulata* Blanco	mantarina (YU)	Mandarina, Naranja clavo, Xocotclavo, Naranja tangerina	20	0,01485	t	As	3, 4, 6, 7, 9
1177	RUTACEAE	*Citrus sinensis* (L.) Osbeck	xocot (PUE), luxa (OA)	Naranja, Naranja de Valencia, Naranja dulce/criolla, Ingerta, China, Naranja de azúcar, Naranja dulce	24	0,01782	t	As	1, 3, 4, 7, 11
1178	RUTACEAE	*Esenbeckia berlandieri* Baill.		Murraya	1	0,00074	s	M	13
1179	RUTACEAE	*Murraya paniculata* (L.) Jacq.		Limonaria	13	0,00965	s	As	3, 4, 6, 9, 25
1180	RUTACEAE	*Ruta chalepensis* L.	nicté (QR)	Ruda, Dura	17	0,01262	s	NK	2, 3, 8, 13, 16
1181	RUTACEAE	*Ruta graveolens* L.	lula (QR)	Ruda	4	0,00297	s	Eu	1, 14, 17, 24
1182	RUTACEAE	*Zanthoxylum caribaeum* Lam.	sina'anche (YU)	Sasafrás	4	0,00297	t	M	2, 4, 7, 13
1183	SALICACEAE	*Salix babylonica* L.		Sauce	1	0,00074	t	As	27
1184	SALICACEAE	*Salix bonplandiana* Kunth			1	0,00074	t	M	19
1185	SALICACEAE	*Salix humboldtiana* Willd.			1	0,00074	t	CSA	16
1186	SAPINDACEAE	*Cupania dentata* DC.	cuezalcuahuit, ts' aw' (HU)	Garochillo, Üalo volador	3	0,00223	t	M	25, 27, 30
1187	SAPINDACEAE	*Litchi chinensis* Sonn.		Lichi, Litchi	2	0,00148	t	As	27, 29
1188	SAPINDACEAE	*Melicoccus bijugatus* Jacq.	guaya de otoit, uayam (YU)	Guya, Guaya, Huaya extranjera, Huya cubana, Guya cubana, Mamoncillo	12	0,00891	t	M	1, 3, 4, 7, 28
1189	SAPINDACEAE	*Melicoccus oliviformis* Kunth	guaya matiel, wayum (YU)	Guaya de Monte, Guaya, Huaya pais, Huya India, Guayum	13	0,00965	t	M	3, 4, 5, 7, 8
1190	SAPINDACEAE	*Paullinia tomentosa* Jacq.	t'in kamab (HU)		1	0,00074	c	M	30
1191	SAPINDACEAE	*Sapindus saponaria* L.	subu'ul, sihó (QR), walul (HU)	Jabóncillo, Juguete, Coyul	6	0,00445	t	M	5, 7, 9, 11, 23
1192	SAPINDACEAE	*Serjania triquetra* Radlk.		Palo de tres costillas	1	0,00074	c	M	23
1193	SAPINDACEAE	*Serjania yucatanensis* Standl.			1	0,00074	c	M	2
1194	SAPINDACEAE	*Thouinia villosa* DC.		Tecuatli	1	0,00074	c	M	22
1195	SAPOTACEAE	*Chrysophyllum cainito* L.	taq'uin ch'ijt, chixt, nihkeh (YU)	Caimito, Caimito del monte, Caimito morado, Cayumito	8	0,00594	t	CSA	3, 4, 5, 8, 9
1196	SAPOTACEAE	*Chrysophyllum mexicanum* Brandegee		Pistillo	1	0,00074	t	M	26
1197	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen	bic´ti chΛ´te´, chΛte´ (CAM) chinino, Ya' (YU, QR), Yaj (YU), nachu ndse' en (OA)chakalja'as, nacha ani (OA), chakalja'as, nacha ani (OA)	Zapote chiquito, Chicozapote, Zapote chicom, Sapote, Mamey, Zapote chico, Zapote injertado, Caimito, Caimito del monte, Caimito morado, Cayumito	21	0,01559	t	M	2, 3, 4, 7, 9
1198	SAPOTACEAE	*Pouteria campechiana* (Kunth.) Baehni	Kanix'te', Kaniste', nxtin (OA)	Zapote agrio, Zapote amarillo	7	0,00520	t	M	2, 7, 8, 11, 26
1199	SAPOTACEAE	*Pouteria glomerata* (Miq) Radlk.			2	0,00148	t	M	5, 9
1200	SAPOTACEAE	*Pouteria glomerata* ssp. *glomerata*	choch (YU)	Fruta de Santo Domingo	3	0,00223	t	M	3, 4, 7
1201	SAPOTACEAE	*Pouteria reticulata* (Engl.) Eyma.		Zapotillo	1	0,00074	t	M	13
1202	SAPOTACEAE	*Pouteria sapota* (Jacq.) H.E.Moore & Stearn	chakal ha's, way ja'as (YU), cuauhtzapot (PUE)	Mamey, Zapote, Zapote Mamey	15	0,01114	t	M	3, 4, 8, 14, 26
1203	SAPOTACEAE	*Sideroxylon capiri* ssp. *tempisque* (Pittier) T.D.Penn.		Catire	1	0,00074	t	M	23
1204	SAPOTACEAE	*Sideroxylon obtusifolium* (Roem. & Schult.)		Caipoqui	1	0,00074	t	M	26

		T.D.Penn.							
1205	SCHIZAEACEAE	*Lygodium venustum* Sw.		Nido de papan	1	0,00074	c	M	29
1206	SCROPHULARIACEAE	*Antirrhinum majus* L.		Perrito	1	0,00074	h	Eu	22
1207	SCROPHULARIACEAE	*Capraria biflora* L.	chech kitam (YU)	Claudiosa, Tasajo	1	0,00074	h	M	16
1208	SCROPHULARIACEAE	*Capraria saxifragifolia* Schl. & Cham			1	0,00074	s	M	29
1209	SCROPHULARIACEAE	*Russelia equisetiformis* Schlecht. & Cham.		Cola de caballo	3	0,00223	c	M	2, 25, 31
1210	SCROPHULARIACEAE	*Scoparia dulcis* L.		Hierba Martín	1	0,00074	h	M	16
1211	SCROPHULARIACEAE	*Stemodia durantifolia* (L.) Swartz		Santa Marta	1	0,00074	h	M	23
1212	SELAGINELLACEAE	*Selaginella lepidophylla* (Hooker & Greville) Spring		Doradilla	1	0,00074	h	M	23
1213	SIMAROUBACEAE	*Alvaradoa amorphoides* Lieb.	lunche (YU), belsinik Che (YU)		4	0,00297	t	M	2, 5, 6, 7
1214	SIMAROUBACEAE	*Simarouba glauca* DC.		Pistache, Aceituno	2	0,00148	t	M	9, 21
1215	SMILACACEAE	*Smilax aristolochiifolia* Mill.			1	0,00074	c	M	8
1216	SMILACACEAE	*Smilax moranensis* M. Martens & Galeotti	ac (CHI)	Bejuco	1	0,00074	c	M	17
1217	SOLANACEAE	*Atropa belladonna* L.		Belladona	1	0,00074	h	NK	14
1218	SOLANACEAE	*Browallia americana* L.		Primavera, Juanita	1	0,00074	h	M	25
1219	SOLANACEAE	*Brugmansia sanguinea* (Ruiz & Pav) D. Don	xochimait (PUE)	Floripondia rojo	1	0,00074	s	CSA	25
1220	SOLANACEAE	*Brugmansia suaveolens* L.		Campana	1	0,00074	s	CSA	14
1221	SOLANACEAE	*Brugmansia x candida* Pers.	Kampana Te', xochimait (PUE)	Campanula blanca/ rosa, Floripondio, Floripondio blanco	8	0,00594	s	CSA	3, 9, 17, 25, 31
1222	SOLANACEAE	*Brunfelsia americana* L.		Galán de noche	1	0,00074	s	NK	3
1223	SOLANACEAE	*Brunfelsia nitida* Benth.		Galán, Galán de tarde, Galancillo	2	0,00148	s	CSA	25, 29
1224	SOLANACEAE	*Capsicum annum* L.		Chile seco, Chile chocolate	21	0,01559	s	M	1, 2, 5, 7, 9
1225	SOLANACEAE	*Capsicum annuum* var. *glabriusculum* (Dunal) Heiser & Pickersgill	tsakam ist (HU), nia kandu (OA)	Chile chiquito, Chile bolita, Chile piquín	6	0,00445	s	M	12, 20, 21, 28, 30
1226	SOLANACEAE	*Capsicum baccatum* L.		Chile piquín	1	0,00074	s	M	31
1227	SOLANACEAE	*Capsicum chinense* Jacq.		Chile habanero	2	0,00148	s	As	3, 12
1228	SOLANACEAE	*Capsicum pubescens* Ruiz & Pav.	ich (CHI) cojo iaa murunoo, triqui (OA)	Chile tusta, Chile manzano (CHI)	3	0,00223	s	M	17, 28, 19
1229	SOLANACEAE	*Cestrum diurnum* L.			1	0,00074	s	M	5
1230	SOLANACEAE	*Cestrum dumetorum* Schlecht	tsabalte' (HU)	Alcajuda, Frutenoche, Orcajuda	3	0,00223	s	M	28, 29, 30
1231	SOLANACEAE	*Cestrum elegans* (Brong. Ex Neuman)		Huele de noche	1	0,00074	s	M	21
1232	SOLANACEAE	*Cestrum nocturnum* L.	ak'ab yom, ngaya ase'e, desá (YU)	Florifundio, Huele de noche, Zorillo, Frutenoche, Huele de noche, Galan de noche, Juan de noche, Hediondilla	13	0,00965	s	M	3, 4, 6, 7, 9
1233	SOLANACEAE	*Cestrum racemosum* Ruiz & Pav.		Huele de noche	1	0,00074	s	M	26
1234	SOLANACEAE	*Datura inoxia* Mill.		Toloache	3	0,00223	h	M	3, 8, 24
1235	SOLANACEAE	*Datura stramonium* L.	chamico (QR)	Floribundio, Toloache, Chamico blanco, Chayotillo	4	0,00297	h	M	9, 11, 19, 23
1236	SOLANACEAE	*Lycianthes heteroclita* (Sendtner) Bitter	axinté (CHI)		1	0,00074	h	M	17
1237	SOLANACEAE	*Lycianthes stephanocalyx* Bitter		Cuichil	1	0,00074	h	M	25
1238	SOLANACEAE	*Lycopersicon esculentum* Mill.	p'aak, p'ak, koya', chichol (CHI), p'ak (YU), ahp'ak (QR), xitomat (PUE), tuthay (HU), chuti xkua'a (OA)	Tomate, Jitomate, Tomate grande, Tomate menudo, Tomate rojo, Xaltomate	19	0,01411	h	M	1, 3, 7, 9, 17
1239	SOLANACEAE	*Nicotiana glauca* Graham	pasmoxioqui (YU)	Gigante	2	0,00148	s	CSA	22, 23
1240	SOLANACEAE	*Nicotiana tabacum* L.	yaxmocj, c'ujts, moy, kutz (QR), nagno (OA)	Tabaco	8	0,00594	s	CSA	2, 8, 9 12, 16

