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1 **A CROP WILD RELATIVE INVENTORY FOR MEXICO**

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14

15 **Abbreviations:** CITES, Convention on International Trade in Endangered Species of Wild
16 Fauna and Flora; CWR, crop wild relatives; FAOSTAT, Food and Agriculture Organization
17 of the United Nations statistical database; GP, gene pool; GRIN, Germplasm Resources
18 Information Network; INEGI, National Institute of Statistics and Geography; IUCN,
19 International Union for Conservation of Nature; SIAP, Agricultural and Fisheries
20 Information Service; TG, taxon group.

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27 **ABSTRACT**

28 Crop Wild Relatives (CWR) are valuable sources of variation for the genetic improvement
29 of crops. Mexico is an important center of diversity of crops and CWR. However, this
30 diversity is threatened by the impacts of climate change, habitat degradation, increasing
31 human population, among other factors. Given the large number of CWR, the creation of a
32 CWR inventory is the starting point for the development of a national CWR conservation
33 strategy. The process for the preparation of a national CWR inventory for Mexico consisted
34 of: a) producing of a list of national crop species, b) match the crop genera with the list of
35 national flora to produce a CWR checklist and c) prioritize the CWR checklist according to
36 a series of selection criteria and using a ranking system. The selection criteria included the
37 economic value of the related crop, potential for crop improvement, food intake, threat
38 status, geographical distribution and crop use. Applying these criteria, 310 prioritized CWR
39 taxa were selected, about 2% of the national CWR diversity, integrating the national CWR
40 inventory. They are mostly related to food crops of national but also global importance,
41 such as maize (*Zea mays* L.), common bean (*Phaseolus vulgaris* L.), chili pepper
42 (*Capsicum annuum* L.), squash (*Cucurbita* spp.), potato (*Solanum tuberosum* L.), cassava
43 (*Manihot esculenta* Crantz) and sweet potato (*Ipomoea batatas* (L.) Lam.). Approximately
44 31% of the taxa are endemic to Mexico. The inventory will help to develop *in situ* and *ex*
45 *situ* conservation plans as part of a national CWR conservation strategy.

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47 **Keywords:** Plant genetic resources, CWR conservation strategy, National CWR inventory

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53 Climate change will have direct impacts on agriculture (Jarvis et al., 2008, 2010; Wheeler
54 and von Braun, 2013; IPCC, 2014; Rosenzweig et al., 2014), changing the growing
55 environment and geographical occurrence and prevalence of pest and diseases, resulting in
56 reduced crop productivity (Kang et al., 2009; Jarvis et al., 2010; Sankaranarayanan et al.,
57 2010; Luck et al., 2011; Lobell and Gourdji, 2012; Ray et al., 2015; Msowoya et al., 2016;
58 Asaminew et al., 2017). In maize, for example, up to 25% yield loss has been predicted due
59 to climate change by the end of this century in China (Yin et al., 2015) and up to 50% in
60 Iowa, United States of America (Xu et al., 2016). Crop wild relatives (CWR) are a potential
61 source of genetic diversity breadth for crop improvement. Through gene donation to crops,
62 CWR help underpin food security (Maxted et al., 2006; Ford-Lloyd et al., 2011). CWR
63 have been particularly useful for resistance or tolerance to plant pests and diseases, increase
64 productivity as well as for gaining adaptability to climate change conditions (Maxted and
65 Kell, 2009; Ford-Lloyd et al., 2011), as they have significantly broader genetic variation
66 than the crops themselves (Tanksley and McCouch, 1997; Vollbrecht and Sigmon, 2005).

67 CWR, in the broad sense, are any wild plant with a close genetic relationship to a
68 crop, allowing natural or artificial crossing with it (Maxted et al., 2006). To estimate the
69 degree of relationship, two concepts were developed. The “Gene Pool” concept, proposed
70 by Harlan and de Wet (1971), establishes potential utilization value as a gene donor based
71 on actual breeding success between the crops and their wild relatives. For use where
72 crossing ability is unknown, the “Taxon Group” concept was developed (Maxted et al.,
73 2006). The concept uses taxonomic distance as a proxy for genetic distance, assuming there
74 is a direct relationship between the two factors which permits much wider application for
75 nearly all crop gene pools (Maxted et al., 2006).

76 Mexico holds more than 25,000 plant species (Mittermeier et al., 1997; CONABIO,
77 2008; Llorente-Bousquets and Ocegueda, 2008). From this diversity, about 40 to 50% are
78 endemic to Mexico (Rzedowski, 1991a, 1991b; Villaseñor, 2004; Sarukhán et al., 2009)

79 and Mexico is also known as a Vavilov center of crop origin, domestication and
80 diversification for globally important crops (Vavilov, 1992). The significance of the
81 Mexican CWR is appreciated at global level, Vincent et al. (2013) included in the global
82 “Harlan and de Wet Inventory” 35 genera with global prioritized CWR from Mexico.
83 Maize (*Zea L.*), domesticated more than six thousand years ago (Piperno and Flannery,
84 2001), and beans (*Phaseolus L.*) with 52 species found in Mexico, out of the 63 known
85 species globally (Delgado-Salinas et al., 1999), are well known examples. However,
86 climate change and loss of habitat due to land use change, overpopulation, pollution, and
87 overexploitation of natural resources, soil degradation, among others, are factors
88 contributing to genetic erosion of biodiversity in Mexico (Challenger et al., 2009). These
89 threats are likely to adversely impact Mexican CWR, and some may even become extinct
90 (Lira et al., 2009; Ureta et al., 2012). Due to the wealth of diversity, and the associated
91 threats, the Mexican Strategy for Plant Conservation (MSPC) 2012–2030 (CONABIO,
92 2012), recognized the need for a better understanding of the plant diversity of Mexico, its
93 preservation and sustainable utilization, particularly because of their prominence to the
94 genetic diversity of CWR.

95 Globally there are a large number of CWR—50,000 to 60,000, of these about 10,740
96 could potentially contribute to future food security (Maxted and Kell, 2009). Yet their *ex*
97 *situ* and particularly their *in situ* conservation is currently inadequate (Maxted and Kell,
98 2009). In Mexico, the *ex situ* conservation of CWR is also limited, with their genetic
99 diversity currently underrepresented and undermanaged in the genebanks (Molina and
100 Córdova, 2006, Bellon et al., 2009; Bioversity International, 2014). Moreover, it is
101 estimated that the conservation of wild plant genetic resources in their natural habitats is
102 minimal and they are endangered (Molina and Córdova, 2006, Bellon et al., 2009;
103 Bioversity International, 2014). All CWR have the potential to contribute beneficial traits to
104 their related crop. The sheer numbers of taxa involved means a phased approach to their

105 conservation is often taken as a first step in effective conservation planning. Several
106 checklists of plant diversity have been created for Mexico at different levels. For instance,
107 the checklist of vascular plants of the Mexican flora (Villaseñor, 2004, 2016), the
108 Magnoliophyta and Pinophyta divisions lists (Villaseñor and Ortiz, 2014; Gernandt and
109 Pérez-de la Rosa, 2014), or the Lamiaceae family catalogue (Martínez-Gordillo et al.,
110 2013). The “Flora of the Tehuacán-Cuicatlán Valley” and “Flora of the Bajío and adjacent
111 regions” are examples of checklists at regional level within Mexico (UNAM, 2017;
112 INECOL, 2017). Nevertheless, a prioritized list of wild taxa related to cultivated plants has
113 not been produced for Mexico. Identifying an initial subset of taxa to form the foundation
114 of the first iteration of a national CWR conservation strategy is recommended. Then it can
115 be enhanced as resources and information become available (Maxted et al., 2013). A
116 national CWR inventory of CWR taxa provides the information on the relevant taxonomic
117 diversity and other information associated to the conservation and current/potential
118 utilization of CWR (Maxted et al., 2013). Typically, the preparation of a national CWR
119 inventory involves a) producing a list of national plant taxa, b) matching this against a list
120 of global crop genera to generate a list of national plant taxa found in the same genera as
121 the national crops, which is a comprehensive CWR checklist and c) prioritizing this CWR
122 checklist to produce a more manageable inventory of CWR taxa with associated data that
123 can form the basis of the first phase of active national CWR conservation (Maxted et al.,
124 2013). This approach has been previously implemented for CWR conservation planning at
125 national and global level (e.g. Idohou et al., 2012; Fitzgerald et al., 2013; Khoury et al.
126 2013; Taylor et al., 2013; Vincent et al., 2013; Fielder et al., 2015; Kell et al., 2015; Lala et
127 al., 2017). The criteria used to select the first phase may include: economic value of the
128 related crop, potential as a gene donor (closely related to the crop), status of occurrence
129 (native or introduced CWR), threat status, conservation status, legislation, geographical
130 distribution, genetic diversity, social considerations, or other relevant criteria (Maxted et

131 al., 1997; Magos Brehm et al., 2010; Maxted et al., 2013; Kell et al., 2015). In this paper,
132 the development of a national CWR inventory for Mexico is presented as a starting point
133 for the development of a national CWR conservation strategy.

134

135 **MATERIALS AND METHODS**

136 ***CWR checklist***

137 The initial step towards the development of a national CWR inventory is the creation of a
138 CWR checklist. For this purpose, two lists were required. First, the Taxonomic Catalogue
139 of Species of Mexico (CONABIO, 2008) was used as the floristic checklist of vascular
140 plant species. This list contains the names of the more than 25,000 plant taxa occurring in
141 Mexico. This floristic checklist was then matched against a second list containing the
142 genera of crops cultivated in Mexico, including native and non-native human food, forage
143 and fodder, medicine and spice, industrial, and ornamental crops (Molina and Córdova,
144 2006; INEGI, 2007; CONABIO, 2008; SIAP, 2017) to produce the Mexican CWR
145 checklist. All accepted taxonomic names were confirmed against GRIN Taxonomy
146 (USDA–ARS–GRIN, 2017) and Tropicos nomenclature (Missouri Botanical Garden,
147 2017).

148

149 ***Selection criteria***

150 A series of selection criteria and sub-criteria related to biological and socio-economical
151 characteristics were then applied to the CWR checklist to identify those CWR taxa to be
152 included in the first phase of conservation planning and implementation, the national CWR
153 inventory. The criteria used were:

154

155 1. Economic value of the related crop. This criterion includes four sub-criteria: (a)
156 production value (MXN), (b) production area (ha) over a period of 10 years (2007–2016),

157 (c) the projected production value, and (d) projected production area over a period of 10
158 years (2017–2026). Projections were estimated to include potential increasing or decreasing
159 economic values of crops in the near future and maximize the inclusion of emergent crops.

160 2. Energy, protein and fat content of related crop. These per capita values were included to
161 estimate the importance of the crops for human consumption in Mexico, for a period of ten
162 years (2002–2011) (FAO, 2017).

163 3. Potential for crop improvement. In this criterion, the Gene Pool (GP) and Taxon Group
164 (TG) concepts were applied to define the level of relationship to the crop, in accordance to
165 the respective definitions provided by Harlan and de Wet (1971) and Maxted et al. (2006).
166 The latter proposed that a close crop–CWR relationship would be “defined in terms of the
167 CWR belonging to the Gene Pools 1 or 2, or Taxon Groups 1 to 4 of the crop”. CWR taxa
168 belonging to GP3 were also included when their use in crop improvement had previously
169 been confirmed, e.g. *Gossypium aridum* (Rose & Standl.) Skovst. (Romano et al., 2009),
170 *Helianthus californicus* DC. (Feng et al., 2006; Christov, 2008; Kaya, 2014), *Phaseolus*
171 *acutifolius* A. Gray (Singh, 2001; Munoz et al., 2004; Porch et al., 2013) or *Tripsacum* L.
172 (Prischmann et al., 2009).

173 4. Threat and protection status. The global and national risk of extinction of wild plants was
174 compiled from a) the List of threatened species of the Mexican Norm NOM–059–
175 SEMARNAT–2010 (DOF, 2015); b) the IUCN Red List of Threatened Species (IUCN,
176 2016); and c) the CITES, the international agreement aiming for the protection of wild
177 plants and animals in the global market (CITES, 2015).

178 5. Taxon distribution, taxonomic distinction and occurrence status. Including (a) national
179 endemism, (b) national geographic distribution (number of states in which the taxon
180 occurs), taxonomic singularity (number of taxa within the genus), and occurrence status
181 (invasive, introduced or native).

182 6. Crop uses. Many Mexican crops are multi-purpose so the number of the related crops of
183 a CWR, and the number of uses of the related crop were used as additional indicators of the
184 socio-economic importance of the crops.

185

186 The additional information was obtained from different national and international sources
187 (Hanelt and IPK 2001; Molina and Córdova, 2006; INEGI, 2007; CONABIO, 2008, 2011;
188 Vincent et al., 2013; SIAP, 2017; USDA–ARS–GRIN, 2017).

189

190 ***Prioritization***

191 The priority of the CWR taxa were calculated using the ranking system based on a point
192 scoring method (Magos Brehm et al., 2010) in which each category within a criterion/sub-
193 criterion is assigned a specific number of points, depending on the scale and the
194 significance or implication of the criterion (Table 1). For example, endemic taxa will get
195 more points than the non-endemic taxa; also those taxa related to crops of higher economic
196 value will have more points than those related to crops of lower economic value. On the
197 other hand, taxa with a narrower distribution were given more points than those with a
198 wider distribution. Once the corresponding points were assigned to all the categories for
199 each criterion, the next step was to apply these criteria to each taxon in the CWR checklist
200 and sum the corresponding points. The total number of points of all the criteria is the final
201 score for the taxon and that was used to prioritize the taxa. Taxa with a score of 48 and
202 higher were selected, which meant the top 300 prioritized CWR were to be included in the
203 inventory. Applying this scoring method, all CWR taxa related to both native and non-
204 native crops cultivated in Mexico were prioritized. CWR related to exclusively to
205 ornamental species or to non-native crops were excluded from the CWR inventory.

206

207 **RESULTS AND DISCUSSION**

208 The inventory contains 310 high priority CWR taxa, comprising 27 families, 43 genera, 286
209 species and 24 sub-specific taxa (Supplemental Table S1). The families with the highest
210 number of taxa are Lamiaceae (Labiatae) (34), Cactaceae (33), Solanaceae (30),
211 Euphorbiaceae (26), Asteraceae (Compositae) (23), Fabaceae (Leguminosae) (22) and
212 Poaceae (Gramineae) (20). The genera with the highest number of taxa are *Salvia* L. (34),
213 *Manihot* Mill. (21), *Stenocereus* (A. Berger) Riccob (20), *Solanum* L. (20), *Agave* L. (19),
214 *Amaranthus* L. (17), *Tripsacum* L. (15), *Phaseolus* L. (14), *Annona* L. (12), *Opuntia* L. (12)
215 and *Cucurbita* L. (11) (Table 2). Below are the CWR that have been prioritized by each
216 selection criteria.

217 ***Economic value of the related crop***

218 The top ten crops represented in the inventory with the highest production value and
219 production area in the country are shown in Table 3. Maize is the most economically
220 valuable crop and it has the highest number of CWR (20), as does potato. Avocado and
221 chili pepper are the second and third most economically important crops although they have
222 the lowest number of CWR, with 2 each. Regarding production area, maize and beans are
223 the most cultivated crops. The top ten crops are represented by 100 wild relatives, almost
224 one third of the inventory, highlighting the importance of these genetic resources for urgent
225 conservation.

226 Wild relatives of three of the top 10 most economically important crops in the world
227 have their centre of diversity in Mexico and are included in the Mexican national inventory,
228 namely maize, potato and cotton (FAO, 2017). CWR of these crops were identified as
229 global priorities and are included in the “Harlan and de Wet Inventory” (Vincent et al.,
230 2013, <http://www.cwrdiversity.org/>), along with wild relatives of chili pepper, papaya,
231 pumpkin, sunflower, sweet potato, cassava, avocado, beans and cacao. The Mexican
232 national inventory contains 139 prioritized CWR taxa (45%) that are also included in the
233 global inventory (Vincent et al., 2012), so the conservation of these genetic resources in

234 Mexico is essential not only for national but for global food security. As the global
235 inventory has proven a valuable instrument when developing conservation strategies
236 (Castañeda-Álvarez et al., 2016), the national CWR inventory can be a fundamental
237 resource in the development of a national conservation strategy for Mexico.

238 ***Importance for human consumption***

239 Forty taxa are related to maize, beans and cotton, the main sources of energy, protein and
240 fat in the country (FAO, 2017) (Supplemental Table S1). The inventory also includes wild
241 relatives of crops such as cacao, which is economically important due to its high production
242 value (SIAP, 2017), but does not contribute substantially to per capita consumption in the
243 country (FAO, 2017).

244 ***Potential of CWR for crop improvement***

245 About 138 (45%) of the taxa were prioritized using the Gene Pool concept while the other
246 172 (55%) using the Taxon Group concept (Supplemental Table S1). Approximately 11%
247 (34) of them belong to the GP1 or TG1B of 22 crops. There is a continuously increasing
248 number of CWR with potential or confirmed utilization in genetic improvement of crops as
249 breeding techniques are being developed (Ford-Lloyd et al., 2011). At least 36 prioritized
250 CWR (12%) have a recognized potential as gene donor or have been successfully used in
251 the genetic improvement of 11 Mexican native crops, including potato, sunflower, beans,
252 cassava, guava, sweet potato, pumpkin/squash, maize, cotton, chili pepper and lead tree
253 (Table 4). Potato has the largest number of prioritized CWR that have been used in genetic
254 improvement. They are mainly used to confer resistance to biotic stresses, principally
255 disease resistance, but also contribute abiotic stress traits (e.g. drought and heat tolerance),
256 agronomic traits (e.g. yield improvement) and quality traits (e.g. oil, starch and protein
257 content) (Figure 1).

258 ***Threat and protection status of CWR***

259 About 15% of the prioritized CWR taxa (45) have been assessed to determine their global
260 and national risk of extinction under the IUCN or NOM-059-SEMARNAT-2010
261 classifications, respectively, 18 (6%) of which are threatened. Additionally, nine taxa (3%)
262 are listed under the CITES classification and so worthy of conservation priority
263 (Supplemental Table S1). On the IUCN red list categories, four CWR taxa have been
264 assessed as Endangered, three as Vulnerable and one as Near Threatened, whereas four taxa
265 have been assessed as Endangered, three as Threatened and six are Under Special
266 Protection according to the NOM-059-SEMARNAT-2010 (Table 5). Among the genera
267 with threatened CWR are *Agave* L. (2), *Diospyros* (1), *Persea* Mill. (1), *Pinus* L. (3),
268 *Pouteria* Aubl. (2), *Stenocereus* (A. Berger) Riccob (4), *Tripsacum* L. (2), *Vanilla* Mill. (1),
269 and *Zea* L (2). All prioritized CWR taxa belonging to the family Pinaceae and Cactaceae
270 have been categorized under at least one of the threat status sources (NOM-059-
271 SEMARNAT-2010, IUCN or CITES). From the 33 taxa of the family Cactaceae included,
272 the family with the highest number of prioritized CWR, 25 taxa (76%) have been assessed
273 using the IUCN categories and criteria, three of which are threatened. However, most
274 Mexican CWR taxa lack assessments. Some prioritized CWR have a relatively restricted
275 distribution within one state of the country, such as *Gossypium schwendimanii*, *Manihot*
276 *oaxacana*, *Sechium chinantlense*, *Solanum guerreroense*, *Tripsacum zopilotense* or *Zea*
277 *diploperennis*. Further assessments are required, and are currently being undertaken as part
278 of a CWR conservation strategy for Mexico (unpublished data, 2017) and Mesoamerica
279 (<http://www.psmesoamerica.org/en/>), to improve the threat status assessment of prioritized
280 Mexican CWR.

281 ***Distribution of CWR***

282 As Mexico has a relatively large number of endemic species, it is not surprising that there
283 are a considerable number of endemic CWR, about one third of the total taxa. Although
284 several wild relatives are distributed not only in Mexico, but beyond the southern frontier to

285 Central American countries, in the Mesoamerican region, and past the northern frontier
 286 with the United States of America. Thus, ≈31% of the CWR taxa are endemic to Mexico
 287 (97), 11% to Mesoamerica (35) and 12% to Mexico and the United States of America (36)
 288 (Figure 2). About 44% (43) of the taxa endemic to Mexico belong to the families
 289 Solanaceae, Euphorbiaceae and Cactaceae. The genera with the highest number of taxa
 290 endemic to Mexico are *Manihot* Mill. (15), *Solanum* L. (15), *Stenocereus* (A. Berger)
 291 Riccob (10), *Salvia* L. (8), *Agave* L. (7), *Cucurbita* L. (5) and *Zea* L. (4). Poaceae is the
 292 family with the highest number of CWR endemic to Mesoamerica (9), primarily *Tripsacum*
 293 L. (8), followed by Solanaceae (4), *Solanum* L. (4), *Manihot* Mill. (3), and *Salvia* L. (3) the
 294 genera with the highest number of CWR. On the other hand, the genera with more species
 295 endemic to Mexico and the United States of America are *Helianthus* L. (6), *Phaseolus* L.
 296 (4) and *Amaranthus* L. (4). Thus, it is important to recognize the need to establish multi-
 297 national actions for the conservation of these taxa as proposed by Khoury et al. (2013) in
 298 the USA and like in the USA the Fabaceae and Poaceae were identified as the two families
 299 with the highest number of prioritized CWR taxa.

300 ***Uses of the related crop***

301 The inventory contains wild taxa related to sunflower, cacao and maize, crops which
 302 utilization is diversified (Supplemental Table S1). Most prioritized CWR are related to
 303 human food crops (Figure 3), these include CWR related to: fruit crops, including custard
 304 apple (*Annona* L.), papaya (*Carica* L., *Jacaratia* A.DC., *Jarilla* Rusby), Mexican hawthorn
 305 (*Crataegus* L.), squash, cushaw and pumpkin (*Cucurbita* L.), prickly pear (*Opuntia* L.),
 306 avocado (*Persea* Mill.), yellow sapote (*Pouteria* Aubl.), guava (*Psidium* L.) and pitaya
 307 (*Stenocereus* (A. Berger) Riccob); industrial crops, agave (*Agave* L.), cotton (*Gossypium*
 308 L.), sunflower (*Helianthus* L.), physic nut (*Jatropha* L.), marigold (*Tagetes* L.), cacao
 309 (*Theobroma* L.), and vanilla (*Vanilla* Mill.); tuber crops, sweet potato (*Ipomoea* L.),
 310 cassava (*Manihot* Mill.) and potato (*Solanum* L.); vegetable crops, nopal (*Opuntia* L.) (also

311 a forage crop), yam-bean (*Pachyrhizus* Rich. ex DC.), husk tomato (*Physalis* L.) and
312 chayote (*Sechium* P. Browne); cereal and pseudo-cereal crops, amaranth (*Amaranthus* L.)
313 and maize (*Tripsacum* L., *Zea* L.) (also a forage crop); medicine and spice crops, annatto
314 (*Bixa* L.), chili pepper (*Capsicum* L.) and chia (*Salvia* L.); legume crops, lead tree
315 (*Leucaena* Benth) and beans (*Phaseolus* L.); nut crops, pecan (*Carya* Nutt.) and pinyon
316 pine (*Pinus* L.) (Supplemental Table S1). Pinyon wild relatives are the only forest species
317 included in the inventory.

318

319 **CONCLUSION**

320 The Mexican national prioritized CWR inventory is based on a comprehensive and tested
321 methodology, using criteria associated with economic importance of the related crop, the
322 relatively close relationship to the crop, the threatened status, and nutritional, geographic
323 and socio-economic factors. Due to the high diversity of CWR in Mexico, a phased
324 approach to CWR conservation is recommended and those included in the Mexican
325 national prioritized CWR inventory provide an initial set of taxa that require immediate *in*
326 *situ* and *ex situ* conservation action. The CWR taxa identified include a significant number
327 that also have regionally and globally importance. The inventory can be used as a tool by
328 natural resources stakeholders and researchers working for the systematic conservation of
329 prioritized CWR. It is also a source for the identification of genetic resources that can
330 potentially be used in breeding of native crops. The preservation of these prioritized CWR
331 will help to face the genetic erosion due to the impacts of climate change and other factors
332 threatening the national diversity and food security.

333

334 **SUPPLEMENTARY MATERIAL**

335 The supplementary information is included in the Supplemental Table S1. It contains the
336 Prioritized Crop Wild Relative Inventory of Mexico.

337

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342

343 **BIBLIOGRAPHY**

344 Amusan, I.O., P.J. Rich, A. Menkir, T. Housley, and G. Ejeta. 2008. Resistance to *Striga*
345 *hermonthica* in a maize inbred line derived from *Zea diploperennis*. *New Phytol.*
346 178:157–66. doi: 10.1111/j.1469-8137.2007.02355.x.

347 Arreola, H., and T. Terrazas. 2013. *Stenocereus beneckeii*. The IUCN Red List of
348 Threatened Species 2013: e.T151847A568136.
349 <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T151847A568136.en> (accessed
350 12 June 2017).

351 Asaminew, T.G., A. Araya, G. Atkilt, and H. Solomon. 2017. Modelling the potential
352 impact of climate change on cotton (*Gossypium hirsutum*) production in
353 northeastern semi-arid Afar and western Tigray regions of Ethiopia. *J. Earth Sci.*
354 *Clim. Change* 8:390. doi: 10.4172/2157-7617.1000390.

355 Austin, D.F. 1978. The *Ipomoea batatas* complex-I. Taxonomy. *Bulletin of the Torrey*
356 *Botanical Club* 114–129. doi: 10.2307/2484429.

357 Balasubramanian, P., A. Vanderberg, P. Hucl, and L. Gusta. 2004. Resistance of *Phaseolus*
358 species to ice crystallization at subzero temperature. *Physiol. Plant.* 120(3):451–457.
359 doi: 10.1111/j.0031-9317.2004.00257.x.

360 Beaver, J.S., T.G. Porch, and M. Zapata. 2008. Registration of ‘Verano’ white bean. *J. Plant*
361 *Regist.* 2(3):187–189. doi:10.3198/jpr2008.02.0110crc.