1241	SOLANACEAE	*Petunia hybrida* Hort. Ex Vilm.		Petunia	3	0,00223	h	M	19, 29, 31
1242	SOLANACEAE	*Physalis cinerascens* (Dunal) Hitch.	jit koya' (HU)	Tomate con cáscara, Tomatillo	2	0,00148	h	M	9, 29
1243	SOLANACEAE	*Physalis graciliis* Miers	tuthaayil an t' ot (HU)		1	0,00074	c	M	30
1244	SOLANACEAE	*Physalis ixocarpa* Brot.	bitalchichol (CHI)	Tomate verde	2	0,00148	h	M	17, 19
1245	SOLANACEAE	*Physalis melanocystis* (Robinson) Bitter var. *melanocystis*	akal k' ak' al ilaal (HU)		1	0,00074	s	M	30
1246	SOLANACEAE	*Physalis pubescens* L.	chichol ch'oj (YU)	Tomate silvestre	1	0,00074	h	M	17
1247	SOLANACEAE	*Physalis virginiana* Miller	tuthaayil an t' ot (HU)	Tomatillo del monte	1	0,00074	h	M	30
1248	SOLANACEAE	*Physalis viscosa* L.	tuthaayil an t' ot (HU)	Tomatillo del monte	1	0,00074	h	M	30
1249	SOLANACEAE	*Solandra maxima* (Sessé & Moc.) P. Green.		Capa de oro	2	0,00148	c	M	21, 27
1250	SOLANACEAE	*Solanum americanum* Mill.	mul itá (CHI), wal ts'ok (HU), ndi ya'a (OA)	Bixhiate, Hierba Mora	11	0,00817	h	NA	8, 14, 19, 20, 29
1251	SOLANACEAE	*Solanum candidum* Lindl.		Chinchilegua	2	0,00148	s	CSA	19, 31
1252	SOLANACEAE	*Solanum chiapapense* Roe.			1	0,00074	s	M	2
1253	SOLANACEAE	*Solanum crysotrichum* Schltdl.	k'uxpeul ka' (YU)	Sosa	1	0,00074	s	M	17
1254	SOLANACEAE	*Solanum diphyllum* L.	tsakam tsabalte' (HU)	Trompillo, Orcajudo verde	2	0,00148	s	M	29, 30
1255	SOLANACEAE	*Solanum erianthum* D. Don.			1	0,00074	s	M	8
1256	SOLANACEAE	*Solanum hirtum* Vahl.	putbalam (YU)		2	0,00148	s	M	2, 11
1257	SOLANACEAE	*Solanum jasminoides* Pax.		Gloria	1	0,00074	c	CSA	21
1258	SOLANACEAE	*Solanum laceolatum* (Cav.)	k'uxpeul (CHI)	Sosa (morada)	1	0,00074	s	M	17
1259	SOLANACEAE	*Solanum mammosum* L.			2	0,00148	s	NK	8, 25
1260	SOLANACEAE	*Solanum nigrescens* Mart. & Gal.		Salasar, Hierba Mora	2	0,00148	h	M	9, 27
1261	SOLANACEAE	*Solanum nigrum* L.	ch'ajuc', tomatquilit (PUE)	Hierba Mora	4	0,00297	h	NK	9, 21, 24, 25
1262	SOLANACEAE	*Solanum nitidum* Ruiz & Pav.		Guayacan	1	0,00074	h	CSA	31
1263	SOLANACEAE	*Solanum nudum* Kunth	k'uxpeul (CHI)	Gediondilla	2	0,00148	s	M	16, 17
1264	SOLANACEAE	*Solanum pimpinellifolium* (Jusl.) Mill.	citaltomat (PUE)		1	0,00074	h	M	25
1265	SOLANACEAE	*Solanum rostratum* Dunal		Ayohuixtle	1	0,00074	h	M	23
1266	SOLANACEAE	*Solanum seaforthianum* Andrews			1	0,00074	c	M	19
1267	SOLANACEAE	*Solanum torvum* Sw.	muuthuuts' (HU), ya naya' a xuya (OA)	Ebalam, Sosa, Berenjena	5	0,00371	s	NA	3, 4, 20, 30, 31
1268	SOLANACEAE	*Solanum tuberosum* L.	Is'ac (YU)	Papa	1	0,00074		M	17
1269	SOLANACEAE	*Solanum umbellatum* Mill.	uk'uch (YU)		1	0,00074	s	M	7
1270	STERCULIACEAE	*Dombeya wallichii* (Lindl.) K.Schum.		Flor del artadecer	1	0,00074	t	Af	21
1271	STERCULIACEAE	*Guazuma ulmifolia* Lam.	piixoy (YU, QR), xpapaste', wajsimo, olotcuahuit (PUE)	Guácima, Guasima, cuaulote, Huácimo Piixoi, Palo de olote	16	0,01188	t	M	6, 9, 10, 15, 28
1272	STERCULIACEAE	*Helicteres baruensis* Jacq.	zuput (QR)		2	0,00148	s	M	2, 11
1273	STERCULIACEAE	*Melochia nodiflora* Sw.			1	0,00074	h	M	8
1274	STERCULIACEAE	*Theobroma bicolor* Humb. Et. Bonpl.	nguió xaa (OA)	Cuapataixtle, Cacao blanco	2	0,00148	t	CSA	20, 21
1275	STERCULIACEAE	*Theobroma cacao* L.	x'mul'och, nkio'o (OA)	Cacao	7	0,00520	t	M	11, 15, 18, 19, 21
1276	STERCULIACEAE	*Waltheria indica* L.		Tapaculo	1	0,00074	h	As	23
1277	STYRACACEAE	*Styrax argenteus* C. Presl.		Chucamay, Levadura	2	0,00148	t	M	16, 31
1278	THEACEAE	*Camellia japonica* L.		Camelia	1	0,00074	t	As	25
1279	THEACEAE	*Ternstroemia tepezapote* Schlecht & Cham.		Teléfono, Trompillo, Mata piojo, Tila	1	0,00074	t	M	16
1280	THYMELAEACEAE	*Daphnopsis americana* (Mill.)		Talismecate, Cebollejo	2	0,00148	t	M	16, 32
1281	TILIACEAE	*Carpodiptera cubensis* Griseb.		Alzaprima	1	0,00074	h	M	28
1282	TILIACEAE	*Corchorus siliquosus* L.	chi'chi'beh (QR), alahuaoxipahuas (PUE), pehtsul kw' eet (HU)	Malvilla, Malvilla de platanillo, Escoba resbalosa	3	0,00223	s	M	11, 25, 30
1283	TILIACEAE	*Heliocarpus americanus* L.		Clahuilaga	1	0,00074	t	CSA	23

1284	TILIACEAE	*Heliocarpus appendiculatus* Turez.	xonot, iztaxonot (PUE)	Jonote, Jonote blanco	2	0,00148	t	M	25, 26
1285	TILIACEAE	*Heliocarpus donnell-smithii* Rose	xaxaloxonot (PUE), baat (HU)	Jonote, Jonote de monte	5	0,00371	t	M	2, 13, 25, 27, 30
1286	TILIACEAE	*Luehea candida* (DC) Mart.			1	0,00074	t	M	2
1287	TILIACEAE	*Triumfetta semitriloba* Jacq.	Yuch'max, thipaxi' (HU)	Cadillo	4	0,00297	s	M	2, 8, 17, 30
1288	TROPAEOLACEAE	*Tropaeolum majus* L.		Mastuerzo	1	0,00074	c	CSA	31
1289	TURNERACEAE	*Turnera ulmifolia* L.	chak miisib (CH)		2	0,00148	s	M	2, 9
1290	TYPHACEAE	*Typha latifolia* L.		Tule	1	0,00074	h	M	23
1291	ULMACEAE	*Trema micrantha* (L.) Blume		Togalapoli	2	0,00148	t	M	2, 26
1292	URTICACEAE	*Myriocarpa longipes* Liebm.		Palo de agua	1	0,00074	t	CSA	26
1293	URTICACEAE	*Pilea cadierei* Gagnep. & Guillaumin			1	0,00074	h	As	29
1294	URTICACEAE	*Pilea herniarioides* (Sw.) Lindley			1	0,00074	h	M	29
1295	URTICACEAE	*Pilea microphylla* (L.) Liebm.		Planta en maceta, Espuma de mar, Rocio, Chino	5	0,00371	h	M	2, 9, 13, 21, 29
1296	URTICACEAE	*Pilea pubescens* Liebm.			2	0,00148	h	M	25, 29
1297	URTICACEAE	*Pouzolzia occidentalis* (Liebm.) Weed.	uxum ilaal (HU)		1	0,00074	s	M	30
1298	URTICACEAE	*Urera baccifera* (L.) Gaudich	laal (YU)		1	0,00074	s	M	5
1299	URTICACEAE	*Urera caracasana* (Jacq.) Griseb.		Chichicaztle	3	0,00223	t	M	2, 6, 29
1300	URTICACEAE	*Urtica chamaedryoides* Pursh.		Chicicaste, Chicicaztle	2	0,00148	h	M	25, 29
1301	VERBENACEAE	*Callicarpa acuminata* Kunth	ukuuch xiw (YU), xpuki'n, elte' (HU)		3	0,00223	s	M	2, 7, 11
1302	VERBENACEAE	*Citharexylum mocinnoi* D.Don			1	0,00074	t	M	19
1303	VERBENACEAE	*Citharexylum schottii* Greenm.			3	0,00223	t	M	2, 7, 30
1304	VERBENACEAE	*Clerodendrum thomsoniae* Balf.	naxú koama (OA)	Clerolindo, Clero blanco, Bejuco	3	0,00223	s	Af	20, 25, 27
1305	VERBENACEAE	*Clerodendrum x speciosum* Dombr. Java Glory Bean		Clero rojo, Clero lindo	1	0,00074	c	Af	25
1306	VERBENACEAE	*Cornutia pyramidata* L.	xolte'xnuc (QR), yashé (CHI), cuauhuiteconi (PUE)	Tabaquillo cimarron, Palo hueco	3	0,00223	h	M	11, 17, 25
1307	VERBENACEAE	*Duranta erecta* L.		Ramo de novia	4	0,00297	s	M	2, 25, 27, 29
1308	VERBENACEAE	*Glandularia bipinnatifida* (Schauer) Nutt.		Pizarrina	1	0,00074	h	M	25
1309	VERBENACEAE	*Glandularia elegans* (Kunth) Umber		Alfombrilla del monte	1	0,00074	h	M	31
1310	VERBENACEAE	*Glandularia laeinata* (L.) S & C.		Alfombrilla	1	0,00074	h	CSA	31
1311	VERBENACEAE	*Lantana achyranthifolia* Desf.			1	0,00074	s	M	19
1312	VERBENACEAE	*Lantana camara* L.	tsak patelax (HU)	Orosus o Cruzus, Orégano, Rinonina, Sonorita	13	0,00965	s	M	3, 5, 6, 7, 28
1313	VERBENACEAE	*Lantana involucrata* L.		Pitiona	1	0,00074	h	M	18
1314	VERBENACEAE	*Lantana montevidensis* (Spreng.) Briq.			1	0,00074	s	CSA	19
1315	VERBENACEAE	*Lippia alba* (Mill.) N.E.Br. ex Britton & P.Wilson	xca ya'a (OA)	Té de China, Salvia real, Yerba buena, Cimarrona	6	0,00445	s	M	12, 16, 20, 21, 31
1316	VERBENACEAE	*Lippia graveolens* Kunth	ak'ilche', xak'ilche', xaak'che (HU)	Orégano, Oreganocito, Salva real	7	0,00520	h	M	2, 3, 9, 12, 13
1317	VERBENACEAE	*Lippia myriocephala* Schlecht. & Cham.	anaamte' (HU)	Palo de gusano	2	0,00148	s	M	26, 30
1318	VERBENACEAE	*Lippia umbellata* Cav.	coaciulcuahuit (PUE)	Tabaquillo, Palo que da gusano	1	0,00074	s	M	25
1319	VERBENACEAE	*Petrea volubilis* L.	thathup ts'aah (HU)		1	0,00074	c	M	30
1320	VERBENACEAE	*Phyla scaberrima* (Juss. ex Pers.) Moldenke	tzopelicxihuit (PUE)	Orégano grueso, Orozús, Hierba dulce, Jegüite dulce	4	0,00297	h	M	2, 11, 16, 19
1321	VERBENACEAE	*Priva lappulacea* (L.) Pers.	matiel, t'apay ts' ohool (YU)	Monte	4	0,00297	s	M	2, 9, 29, 30
1322	VERBENACEAE	*Stachytarpheta* frantzii Pol.		Verbena	1	0,00074	h	M	13
1323	VERBENACEAE	*Tectona grandis* L.		Almendra	1	0,00074	t	As	9
1324	VERBENACEAE	*Verbena carolina* L.	pemk'ulub (CHI)	Verbena	4	0,00297	h	M	17, 19, 23, 25
1325	VERBENACEAE	*Verbena hybrida* Voss		Alfombrilla	1	0,00074	h	NK	25
1326	VERBENACEAE	*Verbena litoralis* Kunth	pemk'ulub (CHI)	Verbena	3	0,00223	h	M	16, 17, 25

1327	VERBENACEAE	*Vitex gaumeri* Greenman	ya'ax nik (QR)		3	0,00223	t	M	2, 7, 11
1328	VERBENACEAE	*Vitex hemsley* Briq.	ya tundi (OA)	Capulín	1	0,00074	h	M	20
1329	VERBENACEAE	*Vitex mollis* Kunth	ahualamo (NAY)	Coyotomate	2	0,00148	t	M	23, 31
1330	VERBENACEAE	*Vitex pyramidata* B.L.Rob.		Canelillo	1	0,00074	t	M	23
1331	VERBENACEAE	*Vitex trifolia* L.		Cerco, Salvia	2	0,00148	s	Af	5, 9
1332	VIOLACEAE	*Hybanthus yucatanensis* Millsp.	sak bake (YU)		1	0,00074	h	M	7
1333	VIOLACEAE	*Viola odorata* L.		Violeta	1	0,00074	h	NK	25
1334	VISCACEAE	*Phoradendron quadrangulare* (Kunth) Griseb.		Caballera, Contrahierba	1	0,00074	c	CSA	9
1335	VITACEAE	*Cissus microcarpa* Vahl			1	0,00074	c	M	2
1336	VITACEAE	*Vitis bourgaena* Planch.		Bejuco	1	0,00074	c	M	17
1337	VITACEAE	*Vitis tiliifolia* Humb. & Bonpl.		Corraleno, Bejuco de agua, Uvero	1	0,00074	c	M	16
1338	VITACEAE	*Vitis vinifera* L.		Uva	1	0,00074	c	Eu	14
1339	ZINGIBERACEAE	*Alpinia purpurata* (Vieill.) K.Schum.		Hawaiana, Hawaianita, Mariposa	5	0,00371	h	As	9, 11, 15, 18, 19
1340	ZINGIBERACEAE	*Alpinia zerumbet* (Pers.) B.L.Burtt & R.M.Sm.		Caracolito	2	0,00148	h	As	16, 19
1341	ZINGIBERACEAE	*Curcuma longa* L.	azafraan (HU)	Azafrán	1	0,00074	h	As	30
1342	ZINGIBERACEAE	*Etlingera elatior* (Jack) R.M.Sm.		Hawaiana, Antorcha	1	0,00074	h	As	25
1343	ZINGIBERACEAE	*Hedychium coronarium* Koenig	pimel pejpen' (HUA)	Pureza, Mariposas, Mariposa blanca, Flor de mariposa, Flor de paloma, Pureza de María	11	0,00817	h	As	3, 6, 7, 9, 13
1344	ZINGIBERACEAE	*Renealmia alpinia* (Rottb.) Maas	ixquihit (PUE)	Ixquihit del grande	1	0,00074	h	M	25
1345	ZINGIBERACEAE	*Zingiber officinale* Roscoe	cibre, laab ist (HU)	Gengibre, Sensibre, Agengible	6	0,00445	h	As	9, 12, 21, 29 30
1346	ZYGOPHYLLACEAE	*Guaiacum sanctum* L.	guayacan (YU)	Guayacán, Roble	1	0,00074	t	M	9
1347	ZYGOPHYLLACEAE	*Kallstroemia rosei* Rydb.		Verdolaga de marrano	1	0,00074	c	M	23