- 362 Bellon, M.R., A. Barrientos-Priego, P. Colunga-GarcíaMarín, H. Perales, J.A. Reyes
363 Agüero, R. Rosales Serna, and D. Zizumbo-Villarreal. 2009. Diversidad y
364 conservación de recursos genéticos en plantas cultivadas. In: CONABIO, Capital
365 natural de México, vol. 2: Estado de conservación y tendencias de cambio.
366 Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, México. Pp.
367 355–382.
- 368 Bioversity International. 2014. Strategic action plan to strengthen conservation and use of
369 Mesoamerican plant genetic resources in adapting agriculture to climate change
370 (SAPM) 2014–2024. Bioversity International. Cali, Colombia. ISBN 978-92-9043-
371 969-1.
- 372 Bradshaw, J.E., G.J. Bryan, and G. Ramsay. 2006. Genetic resources (including wild and
373 cultivated *Solanum* species) and progress in their utilization in potato breeding.
374 *Potato Res.* 49:49–65. doi: 10.1007/s11540-006-9002-5.
- 375 Burquez Montijo, A., R.S. Felger, and T. Van Devender. 2013. *Stenocereus alamosensis*.
376 The IUCN Red List of Threatened Species 2013: e.T159212A794280.
377 <http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T159212A794280.en> (accessed
378 12 June 2017).
- 379 Butare, L., I. Rao, P. Lepoivre, J. Polania, C. Cajiao, J. Cuasquer, and S. Beebe. 2011. New
380 genetic sources of resistance in the genus *Phaseolus* to individual and combined
381 aluminium toxicity and progressive soil drying stresses. *Euphytica* 181(3):385–404.
382 doi: 10.1007/s10681-011-0468-0.
- 383 Carneiro, R.M.D.G., V.M. de Freitas, J.K. Mattos, J.M.C. Castro, C.B. Gomes, and R.G.
384 Carneiro. 2012. Major guava nematodes and control prospects using resistance on
385 *Psidium* spp. and non-host crops. *Acta Hort.* 959:41–49. doi:
386 10.17660/ActaHortic.2012.959.4.

- 387 Castañeda-Álvarez, N., C.K. Khoury, H.A. Achicanoy, V. Bernau, H. Dempewolf, R.J.
388 Eastwood, L. Guarino, R.H. Harker, A. Jarvis, N. Maxted, J.V. Müller, J. Ramirez-
389 Villegas, C.C. Sosa, P.C. Struik, H. Vincent, and J. Toll. 2016. Global conservation
390 priorities for crop wild relatives. *Nat. Plants* 2:16022. doi: 10.1038/nplants.2016.22.
- 391 Ceballos, H., M.A. Fregene, Z. Lentini, T. Sánchez, Y.J. Puentes P., J.C. Pérez V., A.
392 Rosero, and A.P. Tofiño. 2006. Development and identification of high-value
393 cassava clones. *Acta Hort.* 703:63–70. doi: 10.17660/ActaHortic.2006.703.6.
- 394 Challenger, A., R. Dirzo, J.C. López Acosta, E. Mendoza, A. Lira-Noriega, and I. Cruz.
395 2009. Factores de cambio y estado de la biodiversidad. In: CONABIO, Capital
396 natural de México, vol. 2: Estado de conservación y tendencias de cambio.
397 Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, México. p. 37–
398 73.
- 399 Christov, M. 2008. *Helianthus* species in breeding research on sunflower. In: L. Velasco,
400 editor, Proceedings of the 17th International Sunflower Conference, Cordoba,
401 Spain. 8–12 June. Consejería de Agricultura y Pesca, Sevilla. p. 709–713.
- 402 Christov, M., R. Batchvarova, and M. Hristova-Cherbadzhi. 2009. Wild species of
403 *Helianthus* L.: Sources of resistance to the parasite *Orobanche cumana* Wallr. *Helia*
404 32(51):65–73. doi: 10.2298/hel0951065c.
- 405 CITES. 2015. The Convention on International Trade in Endangered Species of Wild Fauna
406 and Flora. <https://cites.org/eng> (accessed 10 Mar. 2017).
- 407 CONABIO. 2008. Capital natural de México, vol. 1: Conocimiento actual de la
408 biodiversidad. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad,
409 México.
- 410 CONABIO. 2011. Global Project of Native Maize, National Commission for Knowledge
411 and Use of Biodiversity.
412 <http://www.biodiversidad.gob.mx/genes/proyectoMaices.html> (accessed 15 Mar.

- 413 2017).
- 414 CONABIO. 2012. Estrategia Mexicana para la Conservación Vegetal 2012–2030. Comisión
415 Nacional para el Conocimiento y Uso de la Biodiversidad. Impresora Apolo,
416 México.
- 417 Delgado-Salinas, A., T. Turley, A. Richman, and M. Lavin. 1999. Phylogenetic analysis of
418 the cultivated and wild species of *Phaseolus* (Fabaceae). *Syst. Bot.* 23(3):438–460.
419 doi: 10.2307/2419699.
- 420 De Oliveira, A.C.B., W.R. Maluf, J.E.B. Pinto, and S.M. Azevedo. 2003. Resistance to
421 papaya ringspot virus in summer squash *Cucurbita pepo* L. introgressed from an
422 interspecific *C. pepo* x *C. moschata* cross. *Euphytica* 132(2):211–215. doi:
423 10.1023/A:1024650910031.
- 424 De Ron, A.M., R. Papa, E. Bitocchi, A.M. González, D.G. Debouck, M.A. Brick, D.
425 Fourie, F. Marsolais, J. Beaver, V. Geffroy, P.McClean, M. Santalla, R. Lozano,
426 F.J. Yuste-Lisbona, and P.A. Casquero. 2015. Common bean. In: A.M. De Ron,
427 editor, Grain Legumes. Handbook of Plant Breeding, vol. 10. Springer New York.
428 p. 1–36.
- 429 DOF. 2015. Modificación del Anexo Normativo III, Lista de especies en riesgo de la Norma
430 Oficial Mexicana NOM–059–SEMARNAT–2010, Protección ambiental–Especies
431 nativas de México de flora y fauna silvestres–Categorías de riesgo y
432 especificaciones para su inclusión, exclusión o cambio–Lista de especies en riesgo,
433 publicada el 30 de diciembre de 2010. Diario Oficial de la Federación.
434 http://dof.gob.mx/nota_detalle.php?codigo=5420810&fecha=21/12/2015 (accessed
435 1 Mar. 2017).
- 436 FAO. 2017. FAOSTAT. Food and Agriculture Organization of the United Nations.
437 Statistics Division. <http://faostat3.fao.org/home/E> (accessed 7 Mar. 2017).
- 438 Farjon, A. 2013. *Pinus maximartinezii*. The IUCN Red List of Threatened Species 2013:

- 439 e.T30975A2799675. [http://dx.doi.org/10.2305/IUCN.UK.2013-](http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T30975A2799675.en)
440 [1.RLTS.T30975A2799675.en](http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T30975A2799675.en) (accessed 12 June 2017).
- 441 Feng, J., G.J. Seiler, T.J. Gulya, and C.C. Jan. 2006. Development of *Sclerotinia* stem rot
442 resistant germplasm utilizing hexaploid *Helianthus* species. Poster presented at:
443 28th Sunflower Research Workshop, Fargo, ND. 11–12 January.
444 http://www.sunflowernsa.com/uploads/research/248/Feng_Sclerotinia_06.pdf
445 (accessed 10 Apr. 2017).
- 446 Fielder, H., P. Brotherton, J. Hosking, J.J. Hopkins, B. Ford-Lloyd, and N. Maxted. 2015.
447 Enhancing the Conservation of Crop Wild Relatives in England. PLoS ONE
448 10(6):e0130804. doi:10.1371/journal.pone.0130804.
- 449 Fitzgerald, H., H. Korpelainen, and M. Veteläinen. 2013. Prioritization of crop wild
450 relatives in Finland. In: N. Maxted and S. Kell, editors, Crop Wild Relative 9. PGR
451 Secure. University of Birmingham. p. 10–13.
- 452 Ford-Lloyd, B.V., M. Schmidt, S.J. Armstrong, O. Barazani, J. Engels, R. Hadas, K.
453 Hammer, S.P. Kell, D. Kang, K. Khoshbakht, Y. Li, C. Long, B-R. Lu, K. Ma, V.T.
454 Nguyen, L. Qiu, S. Ge, W. Wei, Z. Zhang, and N. Maxted. 2011. Crop Wild
455 Relatives–Undervalued, Underutilized and under Threat? BioScience 61:559–565.
456 doi: 10.1525/bio.2011.61.7.10.
- 457 Formisano, G., H.S. Paris, L. Frusciante, and M.R. Ercolano. 2010. Commercial *Cucurbita*
458 *pepo* squash hybrids carrying disease resistance introgressed from *Cucurbita*
459 *moschata* have high genetic similarity. Plant Genet. Resour. 8:198–203. doi:
460 10.1017/S1479262110000183.
- 461 Freytag, G.F., M.J. Bassett, and M. Zapata. 1982. Registration of XR-235-1-1 bean
462 germplasm (reg. No. GP42). Crop Sci. 22:1268–1269. doi:
463 10.2135/cropsci1982.0011183X002200060066x.
- 464 Gernandt1, D.S. and J.A. Pérez-de la Rosa. 2014. Biodiversity of Pinophyta (conifers) in

- 465 Mexico. *Rev. Mex. Biodiv. Suppl.* 85: S126–S133. doi: 10.7550/rmb.32195.
- 466 Hajjar, R., and T. Hodgkin. 2007. The use of wild relatives in crop improvement: a survey
467 of developments over the last 20 years. *Euphytica* 156(1–2):1–13. doi:
468 10.1007/s10681-007-9363-0.
- 469 Hanelt, P., and IPK (Institute of Plant Genetics and Crop Plant Research). 2001. Mansfeld's
470 world database of agricultural and horticultural crops. IPK Gatersleben.
471 <http://mansfeld.ipk-gatersleben.de/apex/f?p=185:4> (accessed 9 Mar. 2017).
- 472 Harlan, J.R., and J.M.J. de Wet. 1971. Towards a rational classification of cultivated plants.
473 *Taxon* 20:509–517. doi: 10.2307/1218252.
- 474 Hodgkin, T., and R. Hajjar. 2008. Using crop wild relatives for crop improvement: trends
475 and perspectives. In: N. Maxted, B.V. Ford-Lloyd, S.P. Kell, J. Iriondo, E. Dulloo,
476 and J. Turok, editors, *Crop Wild Relative Conservation and Use*. CABI Publishing,
477 Wallingford. p. 535–548.
- 478 Horn, R. 2002. Molecular diversity of male sterility inducing and male-fertile cytoplasm in
479 the genus *Helianthus*. *Theor. Appl. Genet.* 104(4):562–570. doi: 10.1007/s00122-
480 001-0771-6.
- 481 Idohou, R., A.E. Assogbadjo, B. Fandohan, G.N. Gouwakinnou, R.L. Glele Kakai, B.
482 Sinsin, and N. Maxted. 2012. National inventory and prioritization of crop wild
483 relatives: case study for Benin. *Genet. Resour. Crop Ev.* 60(4):1337–1352. doi:
484 10.1007/s10722-012-9923-6.
- 485 INECOL. 2017. Flora del Bajío y de Regiones Adyacentes. Instituto de Ecología, A.C.
486 http://www1.inecol.edu.mx/publicaciones/listado_floba_links.htm (accessed 10
487 Nov. 2017).
- 488 INEGI. 2007. Censo Agrícola, Ganadero y Forestal Agropecuario. Instituto Nacional de
489 Estadística y Geografía. México.
490 <http://www.inegi.org.mx/est/contenidos/proyectos/agro/> (accessed 5 Mar. 2017).

- 491 Inglis, D., C.R. Brown, B.G. Gundersen, L.D. Porter, J.S. Miller, D.A. Johnson, H. Lozoya-
492 Saldaña, and K.G. Haynes. 2007. Assessment of *Solanum hougasii* in Washington
493 and Mexico as a source of resistance to late blight. *Am. J. Pot. Res.* 84(3):217–228.
494 doi: 10.1007/BF02986271.
- 495 IPCC. 2014. Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II
496 and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate
497 Change. IPCC, Geneva, Switzerland.
- 498 IUCN. 2016. The IUCN Red List of Threatened Species. Version 2016–3. International
499 Union for Conservation of Nature and Natural Resources.
500 <http://www.iucnredlist.org> (accessed 13 Mar. 2017).
- 501 Iwanaga, M. 1988. Use of wild germplasm for sweet potato breeding. In: International
502 Potato Center, Exploration, maintenance, and utilization of sweet potato genetic
503 resources. Report of the First Sweet Potato Planning Conference 1987, Lima, Perú.
504 p. 199–210.
- 505 Jansky, S. 2000. Breeding for disease resistance in potato. *Plant Breed. Rev.* 19:69–156.
506 doi: 10.1002/9780470650172.ch4.
- 507 Jansky, S.H., H. Dempewolf, E.L. Camadro, R. Simon, E. Zimnoch-Guzowska, D.A.
508 Bisognin, and M. Bonierbale. 2013. A case for crop wild relative preservation and
509 use in potato. *Crop Sci.* 53(3):746–754. doi:10.2135/cropsci2012.11.0627.
- 510 Jarvis, A., A. Lane, and R.J. Hijmans. 2008. The effect of climate change on crop wild
511 relatives. *Agric. Ecosyst. Environ.* 126:13–23. doi: 10.1016/j.agee.2008.01.013.
- 512 Jarvis, A., J. Ramirez, B. Anderson, C. Leibing, and P. Aggarwal. 2010. Scenarios of
513 climate change within the context of agriculture. In: M. Reynolds, editor, *Climate*
514 *change & crop production*. CAB International, UK. p. 9–37.
- 515 Jennings, D.L. 1995. Cassava, *Manihot esculenta* (Euphorbiaceae). In: J. Smartt and N.W.
516 Simmonds, editors, *Evolution of Crop Plants*. Longman Group, Harlow, Essex. p.

- 517 128–132.
- 518 Kang Y., S. Kham and X. Ma. 2009. Climate change impacts on crop yield, crop water
519 production and food security. A review. *Prog. Nat. Sci.* 19:1665–1764. doi:
520 10.1016/j.pnsc.2009.08.001.
- 521 Kantar, M.B., C.C. Sosa, C.K. Khoury, N.P. Castañeda-Álvarez, H.A. Achicanoy, V.
522 Bernau, NC. Kane, L. Marek, G. Seiler, and L.H. Rieseberg. 2015. Ecogeography
523 and utility to plant breeding of the crop wild relatives of sunflower (*Helianthus*
524 *annuus* L.). *Front. Plant Sci.* 6:841. doi: 10.3389/fpls.2015.00841.
- 525 Kaya, Y. 2014. Sunflower. In: A. Pratap and J. Kumar, editors, *Alien Gene Transfer in Crop*
526 *Plants*, vol. 2. Springer New York. p. 281–315.
- 527 Kell, S., H. Quin, B. Chen, B. Ford-Lloyd, W. Wei, D. Kang, and N. Maxted. 2015. China's
528 crop wild relatives: diversity for agriculture and food security. *Agric. Ecosyst.*
529 *Environ.* 209(138–154). doi: 10.1016/j.agee.2015.02.012.
- 530 Khoury, C.K., S. Greene, J. Wiersema, N. Maxted, A. Jarvis, and P.C. Struik. 2013. An
531 Inventory of Crop Wild Relatives of the United States. *Crop Sci.* 53:1–13. doi:
532 10.2135/cropsci2012.10.0585.
- 533 Khoury, C.K., B. Heider, N.P. Castañeda-Álvarez, H.A. Achicanoy, C.C. Sosa, R.E. Miller,
534 R.W. Scotland, J.R.I. Wood, G. Rossel, L.A. Eserman, R.L. Jarret, G.C. Yench, V.
535 Bernau, H. Juarez, S. Sotelo, S. de Haan, and P.C. Struik. 2015. Distributions, ex
536 situ conservation priorities, and genetic resource potential of crop wild relatives of
537 sweetpotato [*Ipomoea batatas* (L.) Lam., I. series Batatas]. *Front. Plant Sci.* 6:251.
538 doi: 10.3389/fpls.2015.00251.
- 539 Lala, S., A. Amri, and N. Maxted. 2017. Towards the conservation of crop wild relative
540 diversity in North Africa: checklist, prioritisation and inventory. *Genet. Resour.*
541 *Crop Ev.* doi: 10.1007/s10722-017-0513-5.
- 542 Lebot, V. 2010. Sweet Potato. In: J.E. Bradshaw, editor, *Handbook of plant breeding, root*

- 543 and tuber crops. Springer. p. 97–125.
- 544 Lira, R., O. Téllez, and P. Dávila. 2009. The effects of climate change on the geographic
545 distribution of Mexican wild relatives of domesticated Cucurbitaceae. *Genet.*
546 *Resour. Crop Ev.* 56:691–703. doi: 10.1007/s10722-008-9394-y.
- 547 Liu, Z., and D. Halterman. 2009. Different genetic mechanisms control foliar and tuber
548 resistance to *Phytophthora infestans* in wild potato *Solanum verrucosum*. *Am. J.*
549 *Pot. Res.* 86(6):476. doi 10.1007/s12230-009-9103-1.
- 550 Llorente-Bousquets, J., and S. Ocegueda. 2008. Estado del conocimiento de la biota. In:
551 CONABIO, Capital natural de México, vol. 1: Conocimiento actual de la
552 biodiversidad, México, Comisión Nacional para el Conocimiento y Uso de la
553 Biodiversidad, México. p. 283–322.
- 554 Lobell, D.B, and S.M. Gourdj. 2012. The Influence of Climate Change on Global Crop
555 Productivity. *Plant Physiol.* 160:1686–1697. doi: [http://dx.doi.org/10.1104/pp.112.](http://dx.doi.org/10.1104/pp.112.208298)
556 208298.
- 557 Luck, J., M. Spackman, A. Freeman, P. Tre bicki, W. Griffiths, K. Finlay, and S.
558 Chakraborty. 2011. Climate change and diseases of food crops. *Plant Pathol.*
559 60:113–121. doi: 10.1111/j.1365-3059.2010.02414.x.
- 560 Maesen, L.J.G. van der, and S. Somaatmadja. 1989. Plant Resources of South-East Asia:
561 Pulses. Prosea, Pudoc, Wageningen, Netherlands.
- 562 Magos Brehm, J., N. Maxted, M.A. Martins-Loução, and B.V. Ford-Lloyd. 2010. New
563 approaches for establishing conservation priorities for socio-economically important
564 plant species. *Biodivers. Conserv.* 19:2715–2740. doi: 10.1007/s10531-010-9871-4.
- 565 Mahuku, G.S., C.E. Jara, C. Cajiao, and S. Beebe. 2002. Sources of resistance to
566 *Colletotrichum lindemuthianum* in the secondary gene pool of *Phaseolus vulgaris*
567 and in crosses of primary and secondary gene pools. *Plant Dis.* 86(12):1383–1387.
568 doi: 10.1094/PDIS.2002.86.12.1383.

- 569 Mahuku, G.S., C.E. Jara, C. Cajiao, and S. Beebe. 2003. Sources of resistance to angular
570 leaf spot (*Phaeoisariopsis griseola*) in common bean core collection, wild
571 *Phaseolus vulgaris* and secondary gene pool. *Euphytica* 130(3):303–313. doi:
572 10.1023/A:1023095531683.
- 573 Markhart, A.H. 1985. Comparative water relations of *Phaseolus vulgaris* L. and *Phaseolus*
574 *acutifolius* Gray. *Plant Physiol.* 77(1):113–117.
- 575 Martínez-Gordillo, M. I. Fragoso-Martínez, M.R. García-Peña, and O. Montiel. 2013.
576 Genera of Lamiaceae from Mexico, diversity and endemism. *Rev. Mex. Biodiv.* 84:
577 30–86. doi: 10.7550/rmb.30158.
- 578 Maxted, N., B.V. Ford-Lloyd, S. Jury, S. Kell, and M. Scholten. 2006. Towards a definition
579 of a crop wild relative. *Biodivers. Conserv.* 15(8):2673–2685. doi: 10.1007/s10531-
580 005-5409-6.
- 581 Maxted, N., J.G. Hawkes, L. Guarino, and M. Sawkins. 1997. Towards the selection of taxa
582 for plant genetic conservation. *Genet. Resour. Crop Ev.* 44(4):337–348. doi:
583 10.1023/A:1008643206054.
- 584 Maxted, N., and S. Kell. 2009. Establishment of a Global Network for the *in situ*
585 conservation of Crop Wild Relatives: status and needs. FAO Commission on
586 Genetic Resources for Food and Agriculture. Rome, Italy.
- 587 Maxted, N., J. Magos Brehm, and S. Kell. 2013. Resource book for preparation of national
588 conservation plans for crop wild relatives and landraces. University of Birmingham,
589 UK.
590 [http://www.fao.org/fileadmin/templates/agphome/documents/PGR/PubPGR/Resour](http://www.fao.org/fileadmin/templates/agphome/documents/PGR/PubPGR/ResourceBook/TEXT_ALL_2511.pdf)
591 [ceBook/TEXT_ALL_2511.pdf](http://www.fao.org/fileadmin/templates/agphome/documents/PGR/PubPGR/ResourceBook/TEXT_ALL_2511.pdf) (accessed 2 Feb. 2017).
- 592 Mejía-Jiménez, A., C. Muñoz, H.J. Jacobsen, W.M. Roca, and S.P. Singh. 1994.
593 Interspecific hybridization between common and tepary beans: increased hybrid
594 embryo growth, fertility, and efficiency of hybridization through recurrent and

- 595 congruity backcrossing. *Theor. Appl. Genet.* 88(3–4):324–331. doi:
596 10.1007/BF00223640.
- 597 Metwally, E.I., S.A. Haroun, and G.A. El-Fadly. 1996. Interspecific cross between
598 *Cucurbita pepo* L. and *Cucurbita martinuzzi* through in vitro embryo culture.
599 *Euphytica* 90:1–7. doi: 10.1007/BF00025153.
- 600 Miklas, P.N., M. Zapata, J.S. Beaver, and K.F. Grafton. 1999. Registration of four dry bean
601 germplasms resistant to common bacterial blight: ICB-3, ICB-6, ICB-8, and ICB-
602 10. *Crop Sci.* 39(2), 594–595. doi: 10.2135/cropsci1999.0011183X003900020065x.
- 603 Missouri Botanical Garden. 2017. Tropicos. Saint Louis, Missouri, <http://www.tropicos.org>
604 (accessed 1 June 2017).
- 605 Mittermeier, R.A., C.G. Mittermeier, and G.P. Robles. 1997 *Megadiversity: Earth's*
606 *biologically wealthiest nations* (1st English edition). CEMEX, México, D.F.
- 607 Molina, J.C and L. Córdova, editors. 2006. *Recursos Fitogenéticos de México para la*
608 *Alimentación y la Agricultura: Informe Nacional 2006*. Secretaría de Agricultura,
609 Ganadería, Desarrollo Rural, Pesca y Alimentación y Sociedad Mexicana de
610 Fitogenética, A.C. Chapingo, México.
- 611 Monteiro, C.E.D.S., T.N.S. Pereira, and K.P.D. Campos. 2011. Reproductive
612 characterization of interspecific hybrids among *Capsicum* species. *Crop Breed.*
613 *Appl. Biotechnol.* 11(3):241–249. doi: 10.1590/S1984-70332011000300006.
- 614 Msowoya, K., K. Madani, R. Davtalab, A. Mirchi, and J. Lund. 2016. Climate change
615 impacts on maize production in the warm heart of Africa. *Water Resour. Manag.*
616 30:5299–5312. doi: 10.1007/s11269-016-1487-3.
- 617 Munoz, L.C., M.W. Blair, M.C. Duque, J. Tohme, and W. Roca. 2004. Introgression in
618 common bean x Tepary bean interspecific congruity_backcross lines as measured by
619 AFLP marker. *Crop Sci.* 44:637–645. doi: 10.2135/cropsci2004.6370.