Appendix V: Recorded subspecies, botanical variants and hybrids

TR: Total records in 31 investigations

*** 1- 31:** Record reference, according to numeration of location of the dataset (Fig.11, No. 1-31)

#	Plant Family	Subspecies	T	References*
1	AGAVACEAE	*Agave americana* ssp. *americana*	1	19
2	ASTERACEAE	*Artemisia ludoviciana* ssp. *mexicana* (Willd.) Keck	8	9, 11, 16, 25, 31
3	EUPHORBIACEAE	*Cnidoscolus aconitifolius* ssp. *aconitifolius* Breckon	1	6, 9, 10, 12 ,18
4	EUPHORBIACEAE	*Euphorbia tithymaloides* ssp. *parasitica* (Boiss. ex Klotzsch)	2	1, 11
5	FABACEAE	*Phaseolus coccineus* ssp. *polyanthus* (Greenm.) Marechal & Gal.	1	30
6	MALVACEAE	*Alcea rosea* ssp. *ficifolia* (L.) Govaerts	1	9
7	MIMOSACEAE	*Inga vera* ssp. *eriocarpa* (Benth.) Leon	1	31
8	MIMOSACEAE	*Inga vera* ssp. *spuria* (Willd.) J.Leon	3	14, 25, 27
9	MORACEAE	*Artocarpus nitidus* ssp. *borneensis*	1	14
10	MYRSINACEAE	*Myrsine coriacea* ssp. *coriacea*	1	17
11	POACEAE	*Digitaria eriantha* ssp. pentzii (Stent) Kok	1	27
12	SAPOTACEAE	*Pouteria glomerata* ssp. *glomerata*	3	3, 4, 7
13	SAPOTACEAE	*Sideroxylon capiri* ssp. *tempisque* (Pittier) T.D.Penn.	1	23
#	Plant Family	Botanical Variants	T	References*
1	AGAVACEAE	*Agave vivipara* var. v*ivipara*	4	2, 3, 23, 29
2	ASTERACEAE	*Isocarpha oppositifolia* var. *achyranthes* (DC.) Keil & Stuessy	1	2
3	ASTERACEAE	*Sclerocarpus uniserialis* (Hook.) Bentham var. *frutescens* (Brandeg.)	2	29, 30
4	ASTERACEAE	*Senecio praecox var. morelensis* (Miranda) McVaugh	1	23
5	ASTERACEAE	*Smallanthus maculatus* var. *maculatus* (Cav.) H.Rob..	1	30
6	BEGONIACEAE	*Begonia cucullata* var. *hookeri* (A.DC.) L.B.Sm. & B.G.Schub.	1	31
7	COMMELINACEAE	*Tradescantia zebrina* var. *zebrina* G. Don	2	25, 31
8	DAVALLIACEAE	*Nephrolepis exaltata* var. Roseveltii plumosa	1	31
9	EQUISETACEAE	*Equisetum hyemale* var. *affine* (Engelm.) A.A. Eaton	1	22
10	EUPHORBIACEAE	*Euphorbia milii* var. *splendens* (Bojer ex Hook.) Ursch & Leandri	1	13
11	FABACEAE	*Chloroleucon mangense* var. *mangense* (Jacq.) Britton & Rose	1	5
12	FABACEAE	*Dalea foliolosa* var. *foliolosa* (Aiton) Barneby	1	23
13	FABACEAE	*Mucuna pruriens* var. *pruriens* (L.) DC.	1	2
14	LILIACEAE	*Chlorophytum comosum* var. c*omosum*	1	31
15	LYTHRACEAE	*Cuphea decandra* var. *purpusii* (Brandegee) Bacig.	1	31
16	MALVACEAE	*Hibiscus rosa-sinensis* var. c*ooperii*	1	21
17	MALVACEAE	*Hibiscus rosa-sinensis* var. *rubra plena*	1	21
18	MALVACEAE	*Malvaviscus arboreus* var. *mexicanus* Schltdl.	2	28, 29
19	MALVACEAE	*Talipariti tiliaceum* var. *pernambucense* (Arruda) Fryxell	1	21
20	PIPERACEAE	*Piper hispidum* var. *hispidum*	1	25
21	ROSACEAE	*Rosa multiflora* var. *cathayensis* Rehder & E.H. Wilson	1	25
22	RUTACEAE	*Citrus aurantiifolia* var. *latifolia* Tanaka ex Yu. Tanaka	1	27
23	SOLANACEAE	*Capsicum annuum* var. *glabriusculum* (Dunal) Heiser & Pickersgill	6	12, 20, 21, 28, 30
24	SOLANACEAE	*Physalis melanocystis* (Robinson) Bitter var. *melanocystis*	1	30
#	Plant family	Hybrids	T	References*
1	AMARYLLIDACEAE	Eucharis × grandiflora Planch. & Linden	1	31
2	ASTERACEAE	*Dendrothema* x *grandiflorum*	1	16
3	BEGONIACEAE	*Begonia* × *albopicta* W.Bull	1	25
4	CANNACEAE	*Canna* x *generalis* Bailey	4	1, 7, 27, 31
5	GERANIACEAE	*Pelargonium* x *hortorum*	4	16, 22, 25, 31
6	IRIDACEAE	*Iris* x *germanica*	1	31

7	LAMIACEAE	*Mentha* × *piperita* L.	9	3, 8, 9, 11, 12
8	LAMIACEAE	*Mentha* × *verticillata* L.	4	1, 9, 14, 22
9	LAURACEAE	*Persea schiedean*a x *americana*	1	18
10	MUSACEAE	*Musa acuminata* Colla x *M. balbisiana* Colla	2	1, 3, 7, 9, 29
11	NYCTAGINACEAE	*Bougainvillea* x *buttiana* Holttum & Standl.	7	1, 4, 7, 9, 31
12	ONAGRACEAE	*Fuchsia* × *hybrida* Voss	2	19, 31
13	ROSACEAE	*Potentilla* × *ananassa* (Duch. ex Rozier) Mabb.	1	19
14	ROSACEAE	*Rosa* × *damascena* 144+(pro sp.)+	1	19
15	ROSACEAE	*Rosa* × *rugosa* Thunb.	1	19
16	ROSACEAE	*Rosa x alba* L.	1	19
17	ROSACEAE	*Rosa x centifolia* L.	5	13, 19, 20, 23, 27
18	ROSACEAE	*Spiraea x vanhouttei* (C. Briot) Carriere	1	25
19	RUTACEAE	*Citrus* × *limon* (L.) Osbeck	9	3, 4, 14, 22, 24
20	RUTACEAE	*Citrus* × *microcarpa* Bunge	2	4, 7
21	SOLANACEAE	*Brugmansia x candida* Pers.	8	3, 9, 17, 25, 31
22	VERBENACEAE	*Clerodendrum x speciosum* Dombr. Java Glory Bean	1	25

Appendix VI: Most frequent home garden plants (Rank 1-20)

H= herb**, S=** shrub, **T=** tree, **C=** climber**, E=** epiphyt

M= Mexico**, AS=** Asia, **AF=** Africa, **EU=** Europe and Near East, **O=** Oceania and Australia**, NA=** North America**, NK**= Not known

Rank	Total record	Family	Specie	Growth habit					Origin
				H	S	T	C	E	
1	29	MUSACEAE	*Musa acuminata* Colla x *M. balbisiana* Colla			x			AS
2	28	CARICACEAE	*Carica papaya* L.			x			M
3	27	MYRTACEAE	*Psidium guajava* L.			x			M
4	24	ANACARDIACEAE	*Mangifera indica* L.			x			AS
4	24	FABACEAE	*Tamarindus indica* L.			x			AS
4	24	LAURACEAE	*Persea americana* Mill.			x			M
4	24	RUTACEAE	*Citrus sinensis* (L.) Osbeck			x			AS
5	23	MELIACEAE	*Cedrela odorata* L.			x			M
5	23	RUTACEAE	*Citrus aurantiifolia* (Christm.) Swingle			x			AS
6	22	ANNONACEAE	*Annona muricata* L.			x			M
6	22	ARECACEAE	*Cocos nucifera* L.			x			AS
7	21	BURSERACEAE	*Bursera simaruba* (L.) Sarg.			x			M
7	21	COMBRETACEAE	*Terminalia catappa* L.			x			NK
7	21	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen			x			M
7	21	SOLANACEAE	*Capsicum annum* L.		x				M
8	20	MALPIGHIACEAE	*Byrsonima crassifolia* (L.) Kunth			x			M
8	20	RUTACEAE	*Citrus reticulata* Blanco			x			AS
9	19	EUPHORBIACEAE	*Manihot esculenta* Crantz.	x					C
9	19	MALVACEAE	*Hibiscus rosa-sinensis* L.		x				AS
9	19	PUNICACEAE	*Punica granatum* L.		x				AS
9	19	SOLANACEAE	*Lycopersicon esculentum* Mill.	x					M
10	18	ALOEACEAE	*Aloe vera* (L.) Burm.f.	x					AF
10	18	ASTERACEAE	*Tagetes erecta* Willd.	x					M
10	18	BIGNONIACEAE	*Crescentia cujete* L.			x			M
10	18	PIPERACEAE	*Piper auritum* Kunth		x				M
11	17	ANACARDIACEAE	*Spondias purpurea* L.			x			M
11	17	ANNONACEAE	*Annona reticulat*a L.			x			M
11	17	CHENOPODIACEAE	*Chenopodium ambrosioides* L.	x					M
11	17	POACEAE	Cymbopogon citratus (DC.) Stapf	x					AS
11	17	POACEAE	*Saccharum officinarum* L.	x					AS
11	17	RUBIACEAE	*Coffea arabica* L.		x				AF
11	17	RUTACEAE	*Ruta chalepensis* L.		x				NK
12	16	APOCYNACEAE	*Plumeria rubra* L.			x			M
12	16	BIGNONIACEAE	*Parmentiera aculeata* (Kunth)			x			M
12	16	BIXACEAE	*Bixa orellana* L.			x			M
12	16	BROMELIACEAE	*Ananas comosus* (L.) Merr.	x					C
12	16	EUPHORBIACEAE	*Cnidoscolus aconitifolius* ssp. *aconitifolius* Breckon		x				M
12	16	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.			x			M
12	16	STERCULIACEAE	*Guazuma ulmifolia* Lam.			x			M
13	15	APOCYNACEAE	*Nerium oleander* L.		x				EU
13	15	EUPHORBIACEAE	*Codiaeum variegatum* (L.) Rumph. ex A.Juss.		x				AS
13	15	FABACEAE	*Delonix regia* (Hook.) Raf.			x			AF
13	15	LAMIACEAE	*Ocimum basilicum* L.	x					AS
13	15	POACEAE	*Zea mays* L.	x					M