- 620 Nabhan, G.P. 1979. Tepary beans: The effects of domestication on adaptations to arid
621 environments. *Arid Lands Newsletter* 10:11–16.
- 622 Narina, S.S., M. Jasti, R. Buyyarapu, and R. Bhattacharjee. 2011. *Manihot*. In: C. Kole,
623 editor, *Wild Crop Relatives: Genomic and Breeding Resources*. Springer Berlin
624 Heidelberg. p. 133–155.
- 625 Nassar, N.M., D.Y.C. Hashimoto, and S.D.C. Fernandes. 2008. Wild *Manihot* species:
626 botanical aspects, geographic distribution and economic value. *Genet. Mol. Res.*
627 7(1):16–28.
- 628 Nault, L.R., D.T. Gordon, V.D. Damsteegt, and H.H. Iltis. 1982. Response of annual and
629 perennial teosintes (*Zea*) to six maize viruses. *Plant Dis.* 66:61–62. doi:
630 10.1094/PD-66-61.
- 631 Paris, H.S. 2008. Summer Squash. In: J. Prohens, F. Nuez, and M.J. Carena, editors,
632 *Handbook of plant breeding, Vegetables I*. Springer. p. 351–379.
- 633 Piperno, D.R., and K.V. Flannery. 2001. The earliest archaeological maize (*Zea mays* L.)
634 from highland Mexico: New accelerator mass spectrometry dates and their
635 implications. *Proc. Natl. Acad. Sci. USA* 98(4):2101–2103. doi:
636 10.1073/pnas.98.4.2101.
- 637 Porch, T.G., J.S. Beaver, D.G. Debouck, S.A. Jackson, J.D. Kelly, and H. Dempewolf.
638 2013. Use of wild relatives and closely related species to adapt common bean to
639 climate change. *Agronomy* 3(2):433–461. doi: 10.3390/agronomy3020433.
- 640 Porch, T.G., V.H. Ramirez, D. Santana, and E.W. Harmsen. 2009. Evaluation of common
641 bean for drought tolerance in Juana Diaz, Puerto Rico. *J. Agron. Crop Sci.*
642 195(5):328–334. doi: 10.1111/j.1439-037X.2009.00375.x.
- 643 Prischmann, D.A., K.E. Dashiell, D.J. Schneider, and M.W. Eubanks. 2009. Evaluating
644 *Tripsacum*_introgressed maize germplasm after infestation with western corn
645 rootworms (Coleoptera: Chrysomelidae). *J. Appl. Entomol.* 133(1):10–20. doi:

- 646 10.1111/j.1439-0418.2008.01311.x.
- 647 Rao, G.U., A. Ben Chaim, Y. Borovsky, and I. Paran. 2003. Mapping of yield-related QTLs
648 in pepper in an interspecific cross of *Capsicum annum* and *C. frutescens*. *Theor.*
649 *Appl. Genet.* 106:1457–1466.
- 650 Ray, D.K., J.S. Gerbeer, G.K. MacDonald, and P.C. West. 2015. Climate variation explains
651 a third of global crop yield variability. *Nat. Commun.* 6:5989. doi:
652 10.1038/ncomms/6989.
- 653 Rogers, D.J. and S.G. Appan. 1973. *Manihot*, Manihotoides (Euphorbiaceae). *Flora*
654 *Neotropical Monograph* 13. Hafner Press, New York.
- 655 Romano, G.B., E.J. Sacks, S.R. Stetina, A.F. Robinson, D.D. Fang, O.A. Gutierrez, and J.A.
656 Scheffler. 2009. Identification and genomic location of a reniform nematode
657 (*Rotylenchulus reniformis*) resistance locus (Renari) introgressed from *Gossypium*
658 *aridum* into upland cotton (*G. hirsutum*). *Theor. Appl. Genet.* 120:139–150. doi:
659 10.1007/s00122-009-1165-4.
- 660 Rosenzweig C., J. Elliott, D. Deryng, A.C. Ruane, C. Müller, A. Arneth, K.J. Boote, C.
661 Folberth, M. Glotter, N. Khabarov, K. Neumann, F. Piontek, T.A.M. Pugh, E.
662 Schmid, E. Stehfest, H. Yang, and J.W. Jones. 2014. Assessing agricultural risks of
663 climate change in the 21st century in a global gridded crop model intercomparison.
664 *Proc. Natl. Acad. Sci. USA.* 111(9):3268–3273. doi: 10.1073/pnas.1222463110.
- 665 Ross, H. 1979. Wild species and primitive cultivars as ancestors of potato varieties. In:
666 A.C. Zeven and A.M. Harten, editors, *Proceedings of the conference broadening the*
667 *genetic base of crops.* Centre for Agricultural Publishing and Documentation,
668 Wageningen, Netherlands. p. 237–245.
- 669 Rzedowski, J. 1991a. Diversidad y orígenes de la flora fanerogámica de México. *Acta Bot.*
670 *Mex.* 14:3–21. doi: 10.21829/abm14.1991.611.
- 671 Rzedowski, J. 1991b. El endemismo en la flora fanerogámica mexicana: una apreciación

- 672 analítica preliminar. *Acta Bot. Mex.* 15:47–64. doi: 10.21829/abm15.1991.620.
- 673 Sakamoto, S. 1976. Breeding of a new sweet potato variety, Minamiyutaka, by the use of
674 wild relatives. *Japanese Agricultural Research Quarterly* 10(4): 183–186.
- 675 Sankaranarayanan, K., C.S. Praharaj, P. Nalayini, K.K. Bandyopadhyay, and N.
676 Gopalakrishnan. 2010. Climate change and its impact on cotton (*Gossypium* sp.).
677 *Indian J. Agric. Sci.* 80(7):561–75.
- 678 Sarukhán, J., P. Koleff, J. Carabias, J. Soberon, R. Dirzo, J. Llorente-Bousquets, G.
679 Halffter, R. González, I. March, A. Mohar, S. Anta, and J. de la Maza. 2009. Capital
680 Natural de México. Síntesis: conocimiento actual, evaluación y perspectivas de
681 sustentabilidad. Comisión Nacional para el Conocimiento y Uso de la
682 Biodiversidad, México.
- 683 Schmit, V., and J.P. Baudoin. 1992. Screening for resistance to *Ascochyta* blight in
684 populations of *Phaseolus coccineus* L. and *P. polyanthus* Greenman. *Field Crops*
685 *Res.* 30(1):155–165. doi: 10.1016/0378-4290(92)90064-G.
- 686 Schwartz, H.F., K. Otto, H. Teran, M. Lema, and S.P. Singh. 2006. Inheritance of white
687 mold resistance in *Phaseolus vulgaris* x *P. coccineus* crosses. *Plant Dis.* 90(9):1167–
688 1170. doi: 10.1094 / PD-90-1167.
- 689 Schwartz, H.F., and S.P. Singh. 2013. Breeding common bean for resistance to white mold:
690 A review. *Crop Sci.* 53(5):1832–1844. doi: 10.2135/cropsci2013.02.0081.
- 691 Scott, M.E., and T.E. Michaels. 1992. *Xanthomonas* resistance of *Phaseolus* interspecific
692 cross selections confirmed by field performance. *HortScience* 27(4):348–350.
- 693 Seiler, G.J. 1984. Evaluation of seeds of sunflower species for several chemical and
694 morphological characteristics. *Crop Sci.* 25:183–187.
695 doi:10.2135/cropsci1985.0011183X002500010044x.
- 696 Seiler, G.J. 1991. Registration of six interspecific sunflower germplasm lines derived from
697 wild perennial species. *Crop Sci.* 31:1097–1098.

- 698 Seiler, G.J. 2000. Registration of 10 interspecific germplasms derived from wild perennial
699 sunflower. *Crop Sci.* 40:587–588. doi: 10.2135/cropsci2000.0019rgp.
- 700 Seiler, G.J., and L.F. Malek. 2011. Germplasm resources for increasing the genetic diversity
701 of global cultivated sunflower. *Helia* 34(55):1–20. doi: 10.2298/HEL1155001S.
- 702 Shi, Y.Z., A.Y. Liu, J.W. Li, S.F. Wang, and Y.L. Yuan. 2008. Heterosis and genetic analysis
703 of fiber quality traits of interspecific hybrid of *G. hirsutum* L. x *G. barbadense* L. (In
704 Chinese, with English abstract.). *Cotton Sci.* 20(1):56–61.
- 705 Shiotani, I., Z.Z. Huang, S. Sakamoto, and T. Miyazaki. 1991. The role of the wild
706 *Ipomoea trifida* germplasm in sweet potato breeding. In: F. Ofori and S.K. Hahn,
707 editors, *Proceedings of the 9th Symposium on Tropical Root Crops in a Developing*
708 *Economy*. 20–26 October, Accra, Ghana. International Society for Tropical Root
709 Crops, Wageningen, Netherlands. p. 388–398.
- 710 SIAP. 2017. Sistema de Información Agroalimentaria y Pesquera.
711 <http://www.siap.gob.mx/cierre-de-la-produccion-agricola-por-cultivo/> (accessed 1
712 Mar. 2017).
- 713 Singh, S. 2001. Broadening the genetic base of common bean cultivars. *Crop Sci.* 41:
714 1659–1675. doi:10.2135/cropsci2001.1659.
- 715 Singh, S., and C.G. Munoz. 1999. Resistance to common bacterial blight among *Phaseolus*
716 species and common bean improvement. *Crop Sci.* 39(1):80–89.
717 doi:10.2135/cropsci1999.0011183X003900010013x.
- 718 Sondahl, M.R., D.A. Evans, L.M. Prioli, and W.J. Silva. 1984. Tissue Culture Regeneration
719 of Plants in *Zea diploperennis*, a Close Relative of Corn. *Nat. Biotechnol.* 2:455–
720 458. doi: 10.1038/nbt0584-455.
- 721 Spooner, D.M., and J.B. Bamberg. 1994. Potato genetic resources: sources of resistance and
722 systematics. *Am. Pot. J.* 71(5):325–337. doi: 10.1007/BF02849059.
- 723 Srivastava, A., V. Bhardwaj, B.P. Singh, and S.P. Khurana. 2016. Potato diversity and its

- 724 genetic enhancement. In: V. Rajpal, S. Rao, and S. Raina, editors, Gene pool
725 diversity and crop improvement. Sustainable development and biodiversity, vol. 10.
726 Springer, Cham. p. 187–226.
- 727 Sujatha, M., and M. Lakshminarayana. 2007. Resistance to *Spodoptera litura* (Fabr.) in
728 *Helianthus* species and backcross derived inbred lines from crosses involving
729 diploid species. *Euphytica* 155(1–2):205–213. doi: 10.1007/s10681-006-9322-1.
- 730 Suszkiw, J. 2009. Scientists use old, new tools to develop pest-resistant potato. *Agric. Res.*
731 57(4):11–12.
- 732 Tanksley, S.D., and S.R. McCouch. 1997. Seed banks and molecular maps: unlocking
733 genetic potential from the wild. *Science* (Washington, DC) 277(5329):1063–1066.
734 doi: 10.1126/science.277.5329.1063.
- 735 Taylor, N.G., V. Holubec. K. Chobot, M. Parra-Quijano, N. Maxted, and S. Kell. 2013.
736 Systematic crop wild relative conservation planning for Czech Republic. In: N.
737 Maxted and S. Kell, editors, *Crop Wild Relative 9*. PGR Secure. University of
738 Birmingham. p. 5–9.
- 739 Terrazas, T., M. Cházaro, and H. Arreola. 2013a. *Stenocereus chrysocarpus*. The IUCN
740 Red List of Threatened Species 2013: e.T152821A682609.
741 <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152821A682609.en> (accessed
742 12 June 2017).
- 743 Terrazas, T., M. Cházaro, and H. Arreola. 2013b. *Stenocereus martinezii*. The IUCN Red
744 List of Threatened Species 2013: e.T152657A662348.
745 <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152657A662348.en> (accessed
746 12 June 2017).
- 747 Thompson, T.E., D.C. Zimmerman, and C.E. Rogers. 1981. Wild *Helianthus* as a genetic
748 resource. *Field Crops Res.* 4:333–343. doi: 10.1016/0378-4290(81)90083-6.
- 749 Tikhomirov, V.T., and P.V. Chiryaev. 2005. Sources of resistance to diseases in original

- 750 material of sunflower. *Helia* 28(42):101–106. doi:10.2298/HEL0542101T.
- 751 UNAM. 2017. Flora del Valle de Tehuacán-Cuicatlán. Instituto de Biología, Universidad
752 Nacional Autónoma de México.
753 [http://www.ibiologia.unam.mx/barra/publicaciones/floras_tehuacan/florastehuacan.ht](http://www.ibiologia.unam.mx/barra/publicaciones/floras_tehuacan/florastehuacan.htm#n100)
754 [m#n100](http://www.ibiologia.unam.mx/barra/publicaciones/floras_tehuacan/florastehuacan.htm#n100) (accessed 10 Nov. 2017).
- 755 Ureta, C., E. Martínez-Meyer, H.R. Perales, and E.R. Álvarez-Buylla. 2012. Projecting the
756 effects of climate change on the distribution of maize races and their wild relatives
757 in Mexico. *Glob. Chang. Biol.* 18:1073–1082. doi: 10.1111/j.1365-
758 2486.2011.02607.x.
- 759 USDA–ARS–GRIN. 2017. National Plant Germplasm System (NPGS). Agricultural
760 Research Service–Germplasm Resources Information Network. Online Database.
761 <http://www.ars-grin.gov/> (accessed 10 May 2017).
- 762 Vavilov, N. 1992. Origin and geography of cultivated plants. University Press Cambridge.
763 University of Cambridge.
- 764 Vear, F. 2011. *Helianthus*. In: Wild Crop Relatives: Genomic and Breeding Resources.
765 Springer Berlin Heidelberg. p. 161–170.
- 766 Villaseñor, J.L. 2004. Los géneros de plantas vasculares de la flora de México. *Bol. Soc.*
767 *Bot. Mex.* 75:105–135. <http://www.redalyc.org/articulo.oa?id=57707506> (accessed
768 4 Feb. 2017).
- 769 Villaseñor, J.L., and E. Ortiz. 2014. Biodiversidad de las plantas con flores (División
770 Magnoliophyta) en México. *Rev. Mex. Biodiv.* 85: 134–1442. doi:
771 10.7550/rmb.31987.
- 772 Villaseñor, J.L. 2016. Checklist of the native vascular plants of Mexico. *Rev. Mex. Biodiv.*
773 87: 559–902. doi: 10.1016/j.rmb.2016.06.017.
- 774 Vincent, H., J. Wiersema, S. Kell, H. Fielder, S. Dobbie, N.P. Castañeda-Álvarez, L.
775 Guarino, R. Eastwood, B. León, and N. Maxted. 2013. A prioritized crop wild

- 776 relative inventory to help underpin global food security. *Biol. Conserv.* 167:265–
777 275. doi: 10.1016/j.biocon.2013.08.011.
- 778 Vollbrecht E. and B. Sigmon. 2005. Amazing grass: developmental genetics of maize
779 domestication. *Biochem. Soc. Trans.* 33:1502–1506. doi: 10.1042/BST0331502.
- 780 Wei, W.H., W.-P. Zhao, Y.-C. Song, L.-H. Liu, L.-Q. Guo, and M.-G. Gu. 2003. Genomic
781 in situ hybridization analysis for identification of introgressed segments in
782 alloplasmic lines from *Zea mays* × *Zea diploperennis*. *Hereditas* 138:21–26. doi:
783 10.1034/j.1601-5223.2003.01544.x.
- 784 Westphal, E., and P.C.M. Jansen, editors. 1989. *Plant Resources of South-East Asia: a*
785 *selection*. Prosea, Pudoc, Wageningen, Netherlands.
- 786 Wheeler, T., and J. von Braun. 2013. *Climate Change Impacts on Global Food Security*.
787 *Science* (Washington, DC) 341(6145):508–513. doi: 10.1126/science.1239402.
- 788 Wilkinson, R.E. 1983. Incorporation of *Phaseolus coccineus* germplasm may facilitate
789 production of high yielding *P. vulgaris* lines. *Bean Improvement Cooperative*.
790 *Annual Report (USA)* 28. p. 29.
- 791 World Conservation Monitoring Centre. 1998a. *Persea schiedeana*. The IUCN Red List of
792 Threatened Species 1998: e.T34402A9863895.
793 <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T34402A9863895.en> (accessed 12
794 June 2017).
- 795 World Conservation Monitoring Centre. 1998b. *Pouteria belizensis*. The IUCN Red List of
796 Threatened Species 1998: e.T37695A10067842.
797 <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T37695A10067842.en> (accessed
798 12 June 2017).
- 799 World Conservation Monitoring Centre. 1998c. *Pouteria rhynchocarpa*. The IUCN Red
800 List of Threatened Species 1998: e.T34412A9865563.
801 <http://dx.doi.org/10.2305/IUCN.UK.1998.RLTS.T34412A9865563.en> (accessed 12

802 June 2017).

803 Xu, H., T.E. Twine, and E. Girvetz. 2016. Climate Change and Maize Yield in Iowa. PLoS
804 ONE 11(5):e0156083. doi: 10.1371/journal.pone.0156083.

805 Yang, Y., S. Guan, H. Zhai, S. He, and Q. Liu. 2009. Development and evaluation of a
806 storage root-bearing sweet potato somatic hybrid between *Ipomoea batatas* (L.)
807 Lam. and *I. triloba* L. Plant Cell Tissue Organ Cult. 99(1):83–89. doi:
808 10.1007/s11240-009-9578-y.

809 Yin, Y., Q. Tang, and X. Liu. 2015. A multi-model analysis of change in potential yield of
810 major crops in China under climate change. Earth Syst. Dynam. doi: 6:45–59.
811 10.5194/esd-6-45-2015

812 Zamir, D. 2001. Improving plant breeding with exotic genetic libraries. Nat. Rev. Genet.
813 2(12):983–989. doi: 10.1038/35103590.

814 Zapata, M., G. Freytag, and R. Wilkinson. 2004. Release of five common bean germplasm
815 lines resistant to common bacterial blight: W-BB-11, W-BB-20-1, W-BB-35, W-
816 BB-52, and W-BB-11-56. J. Agric. Univ. P.R. 88(1–2)91–95.

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842 **Figure 1.** Use of the prioritized crop wild relatives in the genetic improvement of Mexican
843 native crops.

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845 **Figure 2.** Number of prioritized crop wild relatives endemic to Mexico, Mesoamerica or
846 the region of Mexico and the United States of America.

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848 **Figure 3.** Number of prioritized crop wild relative taxa per crop use.

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Criterion	Subcriterion	Category/Score							
		1	2	3	4	5	6	7	8
Economic Value of the related crop	Production Value (Thousands of MXN)†‡	100§	1,000	10,000	100,000	1,000,000	10,000,000	100,000,000	1,000,000,000
	Projected Production Value (Thousands of MXN)†¶	100	1,000	10,000	100,000	1,000,000	10,000,000	100,000,000	10,000,000,000
	Production Area (has)†‡	10	100	1,000	10,000	100,000	1,000,000	10,000,000	100,000,000
	Projected Production Area (has)†¶	10	100	1,000	10,000	100,000	1,000,000	10,000,000	1,000,000,000
Level of Relationship to the crop	Gene Pool Level#	GP3	NA	NA	GP2	NA	NA	NA	GP1
	Taxon Group Level††	TG4	NA	NA	TG3	NA	TG2	NA	TG1b
Food Supply	Energy Supply (Kcal/capita/day)‡‡	0.5	2	5	10	50	200	500	1,100
	Protein Supply (g/capita/day)‡‡	1	NA	NA	10	NA	NA	NA	30
	Fat Supply (g/capita/day)‡‡	1	NA	NA	10	NA	NA	NA	20
Threat Status	Threat Status NOM–059§§	E	NA	NA	Pr	NA	A	NA	P
	Threat Status CITES (Appendix)	III	NA	NA	II	NA	NA	NA	I
	Threat Status IUCN¶¶	EW	NA	DD	LC	NT	VU	EN	CR
Geographic Distribution	National Distribution (No. States)	32	24	20	16	12	8	4	1
	Singularity (No. Taxa/Genus)	320	160	80	40	20		10 5	1
	Ocurrence Status	Invasive	NA	NA	Introduced	NA	NA	NA	Native
	Endemism Status###	NE	NA	NA	NA	NA	NA	NA	Endemic
	Endemism Status (State Area Km ²)	2,000,000	250,000	175,000	80,000	70,000	30,000	7,000	2,000
Use	Number of crops (related to)	1	2	NA	4	6	NA	8	10
	No. of uses†	1	NA	2	NA	4	NA	8	16

Table 1. Selection criteria, categories and scores used for the prioritization of Mexican crop wild relatives.

† Values of the related crop.

‡ Values from 2007–2016.

§ Numbers are the highest values of the range.

¶ Values for 2017–2026.

GP1: Primary Gene Pool, GP2: Secondary Gene Pool, GP3: Tertiary Gene Pool.

†† TG1b: Taxon Group 1b, TG2: Taxon Group 2, TG3: Taxon Group 3, TG4: Taxon Group 4.

‡‡ Values from 2002–2011.

§§ E: Extinct in the wild, Pr: under Special Protection, A: Threatened, P: Endangered.

¶¶ EW: Extinct in the wild, DD: Data Deficient, LC: Least Concerned, NT: Near Threatened, VU: Vulnerable, EN: Endangered, CR: Critically Endangered.

NE: non-endemic.

Table 2. Families of Mexican crop wild relatives included in the inventory.

Family	Genus	Related Crop	CWR
Amaranthaceae	<i>Amaranthus</i>	Amaranth	17
Anacardiaceae	<i>Spondias</i>	Purple mombin	2
Annonaceae	<i>Annona</i>	Annona	12
Asparagaceae	<i>Agave</i>	Agave	19
Asteraceae	<i>Helianthus</i>	Sunflower	9
	<i>Porophyllum</i>	Poreleaf, pipicha	5
	<i>Tagetes</i>	Marigold	9
Bixaceae	<i>Bixa</i>	Annatto	1
Cactaceae	<i>Hylocereus</i>	Pitahaya	1
	<i>Opuntia</i>	Opuntia	12
	<i>Stenocereus</i>	Pitaya, cina	20
Caricaceae	<i>Carica</i>	Papaya	1
	<i>Jacaratia</i>	Papaya	2
	<i>Jarilla</i>	Papaya	2
Convolvulaceae	<i>Ipomoea</i>	Sweet-potato	6
Cucurbitaceae	<i>Cucurbita</i>	Pumpkin, squash, cushaw	11
	<i>Sechium</i>	Chayote	4
Ebenaceae	<i>Diospyros</i>	Black sapote	3
Euphorbiaceae	<i>Jatropha</i>	Physic nut	5
	<i>Manihot</i>	Cassava	21
Fabaceae	<i>Leucaena</i>	Lead tree	5
	<i>Pachyrhizus</i>	Yam-bean	2
	<i>Phaseolus</i>	Bean	14
	<i>Pithecellobium</i>	Blackbead	1
Juglandaceae	<i>Carya</i>	Pecan	4
Lamiaceae	<i>Salvia</i>	Chia, sage	34
Lauraceae	<i>Persea</i>	Avocado	2
Malpighiaceae	<i>Byrsonima</i>	Nance	1
Malvaceae	<i>Gossypium</i>	Cotton	6
	<i>Theobroma</i>	Cacao	1
Myrtaceae	<i>Psidium</i>	Guava	5
Orchidaceae	<i>Vanilla</i>	Vanilla	2
Pinaceae	<i>Pinus</i>	Pinyon	5
Poaceae	<i>Tripsacum</i>	Maize	15
	<i>Zea</i>	Maize	5
Portulacaceae	<i>Portulaca</i>	Purslane	2
Rosaceae	<i>Crataegus</i>	Mexican hawthorn	3
Sapotaceae	<i>Manilkara</i>	Naseberry, gum tree	2
	<i>Pouteria</i>	Marmalade-plum, yellow sapote	8
Simmondsiaceae	<i>Simmondsia</i>	Goatnut	1
Solanaceae	<i>Capsicum</i>	Chili pepper	2
	<i>Physalis</i>	Husk tomato	8
	<i>Solanum</i>	Potato	20

Table 3. Native crops with the highest accumulated and projected production value and production area from 2007 to 2016 (original values from SIAP, 2017) in Mexican pesos, average exchange rate for the period is 13.428.

Crop	Accumulated Production Value (millions of USD)	Projected Production Value (millions of USD)	Accumulated Production Area (millions of ha)	Projected Production Area (millions of ha)	CWR
Maize	60,811	120,444	83.1	165.5	20
Avocado	13,408	26,009	1.5	3.0	2
Chili pepper	11,291	21,566	1.5	2.9	2
Beans	8,399	16,932	17.1	34.4	14
Potato	7,831	15,894	0.6	1.3	20
Agave	4,128	7,606	1.7	3.5	19
Pecan	3,976	7,678	1.0	1.9	4
Cotton	3,613	7,500	1.3	2.7	6
Papaya	2,300	4,409	0.2	0.3	5
Husk tomato	1,849	3,647	0.5	0.9	8

Table 4. Confirmed and potential use of Mexican prioritized crop wild relatives in the genetic improvement of native crops†.