13	15	RUBIACEAE	Hamelia patens Jacq.	x					M
13	15	RUBIACEAE	*Ixora coccinea* L.		x				AS
13	15	SAPOTACEAE	*Pouteria sapota* (Jacq.) H.E.Moore & Stearn			x			M
14	14	APIACEAE	*Coriandrum sativum* L.	x					AS
14	14	APOCYNACEAE	*Catharanthus roseus* (L.) G. Don	x					M
14	14	CUCURBITACEAE	*Sechium edule* (Jacq.) Sw.				x		M
14	14	EUPHORBIACEAE	*Ricinus communis* L.		x				AF
14	14	FABACEAE	*Phaseolus vulgaris* L.				x		M
14	14	NYCTAGINACEAE	*Bougainvillea glabra* Choisy				x		C
15	13	AMARANTHACEAE	*Celosia argentea* L.	x					M
15	13	ANNONACEAE	*Annona squamosa* L.			x			M
15	13	CUCURBITACEAE	*Cucurbita pepo* L.	x					M
15	13	FABACEAE	*Leucaena leucocephala* (Lam.) De Wit.			x			M
15	13	LYTHRACEAE	*Lagerstroemia indica* L.		x				M
15	13	MIMOSACEAE	*Pithecellobium dulce* (Roxb.) Benth.			x			M
15	13	MORACEAE	*Brosimum alicastrum* Sw.			x			M
15	13	RUTACEAE	*Citrus aurantium* L.			x			AS
15	13	RUTACEAE	*Murraya paniculata* (L.) Jacq.		x				AS
15	13	SAPINDACEAE	*Melicoccus oliviformis* Kunth.			x			M
15	13	SOLANACEAE	*Cestrum nocturnum* L.		x				M
15	13	VERBENACEAE	*Lantana camara* L.		x				M
16	12	AMARANTHACEAE	*Amaranthus hybridus* L.	x					M
16	12	ANACARDIACEAE	*Spondias mombin* L.			x			M
16	12	ASCLEPIADACEAE	*Asclepias curassavica* L.	x					M
16	12	BORAGINACEAE	*Ehretia tinifolia* L.			x			M
16	12	CACTACEAE	*Hylocereus undatus* (Haw.) Britt. & Rose					x	M
16	12	CAESALPINIACEAE	*Caesalpinia pulcherrima* (L.) Schwartz		x				M
16	12	CONVOLVULACEAE	*Ipomoea batatas* (L.) Lam.				x		M
16	12	MYRTACEAE	*Pimenta dioica* (L.) Merr.			x			M
16	12	PORTULACACEAE	*Portulaca oleracea* L.	x					M
16	12	SAPINDACEAE	*Melicoccus bijugatus* Jacq.			x			M
17	11	BIGNONIACEAE	*Tabebuia rosea* (Bertol.) Bertero ex A.D.C.			x			M
17	11	BORAGINACEAE	*Cordia dodecandra* DC.			x			M
17	11	CAESALPINIACEAE	*Bauhinia divaricata* L.			x			NK
17	11	CAPRIFOLIACEAE	*Sambucus mexicana* Presl.		x				M
17	11	EUPHORBIACEAE	*Euphorbia pulcherrima* Willd.	x					M
17	11	EUPHORBIACEAE	*Jatropha curcas* L.			x			M
17	11	FABACEAE	*Piscidia piscipula* (L.) Sarg.			x			AS
17	11	LAMIACEAE	*Ocimum micranthum* Willd.	x					M
17	11	MALVACEAE	*Gossypium hirsutum* L.		x				M
17	11	ROSACEAE	*Prunus persica* (L.) Batsch.			x			AS
17	11	RUTACEAE	*Citrus medica* L.			x			AS
17	11	SOLANACEAE	*Solanum americanum* Mill.	x					NA
17	11	ZINGIBERACEAE	*Hedychium coronarium* Koenig	x					AS
18	10	AMARANTHACEAE	*Gomphrena globosa* L.	x					M
18	10	ASTERACEAE	*Montanoa grandiflora* Alaman ex DC.		x				M
18	10	BIGNONIACEAE	*Tecoma stans* (L.) Juss.		x				M
18	10	CRASSULACEAE	*Bryophyllum pinnatum* (Lam.) Oken	x					M
18	10	CUCURBITACEAE	*Luffa cylindrica* (L.) Roem.				x		M
18	10	FABACEAE	*Phaseolus lunatus* L.				x		C
19	9	ARACEAE	*Xanthosoma sagitifolium* (L.) Schott		x				NK
19	9	ARECACEAE	*Acrocomia aculeata* (Jacq.) Lodd. Ex Mart.			x			M

19	9	BALSAMINACEAE	*Impatiens balsamina* L.	x					AS
19	9	BOMBACACEAE	*Ceiba pentandra* (L.) Gaertn.			x			M
19	9	BRASSICACEAE	*Raphanus sativus* L.	x					EU
19	9	CUCURBITACEAE	*Lagenaria siceraria* (Molina) Standley				x		NK
19	9	FABACEAE	*Erythrina americana* Mill.			x			M
19	9	LAMIACEAE	*Mentha × piperita* L.	x					EU
19	9	LAMIACEAE	*Plectranthus scutellarioides* (L.) *R.Br.*		x				AS
19	9	LILIACEAE	*Asparagus setaceus* (Kunth) Jessop				x		AF
19	9	MELIACEAE	*Melia azedarach* L.			x			AS
19	9	MIMOSACEAE	*Enterolobium cyclocarpum* (Jacq.) Griseb.			x			M
19	9	NYCTAGINACEAE	*Mirabilis jalapa* L.	x					M
19	9	RUBIACEAE	*Gardenia jasminoides* J.Ellis	x					AS
19	9	RUTACEAE	*Citrus × limon* (L.) Osbeck			x			AS
19	9	RUTACEAE	Citrus paradisi Macf.			x			AS
20	8	APOCYNACEAE	*Tabernaemontana amygddalifolia* Jacq.		x				M
20	8	ARACEAE	*Caladium bicolor* (Aiton) Vent.	x					C
20	8	ASTERACEAE	*Artemisia ludoviciana* ssp. *mexicana* (Willd.) Keck	x					M
20	8	CRASSULACEAE	*Kalanchoe blossfeldiana* Poclln.	x					AF
20	8	DIOSCOREACEAE	*Dioscorea bulbifera* L.				x		AS
20	8	FABACEAE	*Cajanus cajan* (L.) Millsp.		x				NK
20	8	LAMIACEAE	*Mentha spicata* L.	x					EU
20	8	LILIACEAE	*Allium cepa* L.	x					AS
20	8	MORACEAE	*Cecropia obtusifolia* Bertol			x			M
20	8	PORTULACACEAE	*Portulaca pilosa* L.	x					M
20	8	RUTACEAE	*Citrus limon* (L.) Burm. f.			x			AS
20	8	SAPOTACEAE	*Chrysophyllum cainito* L.			x			C
20	8	SOLANACEAE	*Brugmansia x candida* Pers.		x				C
20	8	SOLANACEAE	*Nicotiana tabacum* L.		x				C

Appendix VII: Plant families of the home gardens (Rank 1-34)