Crop	CWR	Confirmed or potential use
Chili pepper	<i>Capsicum frutescens</i> L.	Cytoplasmic male sterility (Monteiro et al., 2011), yield improvement (Rao et al., 2003)
Pumpkin, squash, cushaw	<i>Cucurbita lundelliana</i> L. H. Bailey <i>Cucurbita okeechobeensis</i> (Small) L. H. Bailey subsp. <i>martinezii</i> (L. H. Bailey) T. C. Andres & Nabhan ex T. W. Walters & D. S. Decker	Powdery mildew resistance (Paris, 2008) Cucumber mosaic virus resistance (Metwally et al., 1996), powdery mildew resistance (Formisano et al., 2010), papaya ringspot virus resistance (de Oliveira et al., 2003)
Cotton	<i>Gossypium aridum</i> (Rose & Standl.) Skovst. <i>Gossypium barbadense</i> L.	Reniform nematode resistance (Romano et al., 2009) Fibber quality traits (Zamir, 2001; Shi et al., 2008)
Sunflower	<i>Helianthus annuus</i> L. <i>Helianthus californicus</i> DC. <i>Helianthus ciliaris</i> DC. <i>Helianthus hirsutus</i> Raf. <i>Helianthus niveus</i> (Benth.) Brandegee	Soil salinity tolerance (Seiler and Malek, 2011), seed size, <i>Phomopsis</i> brown stem canker, <i>Sclerotinia</i> resistance, early maturing (Christov, 2008), broomrape resistance, <i>Verticillium</i> wilt resistance (Hajjar and Hodgkin, 2007), downy mildew resistance (Seiler and Malek, 2011; Hajjar and Hodgkin, 2007; Christov, 2008), rust resistance (Seiler and Malek, 2011; Hajjar and Hodgkin, 2007), cytoplasmic male sterility (Hajjar and Hodgkin, 2007; Christov, 2008), fertility restoration genes (Horn, 2002; Christov, 2008), seed oil content (Christov, 2008; Vear, 2011) Downy mildew resistance, fertility restoration Genes (Christov, 2008), <i>Sclerotinia</i> resistance (Feng et al., 2006), broomrape resistance (Kaya, 2014) Broomrape resistance, <i>Sclerotinia</i> resistance (Christov et al., 2009), downy mildew resistance (Christov, 2008; Christov et al., 2009), fertility restoration genes, early maturing (Christov, 2008), powdery mildew resistance (Kaya, 2014), sunflower moth resistance (Vear, 2011) Broomrape resistance, <i>Sclerotinia</i> resistance (Christov et al., 2009), downy mildew resistance (Christov, 2008; Christov et al., 2009), fertility restoration genes (Seiler, 2000; Christov, 2008; Seiler, 1991), acidic soil tolerance (Kantar et al., 2015), Alternaria leaf spot resistance, stem weevil resistance (Vear, 2011), <i>Phomopsis</i> brown stem canker (Kaya, 2014; Vear, 2011), tobacco caterpillar resistance (Sujatha and Lakshminarayana, 2007), high oleic acid concentration (Seiler, 1984) Downy mildew resistance, <i>Sclerotinia</i> resistance (Tikhomirov and Chiryaev, 2005), <i>Phomopsis</i> brown stem canker (Kaya, 2014; Tikhomirov and Chiryaev, 2005), seed oil content (Thompson et al., 1981)
Sweet potato	<i>Ipomoea leucantha</i> Jacq. <i>Ipomoea trifida</i> (Kunth) G. Don	Heat tolerance, sandy soil tolerance (Khoury et al., 2015), gene transfer (Austin, 1978) High starch content (Shiotani et al., 1991), dry matter yield, protein content (Iwanaga, 1988), black rot resistance (Sakamoto, 1976; Shiotani et al., 1991; Lebot, 2010; Khoury et al., 2015), root knot

		nematode resistance, root lesion nematode resistance (Sakamoto, 1976; Shiotani et al., 1991; Iwanaga, 1988), weevil resistance (Iwanaga, 1988; Shiotani et al., 1991; Lebot, 2010; Khoury et al., 2015), heat tolerance, waterlogging tolerance (Khoury et al., 2015), yield improvement (Iwanaga, 1988; Khoury et al., 2015), drought tolerance (Shiotani et al., 1991; Lebot, 2010; Khoury et al., 2015), scab resistance (Lebot, 2010; Khoury et al., 2015)
	<i>Ipomoea triloba</i> L.	Drought tolerance (Yang et al., 2009; Khoury et al., 2015), soluble sugar (Yang et al., 2009), heat tolerance (Khoury et al., 2015)
Lead tree	<i>Leucaena diversifolia</i> (Schltdl.) Benth.	Cold tolerance, disease resistance, potential gene source (Westphal and Jansen, 1989)
Cassava	<i>Manihot angustiloba</i> (Torr.) Mull. Arg.	Drought tolerance (Jennings, 1995), gene transfer, crop quality for high starch content (Narina et al., 2011)
	<i>Manihot chlorosticta</i> Standl. & Goldman	Soil salinity tolerance, poor soil tolerance (Narina et al., 2011), source of waxy-starch (Ceballos et al., 2006)
	<i>Manihot crassisejala</i> Pax & K. Hoffm.	Source of waxy-starch (Ceballos et al., 2006)
	<i>Manihot pringlei</i> S. Watson	Low cyanide content (Nassar et al., 2008)
	<i>Manihot rubricaulis</i> I. M. Johnst.	Cold tolerance (Jennings, 1995), drought resistance (Rogers and Appan, 1973)
Tepary bean, Scarlet runner bean, Year bean, Common bean, Lima bean	<i>Phaseolus acutifolius</i> A. Gray	Common bacterial blight resistance (Scott and Michaels, 1992; Mejía-Jiménez, 1994; Singh, 2001; Singh and Munoz, 1999), <i>Fusarium</i> wilt resistance, seed protein content (Porch et al., 2013), gene transfer (Munoz et al., 2004; Mejía-Jiménez et al., 1994), drought tolerance (Singh, 2001; Markhart, 1985; Porch et al., 2009; Mejía-Jiménez, 1994; Munoz et al., 2004), heat tolerance (Mejía-Jiménez, 1994; Nabhan, 1979; Munoz et al., 2004; Porch et al., 2013), soil salinity tolerance (Munoz et al., 2004), ashy stem blight resistance, bean gold mosaic virus resistance, bean rust resistance (Singh, 2001), bruchid resistance, leafhopper resistance (Mejía-Jiménez, 1994; Singh, 2001),
	<i>Phaseolus angustissimus</i> A. Gray	Frost tolerance (Balasubramanian et al., 2004)
	<i>Phaseolus coccineus</i> L.	Aluminum tolerance (de Ron et al., 2015; Porch et al., 2013; Butare et al., 2011), bean stem maggot resistance (de Ron et al., 2015), bean yellow mosaic virus resistance (Singh, 2001; de Ron et al., 2015), angular leaf spot resistance (Mahuku, 2003; Singh, 2001), anthracnose resistance (Singh, 2001; Mahuku, 2002), common bacterial blight resistance (Porch et al., 2013; Beaver et al., 2008; Miklas et al., 1999; Zapata et al., 2004; Singh, 2001; Freytag, 1982), <i>Fusarium</i> root rot resistance (Singh, 2001; Wilkinson, 1983), white mold resistance (Schwartz and Singh, 2013; Singh, 2001; Schwartz et al.,

		2006), cold tolerance, bean gold mosaic virus resistance (Singh, 2001), Ascochyta blight resistance (Singh, 2001; Schmit and Baudoin, 1992), yield improvement (Wilkinson, 1983; Singh, 2001)
	<i>Phaseolus dumosus</i> Macfad.	Angular leaf spot resistance (Mahuku et al., 2003), anthracnose resistance (Porch et al., 2013), <i>Ascochyta</i> blight resistance (Porch et al., 2013; de Ron et al., 2015), white mold resistance (Schwartz and Singh, 2013)
	<i>Phaseolus maculatus</i> Scheele subsp. <i>ritensis</i> (M. E. Jones) Freytag	Disease resistance (Maesen and Somaatmadja, 1989)
Guava	<i>Psidium friedrichsthalianum</i> (O. Berg) Nied.	Potential for disease resistance in guava (Carneiro et al., 2012)
Potato	<i>Solanum bulbocastanum</i> Dunal	Late blight resistance (Jansky, 2000; Hodgkin and Hajjar, 2008; Srivastava et al., 2016), root knot nematode resistance (Suszkiw, 2009; Srivastava et al., 2016), drought tolerance, heat tolerance, aphid resistance, cyst nematode resistance, early blight resistance (Srivastava et al., 2016), blackleg and soft rot resistance (Jansky, 2000; Srivastava et al., 2016)
	<i>Solanum demissum</i> Lindl.	Late blight resistance (Jansky, 2000; Jansky et al., 2013; Bradshaw et al., 2006; Srivastava et al., 2016; Hajjar and Hodgkin, 2007), potato leaf roll virus resistance (Jansky, 2000; Srivastava et al., 2016), blackleg and soft rot resistance (Srivastava et al., 2016; Jansky, 2000), frost tolerance, Colorado potato beetle resistance, cyst nematode resistance, potato virus Y resistance, wart resistance (Srivastava et al., 2016)
	<i>Solanum hjertingii</i> Hawkes	Blackleg and soft rot resistance (Srivastava et al., 2016; Jansky, 2000), root knot nematode resistance, spindle tuber viroid resistance (Srivastava et al., 2016)
	<i>Solanum hougasii</i> Correll	Late blight resistance (Inglis et al., 2007), root knot nematode resistance (Spooner and Bamberg, 1994), potato virus Y resistance (Jansky, 2000)
	<i>Solanum iopetalum</i> (Bitter) Hawkes	Late blight resistance (Jansky, 2000)
	<i>Solanum pinnatisectum</i> Dunal	Drought tolerance, heat tolerance, blackleg and soft rot resistance, Colorado potato beetle resistance, late blight resistance, chip making from cold (Srivastava et al., 2016)
	<i>Solanum polyadenium</i> Greenm.	Colorado potato beetle resistance, late blight resistance (Srivastava et al., 2016)
	<i>Solanum stenophyllidium</i> Bitter	Frost tolerance (Srivastava et al., 2016)
	<i>Solanum stoloniferum</i> Schltdl.	Late blight resistance (Hajjar and Hodgkin, 2007; Bradshaw et al., 2006; Srivastava et al., 2016), potato virus Y resistance (Ross, 1979; Srivastava et al., 2016; Jansky et al., 2013), drought tolerance,

Maize	<i>Solanum verrucosum</i> Schlttdl.	heat tolerance, aphid resistance, potato leaf roll virus resistance (Srivastava et al., 2016)
	<i>Tripsacum dactyloides</i> (L.) L.	Late blight resistance (Srivastava et al., 2016; Liu and Halterman, 2009)
	var. <i>dactyloides</i>	Corn rootworm tolerance (Prischmann et al., 2009)
	<i>Zea diploperennis</i> Iltis, Doebley & R. Guzman	Tiller number (Sondahl et al., 1984), maize chlorotic dwarf virus resistance, maize chlorotic mottle virus resistance, maize streak virus resistance (Nault et al., 1982), <i>Striga</i> resistance (Amusan et al., 2008), disease resistance (Wei et al., 2003)

† Adapted from the Inventory of Crop Wild Relatives of the United States (Khoury et al., 2013), “The Harlan and de Wet Crop Wild Relative Inventory” (Vincent *et al.*, 2013) and U.S. National Genetic Resources Program (USDA–ARS–GRIN, 2017).

Table 5. Threatened categories of prioritized crop wild relatives.

CWR Taxa	NOM-059 Category	IUCN Category	Reference
<i>Agave congesta</i> Gentry	Pr		DOF, 2015
<i>Agave kewensis</i> Jacobi	P		DOF, 2015
<i>Diospyros konzattii</i> Standl.	P		DOF, 2015
<i>Persea schiedeana</i> Nees		VU	World Conservation Monitoring Centre, 1998a
<i>Pinus maximartinezii</i> Rzedl.	P	EN	DOF, 2015; Farjon, 2013
<i>Pinus monophylla</i> Torr. & Frém.	Pr		DOF, 2015
<i>Pinus quadrifolia</i> Parl. ex Sudw.	Pr		DOF, 2015
<i>Pouteria belizensis</i> (Standl.) Cronquist		VU	World Conservation Monitoring Centre, 1998b
<i>Pouteria rhynchocarpa</i> T.D. Penn.		EN	World Conservation Monitoring Centre, 1998c
<i>Stenocereus alamosensis</i> (J.M. Coult.) A.C. Gibson & K.E. Horak		VU	Burquez Montijo et al., 2013
<i>Stenocereus beneckeii</i> (Ehrenb.) A. Berger & Buxb.		NT	Arreola and Terrazas, 2013
<i>Stenocereus chrysocarpus</i> Sánchez-Mej.		EN	Terrazas et al., 2013a
<i>Stenocereus eruca</i> (Brandege) A.C. Gibson & K.E. Horak	A		DOF, 2015
<i>Stenocereus martinezii</i> (J.G. Ortega) Buxb.	Pr	EN	DOF, 2015; Terrazas et al., 2013b
<i>Tripsacum maizar</i> Hern.-Xol. & Randolph	A		DOF, 2015
<i>Tripsacum zopilotense</i> Hern.-Xol. & Randolph	Pr		DOF, 2015
<i>Vanilla planifolia</i> Andrews	Pr		DOF, 2015
<i>Zea diploperennis</i> Iltis, Doebley & R. Guzmán	A		DOF, 2015
<i>Zea perennis</i> (Hitchc.) Reeves & Mangelsd.	P		DOF, 2015

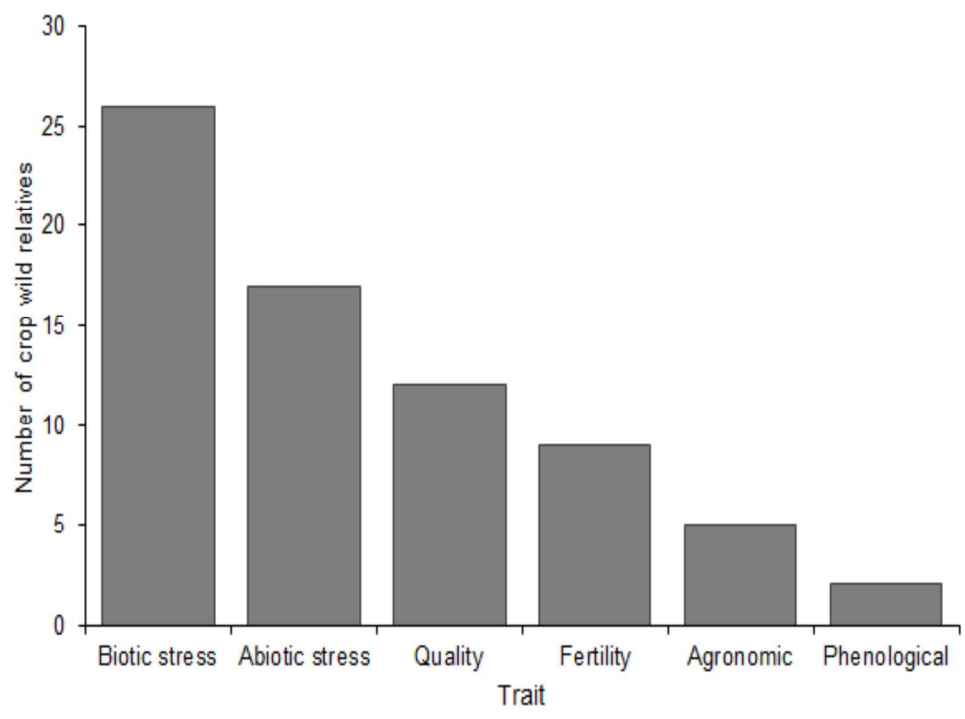


Figure 1. Use of the prioritized crop wild relatives in the genetic improvement of Mexican native crops.

320x238mm (300 x 300 DPI)

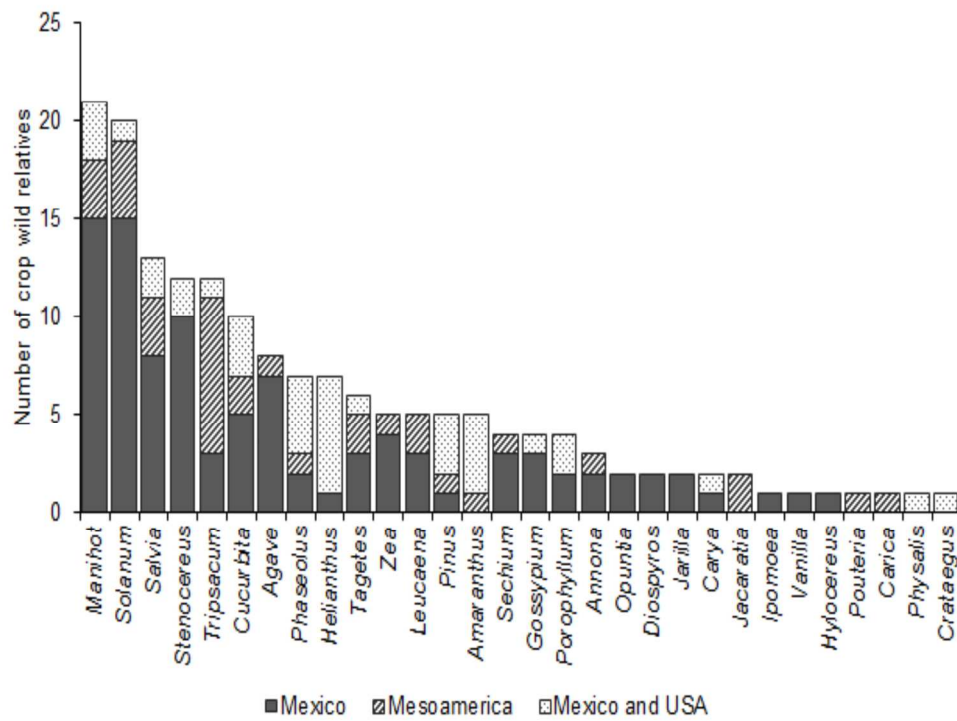


Figure 2. Number of prioritized crop wild relatives endemic to Mexico, Mesoamerica or the region of Mexico and the United States of America.

431x322mm (300 x 300 DPI)

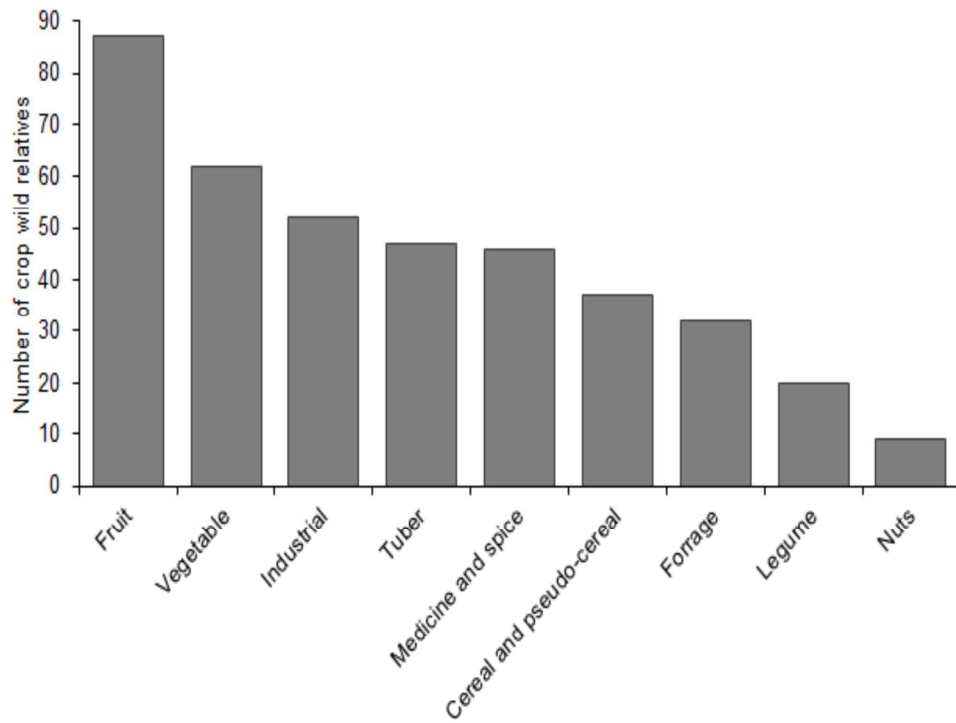


Figure 3. Number of prioritized crop wild relative taxa per crop use.

322x240mm (300 x 300 DPI)

Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	karwinskii	Zucc.	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	kewensis	Jacobi	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroacantha	Zucc.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	macroculmis	Tod.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	mapisaga	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	rhodacantha	Trel.	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	seemanniana	Jacobi	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	sisalana	Perrine ex Engelm.	0
Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	stringens	Trel.	0

Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	stringens	Trel.	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Asparagaceae	Agave	tequilana	F.A.C. Weber	0
Amaranthaceae	Amaranthus	australis	(A. Gray) J.D. Sauer	0
Amaranthaceae	Amaranthus	australis	(A. Gray) J.D. Sauer	0
Amaranthaceae	Amaranthus	australis	(A. Gray) J.D. Sauer	0
Amaranthaceae	Amaranthus	australis	(A. Gray) J.D. Sauer	0
Amaranthaceae	Amaranthus	australis	(A. Gray) J.D. Sauer	0
Amaranthaceae	Amaranthus	blitoides	S. Watson	0
Amaranthaceae	Amaranthus	blitoides	S. Watson	0
Amaranthaceae	Amaranthus	blitoides	S. Watson	0
Amaranthaceae	Amaranthus	blitoides	S. Watson	0
Amaranthaceae	Amaranthus	caudatus	L.	0
Amaranthaceae	Amaranthus	caudatus	L.	0
Amaranthaceae	Amaranthus	caudatus	L.	0
Amaranthaceae	Amaranthus	caudatus	L.	0
Amaranthaceae	Amaranthus	crassipes	Schltdl.	0
Amaranthaceae	Amaranthus	crassipes	Schltdl.	0
Amaranthaceae	Amaranthus	crassipes	Schltdl.	0
Amaranthaceae	Amaranthus	crassipes	Schltdl.	0
Amaranthaceae	Amaranthus	crassipes	Schltdl.	0
Amaranthaceae	Amaranthus	cruentus	L.	0
Amaranthaceae	Amaranthus	cruentus	L.	0
Amaranthaceae	Amaranthus	cruentus	L.	0
Amaranthaceae	Amaranthus	cruentus	L.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	dubius	Mart. ex Thell.	0
Amaranthaceae	Amaranthus	fimbriatus	(Torr.) Benth. ex S. V	0
Amaranthaceae	Amaranthus	fimbriatus	(Torr.) Benth. ex S. V	0
Amaranthaceae	Amaranthus	fimbriatus	(Torr.) Benth. ex S. V	0
Amaranthaceae	Amaranthus	fimbriatus	(Torr.) Benth. ex S. V	0
Amaranthaceae	Amaranthus	fimbriatus	(Torr.) Benth. ex S. V	0
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Amaranthaceae	Amaranthus	greggii	S. Watson	0
Amaranthaceae	Amaranthus	greggii	S. Watson	0
Amaranthaceae	Amaranthus	greggii	S. Watson	0
Amaranthaceae	Amaranthus	greggii	S. Watson	0
Amaranthaceae	Amaranthus	hybridus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	hypochondriacus	L.	0
Amaranthaceae	Amaranthus	palmeri	S. Watson	0
Amaranthaceae	Amaranthus	palmeri	S. Watson	0
Amaranthaceae	Amaranthus	palmeri	S. Watson	0
Amaranthaceae	Amaranthus	palmeri	S. Watson	0

Amaranthaceae	Amaranthus	palmeri	S. Watson	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	polygonoides	L.	0
Amaranthaceae	Amaranthus	powellii	S. Watson	0
Amaranthaceae	Amaranthus	scariosus	Benth.	0
Amaranthaceae	Amaranthus	scariosus	Benth.	0
Amaranthaceae	Amaranthus	scariosus	Benth.	0
Amaranthaceae	Amaranthus	scariosus	Benth.	0
Amaranthaceae	Amaranthus	scariosus	Benth.	0
Amaranthaceae	Amaranthus	spinosus	L.	0
Amaranthaceae	Amaranthus	spinosus	L.	0
Amaranthaceae	Amaranthus	spinosus	L.	0
Amaranthaceae	Amaranthus	spinosus	L.	0
Amaranthaceae	Amaranthus	spinosus	L.	0
Amaranthaceae	Amaranthus	tamaulipensis	Henrickson	0
Amaranthaceae	Amaranthus	tamaulipensis	Henrickson	0
Amaranthaceae	Amaranthus	tamaulipensis	Henrickson	0
Amaranthaceae	Amaranthus	tamaulipensis	Henrickson	0
Amaranthaceae	Amaranthus	tamaulipensis	Henrickson	0
Amaranthaceae	Amaranthus	torreyi	(A. Gray) Benth. ex S	0
Amaranthaceae	Amaranthus	torreyi	(A. Gray) Benth. ex S	0
Amaranthaceae	Amaranthus	torreyi	(A. Gray) Benth. ex S	0
Amaranthaceae	Amaranthus	torreyi	(A. Gray) Benth. ex S	0
Amaranthaceae	Amaranthus	torreyi	(A. Gray) Benth. ex S	0
Annonaceae	Annona	cherimola	Mill.	0
Annonaceae	Annona	cherimola	Mill.	0
Annonaceae	Annona	cherimola	Mill.	0
Annonaceae	Annona	cherimola	Mill.	0
Annonaceae	Annona	glabra	L.	0
Annonaceae	Annona	glabra	L.	0
Annonaceae	Annona	glabra	L.	0
Annonaceae	Annona	glabra	L.	0
Annonaceae	Annona	globiflora	Schltl.	0
Annonaceae	Annona	globiflora	Schltl.	0
Annonaceae	Annona	globiflora	Schltl.	0
Annonaceae	Annona	globiflora	Schltl.	0
Annonaceae	Annona	liebmanniana	Baill.	0
Annonaceae	Annona	liebmanniana	Baill.	0
Annonaceae	Annona	liebmanniana	Baill.	0
Annonaceae	Annona	liebmanniana	Baill.	0
Annonaceae	Annona	longiflora	S. Watson	0
Annonaceae	Annona	longiflora	S. Watson	0
Annonaceae	Annona	longiflora	S. Watson	0
Annonaceae	Annona	longiflora	S. Watson	0
Annonaceae	Annona	longipes	Saff.	0
Annonaceae	Annona	longipes	Saff.	0
Annonaceae	Annona	longipes	Saff.	0
Annonaceae	Annona	longipes	Saff.	0
Annonaceae	Annona	macrophyllata	Donn. Sm.	0
Annonaceae	Annona	macrophyllata	Donn. Sm.	0
Annonaceae	Annona	macrophyllata	Donn. Sm.	0
Annonaceae	Annona	macrophyllata	Donn. Sm.	0
Annonaceae	Annona	muricata	L.	0
Annonaceae	Annona	muricata	L.	0

Annonaceae	Annona	muricata	L.		0
Annonaceae	Annona	muricata	L.		0
Annonaceae	Annona	palmeri	Saff.		0
Annonaceae	Annona	palmeri	Saff.		0
Annonaceae	Annona	palmeri	Saff.		0
Annonaceae	Annona	palmeri	Saff.		0
Annonaceae	Annona	purpurea	Moc. & Sessé ex Dur		0
Annonaceae	Annona	purpurea	Moc. & Sessé ex Dur		0
Annonaceae	Annona	purpurea	Moc. & Sessé ex Dur		0
Annonaceae	Annona	purpurea	Moc. & Sessé ex Dur		0
Annonaceae	Annona	reticulata	L.		0
Annonaceae	Annona	reticulata	L.		0
Annonaceae	Annona	reticulata	L.		0
Annonaceae	Annona	reticulata	L.		0
Annonaceae	Annona	squamosa	L.		0
Annonaceae	Annona	squamosa	L.		0
Annonaceae	Annona	squamosa	L.		0
Annonaceae	Annona	squamosa	L.		0
Bixaceae	Bixa	orellana	L.		0
Malpighiaceae	Byrsonima	crassifolia	(L.) Kunth		0
Solanaceae	Capsicum	annuum	L.	var.	
Solanaceae	Capsicum	annuum	L.	var.	
Solanaceae	Capsicum	annuum	L.	var.	
Solanaceae	Capsicum	annuum	L.	var.	
Solanaceae	Capsicum	frutescens	L.		0
Solanaceae	Capsicum	frutescens	L.		0
Solanaceae	Capsicum	frutescens	L.		0
Solanaceae	Capsicum	frutescens	L.		0
Caricaceae	Carica	papaya	L.		0
Juglandaceae	Carya	illinoensis	(Wangenh.) K. Koch		0
Juglandaceae	Carya	myristiciformis	(F. Michx.) Nutt.		0
Juglandaceae	Carya	ovata	(Mill.) K. Koch		0
Juglandaceae	Carya	palmeri	W. E. Manning		0
Rosaceae	Crataegus	mexicana	D.C.		0
Rosaceae	Crataegus	tracyi	Ashe ex Eggl.	var.	
Rosaceae	Crataegus	uniflora	Münchh.		0
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber		0
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber	subsp.	
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber	subsp.	
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber	subsp.	
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber	subsp.	
Cucurbitaceae	Cucurbita	argyrosperma	C. Huber	subsp.	
Cucurbitaceae	Cucurbita	cordata	S. Watson		0
Cucurbitaceae	Cucurbita	cordata	S. Watson		0
Cucurbitaceae	Cucurbita	cordata	S. Watson		0
Cucurbitaceae	Cucurbita	cordata	S. Watson		0
Cucurbitaceae	Cucurbita	cordata	S. Watson		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	digitata	A. Gray		0
Cucurbitaceae	Cucurbita	foetidissima	Kunth		0
Cucurbitaceae	Cucurbita	foetidissima	Kunth		0
Cucurbitaceae	Cucurbita	foetidissima	Kunth		0
Cucurbitaceae	Cucurbita	foetidissima	Kunth		0
Cucurbitaceae	Cucurbita	foetidissima	Kunth		0
Cucurbitaceae	Cucurbita	lundelliana	L. H. Bailey		0

Cucurbitaceae	Cucurbita	lundelliana	L. H. Bailey		0
Cucurbitaceae	Cucurbita	lundelliana	L. H. Bailey		0
Cucurbitaceae	Cucurbita	lundelliana	L. H. Bailey		0
Cucurbitaceae	Cucurbita	lundelliana	L. H. Bailey		0
Cucurbitaceae	Cucurbita	okeechobeensis	(Small) L. H. Bailey	subsp.	
Cucurbitaceae	Cucurbita	okeechobeensis	(Small) L. H. Bailey	subsp.	
Cucurbitaceae	Cucurbita	okeechobeensis	(Small) L. H. Bailey	subsp.	
Cucurbitaceae	Cucurbita	okeechobeensis	(Small) L. H. Bailey	subsp.	
Cucurbitaceae	Cucurbita	okeechobeensis	(Small) L. H. Bailey	subsp.	
Cucurbitaceae	Cucurbita	palmata	S. Watson		0
Cucurbitaceae	Cucurbita	palmata	S. Watson		0
Cucurbitaceae	Cucurbita	palmata	S. Watson		0
Cucurbitaceae	Cucurbita	palmata	S. Watson		0
Cucurbitaceae	Cucurbita	palmata	S. Watson		0
Cucurbitaceae	Cucurbita	pedatifolia	L.H. Bailey		0
Cucurbitaceae	Cucurbita	pedatifolia	L.H. Bailey		0
Cucurbitaceae	Cucurbita	pedatifolia	L.H. Bailey		0
Cucurbitaceae	Cucurbita	pedatifolia	L.H. Bailey		0
Cucurbitaceae	Cucurbita	pedatifolia	L.H. Bailey		0
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	pepo	L.	subsp.	
Cucurbitaceae	Cucurbita	radicans	Naudin		0
Cucurbitaceae	Cucurbita	radicans	Naudin		0
Cucurbitaceae	Cucurbita	radicans	Naudin		0
Ebenaceae	Diospyros	conzattii	Standl.		0
Ebenaceae	Diospyros	conzattii	Standl.		0
Ebenaceae	Diospyros	johnstoniana	Standl. & Steyerl.		0
Ebenaceae	Diospyros	johnstoniana	Standl. & Steyerl.		0
Ebenaceae	Diospyros	rosei	Standl.		0
Ebenaceae	Diospyros	rosei	Standl.		0
Malvaceae	Gossypium	aridum	(Rose & Standl.) Sko		0
Malvaceae	Gossypium	aridum	(Rose & Standl.) Sko		0
Malvaceae	Gossypium	aridum	(Rose & Standl.) Sko		0
Malvaceae	Gossypium	aridum	(Rose & Standl.) Sko		0
Malvaceae	Gossypium	barbadense	L.		0
Malvaceae	Gossypium	barbadense	L.		0
Malvaceae	Gossypium	barbadense	L.		0
Malvaceae	Gossypium	barbadense	L.		0
Malvaceae	Gossypium	gossypoides	(Ulbr.) Standl.		0
Malvaceae	Gossypium	gossypoides	(Ulbr.) Standl.		0
Malvaceae	Gossypium	gossypoides	(Ulbr.) Standl.		0
Malvaceae	Gossypium	gossypoides	(Ulbr.) Standl.		0
Malvaceae	Gossypium	hirsutum	L.		0
Malvaceae	Gossypium	hirsutum	L.		0
Malvaceae	Gossypium	hirsutum	L.		0
Malvaceae	Gossypium	hirsutum	L.		0
Malvaceae	Gossypium	schwendimanii	Fryxell & S. D. Koch		0
Malvaceae	Gossypium	schwendimanii	Fryxell & S. D. Koch		0
Malvaceae	Gossypium	schwendimanii	Fryxell & S. D. Koch		0
Malvaceae	Gossypium	schwendimanii	Fryxell & S. D. Koch		0
Malvaceae	Gossypium	thurberi	Tod.		0
Malvaceae	Gossypium	thurberi	Tod.		0
Malvaceae	Gossypium	thurberi	Tod.		0
Malvaceae	Gossypium	thurberi	Tod.		0
Asteraceae (Con Helianthus		annuus	L.		0

Asteraceae (Con Helianthus	californicus	DC.	0
Asteraceae (Con Helianthus	ciliaris	DC.	0
Asteraceae (Con Helianthus	gracilentus	A. Gray	0
Asteraceae (Con Helianthus	hirsutus	Raf.	0
Asteraceae (Con Helianthus	laciniatus	A. Gray	0
Asteraceae (Con Helianthus	niveus	(Benth.) Brandegee	0
Asteraceae (Con Helianthus	niveus	(Benth.) Brandegee subsp.	
Asteraceae (Con Helianthus	niveus	(Benth.) Brandegee subsp.	
Cactaceae Hylocereus	ocamponis	(Salm-Dyck) Britton &	0
Convolvulaceae Ipomoea	batatas	(L.) Lam.	0
Convolvulaceae Ipomoea	leucantha	Jacq.	0
Convolvulaceae Ipomoea	tabascanana	J.A. McDonald & D.F	0
Convolvulaceae Ipomoea	tabascanana	J.A. McDonald & D.F	0
Convolvulaceae Ipomoea	tiliacea	(Willd.) Choisy	0
Convolvulaceae Ipomoea	trifida	(Kunth) G. Don	0
Convolvulaceae Ipomoea	trifida	(Kunth) G. Don	0
Convolvulaceae Ipomoea	triloba	L.	0
Caricaceae Jacaratia	dolichaula	(Donn. Sm.) Woodso	0
Caricaceae Jacaratia	mexicana	A. DC.	0
Caricaceae Jarilla	caudata	(Brandegee) Standl.	0
Caricaceae Jarilla	heterophylla	(Cerv. ex La Llave) R	0
Euphorbiaceae Jatropha	andrieuxii	Müll. Arg.	0
Euphorbiaceae Jatropha	bartlettii	Wilbur	0
Euphorbiaceae Jatropha	mcvaughii	Dehgan & G.L. Webs	0
Euphorbiaceae Jatropha	pseudocurcas	Müll. Arg.	0
Euphorbiaceae Jatropha	rufescens	Brandegee	0
Fabaceae (Legu Leucaena	confertiflora	Zárate	0
Fabaceae (Legu Leucaena	diversifolia	(Schltdl.) Benth.	0
Fabaceae (Legu Leucaena	esculenta	(Moc. & Sessé ex DC	0
Fabaceae (Legu Leucaena	lanceolata	S. Watson	0
Fabaceae (Legu Leucaena	leucocephala	(Lam.) de Wit	0
Euphorbiaceae Manihot	aesculifolia	(Kunth) Pohl	0
Euphorbiaceae Manihot	angustiloba	(Torr.) Mull. Arg.	0
Euphorbiaceae Manihot	auriculata	McVaugh	0
Euphorbiaceae Manihot	caudata	Greenm.	0
Euphorbiaceae Manihot	chlorosticta	Standl. & Goldman	0
Euphorbiaceae Manihot	crassisepala	Pax & K. Hoffm.	0
Euphorbiaceae Manihot	davisiae	Croizat	0
Euphorbiaceae Manihot	foetida	(Kunth) Pohl	0
Euphorbiaceae Manihot	michaelis	McVaugh	0
Euphorbiaceae Manihot	oaxacana	D. J. Rogers & Appar	0
Euphorbiaceae Manihot	obovata	J. Jimenez Ram.	0
Euphorbiaceae Manihot	pauciflora	Brandegee	0
Euphorbiaceae Manihot	pringlei	S. Watson	0
Euphorbiaceae Manihot	rhomboidea	Mull. Arg.	0
Euphorbiaceae Manihot	rhomboidea	Müll. Arg. subsp.	
Euphorbiaceae Manihot	rubricaulis	I. M. Johnst.	0
Euphorbiaceae Manihot	rubricaulis	I. M. Johnst. subsp.	
Euphorbiaceae Manihot	rubricaulis	I. M. Johnst. subsp.	
Euphorbiaceae Manihot	subspicata	D. J. Rogers & Appar	0
Euphorbiaceae Manihot	tomatophylla	Standl.	0
Euphorbiaceae Manihot	walkerae	Croizat	0
Sapotaceae Manilkara	chicle	(Pittier) Gilly	0
Sapotaceae Manilkara	chicle	(Pittier) Gilly	0
Sapotaceae Manilkara	zapota	(L.) P. Royen	0
Sapotaceae Manilkara	zapota	(L.) P. Royen	0
Cactaceae Opuntia	atropes	Rose	0
Cactaceae Opuntia	atropes	Rose	0
Cactaceae Opuntia	atropes	Rose	0

Cactaceae	Opuntia	atropes	Rose	0
Cactaceae	Opuntia	crassa	Haw.	0
Cactaceae	Opuntia	crassa	Haw.	0
Cactaceae	Opuntia	crassa	Haw.	0
Cactaceae	Opuntia	crassa	Haw.	0
Cactaceae	Opuntia	deamii	Rose	0
Cactaceae	Opuntia	deamii	Rose	0
Cactaceae	Opuntia	deamii	Rose	0
Cactaceae	Opuntia	deamii	Rose	0
Cactaceae	Opuntia	eichlamii	Rose	0
Cactaceae	Opuntia	eichlamii	Rose	0
Cactaceae	Opuntia	eichlamii	Rose	0
Cactaceae	Opuntia	eichlamii	Rose	0
Cactaceae	Opuntia	ficus-indica	(L.) Mill.	0
Cactaceae	Opuntia	ficus-indica	(L.) Mill.	0
Cactaceae	Opuntia	ficus-indica	(L.) Mill.	0
Cactaceae	Opuntia	ficus-indica	(L.) Mill.	0
Cactaceae	Opuntia	hyptiacantha	F.A.C. Weber	0
Cactaceae	Opuntia	hyptiacantha	F.A.C. Weber	0
Cactaceae	Opuntia	hyptiacantha	F.A.C. Weber	0
Cactaceae	Opuntia	lasiacantha	Pfeiff.	0
Cactaceae	Opuntia	lasiacantha	Pfeiff.	0
Cactaceae	Opuntia	lasiacantha	Pfeiff.	0
Cactaceae	Opuntia	lasiacantha	Pfeiff.	0
Cactaceae	Opuntia	spinulifera	Salm-Dyck	0
Cactaceae	Opuntia	spinulifera	Salm-Dyck	0
Cactaceae	Opuntia	spinulifera	Salm-Dyck	0
Cactaceae	Opuntia	streptacantha	Lem.	0
Cactaceae	Opuntia	streptacantha	Lem.	0
Cactaceae	Opuntia	streptacantha	Lem.	0
Cactaceae	Opuntia	streptacantha	Lem.	0
Cactaceae	Opuntia	undulata	Griffiths	0
Cactaceae	Opuntia	undulata	Griffiths	0
Cactaceae	Opuntia	undulata	Griffiths	0
Cactaceae	Opuntia	undulata	Griffiths	0
Cactaceae	Opuntia	velutina	F.A.C. Weber	0
Cactaceae	Opuntia	velutina	F.A.C. Weber	0
Cactaceae	Opuntia	velutina	F.A.C. Weber	0
Cactaceae	Opuntia	velutina	F.A.C. Weber	0
Cactaceae	Opuntia	wilcoxii	Britton & Rose	0
Cactaceae	Opuntia	wilcoxii	Britton & Rose	0
Cactaceae	Opuntia	wilcoxii	Britton & Rose	0
Cactaceae	Opuntia	wilcoxii	Britton & Rose	0
Fabaceae (Legu	Pachyrhizus	erosus	(L.) Urb.	0
Fabaceae (Legu	Pachyrhizus	ferrugineus	(Piper) M. Sorensen	0
Lauraceae	Persea	americana	Mill.	0
Lauraceae	Persea	schiedeana	Nees	0
Lauraceae	Persea	schiedeana	Nees	0
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	0
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	0
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	var.
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	var.
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	var.
Fabaceae (Legu	Phaseolus	acutifolius	A. Gray	var.
Fabaceae (Legu	Phaseolus	albescens	McVaugh ex R. Rami	0
Fabaceae (Legu	Phaseolus	albescens	McVaugh ex R. Rami	0
Fabaceae (Legu	Phaseolus	angustissimus	A. Gray	0
Fabaceae (Legu	Phaseolus	carteri	Freytag & Debouck	0
Fabaceae (Legu	Phaseolus	carteri	Freytag & Debouck	0

Fabaceae (Legu)	Phaseolus	coccineus	L.		0
Fabaceae (Legu)	Phaseolus	coccineus	L.		0
Fabaceae (Legu)	Phaseolus	coccineus	L.		0
Fabaceae (Legu)	Phaseolus	coccineus	L.	subsp.	0
Fabaceae (Legu)	Phaseolus	dumosus	Macfad.		0
Fabaceae (Legu)	Phaseolus	dumosus	Macfad.		0
Fabaceae (Legu)	Phaseolus	dumosus	Macfad.		0
Fabaceae (Legu)	Phaseolus	filiformis	Benth.		0
Fabaceae (Legu)	Phaseolus	filiformis	Benth.		0
Fabaceae (Legu)	Phaseolus	maculatus	Scheele	subsp.	0
Fabaceae (Legu)	Phaseolus	maculatus	Scheele	subsp.	0
Fabaceae (Legu)	Phaseolus	parvifolius	Freytag		0
Fabaceae (Legu)	Phaseolus	parvifolius	Freytag		0
Fabaceae (Legu)	Phaseolus	parvifolius	Freytag		0
Fabaceae (Legu)	Phaseolus	vulgaris	L.		0
Fabaceae (Legu)	Phaseolus	vulgaris	L.		0
Fabaceae (Legu)	Phaseolus	vulgaris	L.		0
Fabaceae (Legu)	Phaseolus	vulgaris	L.	var.	0
Fabaceae (Legu)	Phaseolus	vulgaris	L.	var.	0
Fabaceae (Legu)	Phaseolus	vulgaris	L.	var.	0
Fabaceae (Legu)	Phaseolus	vulgaris	L.	var.	0
Solanaceae	Physalis	acutifolia	(Miers)	Sandwith	0
Solanaceae	Physalis	ampla	Waterf.		0
Solanaceae	Physalis	angulata	L.		0
Solanaceae	Physalis	crassifolia	Benth.		0
Solanaceae	Physalis	lagascae	Roem. & Schult.		0
Solanaceae	Physalis	lagascae	Roem. & Schult.		0
Solanaceae	Physalis	microcarpa	Urb. & Ekman		0
Solanaceae	Physalis	philadelphica	Lam.		0
Solanaceae	Physalis	sulphurea	(Fernald)	Waterf.	0
Pinaceae	Pinus	ayacahuite	C. Ehrenb.	ex Schltdl	0
Pinaceae	Pinus	cembroides	Zucc.		0
Pinaceae	Pinus	maximartinezii	Rzed.		0
Pinaceae	Pinus	monophylla	Torr. & Frém.		0
Pinaceae	Pinus	quadrifolia	Parl. ex Sudw.		0
Fabaceae (Legu)	Pithecellobium	dulce	(Roxb.)	Benth.	0
Asteraceae (Con)	Porophyllum	gracile	Benth.		0
Asteraceae (Con)	Porophyllum	gracile	Benth.		0
Asteraceae (Con)	Porophyllum	linaria	(Cav.)	DC.	0
Asteraceae (Con)	Porophyllum	linaria	(Cav.)	DC.	0
Asteraceae (Con)	Porophyllum	ruderales	(Jacq.)	Cass.	0
Asteraceae (Con)	Porophyllum	ruderales	(Jacq.)	Cass.	0
Asteraceae (Con)	Porophyllum	scoparium	A. Gray		0
Asteraceae (Con)	Porophyllum	scoparium	A. Gray		0
Asteraceae (Con)	Porophyllum	warnockii	R.R. Johnson		0
Asteraceae (Con)	Porophyllum	warnockii	R.R. Johnson		0
Portulacaceae	Portulaca	halimoides	L.		0
Portulacaceae	Portulaca	umbraticola	Kunth		0
Sapotaceae	Pouteria	belizensis	(Standl.)	Cronquist	0
Sapotaceae	Pouteria	belizensis	(Standl.)	Cronquist	0
Sapotaceae	Pouteria	campechiana	(Kunth)	Baehni	0
Sapotaceae	Pouteria	campechiana	(Kunth)	Baehni	0
Sapotaceae	Pouteria	durlandii	(Standl.)	Baehni	0
Sapotaceae	Pouteria	durlandii	(Standl.)	Baehni	0
Sapotaceae	Pouteria	glomerata	(Miq.)	Radlk.	0
Sapotaceae	Pouteria	glomerata	(Miq.)	Radlk.	0
Sapotaceae	Pouteria	reticulata	(Engl.)	Eyma	0
Sapotaceae	Pouteria	reticulata	(Engl.)	Eyma	0
Sapotaceae	Pouteria	rhynchocarpa	T.D. Penn.		0

Sapotaceae	Pouteria	rhynchocarpa	T.D. Penn.	0
Sapotaceae	Pouteria	sapota	(Jacq.) H.E. Moore &	0
Sapotaceae	Pouteria	sapota	(Jacq.) H.E. Moore &	0
Sapotaceae	Pouteria	torta	(Mart.) Radlk.	0
Sapotaceae	Pouteria	torta	(Mart.) Radlk.	0
Myrtaceae	Psidium	friedrichsthalianum	(O. Berg) Nied.	0
Myrtaceae	Psidium	friedrichsthalianum	(O. Berg) Nied.	0
Myrtaceae	Psidium	guajava	L.	0
Myrtaceae	Psidium	guajava	L.	0
Myrtaceae	Psidium	guineense	Sw.	0
Myrtaceae	Psidium	guineense	Sw.	0
Myrtaceae	Psidium	oligospermum	DC.	0
Myrtaceae	Psidium	oligospermum	DC.	0
Myrtaceae	Psidium	salutare	(Kunth) O. Berg	0
Myrtaceae	Psidium	salutare	(Kunth) O. Berg	0
Lamiaceae (Labi	Salvia	axillaris	Moc. & Sessé	0
Lamiaceae (Labi	Salvia	axillaris	Moc. & Sessé	0
Lamiaceae (Labi	Salvia	candicans	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	candicans	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	carnea	Kunth	0
Lamiaceae (Labi	Salvia	carnea	Kunth	0
Lamiaceae (Labi	Salvia	cinnabarina	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	cinnabarina	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	coccinea	Buc'hoz ex Etl.	0
Lamiaceae (Labi	Salvia	coccinea	Buc'hoz ex Etl.	0
Lamiaceae (Labi	Salvia	columbariae	Benth.	0
Lamiaceae (Labi	Salvia	columbariae	Benth.	0
Lamiaceae (Labi	Salvia	elegans	Vahl	0
Lamiaceae (Labi	Salvia	elegans	Vahl	0
Lamiaceae (Labi	Salvia	fluviatilis	Fernald	0
Lamiaceae (Labi	Salvia	fluviatilis	Fernald	0
Lamiaceae (Labi	Salvia	helianthemifolia	Benth.	0
Lamiaceae (Labi	Salvia	helianthemifolia	Benth.	0
Lamiaceae (Labi	Salvia	hispanica	L.	0
Lamiaceae (Labi	Salvia	laevis	Benth.	0
Lamiaceae (Labi	Salvia	laevis	Benth.	0
Lamiaceae (Labi	Salvia	lasiantha	Benth.	0
Lamiaceae (Labi	Salvia	lasiantha	Benth.	0
Lamiaceae (Labi	Salvia	lasiocephala	Hook. & Arn.	0
Lamiaceae (Labi	Salvia	lasiocephala	Hook. & Arn.	0
Lamiaceae (Labi	Salvia	leucantha	Cav.	0
Lamiaceae (Labi	Salvia	leucantha	Cav.	0
Lamiaceae (Labi	Salvia	longispicata	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	longispicata	M. Martens & Galeott	0
Lamiaceae (Labi	Salvia	longistyla	Benth.	0
Lamiaceae (Labi	Salvia	longistyla	Benth.	0
Lamiaceae (Labi	Salvia	mexicana	L.	0
Lamiaceae (Labi	Salvia	mexicana	L.	0
Lamiaceae (Labi	Salvia	microphylla	Kunth	0
Lamiaceae (Labi	Salvia	microphylla	Kunth	0
Lamiaceae (Labi	Salvia	misella	Kunth	0
Lamiaceae (Labi	Salvia	misella	Kunth	0
Lamiaceae (Labi	Salvia	mocinoi	Benth.	0
Lamiaceae (Labi	Salvia	mocinoi	Benth.	0
Lamiaceae (Labi	Salvia	oaxacana	Fernald	0
Lamiaceae (Labi	Salvia	oaxacana	Fernald	0
Lamiaceae (Labi	Salvia	occidentalis	Sw.	0
Lamiaceae (Labi	Salvia	occidentalis	Sw.	0
Lamiaceae (Labi	Salvia	patens	Cav.	0

Lamiaceae (Labi Salvia	patens	Cav.	0
Lamiaceae (Labi Salvia	polystachia	Cav.	0
Lamiaceae (Labi Salvia	polystachia	Cav.	0
Lamiaceae (Labi Salvia	prunelloides	Kunth	0
Lamiaceae (Labi Salvia	prunelloides	Kunth	0
Lamiaceae (Labi Salvia	purpurea	Cav.	0
Lamiaceae (Labi Salvia	purpurea	Cav.	0
Lamiaceae (Labi Salvia	recurva	Benth.	0
Lamiaceae (Labi Salvia	recurva	Benth.	0
Lamiaceae (Labi Salvia	regla	Cav.	0
Lamiaceae (Labi Salvia	regla	Cav.	0
Lamiaceae (Labi Salvia	sanctae-luciaae	Seem.	0
Lamiaceae (Labi Salvia	sanctae-luciaae	Seem.	0
Lamiaceae (Labi Salvia	setulosa	Fernald	0
Lamiaceae (Labi Salvia	setulosa	Fernald	0
Lamiaceae (Labi Salvia	splendens	Sellow ex Wied-Neuv	0
Lamiaceae (Labi Salvia	splendens	Sellow ex Wied-Neuv	0
Lamiaceae (Labi Salvia	stricta	Sessé & Moc.	0
Lamiaceae (Labi Salvia	stricta	Sessé & Moc.	0
Lamiaceae (Labi Salvia	thyrsiflora	Benth.	0
Lamiaceae (Labi Salvia	thyrsiflora	Benth.	0
Lamiaceae (Labi Salvia	tiliifolia	Vahl	0
Lamiaceae (Labi Salvia	tiliifolia	Vahl	0
Cucurbitaceae Sechium	chinantlense	Lira & F. Chiang	0
Cucurbitaceae Sechium	compositum	(Donn. Sm.) C. Jeffre	0
Cucurbitaceae Sechium	edule	Lira & Castrejon	0
Cucurbitaceae Sechium	hintonii	(Paul G. Wilson) C. J	0
Simmondsiaceae Simmondsia	chinensis	(Link) C.K. Schneid.	0
Solanaceae Solanum	bulbocastanum	Dunal	0
Solanaceae Solanum	cardiophyllum	Lindl.	0
Solanaceae Solanum	clarum	Correll	0
Solanaceae Solanum	demissum	Lindl.	0
Solanaceae Solanum	ehrenbergii	(Bitter) Rydb.	0
Solanaceae Solanum	guerreroense	Correll	0
Solanaceae Solanum	hintonii	Correll	0
Solanaceae Solanum	hjertingii	Hawkes	0
Solanaceae Solanum	hougasii	Correll	0
Solanaceae Solanum	iopetalum	(Bitter) Hawkes	0
Solanaceae Solanum	morelliforme	Bitter & Munch	0
Solanaceae Solanum	oxycarpum	Schiede	0
Solanaceae Solanum	pinnatisectum	Dunal	0
Solanaceae Solanum	polyadenium	Greenm.	0
Solanaceae Solanum	schenckii	Bitter	0
Solanaceae Solanum	stenophyllidium	Bitter	0
Solanaceae Solanum	stoloniferum	Schltld.	0
Solanaceae Solanum	tarnii	Hawkes & Hjert.	0
Solanaceae Solanum	trifidum	Correll	0
Solanaceae Solanum	verrucosum	Schltld.	0
Anacardiaceae Spondias	mombin	L.	0
Anacardiaceae Spondias	purpurea	L.	0
Cactaceae Stenocereus	alamosensis	(J.M. Coult.) A.C. Git	0
Cactaceae Stenocereus	alamosensis	(J.M. Coult.) A.C. Git	0
Cactaceae Stenocereus	beneckeii	(Ehrenb.) A. Berger &	0
Cactaceae Stenocereus	beneckeii	(Ehrenb.) A. Berger &	0
Cactaceae Stenocereus	chrysocarpus	Sánchez-Mej.	0
Cactaceae Stenocereus	chrysocarpus	Sánchez-Mej.	0
Cactaceae Stenocereus	eichlamii	(Britton & Rose) Buxt	0
Cactaceae Stenocereus	eichlamii	(Britton & Rose) Buxt	0
Cactaceae Stenocereus	eruca	(Brandege) A.C. Git	0