nSp.: Number of species/ Family

Rank	Plant Family	nSp.	Rank	Plant Family	nSp.	Rank	Plant Family	nSp.
1	ASTERACEAE	95	**28**	MYRSINACEAE	7	**34**	PAPAVERACEAE	2
2	FABACEAE	73	**28**	NYCTAGINACEAE	7	**34**	PEDALIACEAE	2
3	EUPHORBIACEAE	55	**28**	OLEACEAE	7	**34**	PLUMBAGINACEAE	2
4	SOLANACEAE	53	**28**	STERCULIACEAE	7	**34**	POLEMONIACEAE	2
5	LAMIACEAE	39	**28**	TILIACEAE	7	**34**	SIMAROUBACEAE	2
5	RUBIACEAE	39	**28**	ZINGIBERACEAE	7	**34**	SMILACACEAE	2
6	MIMOSACEAE	35	**29**	ARALIACEAE	6	**34**	THEACEAE	2
7	MALVACEAE	33	**29**	ARISTOLOCHIACEAE	6	**34**	VIOLACEAE	2
8	VERBENACEAE	31	**29**	BOMBACACEAE	6	**34**	ZYGOPHYLLACEAE	2
9	APOCYNACEAE	30	**29**	CAPPARIDACEAE	6	**34**	ACTINIDIACEAE	1
9	POACEAE	30	**29**	CARYOPHYLLACEAE	6	**34**	ADIANTACEAE	1
10	ARECACEAE	28	**29**	DIOSCOREACEAE	6	**34**	AGARICACEAE	1
11	ROSACEAE	25	**29**	MUSACEAE	6	**34**	ALOACEAE	1
12	CAESALPINIACEAE	24	**29**	PHYTOLACCACEAE	6	**34**	ALSTROEMERIACEAE	1
13	ARACEAE	23	**29**	PORTULACACEAE	6	**34**	ARAUCARIACEAE	1
14	BIGNONIACEAE	22	**29**	SCROPHULARIACEAE	6	**34**	ASPLENIACEAE	1
15	BORAGINACEAE	21	**30**	EBENACEAE	5	**34**	BETULACEAE	1
15	AGAVACEAE	21	**30**	IRIDACEAE	5	**34**	BIXACEAE	1
15	AMARANTHACEAE	21	**30**	MARANTACEAE	5	**34**	CLETHRACEAE	1
16	ACANTHACEAE	20	**30**	ONAGRACEAE	5	**34**	COCHLOSPERMACEAE	1
16	LILIACEAE	20	**30**	ORCHIDACEAE	5	**34**	ELAEOCARPACEAE	1
16	RUTACEAE	20	**30**	RHAMNACEAE	5	**34**	ERICACEAE	1
17	MORACEAE	19	**30**	CAPRIFOLIACEAE	4	**34**	ERYTHROXYLACEAE	1
18	CONVOLVULACEAE	18	**31**	CHENOPODIACEAE	4	**34**	HAEMODORACEAE	1
19	CACTACEAE	16	**31**	CUPRESSACEAE	4	**34**	HAMAMELIDACEAE	1
19	CUCURBITACEAE	16	**31**	GESNERIACEAE	4	**34**	HYDRANGEACEA	1
20	LAURACEAE	15	**31**	VITACEAE	4	**34**	ICACINACEAE	1
21	AMARYLLIDACEAE	14	**32**	AIZOACEAE	3	**34**	JUGLANDACEAE	1
21	POLYGONACEAE	14	**32**	BALSAMINACEAE	3	**34**	LINDERNIACEAE	1
22	ANACARDIACEAE	13	**32**	CANNACEAE	3	**34**	MAGNOLIACEAE	1
22	BEGONIACEAE	13	**32**	CARICACEAE	3	**34**	MELANTHIACEAE	1
22	BURSERACEAE	13	**32**	CHRYSOBALNANCEAE	3	**34**	MYRICACEAE	1
22	COMMELINACEAE	13	**32**	CLUSIACEAE	3	**34**	OCHNACEAE	1
22	PIPERACEAE	13	**32**	COSTACEAE	3	**34**	PINACEAE	1
23	MALPIGHIACEAE	11	**32**	CYPERACEAE	3	**34**	PITTOSPORACEAE	1
24	PASSIFLORACEAE	11	**32**	DAVALLIACEAE	3	**34**	POLYPODIACEAE	1
25	APIACEAE	10	**32**	GERANIACEAE	3	**34**	PONTEDERIACEAE	1
25	SAPOTACEAE	10	**32**	LOGANIACEAE	3	**34**	PUNICACEAE	1
26	ANNONACEAE	9	**32**	OXALIDACEAE	3	**34**	RANUNCULACEAE	1
26	BROMELIACEAE	9	**32**	PLANTAGINACEAE	3	**34**	RESEDACEAE	1
26	CRASSULACEAE	9	**32**	POLYGALACEAE	3	**34**	SCHIZAEACEAE	1
26	LYTHRACEAE	9	**32**	SALICACEAE	3	**34**	SELAGINELLACEAE	1
26	MYRTACEAE	9	**33**	BASELLACEAE	2	**34**	STYRACACEAE	1
26	SAPINDACEAE	9	**33**	CASUARINACEAE	2	**34**	THYMELAEACEAE	1
26	URTICACEAE	9	**33**	CECROPIACEAE	2	**34**	TROPAEOLACEAE	1
27	FLACOURTIACEAE	8	**33**	CELASTRACEAE	2	**34**	TURNERACEAE	1
27	MELIACEAE	8	**33**	COMBRETACEAE	2	**34**	TYPHACEAE	1
28	ASCLEPIADACEAE	7	**33**	EQUISETACEAE	2	**34**	ULMACEAE	1
28	BRASSICACEAE	7	**33**	LORANTHACEAE	2	**34**	VISCACEAE	1
28	MELASTOMATACEAE	7	**33**	MENISPERMACEAE	2	Total Number of Plant Families: **149**		

Appendix VIII: The most important genus (limited to the number of 50)

#	Family	Genus	No. of species
1	SOLANACEAE	*Solanum*	21
2	EUPHORBIACEAE	*Euphorbia*	15
3	BEGONIACEAE	*Begonia*	13
4	CONVOLVULACEAE	*Ipomea*	13
5	BURSERACEAE	*Bursera*	12
6	RUTACEAE	*Citrus*	12
7	MIMOSACEAE	*Acacia*	11
8	PASSIFLORACEAE	*Passiflora*	11
9	ROSACEAE	*Rosa*	11
10	EUPHORBIACEAE	*Croton*	9
11	MORACEAE	*Ficus*	9
12	PIPERACEAE	*Piper*	9
13	AGAVACEAE	*Agave*	8
14	BORAGINACEAE	*Cordia*	8
15	MALVACEAE	*Hibiscus*	8
16	FABACEAE	*Mimosa*	8
17	LILIACEAE	*Allium*	7
18	ANNONACEAE	*Annona*	7
19	ARECACEAE	*Chamaedorea*	7
20	MIMOSACEAE	*Inga*	7
21	SOLANACEAE	*Physalis*	7
22	CAESALPINIACEAE	*Senna*	7
23	AMARANTHACEAE	*Amaranthus*	6
24	ARISTOLOCHIACEAE	*Aristolochia*	6
25	CUCURBITACEAE	*Cucurbita*	6
26	LYTHRACEAE	*Cuphea*	6
27	DIOSCOREACEAE	*Dioscorea*	6
28	CRASSULACEAE	*Kalanchoe*	6
29	FABACEAE	*Lonchocarpus*	6
30	CACTACEAE	*Opuntia*	6
31	RUBIACEAE	*Randia*	6
32	ASTERACEAE	*Tagetes*	6
33	COMMELINACEAE	*Tradescantia*	5
34	EUPHORBIACEAE	*Acalypha*	5
35	PRIMULACEAE	*Ardisia*	5
36	ASTERACEAE	*Artemisia*	5
37	FABACEAE	*Caesalpinia*	5
38	SOLANACEAE	*Capsicum*	5
39	SOLANACEAE	*Cestrum*	5
40	EUPHORBIACEAE	*Cnidoscolus*	5
41	POLYGONACEAE	*Coccoloba*	5
42	CARYOPHYLLACEAE	*Dianthus*	5
43	EBENACEAE	*Diospyros*	5
44	FABACEAE	*Erythrina*	5
45	OLEACEAE	*Jasminum*	5
46	LAMIACEAE	*Mentha*	5
47	ASTERACEAE	*Porophyllum*	5
48	SAPOTACEAE	*Pouteria*	5
49	ACANTHACEAE	*Ruellia*	5
50	LAMIACEAE	*Salvia*	5

Appendix IX: Most important Food plants (limited to the number of 50)

#	Family	Specie	No.
1	CARICACEAE	*Carica papaya* L.	14
2	RUTACEAE	*Citrus sinensis* (L.) Osbeck	14
3	MUSACEAE	*Musa acuminata* Colla *x M. balbisiana* Colla	14
4	MYRTACEAE	*Psidium guajava* L.	13
5	ANACARDIACEAE	*Mangifera indica* L.	12
6	ARECACEAE	*Cocos nucifera* L.	12
7	FABACEAE	*Tamarindus indica* L.	12
8	LAURACEAE	*Persea americana* Mill.	12
9	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen	12
10	RUBIACEAE	*Coffea arabica* L.	11
11	RUTACEAE	*Citrus aurantiifolia* (Christm.) Swingle	11
12	RUTACEAE	*Citrus reticulata* Blanco	11
13	ANNONACEAE	*Annona muricata* L.	10
14	PUNICACEAE	*Punica granatum* L.	10
15	MALPIGHIACEAE	*Byrsonima crassifolia* (L.) Kunth	10
16	SOLANACEAE	*Solanum lycospersicum* Lam.	10
17	ANNONACEAE	*Annona reticulata* L.	9
18	CONVOLVULACEAE	*Ipomoea batatas* (L.) Lam.	9
19	CUCURBITACEAE	*Sechium edule* (Jacq.) Sw.	9
20	EUPHORBIACEAE	*Manihot esculenta* Crantz.	9
21	POACEAE	*Saccharum officinarum* L.	9
22	RUTACEAE	*Citrus aurantium* L.	9
23	SAPOTACEAE	*Pouteria sapota* (Jacq.) H.E.Moore & Stearn	9
24	SOLANACEAE	*Capsicum annum* L.	9
25	ANACARDIACEAE	*Spondias mombin* L.	8
26	BROMELIACEAE	*Ananas comosus* (L.) Merr.	8
27	CACTACEAE	*Hylocereus undatus* (Haw.) Britt. & Rose	8
28	CUCURBITACEAE	*Cucurbita pepo* L.	8
29	EUPHORBIACEAE	*Cnidoscolus aconitifolius* subsp. *aconitifolius*	8
30	ANACARDIACEAE	*Spondias purpurea* L.	7
31	POACEAE	*Zea mays* L.	7
32	ROSACEAE	*Prunus persica* (L.) Batsch.	7
33	SAPINDACEAE	*Melicoccus bijugatus* Jacq.	7
34	AMARANTHACEAE	*Amaranthus hybridus* L.	6
35	ANNONACEAE	*Annona squamosa* L.	6
36	BIGNONIACEAE	*Parmentiera aculeata (*Kunth)	6
37	FABACEAE	*Phaseolus lunatus* L.	6
38	MORACEAE	*Brosimum alicastrum* Sw.	6
39	RUTACEAE	*Citrus medica* L.	6
40	SAPINDACEAE	*Melicoccus oliviformis* Kunth.	6
41	SAPOTACEAE	*Chrysophyllum cainito* L.	6
42	SAPOTACEAE	*Pouteria campechiana* (Kunth.) Baehni	6
43	APIACEAE	*Coriandrum sativum* L.	5
44	ARACEAE	*Xanthosoma sagitifolium* (L.) Schott	5
45	ARECACEAE	*Acromia aculeata* (Jacq.) Lodd. Ex Mart.	5
46	CHENOPODIACEAE	*Chenopodium ambrosioides* L.	5
47	DIOSCOREACEAE	*Dioscorea bulbifera* L.	5
48	FABACEAE	*Cajanus cajan* (L.) Millsp.	5
49	FABACEAE	*Phaseolus vulgaris* L.	5
50	POACEAE	*Cymbopogon citratus* (DC.) Stapf.	5

Appendix X: Most important Ornamental plants (limited to the number of 50)

#	Family	Specie	No.
1	MALVACEAE	*Hibiscus rosa-sinensis* L.	12
2	APOCYNACEAE	*Nerium oleander* L.	8
3	APOCYNACEAE	*Plumeria rubra* L.	8
4	EUPHORBIACEAE	*Codiaeum variegatum* (L.) Rumph. ex A.Juss.	8
5	LYTHRACEAE	*Lagerstroemia indica* L.	8
6	APOCYNACEAE	*Catharanthus roseus* (L.) G. Don	7
7	ASTERACEAE	*Tagetes erecta* Willd.	7
8	NYCTAGINACEAE	*Bougainvillea glabra* Choisy	7
9	RUBIACEAE	*Ixora coccinea* L.	7
10	RUTACEAE	*Murraya paniculata* (L.) Jacq.	7
11	APOCYNACEAE	*Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schult.	6
12	ASTERACEAE	*Montanoa grandiflora* Alaman ex DC.	6
13	BALSAMINACEAE	*Impatiens balsamina* L.	6
14	CAESALPINIACEAE	*Caesalpinia pulcherrima* (L.) Schwartz	6
15	LILIACEAE	*Asparagus setaceus* (Kunth) Jessop	6
16	LYTHRACEAE	*Lawsonia inermis* L.	6
17	RUBIACEAE	*Gardenia jasminoides* J.Ellis	6
18	SOLANACEAE	*Cestrum nocturnum* L.	6
19	ZINGIBERACEAE	*Hedychium coronarium* Koeniq	6
20	AMARANTHACEAE	*Celosia argentea* L.	5
21	AMARANTHACEAE	*Gomphrena globosa* L.	5
22	ASTERACEAE	*Zinnia elegans* Jacq.	5
23	CRASSULACEAE	*Kalanchoe blossfeldiana* Poclln.	5
24	EUPHORBIACEAE	*Euphorbia pulcherrima* Willd.	5
25	FABACEAE	*Delonix regia* (Hook.) Raf.	5
26	PORTULACACEAE	*Portulaca pilosa* L.	5
27	SOLANACEAE	*Brugmannsia x Candida* Pers.	5
28	AMARYLLIDACEAE	*Hippeastrum puniceum* (Lam.) Voss	4
29	APOCYNACEAE	*Allamanda cathartica* L.	4
30	ARACEAE	*Caladium bicolor* (Aiton) Vent.	4
31	ALOEACEAE	*Aloe vera* (L.) Burm.f.	4
32	AGAVACEAE	*Cordyline fruticosa* Comm. ex Juss.	4
33	ASTERACEAE	*Chrysanthemum morifolium* Ramat.	4
34	ASTERACEAE	*Dahlia pinnata* Cav.	4
35	BALSAMINACEAE	*Impatiens wallerina* Hook. F.	4
36	BIGNONIACEAE	*Tecoma stans* (L.) Juss.	4
37	COMMELINACEAE	*Tradescantia pallida* (Rose) D.R.Hunt, Kew Bull.	4
38	EUPHORBIACEAE	*Euphorbia milii* Des Moul.	4
39	NYCTAGINACEAE	*Bougainvillea x buttiana* Holttum & Standl.	4
40	NYCTAGINACEAE	*Mirabilis jalapa* L.	4
41	PLUMBAGINACEAE	*Plumbago auriculata* Lam.	4
42	AMARYLLIDACEAE	*Hymenocallis littoralis* (Jacq.) Salisb.	3
43	ARACEAE	*Xanthosoma robustum* Schott	3
44	ARACEAE	*Xanthosoma sagitifolium* (L.) Schott	3
45	ARACEAE	*Zantedeschia aethiopica* (L.) Spreng.	3
46	ARECACEAE	*Chamaedorea oblongata* Mart.	3
47	AGAVACEAE	*Sansevieria trifasciata* Prain.	3
48	CANNACEAE	*Canna indica* L.	3
49	CAPRIFOLIACEAE	*Sambucus mexicana* Presl.	3
50	CARYOPHYLLACEAE	*Dianthus caryophyllus* L.	3

Appendix XI: Most important Medicinal plants (limited to the number of 50)

#	Family	Specie	No.
1	MYRTACEAE	*Psidium guajava* L.	9
2	RUBIACEAE	*Hamelia patens* Jacq.	9
3	CHENOPODIACEAE	*Chenopodium ambrosioides* L.	8
4	POACEAE	*Cymbopogon citratus* (DC.) Stapf	8
5	RUTACEAE	*Ruta chalepensis* L.	8
6	ALOEACEAE	*Aloe vera* (L.) Burm.f.	7
7	EUPHORBIACEAE	*Cnidoscolus aconitifolius* ssp. *aconitifolius*	7
8	LAMIACEAE	*Mentha × piperita* L.	7
9	LAMIACEAE	*Ocimum basilicum* L.	7
10	BURSERACEAE	*Bursera simaruba* (L.) Sarg.	6
11	CAPRIFOLIACEAE	*Sambucus mexicana* Presl.	6
12	EUPHORBIACEAE	*Ricinus communis* L.	6
13	MALVACEAE	*Guazuma ulmifolia* Lam.	6
14	MYRTACEAE	*Pimenta dioica* (L.) Merr.	6
15	RUTACEAE	*Citrus aurantium* L.	6
16	VERBENACEAE	*Lantana camara* L.	6
17	ASTERACEAE	*Artemisia ludoviciana* ssp. *mexicana* (Willd.) Keck	5
18	BIGNONIACEAE	*Parmentiera aculeata* (Kunth)	5
19	BIXACEAE	*Bixa orellana* L.	5
20	LAMIACEAE	*Ocimum micranthum* Willd.	5
21	NYCTAGINACEAE	*Bougainvillea glabra* Choisy	5
22	PIPERACEAE	*Piper auritum* L.	5
23	SOLANACEAE	*Brugmannsia x Candida* Pers.	5
24	ANACARDIACEAE	*Spondias mombin* L.	4
25	ANNONACEAE	*Annona muricata* L.	4
26	ANNONACEAE	*Annona reticulata* L.	4
27	ASTERACEAE	*Tagetes erecta* Willd.	4
28	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.	4
29	MALVACEAE	*Gossypium hirsutum* L.	4
30	MELIACEAE	*Cedrela odorata* L.	4
31	MORACEAE	*Brosimum alicastrum* Sw.	4
32	PIPERACEAE	*Piper amalago* L.	4
33	RUTACEAE	*Citrus aurantiifolia* (Christm.) Swingle	4
34	RUTACEAE	*Citrus sinensis* (L.) Osbeck	4
35	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen	4
36	SOLANACEAE	*Nicotiana tabacum* L.	4
37	AMARANTHACEAE	*Amaranthus spinosus* L.	3
38	ASCLEPIADACEAE	*Asclepias curassavica* L.	3
39	ARECACEAE	*Cocos nucifera* L.	3
40	ASTERACEAE	*Parthenium hysterophorus* L.	3
41	ASTERACEAE	*Pluchea odorata* (L.) Cass.	3
42	ASTERACEAE	*Tithonia diversifolia* (Hamsley) A. Gray	3
43	BORAGINACEAE	*Ehretia tinifolia* A.DC.	3
44	CACTACEAE	*Hylocereus undatus* (Haw.) Britt. & Rose	3
45	CARICACEAE	*Carica papaya* L.	3
46	COMMELINACEAE	*Tradescantia spathacea* (Sw.) Stearn	3
47	CUCURBITACEAE	*Mormodica charantia* L.	3
48	EUPHORBIACEAE	*Euphorbia tithymaloides* L.	3
49	CAESALPINACEAE	*Bauhinia divaricata* L.	3
50	LAMIACEAE	*Hyptis verticillata* Jacq.	3

Appendix XII: Most important plants used for Construction (limited to the number of 20)

#	Family	Specie	No.
1	MELIACEAE	*Cedrela odorata* L.	13
2	BORAGINACEAE	*Cordia dodecandra* DC.	6
3	MELIACEAE	*Swietenia macrophylla* King	6
4	ARECACEAE	*Sabal yapa* C. Wright ex Beccari 1,2	5
5	BOMBACACEAE	*Ceiba pentandra* (L.) Gaertn.	5
6	BIGNONIACEAE	*Tabebuia rosea* (Bertol.) Bertero ex A.DC.	4
7	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.	4
8	FABACEAE	*Piscidia piscipula* (L.) Sarg.	4
9	MALVACEAE	*Guazuma ulmifolia* Lam.	4
10	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen	4
11	ARECACEAE	*Sabal mexicana* Mart.	3
12	BURSERACEAE	*Bursera simaruba* (L.) Sarg.	3
13	MORACEAE	*Brosimum alicastrum* Sw.	3
14	ANACARDIACEAE	*Astronium graveolens* Jacq.	2
15	ANNONACEAE	*Malmea depressa* (Baillon) R.E. Fr.	2
16	BORAGINACEAE	*Ehretia tinifolia* A.DC.	2
17	EUPHORBIACEAE	*Croton glabellus* L.	2
18	CAESALPINIACEAE	*Caesalpinia gaumeri* Greenm.	2
19	FABACEAE	*Delonix regia* (Hook.) Raf.	2
20	FABACEAE	*Erythrina americana* Mill.	2

Appendix XIII: Most important plants used for Combustion (limited to the number of 20)