Cactaceae	Stenocereus	eruca	(Brandegee) A.C. Git	0
Cactaceae	Stenocereus	fricii	Sánchez-Mej.	0
Cactaceae	Stenocereus	fricii	Sánchez-Mej.	0
Cactaceae	Stenocereus	griseus	(Haw.) Buxb.	0
Cactaceae	Stenocereus	griseus	(Haw.) Buxb.	0
Cactaceae	Stenocereus	gummosus	(Engelm.) A. Gibson	0
Cactaceae	Stenocereus	gummosus	(Engelm.) A. Gibson	0
Cactaceae	Stenocereus	kerberi	(K. Schum.) A.C. Gib	0
Cactaceae	Stenocereus	kerberi	(K. Schum.) A.C. Gib	0
Cactaceae	Stenocereus	martinezii	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	martinezii	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	montanus	(Britton & Rose) Buxt	0
Cactaceae	Stenocereus	montanus	(Britton & Rose) Buxt	0
Cactaceae	Stenocereus	pruinus	(Otto ex Pfeiff.) Buxb	0
Cactaceae	Stenocereus	pruinus	(Otto ex Pfeiff.) Buxb	0
Cactaceae	Stenocereus	queretaroensis	(F.A.C. Weber) Buxb	0
Cactaceae	Stenocereus	queretaroensis	(F.A.C. Weber) Buxb	0
Cactaceae	Stenocereus	quevedonis	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	quevedonis	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	standleyi	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	standleyi	(J.G. Ortega) Buxb.	0
Cactaceae	Stenocereus	stellatus	(Pfeiff.) Riccob.	0
Cactaceae	Stenocereus	stellatus	(Pfeiff.) Riccob.	0
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb.	0
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb.	0
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb. subsp.	
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb. subsp.	
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb. subsp.	
Cactaceae	Stenocereus	thurberi	(Engelm.) Buxb. subsp.	
Cactaceae	Stenocereus	treleasei	(Britton & Rose) Bact	0
Cactaceae	Stenocereus	treleasei	(Britton & Rose) Bact	0
Asteraceae (Con Tagetes)		erecta	L.	0
Asteraceae (Con Tagetes)		filifolia	Lag.	0
Asteraceae (Con Tagetes)		foetidissima	DC.	0
Asteraceae (Con Tagetes)		hartwegii	Greenm.	0
Asteraceae (Con Tagetes)		lucida	Cav.	0
Asteraceae (Con Tagetes)		micrantha	Cav.	0
Asteraceae (Con Tagetes)		pringlei	S. Watson	0
Asteraceae (Con Tagetes)		stenophylla	B.L. Rob.	0
Asteraceae (Con Tagetes)		subulata	Cerv.	0
Malvaceae	Theobroma	cacao	L.	0
Poaceae (Grami Tripsacum)		andersonii	J. R. Gray	0
Poaceae (Grami Tripsacum)		bravum	J. R. Gray	0
Poaceae (Grami Tripsacum)		dactyloides	(L.) L. var.	
Poaceae (Grami Tripsacum)		dactyloides	(L.) L. var.	
Poaceae (Grami Tripsacum)		dactyloides	(L.) L. var.	
Poaceae (Grami Tripsacum)		intermedium	de Wet & J. R. Harlar	0
Poaceae (Grami Tripsacum)		jalapense	de Wet & Brink	0
Poaceae (Grami Tripsacum)		lanceolatum	Rupr. ex E. Fourn.	0
Poaceae (Grami Tripsacum)		latifolium	Hitchc.	0
Poaceae (Grami Tripsacum)		laxum	Nash	0
Poaceae (Grami Tripsacum)		maizar	Hern.-Xol. & Randolp	0
Poaceae (Grami Tripsacum)		manisuroides	de Wet & J. R. Harlar	0
Poaceae (Grami Tripsacum)		pilosum	Scribn. & Merr.	0
Poaceae (Grami Tripsacum)		pilosum	Scribn. & Merr. var.	
Poaceae (Grami Tripsacum)		zopilotense	Hern.-Xol. & Randolp	0
Orchidaceae	Vanilla	planifolia	Andrews	0
Orchidaceae	Vanilla	pompona	Schiede	0
Poaceae (Grami Zea)		diploperennis	Iltis, Doebley & R. Gu	0

Poaceae (Grami Zea	luxurians	(Durieu & Asch.) R. M	0
Poaceae (Grami Zea	mays	L. subsp.	
Poaceae (Grami Zea	mays	L. subsp.	
Poaceae (Grami Zea	mays	L. subsp.	
Poaceae (Grami Zea	perennis	(Hitcch.) Reeves & M	0

0	0	Agave stringens	Agave stringens Trel.	0
0	0	Agave stringens	Agave stringens Trel.	0
0	0	Agave stringens	Agave stringens Trel.	0
0	0	Agave stringens	Agave stringens Trel.	0
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Agave tequilana	Agave tequilana F.A.C. Wε Agave angustifolia	
0	0	Amaranthus australis	Amaranthus australis (A. C Acnida alabamens	
0	0	Amaranthus australis	Amaranthus australis (A. C Acnida alabamens	
0	0	Amaranthus australis	Amaranthus australis (A. C Acnida alabamens	
0	0	Amaranthus australis	Amaranthus australis (A. C Acnida alabamens	
0	0	Amaranthus australis	Amaranthus australis (A. C Acnida alabamens	
0	0	Amaranthus blitoides	Amaranthus blitoides S. W Amaranthus graec	
0	0	Amaranthus blitoides	Amaranthus blitoides S. W Amaranthus graec	
0	0	Amaranthus blitoides	Amaranthus blitoides S. W Amaranthus graec	
0	0	Amaranthus blitoides	Amaranthus blitoides S. W Amaranthus graec	
0	0	Amaranthus blitoides	Amaranthus blitoides S. W Amaranthus graec	
0	0	Amaranthus caudatus	Amaranthus caudatus L. Amaranthus abyss	
0	0	Amaranthus caudatus	Amaranthus caudatus L. Amaranthus abyss	
0	0	Amaranthus caudatus	Amaranthus caudatus L. Amaranthus abyss	
0	0	Amaranthus caudatus	Amaranthus caudatus L. Amaranthus abyss	
0	0	Amaranthus crassipes	Amaranthus crassipes Sch Amaranthus crass	
0	0	Amaranthus crassipes	Amaranthus crassipes Sch Amaranthus crass	
0	0	Amaranthus crassipes	Amaranthus crassipes Sch Amaranthus crass	
0	0	Amaranthus crassipes	Amaranthus crassipes Sch Amaranthus crass	
0	0	Amaranthus crassipes	Amaranthus crassipes Sch Amaranthus crass	
0	0	Amaranthus cruentus	Amaranthus cruentus L. Amaranthus anac	
0	0	Amaranthus cruentus	Amaranthus cruentus L. Amaranthus anac	
0	0	Amaranthus cruentus	Amaranthus cruentus L. Amaranthus anac	
0	0	Amaranthus cruentus	Amaranthus cruentus L. Amaranthus anac	
0	0	Amaranthus dubius	Amaranthus dubius Mart. ε Amaranthus dubiu	
0	0	Amaranthus dubius	Amaranthus dubius Mart. ε Amaranthus dubiu	
0	0	Amaranthus dubius	Amaranthus dubius Mart. ε Amaranthus dubiu	
0	0	Amaranthus dubius	Amaranthus dubius Mart. ε Amaranthus dubiu	
0	0	Amaranthus dubius	Amaranthus dubius Mart. ε Amaranthus dubiu	
0	0	Amaranthus fimbriatu	Amaranthus fimbriatus (To Amblogyna fimbrie	
0	0	Amaranthus fimbriatu	Amaranthus fimbriatus (To Amblogyna fimbrie	
0	0	Amaranthus fimbriatu	Amaranthus fimbriatus (To Amblogyna fimbrie	
0	0	Amaranthus fimbriatu	Amaranthus fimbriatus (To Amblogyna fimbrie	
0	0	Amaranthus fimbriatu	Amaranthus fimbriatus (To Amblogyna fimbrie	
0	0	Amaranthus greggii	Amaranthus greggii S. Wa Amaranthus annex	
0	0	Amaranthus greggii	Amaranthus greggii S. Wa Amaranthus annex	
0	0	Amaranthus greggii	Amaranthus greggii S. Wa Amaranthus annex	
0	0	Amaranthus greggii	Amaranthus greggii S. Wa Amaranthus annex	
0	0	Amaranthus greggii	Amaranthus greggii S. Wa Amaranthus annex	
0	0	Amaranthus hybridus	Amaranthus hybridus L. Amaranthus aureu	
0	0	Amaranthus hypochoi	Amaranthus hypochondria Amaranthus anard	
0	0	Amaranthus hypochoi	Amaranthus hypochondria Amaranthus anard	
0	0	Amaranthus hypochoi	Amaranthus hypochondria Amaranthus anard	
0	0	Amaranthus hypochoi	Amaranthus hypochondria Amaranthus anard	
0	0	Amaranthus hypochoi	Amaranthus hypochondria Amaranthus anard	
0	0	Amaranthus palmeri	Amaranthus palmeri S. Wε Amaranthus palme	
0	0	Amaranthus palmeri	Amaranthus palmeri S. Wε Amaranthus palme	
0	0	Amaranthus palmeri	Amaranthus palmeri S. Wε Amaranthus palme	
0	0	Amaranthus palmeri	Amaranthus palmeri S. Wε Amaranthus palme	

0	0	Amaranthus palmeri	Amaranthus palmeri S. Wz	Amaranthus palme
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus polygono	Amaranthus polygonoides	Albersia polygonoi
0	0	Amaranthus powellii	Amaranthus powellii S. Wz	Amaranthus bracte
0	0	Amaranthus scariosus	Amaranthus scariosus Ber	Amaranthus floridu
0	0	Amaranthus scariosus	Amaranthus scariosus Ber	Amaranthus floridu
0	0	Amaranthus scariosus	Amaranthus scariosus Ber	Amaranthus floridu
0	0	Amaranthus scariosus	Amaranthus scariosus Ber	Amaranthus floridu
0	0	Amaranthus scariosus	Amaranthus scariosus Ber	Amaranthus floridu
0	0	Amaranthus spinosus	Amaranthus spinosus L.	Amaranthus carac
0	0	Amaranthus spinosus	Amaranthus spinosus L.	Amaranthus carac
0	0	Amaranthus spinosus	Amaranthus spinosus L.	Amaranthus carac
0	0	Amaranthus spinosus	Amaranthus spinosus L.	Amaranthus carac
0	0	Amaranthus spinosus	Amaranthus spinosus L.	Amaranthus carac
0	0	Amaranthus tamaulip	Amaranthus tamaulipensis	0
0	0	Amaranthus tamaulip	Amaranthus tamaulipensis	0
0	0	Amaranthus tamaulip	Amaranthus tamaulipensis	0
0	0	Amaranthus tamaulip	Amaranthus tamaulipensis	0
0	0	Amaranthus tamaulip	Amaranthus tamaulipensis	0
0	0	Amaranthus torreyi	Amaranthus torreyi (A. Grz	Amaranthus bigelc
0	0	Amaranthus torreyi	Amaranthus torreyi (A. Grz	Amaranthus bigelc
0	0	Amaranthus torreyi	Amaranthus torreyi (A. Grz	Amaranthus bigelc
0	0	Amaranthus torreyi	Amaranthus torreyi (A. Grz	Amaranthus bigelc
0	0	Amaranthus torreyi	Amaranthus torreyi (A. Grz	Amaranthus bigelc
0	0	Annona cherimola	Annona cherimola Mill.	Annona pubescen
0	0	Annona cherimola	Annona cherimola Mill.	Annona pubescen
0	0	Annona cherimola	Annona cherimola Mill.	Annona pubescen
0	0	Annona cherimola	Annona cherimola Mill.	Annona pubescen
0	0	Annona glabra	Annona glabra L.	Annona australis f
0	0	Annona glabra	Annona glabra L.	Annona australis f
0	0	Annona glabra	Annona glabra L.	Annona australis f
0	0	Annona glabra	Annona glabra L.	Annona australis f
0	0	Annona globiflora	Annona globiflora Schltdl.	Annona fruticosa s
0	0	Annona globiflora	Annona globiflora Schltdl.	Annona fruticosa s
0	0	Annona globiflora	Annona globiflora Schltdl.	Annona fruticosa s
0	0	Annona globiflora	Annona globiflora Schltdl.	Annona fruticosa s
0	0	Annona liebmanniana	Annona liebmanniana Baill	Annona scleroderr
0	0	Annona liebmanniana	Annona liebmanniana Baill	Annona scleroderr
0	0	Annona liebmanniana	Annona liebmanniana Baill	Annona scleroderr
0	0	Annona liebmanniana	Annona liebmanniana Baill	Annona scleroderr
0	0	Annona longiflora	Annona longiflora S. Watsc	0
0	0	Annona longiflora	Annona longiflora S. Watsc	0
0	0	Annona longiflora	Annona longiflora S. Watsc	0
0	0	Annona longiflora	Annona longiflora S. Watsc	0
0	0	Annona longipes	Annona longipes Saff.	0
0	0	Annona longipes	Annona longipes Saff.	0
0	0	Annona longipes	Annona longipes Saff.	0
0	0	Annona longipes	Annona longipes Saff.	0
0	0	Annona macroprophy	Annona macroprophyllata	Annona diversifoli
0	0	Annona macroprophy	Annona macroprophyllata	Annona diversifoli
0	0	Annona macroprophy	Annona macroprophyllata	Annona diversifoli
0	0	Annona macroprophy	Annona macroprophyllata	Annona diversifoli
0	0	Annona muricata	Annona muricata L.	Annona bonplandi
0	0	Annona muricata	Annona muricata L.	Annona bonplandi

0	0	<i>Annona muricata</i>	<i>Annona muricata</i> L.	<i>Annona bonplandi</i>
0	0	<i>Annona muricata</i>	<i>Annona muricata</i> L.	<i>Annona bonplandi</i>
0	0	<i>Annona palmeri</i>	<i>Annona palmeri</i> Saff.	0
0	0	<i>Annona palmeri</i>	<i>Annona palmeri</i> Saff.	0
0	0	<i>Annona palmeri</i>	<i>Annona palmeri</i> Saff.	0
0	0	<i>Annona palmeri</i>	<i>Annona palmeri</i> Saff.	0
0	0	<i>Annona purpurea</i>	<i>Annona purpurea</i> Moc. & §	<i>Annona involucrelata</i>
0	0	<i>Annona purpurea</i>	<i>Annona purpurea</i> Moc. & §	<i>Annona involucrelata</i>
0	0	<i>Annona purpurea</i>	<i>Annona purpurea</i> Moc. & §	<i>Annona involucrelata</i>
0	0	<i>Annona purpurea</i>	<i>Annona purpurea</i> Moc. & §	<i>Annona involucrelata</i>
0	0	<i>Annona reticulata</i>	<i>Annona reticulata</i> L.	<i>Annona excelsa</i> K
0	0	<i>Annona reticulata</i>	<i>Annona reticulata</i> L.	<i>Annona excelsa</i> K
0	0	<i>Annona reticulata</i>	<i>Annona reticulata</i> L.	<i>Annona excelsa</i> K
0	0	<i>Annona reticulata</i>	<i>Annona reticulata</i> L.	<i>Annona excelsa</i> K
0	0	<i>Annona squamosa</i>	<i>Annona squamosa</i> L.	<i>Annona asiatica</i> L.
0	0	<i>Annona squamosa</i>	<i>Annona squamosa</i> L.	<i>Annona asiatica</i> L.
0	0	<i>Annona squamosa</i>	<i>Annona squamosa</i> L.	<i>Annona asiatica</i> L.
0	0	<i>Annona squamosa</i>	<i>Annona squamosa</i> L.	<i>Annona asiatica</i> L.
0	0	<i>Bixa orellana</i>	<i>Bixa orellana</i> L.	<i>Bixa acuminata</i> Bc
0	0	<i>Byrsonima crassifolia</i>	<i>Byrsonima crassifolia</i> (L.) P	<i>Byrsonima bicucurbitaria</i>
glabriusculum	(Dunal) Heiser & Picke	<i>Capsicum annuum</i> va	<i>Capsicum annuum</i> L. var.	<i>Capsicum angulosum</i>
glabriusculum	(Dunal) Heiser & Picke	<i>Capsicum annuum</i> va	<i>Capsicum annuum</i> L. var.	<i>Capsicum angulosum</i>
glabriusculum	(Dunal) Heiser & Picke	<i>Capsicum annuum</i> va	<i>Capsicum annuum</i> L. var.	<i>Capsicum angulosum</i>
glabriusculum	(Dunal) Heiser & Picke	<i>Capsicum annuum</i> va	<i>Capsicum annuum</i> L. var.	<i>Capsicum angulosum</i>
0	0	<i>Capsicum frutescens</i>	<i>Capsicum frutescens</i> L.	<i>Capsicum assamicum</i>
0	0	<i>Capsicum frutescens</i>	<i>Capsicum frutescens</i> L.	<i>Capsicum assamicum</i>
0	0	<i>Capsicum frutescens</i>	<i>Capsicum frutescens</i> L.	<i>Capsicum assamicum</i>
0	0	<i>Capsicum frutescens</i>	<i>Capsicum frutescens</i> L.	<i>Capsicum assamicum</i>
0	0	<i>Carica papaya</i>	<i>Carica papaya</i> L.	<i>Carica bourgaei</i> §
0	0	<i>Carya illinoensis</i>	<i>Carya illinoensis</i> (Wange	<i>Carya angustifolia</i>
0	0	<i>Carya myristiciformis</i>	<i>Carya myristiciformis</i> (F. M	<i>Hicoria myristiciformis</i>
0	0	<i>Carya ovata</i>	<i>Carya ovata</i> (Mill.) K. Koch	<i>Carya alba</i> auct., (
0	0	<i>Carya palmeri</i>	<i>Carya palmeri</i> W. E. Mann	0
0	0	<i>Crataegus mexicana</i>	<i>Crataegus mexicana</i> D.C.	<i>Crataegus hypoleuca</i>
coahuilensi	J.B. Phipps	<i>Crataegus tracyi</i> var.	<i>Crataegus tracyi</i> Ashe ex E	0
0	0	<i>Crataegus uniflora</i>	<i>Crataegus uniflora</i> Münchf	<i>Crataegus aemula</i>
0	0	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
sororia	(L.H. Bailey) Merrick &	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
sororia	(L.H. Bailey) Merrick &	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
sororia	(L.H. Bailey) Merrick &	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
sororia	(L.H. Bailey) Merrick &	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
sororia	(L.H. Bailey) Merrick &	<i>Cucurbita argyrosperma</i>	<i>Cucurbita argyrosperma</i> C	<i>Cucurbita argyrosperma</i>
0	0	<i>Cucurbita cordata</i>	<i>Cucurbita cordata</i> S. Wats	<i>Cucurbita cylindrica</i>
0	0	<i>Cucurbita cordata</i>	<i>Cucurbita cordata</i> S. Wats	<i>Cucurbita cylindrica</i>
0	0	<i>Cucurbita cordata</i>	<i>Cucurbita cordata</i> S. Wats	<i>Cucurbita cylindrica</i>
0	0	<i>Cucurbita cordata</i>	<i>Cucurbita cordata</i> S. Wats	<i>Cucurbita cylindrica</i>
0	0	<i>Cucurbita cordata</i>	<i>Cucurbita cordata</i> S. Wats	<i>Cucurbita cylindrica</i>
0	0	<i>Cucurbita digitata</i>	<i>Cucurbita digitata</i> A. Gray	0
0	0	<i>Cucurbita digitata</i>	<i>Cucurbita digitata</i> A. Gray	0
0	0	<i>Cucurbita digitata</i>	<i>Cucurbita digitata</i> A. Gray	0
0	0	<i>Cucurbita digitata</i>	<i>Cucurbita digitata</i> A. Gray	0
0	0	<i>Cucurbita digitata</i>	<i>Cucurbita digitata</i> A. Gray	0
0	0	<i>Cucurbita foetidissima</i>	<i>Cucurbita foetidissima</i> Kun	<i>Cucumis foetidissimus</i>
0	0	<i>Cucurbita foetidissima</i>	<i>Cucurbita foetidissima</i> Kun	<i>Cucumis foetidissimus</i>
0	0	<i>Cucurbita foetidissima</i>	<i>Cucurbita foetidissima</i> Kun	<i>Cucumis foetidissimus</i>
0	0	<i>Cucurbita foetidissima</i>	<i>Cucurbita foetidissima</i> Kun	<i>Cucumis foetidissimus</i>
0	0	<i>Cucurbita foetidissima</i>	<i>Cucurbita foetidissima</i> Kun	<i>Cucumis foetidissimus</i>
0	0	<i>Cucurbita lundelliana</i>	<i>Cucurbita lundelliana</i> L. H.	0

0	0	Cucurbita lundelliana	Cucurbita lundelliana L. H.	0
0	0	Cucurbita lundelliana	Cucurbita lundelliana L. H.	0
0	0	Cucurbita lundelliana	Cucurbita lundelliana L. H.	0
0	0	Cucurbita lundelliana	Cucurbita lundelliana L. H.	0
martinezii	(L.H. Bailey) T.C. Andr	Cucurbita okeechobe	Cucurbita okeechobeensis Cucurbita martinezii	
martinezii	(L.H. Bailey) T.C. Andr	Cucurbita okeechobe	Cucurbita okeechobeensis Cucurbita martinezii	
martinezii	(L.H. Bailey) T.C. Andr	Cucurbita okeechobe	Cucurbita okeechobeensis Cucurbita martinezii	
martinezii	(L.H. Bailey) T.C. Andr	Cucurbita okeechobe	Cucurbita okeechobeensis Cucurbita martinezii	
martinezii	(L.H. Bailey) T.C. Andr	Cucurbita okeechobe	Cucurbita okeechobeensis Cucurbita martinezii	
0	0	Cucurbita palmata	Cucurbita palmata S. Wats Cucurbita californi	
0	0	Cucurbita palmata	Cucurbita palmata S. Wats Cucurbita californi	
0	0	Cucurbita palmata	Cucurbita palmata S. Wats Cucurbita californi	
0	0	Cucurbita palmata	Cucurbita palmata S. Wats Cucurbita californi	
0	0	Cucurbita palmata	Cucurbita palmata S. Wats Cucurbita californi	
0	0	Cucurbita pedatifolia	Cucurbita pedatifolia L. H. Cucurbita moorei I	
0	0	Cucurbita pedatifolia	Cucurbita pedatifolia L. H. Cucurbita moorei I	
0	0	Cucurbita pedatifolia	Cucurbita pedatifolia L. H. Cucurbita moorei I	
0	0	Cucurbita pedatifolia	Cucurbita pedatifolia L. H. Cucurbita moorei I	
0	0	Cucurbita pedatifolia	Cucurbita pedatifolia L. H. Cucurbita moorei I	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
fraterna	(L. H. Bailey) Lira et al	Cucurbita pepo subsp	Cucurbita pepo L. subsp. fi Cucurbita fraterna	
0	0	Cucurbita radicans	Cucurbita radicans Naudin Cucurbita gracilior	
0	0	Cucurbita radicans	Cucurbita radicans Naudin Cucurbita gracilior	
0	0	Cucurbita radicans	Cucurbita radicans Naudin Cucurbita gracilior	
0	0	Diospyros conzattii	Diospyros conzattii Standl. Diospyros costaric	
0	0	Diospyros conzattii	Diospyros conzattii Standl. Diospyros costaric	
0	0	Diospyros johnstoniar	Diospyros johnstoniana St; Diospyros xolocot;	
0	0	Diospyros johnstoniar	Diospyros johnstoniana St; Diospyros xolocot;	
0	0	Diospyros rosei	Diospyros rosei Standl. Diospyros sphaera	
0	0	Diospyros rosei	Diospyros rosei Standl. Diospyros sphaera	
0	0	Gossypium aridum	Gossypium aridum (Rose ; Cienfuegosia palmr	
0	0	Gossypium aridum	Gossypium aridum (Rose ; Cienfuegosia palmr	
0	0	Gossypium aridum	Gossypium aridum (Rose ; Cienfuegosia palmr	
0	0	Gossypium aridum	Gossypium aridum (Rose ; Cienfuegosia palmr	
0	0	Gossypium barbaden:	Gossypium barbadense L. Gossypium acumii	
0	0	Gossypium barbaden:	Gossypium barbadense L. Gossypium acumii	
0	0	Gossypium barbaden:	Gossypium barbadense L. Gossypium acumii	
0	0	Gossypium barbaden:	Gossypium barbadense L. Gossypium acumii	
0	0	Gossypium gossypioi:	Gossypium gossypoides (Selera gossypioide	
0	0	Gossypium gossypioi:	Gossypium gossypoides (Selera gossypioide	
0	0	Gossypium gossypioi:	Gossypium gossypoides (Selera gossypioide	
0	0	Gossypium gossypioi:	Gossypium gossypoides (Selera gossypioide	
0	0	Gossypium hirsutum	Gossypium hirsutum L. Gossypium asiatic	
0	0	Gossypium hirsutum	Gossypium hirsutum L. Gossypium asiatic	
0	0	Gossypium hirsutum	Gossypium hirsutum L. Gossypium asiatic	
0	0	Gossypium hirsutum	Gossypium hirsutum L. Gossypium asiatic	
0	0	Gossypium schwendii	Gossypium schwendimanii	0
0	0	Gossypium schwendii	Gossypium schwendimanii	0
0	0	Gossypium schwendii	Gossypium schwendimanii	0
0	0	Gossypium schwendii	Gossypium schwendimanii	0
0	0	Gossypium thurberi	Gossypium thurberi Tod. Thespesia lampas	
0	0	Gossypium thurberi	Gossypium thurberi Tod. Thespesia lampas	
0	0	Gossypium thurberi	Gossypium thurberi Tod. Thespesia lampas	
0	0	Gossypium thurberi	Gossypium thurberi Tod. Thespesia lampas	
0	0	Helianthus annuus	Helianthus annuus L. Helianthus annuus	

0		0 Helianthus californicus	Helianthus californicus DC	Helianthus californicus	0
0		0 Helianthus ciliaris	Helianthus ciliaris DC.	Helianthus angustifolius	0
0		0 Helianthus gracilentus	Helianthus gracilentus A. C.		0
0		0 Helianthus hirsutus	Helianthus hirsutus Raf.		0
0		0 Helianthus laciniatus	Helianthus laciniatus A. Gr	Helianthus crenatus	0
0		0 Helianthus niveus	Helianthus niveus (Benth.)	Encelia nivea Benth.	0
niveus		0 Helianthus niveus sut	Helianthus niveus (Benth.)		0
tephrodes	(A. Gray) Heiser	Helianthus niveus sut	Helianthus niveus (Benth.)	Helianthus tephrodes	0
0		0 Hylocereus ocamponi	Hylocereus ocamponis (S&P)	Cereus ocamponis	0
0		0 Ipomoea batatas	Ipomoea batatas (L.) Lam.	Batatas edulis (Thunberg)	0
0		0 Ipomoea leucantha	Ipomoea leucantha Jacq.	Ipomoea batatas var. leucantha	0
0		0 Ipomoea tabascanana	Ipomoea tabascanana J.A. M.		0
0		0 Ipomoea tabascanana	Ipomoea tabascanana J.A. M.		0
0		0 Ipomoea tiliacea	Ipomoea tiliacea (Willd.) Cl	Convolvulus fastigiatus	0
0		0 Ipomoea trifida	Ipomoea trifida (Kunth) G.	Convolvulus trifidus	0
0		0 Ipomoea trifida	Ipomoea trifida (Kunth) G.	Convolvulus trifidus	0
0		0 Ipomoea triloba	Ipomoea triloba L.	Batatas triloba (L.)	0
0		0 Jacaratia dolichaula	Jacaratia dolichaula (Donn)	Carica dolichaula (L.)	0
0		0 Jacaratia mexicana	Jacaratia mexicana A. DC.	Carica heptaphylla (L.)	0
0		0 Jarilla caudata	Jarilla caudata (Brandege)	Carica caudata Brandege	0
0		0 Jarilla heterophylla	Jarilla heterophylla (Cerv.)	Carica nana Benth.	0
0		0 Jatropha andrieuxii	Jatropha andrieuxii Müll. A.		0
0		0 Jatropha bartlettii	Jatropha bartlettii Wilbur		0
0		0 Jatropha mcvaughii	Jatropha mcvaughii Dehg	Jatropha curcas var. mcvaughii	0
0		0 Jatropha pseudocurcas	Jatropha pseudocurcas Müll.	Jatropha hintonii Vahl	0
0		0 Jatropha rufescens	Jatropha rufescens Brande	Jatropha tehuantepecensis	0
0		0 Leucaena confertiflora	Leucaena confertiflora Zár.		0
0		0 Leucaena diversifolia	Leucaena diversifolia (Schum.)	Acacia diversifolia (Schum.)	0
0		0 Leucaena esculenta	Leucaena esculenta (Moc.)	Acacia esculenta (Moc.)	0
0		0 Leucaena lanceolata	Leucaena lanceolata S. W.	Leucaena microcarpa (Müll. Arg.)	0
0		0 Leucaena leucocephala	Leucaena leucocephala (L.)	Acacia glauca (L.)	0
0		0 Manihot aesculifolia	Manihot aesculifolia (Kunth)	Janipha aesculifolia (Kunth)	0
0		0 Manihot angustiloba	Manihot angustiloba (Torr.)	Janipha manihot var. angustiloba	0
0		0 Manihot auriculata	Manihot auriculata McVau		0
0		0 Manihot caudata	Manihot caudata Greenm.		0
0		0 Manihot chlorosticta	Manihot chlorosticta Standl.	Manihot colimensis (Standl.)	0
0		0 Manihot crassiseipala	Manihot crassiseipala Pax		0
0		0 Manihot davisiae	Manihot davisiae Croizat		0
0		0 Manihot foetida	Manihot foetida (Kunth) P.	Janipha foetida Kunth	0
0		0 Manihot michaelis	Manihot michaelis McVau		0
0		0 Manihot oxacana	Manihot oxacana D. J. R.		0
0		0 Manihot obovata	Manihot obovata J. Jimene		0
0		0 Manihot pauciflora	Manihot pauciflora Brande	Manihotoides pauciflora	0
0		0 Manihot pringlei	Manihot pringlei S. Wats		0
0		0 Manihot rhomboidea	Manihot rhomboidea Müll.	Manihot ludibunda (Müll. Arg.)	0
microcarpa	(Müll. Arg.) D. J. Rogers	Manihot rhomboidea s	Manihot rhomboidea Müll.	Manihot microcarpa (Müll. Arg.)	0
0		0 Manihot rubricaulis	Manihot rubricaulis I. M. Jc		0
isoloba	(Standl.) D. J. Rogers	Manihot rubricaulis su	Manihot rubricaulis I. M. Jc	Manihot isoloba Standl.	0
rubricaulis		0 Manihot rubricaulis su	Manihot rubricaulis I. M. Jc		0
0		0 Manihot subspicata	Manihot subspicata D. J. F.		0
0		0 Manihot tomatophylla	Manihot tomatophylla Standl.		0
0		0 Manihot walkerae	Manihot walkerae Croizat		0
0		0 Manilkara chicle	Manilkara chicle (Pittier) G.	Achras calcicola Pittier	0
0		0 Manilkara chicle	Manilkara chicle (Pittier) G.	Achras calcicola Pittier	0
0		0 Manilkara zapota	Manilkara zapota (L.) P.	R. Achradelpha mammosa (L.) P.	0
0		0 Manilkara zapota	Manilkara zapota (L.) P.	R. Achradelpha mammosa (L.) P.	0
0		0 Opuntia atropes	Opuntia atropes Rose		0
0		0 Opuntia atropes	Opuntia atropes Rose		0
0		0 Opuntia atropes	Opuntia atropes Rose		0

0		0 Opuntia atropes	Opuntia atropes Rose	0
0		0 Opuntia crassa	Opuntia crassa Haw.	0
0		0 Opuntia crassa	Opuntia crassa Haw.	0
0		0 Opuntia crassa	Opuntia crassa Haw.	0
0		0 Opuntia crassa	Opuntia crassa Haw.	0
0		0 Opuntia deamii	Opuntia deamii Rose	0
0		0 Opuntia deamii	Opuntia deamii Rose	0
0		0 Opuntia deamii	Opuntia deamii Rose	0
0		0 Opuntia deamii	Opuntia deamii Rose	0
0		0 Opuntia eichlamii	Opuntia eichlamii Rose	0
0		0 Opuntia eichlamii	Opuntia eichlamii Rose	0
0		0 Opuntia eichlamii	Opuntia eichlamii Rose	0
0		0 Opuntia eichlamii	Opuntia eichlamii Rose	0
0		0 Opuntia ficus-indica	Opuntia ficus-indica (L.) Mi Cactus chinensis f	
0		0 Opuntia ficus-indica	Opuntia ficus-indica (L.) Mi Cactus chinensis f	
0		0 Opuntia ficus-indica	Opuntia ficus-indica (L.) Mi Cactus chinensis f	
0		0 Opuntia ficus-indica	Opuntia ficus-indica (L.) Mi Cactus chinensis f	
0		0 Opuntia hyptiacantha	Opuntia hyptiacantha F.A. Opuntia chavena (
0		0 Opuntia hyptiacantha	Opuntia hyptiacantha F.A. Opuntia chavena (
0		0 Opuntia lasiacantha	Opuntia lasiacantha Pfeiff. Opuntia rzedowski	
0		0 Opuntia lasiacantha	Opuntia lasiacantha Pfeiff. Opuntia rzedowski	
0		0 Opuntia lasiacantha	Opuntia lasiacantha Pfeiff. Opuntia rzedowski	
0		0 Opuntia lasiacantha	Opuntia lasiacantha Pfeiff. Opuntia rzedowski	
0		0 Opuntia spinulifera	Opuntia spinulifera Salm-C Opuntia candelabr	
0		0 Opuntia spinulifera	Opuntia spinulifera Salm-C Opuntia candelabr	
0		0 Opuntia spinulifera	Opuntia spinulifera Salm-C Opuntia candelabr	
0		0 Opuntia streptacantha	Opuntia streptacantha Lerr Opuntia cardona F	
0		0 Opuntia streptacantha	Opuntia streptacantha Lerr Opuntia cardona F	
0		0 Opuntia streptacantha	Opuntia streptacantha Lerr Opuntia cardona F	
0		0 Opuntia streptacantha	Opuntia streptacantha Lerr Opuntia cardona F	
0		0 Opuntia undulata	Opuntia undulata Griffiths	0
0		0 Opuntia undulata	Opuntia undulata Griffiths	0
0		0 Opuntia undulata	Opuntia undulata Griffiths	0
0		0 Opuntia undulata	Opuntia undulata Griffiths	0
0		0 Opuntia velutina	Opuntia velutina F.A.C. W Opuntia affinis Gri	
0		0 Opuntia velutina	Opuntia velutina F.A.C. W Opuntia affinis Gri	
0		0 Opuntia velutina	Opuntia velutina F.A.C. W Opuntia affinis Gri	
0		0 Opuntia velutina	Opuntia velutina F.A.C. W Opuntia affinis Gri	
0		0 Opuntia wilcoxii	Opuntia wilcoxii Britton & F	0
0		0 Opuntia wilcoxii	Opuntia wilcoxii Britton & F	0
0		0 Opuntia wilcoxii	Opuntia wilcoxii Britton & F	0
0		0 Opuntia wilcoxii	Opuntia wilcoxii Britton & F	0
0		0 Pachyrhizus erosus	Pachyrhizus erosus (L.) Ur Cacara bulbosa TI	
0		0 Pachyrhizus ferrugineus	Pachyrhizus ferrugineus (F Calopogonium ferr	
0		0 Persea americana	Persea americana Mill. Laurus persea L.,	
0		0 Persea schiedeana	Persea schiedeana Nees Persea gratissima	
0		0 Persea schiedeana	Persea schiedeana Nees Persea gratissima	
0		0 Phaseolus acutifolius	Phaseolus acutifolius A. Gi	0
0		0 Phaseolus acutifolius	Phaseolus acutifolius A. Gi	0
0		0 Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus acutifol	
0		0 Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus acutifol	
0	acutifolius	Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus tenuifol	
0	acutifolius	Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus tenuifol	
0	tenuifolius	Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus tenuifol	
0	tenuifolius	Phaseolus acutifolius	Phaseolus acutifolius A. Gi Phaseolus tenuifol	
0		0 Phaseolus albescens	Phaseolus albescens McV	0
0		0 Phaseolus albescens	Phaseolus albescens McV	0
0		0 Phaseolus angustissimus	Phaseolus angustissimus / Phaseolus angusti	
0		0 Phaseolus carteri	Phaseolus carteri Freytag	0
0		0 Phaseolus carteri	Phaseolus carteri Freytag	0

	0	0	Phaseolus coccineus	Phaseolus coccineus L.	Lipusa formosa (K
	0	0	Phaseolus coccineus	Phaseolus coccineus L.	Lipusa formosa (K
	0	0	Phaseolus coccineus	Phaseolus coccineus L.	Lipusa formosa (K
coccineus		0	Phaseolus coccineus	Phaseolus coccineus L. su	0
	0	0	Phaseolus dumosus	Phaseolus dumosus Macfz	Phaseolus coccine
	0	0	Phaseolus dumosus	Phaseolus dumosus Macfz	Phaseolus coccine
	0	0	Phaseolus dumosus	Phaseolus dumosus Macfz	Phaseolus coccine
	0	0	Phaseolus filiformis	Phaseolus filiformis Benth.	Phaseolus wrightii
	0	0	Phaseolus filiformis	Phaseolus filiformis Benth.	Phaseolus wrightii
ritensis	(M. E. Jones) Freytag	0	Phaseolus maculatus	Phaseolus maculatus Schf	Phaseolus ritensis
ritensis	(M. E. Jones) Freytag	0	Phaseolus maculatus	Phaseolus maculatus Schf	Phaseolus ritensis
	0	0	Phaseolus parvifolius	Phaseolus parvifolius Frey	0
	0	0	Phaseolus parvifolius	Phaseolus parvifolius Frey	0
	0	0	Phaseolus parvifolius	Phaseolus parvifolius Frey	0
	0	0	Phaseolus vulgaris	Phaseolus vulgaris L.	Phaseolus aborigii
	0	0	Phaseolus vulgaris	Phaseolus vulgaris L.	Phaseolus aborigii
	0	0	Phaseolus vulgaris	Phaseolus vulgaris L.	Phaseolus aborigii
aborigineus	(Burkart) Baudet	0	Phaseolus vulgaris va	Phaseolus vulgaris L. var.	Phaseolus aborigii
aborigineus	(Burkart) Baudet	0	Phaseolus vulgaris va	Phaseolus vulgaris L. var.	Phaseolus aborigii
aborigineus	(Burkart) Baudet	0	Phaseolus vulgaris va	Phaseolus vulgaris L. var.	Phaseolus aborigii
aborigineus	(Burkart) Baudet	0	Phaseolus vulgaris va	Phaseolus vulgaris L. var.	Phaseolus aborigii
	0	0	Physalis acutifolia	Physalis acutifolia (Miers) †	Physalis wrightii A
	0	0	Physalis ampla	Physalis ampla Waterf.	0
	0	0	Physalis angulata	Physalis angulata L.	Physalis angulata
	0	0	Physalis crassifolia	Physalis crassifolia Benth.	Physalis cardiophy
	0	0	Physalis lagascae	Physalis lagascae Roem. †	Physalis micrantha
	0	0	Physalis lagascae	Physalis lagascae Roem. †	Physalis micrantha
	0	0	Physalis microcarpa	Physalis microcarpa Urb. ‡	0
	0	0	Physalis philadelphica	Physalis philadelphica Lan	Physalis philadelp
	0	0	Physalis sulphurea	Physalis sulphurea (Fernal	Margaranthus sulc
	0	0	Pinus ayacahuite	Pinus ayacahuite C. Ehren	0
	0	0	Pinus cembroides	Pinus cembroides Zucc.	Pinus cembroides
	0	0	Pinus maximartinezii	Pinus maximartinezii Rzed	0
	0	0	Pinus monophylla	Pinus monophylla Torr. & f	Caryopitys monop
	0	0	Pinus quadrifolia	Pinus quadrifolia Parl. ex †	Pinus cembroides
	0	0	Pithecellobium dulce	Pithecellobium dulce (Roxb)	Acacia obliquifolia
	0	0	Porophyllum gracile	Porophyllum gracile Benth	0
	0	0	Porophyllum gracile	Porophyllum gracile Benth	0
	0	0	Porophyllum linaria	Porophyllum linaria (Cav.)	Kleinia tagetoides
	0	0	Porophyllum linaria	Porophyllum linaria (Cav.)	Kleinia tagetoides
	0	0	Porophyllum ruderale	Porophyllum ruderale (Jac	Cacalia glandulos
	0	0	Porophyllum ruderale	Porophyllum ruderale (Jac	Cacalia glandulos
	0	0	Porophyllum scoparium	Porophyllum scoparium A.	Porophyllum frutic
	0	0	Porophyllum scoparium	Porophyllum scoparium A.	Porophyllum frutic
	0	0	Porophyllum warnockii	Porophyllum warnockii R.F	0
	0	0	Porophyllum warnockii	Porophyllum warnockii R.F	0
	0	0	Portulaca halimoides	Portulaca halimoides L.	Portulaca halimoid
	0	0	Portulaca umbraticola	Portulaca umbraticola Kun	Portulaca coronat
	0	0	Pouteria belizensis	Pouteria belizensis (Standl	Lucuma belizensis
	0	0	Pouteria belizensis	Pouteria belizensis (Standl	Lucuma belizensis
	0	0	Pouteria campechiana	Pouteria campechiana (Ku	Lucuma campechi
	0	0	Pouteria campechiana	Pouteria campechiana (Ku	Lucuma campechi
	0	0	Pouteria durlandii	Pouteria durlandii (Standl.)	Lucuma durlandii †
	0	0	Pouteria durlandii	Pouteria durlandii (Standl.)	Lucuma durlandii †
	0	0	Pouteria glomerata	Pouteria glomerata (Miq.) †	Abatia glomerata †
	0	0	Pouteria glomerata	Pouteria glomerata (Miq.) †	Abatia glomerata †
	0	0	Pouteria reticulata	Pouteria reticulata (Engl.) †	Chrysophyllum ret
	0	0	Pouteria reticulata	Pouteria reticulata (Engl.) †	Chrysophyllum ret
	0	0	Pouteria rynchocarpa	Pouteria rynchocarpa T.C	0

0	0	Pouteria rhynchocarp;	Pouteria rhynchocarpa T.D	0
0	0	Pouteria sapota	Pouteria sapota (Jacq.) H.I	Achras mammosa
0	0	Pouteria sapota	Pouteria sapota (Jacq.) H.I	Achras mammosa
0	0	Pouteria torta	Pouteria torta (Mart.) Radl	Guapeba torta (M:
0	0	Pouteria torta	Pouteria torta (Mart.) Radl	Guapeba torta (M:
0	0	Psidium friedrichsthali	Psidium friedrichsthalianur	Calyptropsidium fr
0	0	Psidium friedrichsthali	Psidium friedrichsthalianur	Calyptropsidium fr
0	0	Psidium guajava	Psidium guajava L.	Guajava pyrifera (l
0	0	Psidium guajava	Psidium guajava L.	Guajava pyrifera (l
0	0	Psidium guineense	Psidium guineense Sw.	Guajava guineens
0	0	Psidium guineense	Psidium guineense Sw.	Guajava guineens
0	0	Psidium oligospermur	Psidium oligospermum DC	Calyptropsidium s:
0	0	Psidium oligospermur	Psidium oligospermum DC	Calyptropsidium s:
0	0	Psidium salutare	Psidium salutare (Kunth) C	Calycolpus parvifl
0	0	Psidium salutare	Psidium salutare (Kunth) C	Calycolpus parvifl
0	0	Salvia axillaris	Salvia axillaris Moc. & Ses	0
0	0	Salvia axillaris	Salvia axillaris Moc. & Ses	0
0	0	Salvia candicans	Salvia candicans M. Marte	0
0	0	Salvia candicans	Salvia candicans M. Marte	0
0	0	Salvia carnea	Salvia carnea Kunth	Salvia debilis Eplir
0	0	Salvia carnea	Salvia carnea Kunth	Salvia debilis Eplir
0	0	Salvia cinnabarina	Salvia cinnabarina M. Mart	Salvia antennifera
0	0	Salvia cinnabarina	Salvia cinnabarina M. Mart	Salvia antennifera
0	0	Salvia coccinea	Salvia coccinea Buc'hoz e;	Salvia ciliata Bentl
0	0	Salvia coccinea	Salvia coccinea Buc'hoz e;	Salvia ciliata Bentl
0	0	Salvia columbariae	Salvia columbariae Benth.	0
0	0	Salvia columbariae	Salvia columbariae Benth.	0
0	0	Salvia elegans	Salvia elegans Vahl	0
0	0	Salvia elegans	Salvia elegans Vahl	0
0	0	Salvia fluviatilis	Salvia fluviatilis Fernald	0
0	0	Salvia fluviatilis	Salvia fluviatilis Fernald	0
0	0	Salvia helianthemifoli	Salvia helianthemifolia Ber	0
0	0	Salvia helianthemifoli	Salvia helianthemifolia Ber	0
0	0	Salvia hispanica	Salvia hispanica L.	Kiosmina hispanic
0	0	Salvia laevis	Salvia laevis Benth.	0
0	0	Salvia laevis	Salvia laevis Benth.	0
0	0	Salvia lasiantha	Salvia lasiantha Benth.	0
0	0	Salvia lasiantha	Salvia lasiantha Benth.	0
0	0	Salvia lasiocephala	Salvia lasiocephala Hook.	Salvia elsholtzioid
0	0	Salvia lasiocephala	Salvia lasiocephala Hook.	Salvia elsholtzioid
0	0	Salvia leucantha	Salvia leucantha Cav.	Salvia bicolor Ses:
0	0	Salvia leucantha	Salvia leucantha Cav.	Salvia bicolor Ses:
0	0	Salvia longispicata	Salvia longispicata M. Mart	0
0	0	Salvia longispicata	Salvia longispicata M. Mart	0
0	0	Salvia longistyla	Salvia longistyla Benth.	0
0	0	Salvia longistyla	Salvia longistyla Benth.	0
0	0	Salvia mexicana	Salvia mexicana L.	Jungia altissima M
0	0	Salvia mexicana	Salvia mexicana L.	Jungia altissima M
0	0	Salvia microphylla	Salvia microphylla Kunth	Salvia grahami Be
0	0	Salvia microphylla	Salvia microphylla Kunth	Salvia grahami Be
0	0	Salvia misella	Salvia misella Kunth	Salvia obscura Be
0	0	Salvia misella	Salvia misella Kunth	Salvia obscura Be
0	0	Salvia mocinoi	Salvia mocinoi Benth.	Salvia lophantha E
0	0	Salvia mocinoi	Salvia mocinoi Benth.	Salvia lophantha E
0	0	Salvia oaxacana	Salvia oaxacana Fernald	0
0	0	Salvia oaxacana	Salvia oaxacana Fernald	0
0	0	Salvia occidentalis	Salvia occidentalis Sw.	Salvia lateriflora F:
0	0	Salvia occidentalis	Salvia occidentalis Sw.	Salvia lateriflora F:
0	0	Salvia patens	Salvia patens Cav.	Salvia decipiens M

0	0	Salvia patens	Salvia patens Cav.	Salvia decipiens M
0	0	Salvia polystachia	Salvia polystachia Cav.	Salvia amarissima
0	0	Salvia polystachia	Salvia polystachia Cav.	Salvia amarissima
0	0	Salvia prunelloides	Salvia prunelloides Kunth	0
0	0	Salvia prunelloides	Salvia prunelloides Kunth	0
0	0	Salvia purpurea	Salvia purpurea Cav.	Salvia affinis Schl
0	0	Salvia purpurea	Salvia purpurea Cav.	Salvia affinis Schl
0	0	Salvia recurva	Salvia recurva Benth.	Salvia atrocaulis F
0	0	Salvia recurva	Salvia recurva Benth.	Salvia atrocaulis F
0	0	Salvia regla	Salvia regla Cav.	0
0	0	Salvia regla	Salvia regla Cav.	0
0	0	Salvia sanctae-luciae	Salvia sanctae-luciae Seer	0
0	0	Salvia sanctae-luciae	Salvia sanctae-luciae Seer	0
0	0	Salvia setulosa	Salvia setulosa Fernald	0
0	0	Salvia setulosa	Salvia setulosa Fernald	0
0	0	Salvia splendens	Salvia splendens Sellow e:	0
0	0	Salvia splendens	Salvia splendens Sellow e:	0
0	0	Salvia stricta	Salvia stricta Sessé & Moc	0
0	0	Salvia stricta	Salvia stricta Sessé & Moc	0
0	0	Salvia thyrsoflora	Salvia thyrsoflora Benth.	0
0	0	Salvia thyrsoflora	Salvia thyrsoflora Benth.	0
0	0	Salvia tiliifolia	Salvia tiliifolia Vahl	Salvia fimbriata Kl
0	0	Salvia tiliifolia	Salvia tiliifolia Vahl	Salvia fimbriata Kl
0	0	Sechium chinantense	Sechium chinantense Lira	0
0	0	Sechium compositum	Sechium compositum (Dor Ahzolia composita	
0	0	Sechium edule subsp	Sechium edule (Jacq.) Sw.	0
0	0	Sechium hintonii	Sechium hintonii (Paul G. \Microsechium hint	
0	0	Simmondsia chinensis	Simmondsia chinensis (Lin Simmondsia califo	
0	0	Solanum bulbocastan	Solanum bulbocastanum [Solanum bulbocas	
0	0	Solanum cardiophyllum	Solanum cardiophyllum Lir Solanum cardioph	
0	0	Solanum clarum	Solanum clarum Correll	0
0	0	Solanum demissum	Solanum demissum Lindl. Solanum alpicum :	
0	0	Solanum ehrenbergii	Solanum ehrenbergii (Bitte Solanum cardioph	
0	0	Solanum guerreroense	Solanum guerreroense Co	0
0	0	Solanum hintonii	Solanum hintonii Correll	0
0	0	Solanum hjertingii	Solanum hjertingii Hawkes Solanum fendleri v	
0	0	Solanum hougasii	Solanum hougasii Correll Solanum spectabil	
0	0	Solanum iopetalum	Solanum iopetalum (Bitter) Solanum brachyce	
0	0	Solanum morelliforme	Solanum morelliforme Bitte	0
0	0	Solanum oxycarpum	Solanum oxycarpum Schie	0
0	0	Solanum pinnatisectum	Solanum pinnatisectum Du	0
0	0	Solanum polyadenium	Solanum polyadenium Gre Solanum polyader	
0	0	Solanum schenckii	Solanum schenckii Bitter	0
0	0	Solanum stenophyllidum	Solanum stenophyllidium E Solanum brachistc	
0	0	Solanum stoloniferum	Solanum stoloniferum Schi Solanum ajuscoen	
0	0	Solanum tarnii	Solanum tarnii Hawkes & f	0
0	0	Solanum trifidum	Solanum trifidum Correll	0
0	0	Solanum verrucosum	Solanum verrucosum Schli Solanum macropil	
0	0	Spondias mombin	Spondias mombin L. Mauria juglandifoli	
0	0	Spondias purpurea	Spondias purpurea L. Spondias cirouella	
0	0	Stenocereus alamosensis	Stenocereus alamosensis Cereus alamosens	
0	0	Stenocereus alamosensis	Stenocereus alamosensis Cereus alamosens	
0	0	Stenocereus benecke	Stenocereus benecke (Eh Cereus benecke (E	
0	0	Stenocereus benecke	Stenocereus benecke (Eh Cereus benecke (E	
0	0	Stenocereus chrysocarpus	Stenocereus chrysocarpus	0
0	0	Stenocereus chrysocarpus	Stenocereus chrysocarpus	0
0	0	Stenocereus eichlamii	Stenocereus eichlamii (Brit Cereus eichlamii (
0	0	Stenocereus eichlamii	Stenocereus eichlamii (Brit Cereus eichlamii (
0	0	Stenocereus eruca	Stenocereus eruca (Brand Cereus eruca Brar	