#	Family	Specie	No.
1	FABACEAE	*Piscidia piscipula* (L.) Sarg.	4
2	BURSERACEAE	*Bursera simaruba* (L.) Sarg.	3
3	MIMOSACEAE	*Acacia cornigera* (L.) Willd.	3
4	CAESALPINIACEAE	*Bauhinia divaricata* L.	3
5	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.	3
6	FABACEAE	*Leucaena leucocephala* (Lam.) De Wit.	3
7	STERCULIACEAE	*Guazuma ulmifolia* Lam.	3
8	MELIACEAE	*Cedrela odorata* L.	3
9	MORACEAE	*Brosimum alicastrum* Sw.	3
10	ANACARDIACEAE	*Mangifera indica* L.	2
11	ANACARDIACEAE	*Spondias mombin* L.	2
12	BURSERACEAE	*Protium copal* (Scletch & Cham.) Engl.	2
13	COMBRETACEAE	*Terminalia catappa* L.	2
14	EUPHORBIACEAE	*Adelia barbinervis* Schlecht & Cham.	2
15	LAURACEAE	*Ocotea heydeana* (Mez. & Don. Sm.) Bernardi	2
16	MYRTACEAE	*Eugenia capuli* (SchltdL. & Cham.) Hook. & Arn.	2
17	MYRTACEAE	*Psidium guajava* L.	2
18	RUTACEAE	*Citrus aurantium* L.	2
19	SAPINDACEAE	*Melicoccus bijugatus* Jacq.	2
20	SAPOTACEAE	*Manilkara zapota* (L.) V. Royen	2

Appendix XIV: Most important plants used as Fence (limited to the number of 20)

#	Family	Specie	No.
1	FABACEAE	*Gliricidia sepium* (Jacq.) Steud.	5
2	BORAGINACEAE	*Ehretia tinifolia* A.DC.	3
3	BURSERACEAE	*Bursera simaruba* (L.) Sarg.	3
4	FABACEAE	*Enterolobium cyclocarpum* (Jacq.) Griseb.	3
5	FABACEAE	*Erythrina americana* Mill	3
6	MELIACEAE	*Cedrela odorata* L.	3
7	ANACARDIACEAE	*Spondias purpurea* L.	2
8	ARECACEAE	*Cocos nucifera* L.	2
9	EUPHORBIACEAE	*Ricinus communis* L.	2
10	MIMOSACEAE	*Acacia gaumeri* Blake	2
11	FABACEAE	*Leucaena esculenta* (Sessé & Mocino) Benth.	2
12	FABACEAE	*Piscidia piscipula* (L.) Sarg.	2
13	MALVACEAE	*Hibiscus rosa-sinensis* L.	2
14	RUBIACEAE	*Ixora coccinea* L.	2
15	RUTACEAE	*Murraya paniculata* (L.) Jacq.	2
16	AMARYLLIDACEAE	*Hippeastrum elegans* (K. Spreng.) H.E. Moore	1
17	ANACARDIACEAE	*Spondias mombin* L.	1
18	APOCYNACEAE	*Plumeria obtusa* L.	1
19	APOCYNACEAE	*Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schult.	1
20	ARALIACEAE	*Dendropanax arboreus* (L.) Dec & Planch.	1

Appendix XV: Most important plants used as Spice (limited to the number of 20)

#	Family	Specie	No.
1	MYRTACEAE	*Pimenta dioica* (L.) Merr.	8
2	PIPERACEAE	*Piper auritum* L.	7
3	CHENOPODIACEAE	*Chenopodium ambrosioides* L.	6
4	BIXACEAE	*Bixa orellana* L.	5
5	SOLANACEAE	*Capsicum annum* L.	5
6	APIACEAE	*Coriandrum sativum* L.	4
7	APIACEAE	*Eryngium foetidum* L.	4
8	LAMIACEAE	*Mentha × piperita* L.	4
9	LAMIACEAE	*Ocimum basilicum* L.	4
10	VERBENACEAE	*Lippia graveolens* Kunth	4
11	LAMIACEAE	*Mentha arvensis* L.	2
12	LAMIACEAE	*Ocimum micranthum* Willd.	2
13	LAMIACEAE	*Origanum majorana* L.	2
14	LILIACEAE	*Allium cepa* L.	2
15	ORCHIDACEAE	*Vanilla planifolia* Andrews	2
16	PIPERACEAE	*Piper sanctum* Miq.	2
17	ZINGIBERACEAE	*Zingiber officinale* Roscoe	2
18	ANACARDIACEAE	*Spondias purpurea* L.	1
19	APIACEAE	*Eryngium scaposum* Turcz.	1
20	APIACEAE	*Petroselinum crispum* (Mill.) Nym. Ex A.W. Hill	1

Appendix XVI: Most important Ritual plants (limited to the number of 20)

#	Familia	Specie	No.
1	ASTERACEAE	*Tagetes erecta* Willd.	9
2	APOCYNACEAE	*Plumeria rubra* L.	4
3	LAMIACEAE	*Ocimum basilicum* L.	4
4	LAMIACEAE	*Ocimum micranthum* Willd.	4
5	SOLANACEAE	*Nicotiana tabacum* L.	4
6	AMARANTHACEAE	*Celosia argentea* L.	3
7	ARECACEAE	*Chamaedorea* seifrizii Burret	3
8	BURSERACEAE	*Protium copal* (Scletch & Cham.) Engl.	3
9	RUTACEAE	*Ruta chalepensis* L.	3
10	ARECACEAE	*Chamaedorea oblongata* Mart.	2
11	ORCHIDACEAE	*Oncidium sphacelatum* Lindl.	2
12	RUBIACEAE	*Randia longiloba* Hemsl.	2
13	ACANTHACEAE	*Elytraria imbricata* (Vahl.) Pers.	1
14	AMARANTHACEAE	*Amaranthus hybridus* L.	1
15	AMARANTHACEAE	*Gomphrena globosa* L.	1
16	ANACARDIACEAE	*Tapirira mexicana* Marchand.	1
17	APOCYNACEAE	*Cascabela thevetia* (L.) Lippold	1
18	APOCYNACEAE	*Nerium oleander* L.	1
19	APOCYNACEAE	*Tabernaemontana alba* Mill.	1
20	APOCYNACEAE	*Tabernaemontana divaricata* (L.) R.Br. ex Roem. & Schult.	1

Appendix XVII: Most important Forage plants (limited to the number of 20)

#	Familia	Specie	No.
1	MORACEAE	*Brosimum alicastrum* Sw.	7
2	FABACEAE	*Leucaena leucocephala* (Lam.) De Wit.	4
3	BIGNONIACEAE	*Parmentiera aculeata* (Kunth)	3
4	ANACARDIACEAE	*Metopium browneii* (Jacq.) Urb.	2
5	CARICACEAE	*Carica papaya* L.	2
6	MALVACEAE	*Guazuma ulmifolia* Lam.	2
7	POACEAE	*Zea mays* L.	2
8	RUTACEAE	*Citrus sinensis* (L.) Osbeck	2
9	AMARANTHACEAE	*Amaranthus spinosus* L.	1
10	ANACARDIACEAE	*Astronium graveolens* Jacq.	1
11	ANACARDIACEAE	*Spondias mombin* L.	1
12	APOCYNACEAE	*Cascabela gaumeri* (Hemsl.) Lippold	1
13	ARACEAE	*Syngonium neglectum* Schott	1
14	ARACEAE	*Xanthosoma sagitifolium* (L.) Schott	1
15	ARECACEAE	*Attalea butyraceae* (Mutis ex L.f.) Wess. Boer	1
16	ARECACEAE	*Cryosophila argentea* H. Bartlett	1
17	ASTERACEAE	*Isocarpha oppositifolia* var. *achyranthes* (DC.) Keil & Stuessy	1
18	ASTERACEAE	*Tithonia diversifolia* (Hamsley) A. Gray	1
19	BIGNONIACEAE	*Handroanthus chrysanthus* (Jacq.) S.O.Grose	1
20	BIGNONIACEAE	*Parmentiera millspaughiana* L.O.W.	1

Appendix XVIII: Most important plants used for Handicraft and Utensil (limited to the number of 20)

#	Familia	Specie	No.
1	BIGNONIACEAE	*Crescentia cujete* L.	7
2	CUCURBITACEAE	*Lagenaria siceraria* (Molina) Standley	4
3	CUCURBITACEAE	*Luffa cylindrica* (L.) Roem.	3
4	MALVACEAE	*Heliocarpus appendiculatus* Turez.	2
5	RUBIACEAE	*Coffea arabica* L.	2
6	APOCYNACEAE	*Stemmadenia donnell-smithii* (Rose ex J.D.Sm.) Woodson	1
7	ARALIACEAE	*Dendropanax arboreus* (L.) Dec & Planch.	1
8	ARECACEAE	*Brahea dulcis* (Kunth.) Mart.	1
9	ARECACEAE	*Chamaedorea* seifrizii Burret	1
10	ARECACEAE	*Cocos nucifera* L.	1
11	ARECACEAE	*Cryosophila argentea* H. Bartlett	1
12	ARECACEAE	*Desmoncus schippii* Burret	1
13	ARECACEAE	*Sabal yapa* C. Wright ex Beccari 1,2	1
14	ARECACEAE	*Thrinax radiata* Lodd. ex Schult. & Schult.f.	1
15	AGAVACEAE	*Agave vivipara* var. *vivipara*	1
16	ASTERACEAE	*Tagetes lucida* Cav.	1
17	BIGNONIACEAE	*Tabebuia rosea* (Bertol.) Bertero ex A.DC.	1
18	BORAGINACEAE	*Cordia dodecandra* DC.	1
19	BORAGINACEAE	*Cordia spinescens* L.	1
20	BORAGINACEAE	*Tournefortia glabra* L.	1