0	0	Stenocereus eruca	Stenocereus eruca (Brand)	Cereus eruca Brar
0	0	Stenocereus fricii	Stenocereus fricii Sánchez	0
0	0	Stenocereus fricii	Stenocereus fricii Sánchez	0
0	0	Stenocereus griseus	Stenocereus griseus (Haw)	Cereus clavatus C
0	0	Stenocereus griseus	Stenocereus griseus (Haw)	Cereus clavatus C
0	0	Stenocereus gummosus	Stenocereus gummosus (E)	Cereus cumengei
0	0	Stenocereus gummosus	Stenocereus gummosus (E)	Cereus cumengei
0	0	Stenocereus kerberi	Stenocereus kerberi (K. Sc)	Cereus kerberi K.
0	0	Stenocereus kerberi	Stenocereus kerberi (K. Sc)	Cereus kerberi K.
0	0	Stenocereus martinez	Stenocereus martinezii (J.)	Lemaireocereus m
0	0	Stenocereus martinez	Stenocereus martinezii (J.)	Lemaireocereus m
0	0	Stenocereus montan	Stenocereus montanus (Br)	Lemaireocereus m
0	0	Stenocereus montan	Stenocereus montanus (Br)	Lemaireocereus m
0	0	Stenocereus pruinosu	Stenocereus pruinosus (Ol)	Cactus pruinosus
0	0	Stenocereus pruinosu	Stenocereus pruinosus (Ol)	Cactus pruinosus
0	0	Stenocereus queretar	Stenocereus queretaroens	Cereus queretaro
0	0	Stenocereus queretar	Stenocereus queretaroens	Cereus queretaro
0	0	Stenocereus quevedo	Stenocereus quevedonis (L.)	Lemaireocereus q
0	0	Stenocereus quevedo	Stenocereus quevedonis (L.)	Lemaireocereus q
0	0	Stenocereus standley	Stenocereus standleyi (J.)	C Lemaireocereus si
0	0	Stenocereus standley	Stenocereus standleyi (J.)	C Lemaireocereus si
0	0	Stenocereus stellatus	Stenocereus stellatus (Pfei)	Cereus stellatus P
0	0	Stenocereus stellatus	Stenocereus stellatus (Pfei)	Cereus stellatus P
0	0	Stenocereus thurberi	Stenocereus thurberi (Eng)	Cereus thurberi Er
0	0	Stenocereus thurberi	Stenocereus thurberi (Eng)	Cereus thurberi Er
littoralis	(K. Brandegee) N. P. T	Stenocereus thurberi	Stenocereus thurberi subs	Cereus thurberi va
littoralis	(K. Brandegee) N. P. T	Stenocereus thurberi	Stenocereus thurberi subs	Cereus thurberi va
thurberi		0 Stenocereus thurberi	Stenocereus thurberi (Eng)	Cereus thurberi Er
thurberi		0 Stenocereus thurberi	Stenocereus thurberi (Eng)	Cereus thurberi Er
0	0	Stenocereus treleasei	Stenocereus treleasei (Brit)	Cereus treleasei V
0	0	Stenocereus treleasei	Stenocereus treleasei (Brit)	Cereus treleasei V
0	0	Tagetes erecta	Tagetes erecta L.	Tagetes corymbos
0	0	Tagetes filifolia	Tagetes filifolia Lag.	Diglossus variabil
0	0	Tagetes foetidissima	Tagetes foetidissima DC.	Tagetes triradiata
0	0	Tagetes hartwegii	Tagetes hartwegii Greenm	0
0	0	Tagetes lucida	Tagetes lucida Cav.	Tagetes anethina
0	0	Tagetes micrantha	Tagetes micrantha Cav.	Tagetes fragrantis
0	0	Tagetes pringlei	Tagetes pringlei S. Watsor	0
0	0	Tagetes stenophylla	Tagetes stenophylla B.L. F	0
0	0	Tagetes subulata	Tagetes subulata Cerv.	Tagetes multiseta
0	0	Theobroma cacao	Theobroma cacao L.	Cacao minus Gae
0	0	Tripsacum andersonii	Tripsacum andersonii J. R.	Tripsacum guaterr
0	0	Tripsacum bravum	Tripsacum bravum J. R. G	0
dactyloides		0 Tripsacum dactyloide	Tripsacum dactyloides (L.)	Coix dactyloides L
hispidum	(Hitc.) de Wet & J. R	Tripsacum dactyloide	Tripsacum dactyloides (L.)	Tripsacum dactylo
mexicanum	de Wet & J. R. Harlan	Tripsacum dactyloide	Tripsacum dactyloides (L.)	0
0	0	Tripsacum intermediu	Tripsacum intermedium de	0
0	0	Tripsacum jalapense	Tripsacum jalapense de W	0
0	0	Tripsacum lanceolatu	Tripsacum lanceolatum Ru	Tripsacum acutiflo
0	0	Tripsacum latifolium	Tripsacum latifolium Hitc	Tripsacum lanceol
0	0	Tripsacum laxum	Tripsacum laxum Nash	Dactyloides fascicu
0	0	Tripsacum maizar	Tripsacum maizar Hern.-X	0
0	0	Tripsacum manisuroic	Tripsacum manisuroides d	0
0	0	Tripsacum pilosum	Tripsacum pilosum Scribn.	0
guatemalense	de Wet & Brink	Tripsacum pilosum va	Tripsacum pilosum Scribn.	0
0	0	Tripsacum zopilotens	Tripsacum zopilotense Her	0
0	0	Vanilla planifolia	Vanilla planifolia Andrews	Epidendrum rubru
0	0	Vanilla pompona	Vanilla pompona Schiede	Vanilla grandiflora
0	0	Zea diploperennis	Zea diploperennis Ittis, Do	Zea perennis subs

	0		0	<i>Zea luxurians</i>	<i>Zea luxurians</i> (Durieu & A)	<i>Euchlaena luxuriana</i>
mexicana	(Schrad.) H. H. Iltis			<i>Zea mays</i> subsp. mex	<i>Zea mays</i> L. subsp. mexic	<i>Euchlaena mexicana</i>
parviglumis	H. H. Iltis & Doebley			<i>Zea mays</i> subsp. par	<i>Zea mays</i> L. subsp. parvig	<i>Zea mays</i> subsp. j
parviglumis	H. H. Iltis & Doebley			<i>Zea mays</i> subsp. par	<i>Zea mays</i> L. subsp. parvig	<i>Zea mays</i> subsp. j
	0		0	<i>Zea perennis</i>	<i>Zea perennis</i> (Hitchc.) Ree	<i>Euchlaena perennis</i>

Common Name	Gene Pool/Taxon Group†	Crop Gene Pool	Crop
	0 TG3	Agave	Mescal agave
	0 TG2	Agave	Tequila agave
	0 TG3	Agave	Pulque agave
	0 TG3	Agave	Mescal agave
	0 TG2	Agave	Mexican Sisal
	0 TG2	Agave	Zapupe
	0 TG2	Agave	Mescal agave
maguey, mescal agave	TG3	Agave	Mescal agave
maguey, mescal agave	TG2	Agave	Tequila agave
maguey, mescal agave	TG3	Agave	Pulque agave
maguey, mescal agave	TG3	Agave	Mescal agave
maguey, mescal agave	TG2	Agave	Mexican Sisal
maguey, mescal agave	TG1B	Agave	Zapupe
zapupe verde	TG3	Agave	Mescal agave
zapupe verde	TG2	Agave	Tequila agave
zapupe verde	TG3	Agave	Pulque agave
zapupe verde	TG3	Agave	Mescal agave
zapupe verde	TG2	Agave	Mexican Sisal
zapupe verde	TG1B	Agave	Mescal agave
maguey de la cumbre	TG3	Agave	Mescal agave
maguey de la cumbre	TG3	Agave	Tequila agave
maguey de la cumbre	TG3	Agave	Pulque agave
maguey de la cumbre	TG2	Agave	Mescal agave
maguey de la cumbre	TG3	Agave	Mexican Sisal
maguey de la cumbre	TG3	Agave	Zapupe
maguey de la cumbre	TG3	Agave	Mescal agave
	0 TG3	Agave	Mescal agave
	0 TG3	Agave	Tequila agave
	0 TG3	Agave	Pulque agave
	0 TG2	Agave	Mescal agave
	0 TG3	Agave	Mexican Sisal
	0 TG3	Agave	Zapupe
	0 TG3	Agave	Mescal agave
	0 TG2	Agave	Tequila agave
	0 TG2	Agave	Mexican Sisal
	0 TG2	Agave	Zapupe
	0 TG2	Agave	Mescal agave
Mexican sisal, henequen	TG3/TG2/TG3/TG3/TG2/TG2	Agave	Mescal agave
Mexican sisal, henequen	TG2	Agave	Tequila agave
Mexican sisal, henequen	TG3	Agave	Pulque agave
Mexican sisal, henequen	TG3	Agave	Mescal agave
Mexican sisal, henequen	TG2	Agave	Zapupe
Mexican sisal, henequen	TG2	Agave	Mescal agave
	0 TG3	Agave	Mescal agave
	0 TG3	Agave	Tequila agave
	0 TG3	Agave	Pulque agave
	0 TG2	Agave	Mescal agave
	0 TG3	Agave	Mexican Sisal
	0 TG3	Agave	Zapupe
	0 TG3	Agave	Mescal agave
	0 TG3	Agave	Mescal agave
	0 TG3	Agave	Tequila agave
	0 TG3	Agave	Pulque agave
	0 TG2	Agave	Mescal agave
	0 TG3	Agave	Mexican Sisal
	0 TG3	Agave	Zapupe
	0 TG3	Agave	Mescal agave

0 TG3	Agave	Mescal agave
0 TG2	Agave	Tequila agave
0 TG3	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Mexican Sisal
0 TG2	Agave	Zapupe
0 TG2	Agave	Mescal agave
0 TG2	Agave	Mescal agave
0 TG3	Agave	Tequila agave
0 TG3	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mexican Sisal
0 TG3	Agave	Zapupe
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Tequila agave
0 TG3	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Mexican Sisal
0 TG2	Agave	Zapupe
0 TG2	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Tequila agave
0 TG2	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mexican Sisal
0 TG3	Agave	Zapupe
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Tequila agave
0 TG2	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mexican Sisal
0 TG3	Agave	Zapupe
0 TG3	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Tequila agave
0 TG3	Agave	Pulque agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Mexican Sisal
0 TG2	Agave	Zapupe
0 TG2	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG3	Agave	Tequila agave
0 TG3	Agave	Pulque agave
0 TG2	Agave	Mescal agave
0 TG3	Agave	Mexican Sisal
0 TG3	Agave	Zapupe
0 TG3	Agave	Mescal agave
hemp-plant , mescal, s TG2	Agave	Mescal agave
hemp-plant , mescal, s TG3	Agave	Tequila agave
hemp-plant , mescal, s TG3	Agave	Pulque agave
hemp-plant , mescal, s TG3	Agave	Mescal agave
hemp-plant , mescal, s TG3	Agave	Mexican Sisal
hemp-plant , mescal, s TG3	Agave	Zapupe
hemp-plant , mescal, s TG3	Agave	Mescal agave
0 TG3	Agave	Mescal agave
0 TG2	Agave	Tequila agave
0 TG3	Agave	Pulque agave

0 TG3	Agave	Mescal agave
0 TG2	Agave	Mexican Sisal
0 TG2	Agave	Zapupe
0 TG2	Agave	Mescal agave
tequila agave, maguey TG3	Agave	Mescal agave
tequila agave, maguey TG3	Agave	Pulque agave
tequila agave, maguey TG3	Agave	Mescal agave
tequila agave, maguey TG2	Agave	Mexican Sisal
tequila agave, maguey TG2	Agave	Zapupe
tequila agave, maguey TG2	Agave	Mescal agave
southern amaranth, so TG4	Amaranth	Love-lies-bleeding
southern amaranth, so TG4	Amaranth	Red amaranth
southern amaranth, so TG4	Amaranth	Spleen amaranth
southern amaranth, so TG4	Amaranth	Prince-of-Wales fea
southern amaranth, so TG4	Amaranth	Tropical amaranth
matweed, matweed an TG4	Amaranth	Love-lies-bleeding
matweed, matweed an TG4	Amaranth	Red amaranth
matweed, matweed an TG4	Amaranth	Spleen amaranth
matweed, matweed an TG4	Amaranth	Prince-of-Wales fea
matweed, matweed an TG4	Amaranth	Tropical amaranth
matweed, matweed an TG3	Amaranth	Red amaranth
foxtail, foxtail amarant TG3	Amaranth	Red amaranth
foxtail, foxtail amarant TG3	Amaranth	Red amaranth
foxtail, foxtail amarant TG3	Amaranth	Red amaranth
foxtail, foxtail amarant TG4	Amaranth	Red amaranth
clubfoot amaranth, spr TG4	Amaranth	Love-lies-bleeding
clubfoot amaranth, spr TG4	Amaranth	Red amaranth
clubfoot amaranth, spr TG4	Amaranth	Spleen amaranth
clubfoot amaranth, spr TG4	Amaranth	Prince-of-Wales fea
clubfoot amaranth, spr TG3	Amaranth	Tropical amaranth
African-spinach, blood TG3	Amaranth	Love-lies-bleeding
African-spinach, blood TG3	Amaranth	Love-lies-bleeding
African-spinach, blood TG3	Amaranth	Love-lies-bleeding
African-spinach, blood TG4	Amaranth	Love-lies-bleeding
spleen amaranth, bled TG3	Amaranth	Love-lies-bleeding
spleen amaranth, bled TG3	Amaranth	Love-lies-bleeding
spleen amaranth, bled TG3	Amaranth	Love-lies-bleeding
spleen amaranth, bled TG4	Amaranth	Love-lies-bleeding
spleen amaranth, bled TG3	Amaranth	Red amaranth
fringed amaranth TG4	Amaranth	Love-lies-bleeding
fringed amaranth TG4	Amaranth	Red amaranth
fringed amaranth TG4	Amaranth	Spleen amaranth
fringed amaranth TG4	Amaranth	Prince-of-Wales fea
fringed amaranth TG4	Amaranth	Tropical amaranth
Gregg's amaranth, Jos TG4	Amaranth	Love-lies-bleeding
Gregg's amaranth, Jos TG4	Amaranth	Red amaranth
Gregg's amaranth, Jos TG4	Amaranth	Spleen amaranth
Gregg's amaranth, Jos TG4	Amaranth	Prince-of-Wales fea
Gregg's amaranth, Jos TG4	Amaranth	Tropical amaranth
green amaranth, greer GP2	Amaranth	Amaranth
Prince of Wales-feathe TG3	Amaranth	Love-lies-bleeding
Prince of Wales-feathe TG3	Amaranth	Love-lies-bleeding
Prince of Wales-feathe TG3	Amaranth	Love-lies-bleeding
Prince of Wales-feathe TG4	Amaranth	Love-lies-bleeding
Prince of Wales-feathe TG3	Amaranth	Red amaranth
Prince of Wales-feathe TG3	Amaranth	Spleen amaranth
carelessweed, dioecioi TG4	Amaranth	Love-lies-bleeding
carelessweed, dioecioi TG4	Amaranth	Red amaranth
carelessweed, dioecioi TG4	Amaranth	Spleen amaranth
carelessweed, dioecioi TG4	Amaranth	Prince-of-Wales fea

carelessweed, dioecioi	TG4	Amaranth	Tropical amaranth
smartweed amaranth, :	TG4	Amaranth	Love-lies-bleeding
smartweed amaranth, :	TG4	Amaranth	Love-lies-bleeding
smartweed amaranth, :	TG4	Amaranth	Love-lies-bleeding
smartweed amaranth, :	TG4	Amaranth	Love-lies-bleeding
smartweed amaranth, :	TG4	Amaranth	Red amaranth
smartweed amaranth, :	TG4	Amaranth	Spleen amaranth
smartweed amaranth, :	TG4	Amaranth	Prince-of-Wales fea
green amaranth, Powe	GP3	Amaranth	Amaranth
	0 TG3	Amaranth	Love-lies-bleeding
	0 TG3	Amaranth	Red amaranth
	0 TG3	Amaranth	Spleen amaranth
	0 TG3	Amaranth	Prince-of-Wales fea
	0 TG4	Amaranth	Tropical amaranth
carelessweed, edlebur	TG3	Amaranth	Love-lies-bleeding
carelessweed, edlebur	TG3	Amaranth	Red amaranth
carelessweed, edlebur	TG3	Amaranth	Spleen amaranth
carelessweed, edlebur	TG3	Amaranth	Prince-of-Wales fea
carelessweed, edlebur	TG4	Amaranth	Tropical amaranth
	0 TG3	Amaranth	Love-lies-bleeding
	0 TG3	Amaranth	Red amaranth
	0 TG3	Amaranth	Spleen amaranth
	0 TG3	Amaranth	Prince-of-Wales fea
	0 TG4	Amaranth	Tropical amaranth
Bigelow's amaranth, T	TG3	Amaranth	Love-lies-bleeding
Bigelow's amaranth, T	TG3	Amaranth	Red amaranth
Bigelow's amaranth, T	TG3	Amaranth	Spleen amaranth
Bigelow's amaranth, T	TG3	Amaranth	Prince-of-Wales fea
Bigelow's amaranth, T	TG4	Amaranth	Tropical amaranth
cherimoya, custard-ap	TG4	Annona	Custard apple
cherimoya, custard-ap	GP1	Annona	Cherimoya
cherimoya, custard-ap	TG4	Annona	Soursop
cherimoya, custard-ap	TG4	Annona	Sugar apple
alligator-apple, corkwo	TG4	Annona	Custard apple
alligator-apple, corkwo	TG4	Annona	Cherimoya
alligator-apple, corkwo	TG4	Annona	Soursop
alligator-apple, corkwo	TG4	Annona	Sugar apple
	0 TG4	Annona	Custard apple
	0 TG4	Annona	Cherimoya
	0 TG4	Annona	Soursop
	0 TG4	Annona	Sugar apple
hardshell custard-appl	TG4	Annona	Custard apple
hardshell custard-appl	TG4	Annona	Cherimoya
hardshell custard-appl	TG4	Annona	Soursop
hardshell custard-appl	TG4	Annona	Sugar apple
wild cherimoya of Jalis	TG4	Annona	Custard apple
wild cherimoya of Jalis	TG4	Annona	Cherimoya
wild cherimoya of Jalis	TG4	Annona	Soursop
wild cherimoya of Jalis	TG4	Annona	Sugar apple
	0 TG4	Annona	Custard apple
	0 TG4	Annona	Cherimoya
	0 TG4	Annona	Soursop
	0 TG4	Annona	Sugar apple
ilama, anona blanca, II	TG4	Annona	Custard apple
ilama, anona blanca, II	TG4	Annona	Cherimoya
ilama, anona blanca, II	TG4	Annona	Soursop
ilama, anona blanca, II	TG4	Annona	Sugar apple
soursop, anona, guané	TG4	Annona	Custard apple
soursop, anona, guané	TG4	Annona	Cherimoya

soursop, anona, guané	TG4	Annona	Soursop
soursop, anona, guané	TG4	Annona	Sugar apple
	0 TG4	Annona	Custard apple
	0 TG4	Annona	Cherimoya
	0 TG4	Annona	Soursop
	0 TG4	Annona	Sugar apple
	0 TG4	Annona	Custard apple
	0 TG4	Annona	Cherimoya
	0 TG3	Annona	Soursop
	0 TG4	Annona	Sugar apple
bullock's-heart, custarc	TG4	Annona	Custard apple
bullock's-heart, custarc	TG4	Annona	Cherimoya
bullock's-heart, custarc	TG4	Annona	Soursop
bullock's-heart, custarc	TG4	Annona	Sugar apple
custard-apple, sugar-a	TG4	Annona	Custard apple
custard-apple, sugar-a	TG4	Annona	Cherimoya
custard-apple, sugar-a	TG4	Annona	Soursop
custard-apple, sugar-a	TG4	Annona	Sugar apple
annatto, arnatto, lipstic	TG4	Annatto	Annatto
craboo, golden-spoon,	TG4	Nance	Nance
American bird pepper,	GP1	Chili pepper	Chili pepper
American bird pepper,	GP1	Chili pepper	Habanero pepper
American bird pepper,	GP1	Chili pepper	Tabasco pepper
American bird pepper,	GP3	Chili pepper	Apple pepper
bird pepper, capsicum,	GP1	Chili pepper	Tabasco pepper
bird pepper, capsicum,	GP2	Chili pepper	Chili pepper
bird pepper, capsicum,	GP2	Chili pepper	Habanero pepper
bird pepper, capsicum,	GP3	Chili pepper	Apple pepper
papaya, pawpaw, mar	GP1	Papaya	Papaya
pecan, nogal american	GP1	Pecan	Pecan
nutmeg hickory, nogal	GP1	Pecan	Pecan
shagbark hickory, shel	GP1	Pecan	Pecan
Mexican hickory	GP1	Pecan	Pecan
Mexican hawthorn, ma	TG1B	Mexican hawthorn	Mexican hawthorn
	0 TG4	Mexican hawthorn	Mexican hawthorn
one-flower hawthorn	TG4	Mexican hawthorn	Mexican hawthorn
	0 GP2	Pumpkin, squash, cusl	Moschata pumpkin
	0 GP1	Pumpkin, squash, cusl	Cushaw
	0 Progenitor	Pumpkin, squash, cusl	Cushaw
	0 GP2	Pumpkin, squash, cusl	Moshata pumpkin
	0 GP2	Pumpkin, squash, cusl	Pepo pumpkin
	0 GP3	Pumpkin, squash, cusl	Maxima pumpkin
	0 GP3	Pumpkin, squash, cusl	Fig-leaf gourd
coyote gourd	GP3	Pumpkin, squash, cusl	Maxima pumpkin
coyote gourd	GP3	Pumpkin, squash, cusl	Moshata pumpking
coyote gourd	GP3	Pumpkin, squash, cusl	Pepo pumpkin
coyote gourd	GP3	Pumpkin, squash, cusl	Cushaw
coyote gourd	GP3	Pumpkin, squash, cusl	Fig-leaf gourd
	0 GP3	Pumpkin, squash, cusl	Maxima pumpkin
	0 GP3	Pumpkin, squash, cusl	Moshata pumpking
	0 GP3	Pumpkin, squash, cusl	Pepo pumpkin
	0 GP3	Pumpkin, squash, cusl	Cushaw
	0 GP3	Pumpkin, squash, cusl	Fig-leaf gourd
buffalo gourd, Missouri	GP3	Pumpkin, squash, cusl	Maxima pumpkin
buffalo gourd, Missouri	GP3	Pumpkin, squash, cusl	Moshata pumpking
buffalo gourd, Missouri	GP3	Pumpkin, squash, cusl	Pepo pumpkin
buffalo gourd, Missouri	GP3	Pumpkin, squash, cusl	Cushaw
buffalo gourd, Missouri	GP3	Pumpkin, squash, cusl	Fig-leaf gourd
bitter pumpkin, wild pu	GP2	Pumpkin, squash, cusl	Maxima pumpkin

bitter pumpkin, wild pu	GP2	Pumpkin, squash, cusl	Moshata pumpkin
bitter pumpkin, wild pu	GP2	Pumpkin, squash, cusl	Pepo pumpkin
bitter pumpkin, wild pu	GP2	Pumpkin, squash, cusl	Fig-leaf gourd
bitter pumpkin, wild pu	GP3	Pumpkin, squash, cusl	Cushaw
marten gourd, calabac	GP2	Pumpkin, squash, cusl	Moshata pumpkin
marten gourd, calabac	GP2	Pumpkin, squash, cusl	Pepo pumpkin
marten gourd, calabac	GP3	Pumpkin, squash, cusl	Maxima pumpkin
marten gourd, calabac	GP3	Pumpkin, squash, cusl	Cushaw
marten gourd, calabac	GP3	Pumpkin, squash, cusl	Fig-leaf gourd
coyote-melon	GP3	Pumpkin, squash, cusl	Maxima pumpkin
coyote-melon	GP3	Pumpkin, squash, cusl	Moshata pumpkin
coyote-melon	GP3	Pumpkin, squash, cusl	Pepo pumpkin
coyote-melon	GP3	Pumpkin, squash, cusl	Cushaw
coyote-melon	GP3	Pumpkin, squash, cusl	Fig-leaf gourd
	0 GP2	Pumpkin, squash, cusl	Fig-leaf gourd
	0 GP3	Pumpkin, squash, cusl	Maxima pumpkin
	0 GP3	Pumpkin, squash, cusl	Moshata pumpkin
	0 GP3	Pumpkin, squash, cusl	Pepo pumpkin
	0 GP3	Pumpkin, squash, cusl	Cushaw
	0 GP1	Pumpkin, squash, cusl	Pepo pumpkin
	0 Progenitor	Pumpkin, squash, cusl	Pepo pumpkin
	0 GP2	Pumpkin, squash, cusl	Moshata pumpkin
	0 GP2	Pumpkin, squash, cusl	Cushaw
	0 GP3	Pumpkin, squash, cusl	Maxima pumpkin
	0 GP3	Pumpkin, squash, cusl	Fig-leaf gourd
calabacilla, calabaza d	GP2	Pumpkin, squash, cusl	Moshata pumpkin
calabacilla, calabaza d	GP3	Pumpkin, squash, cusl	Maxima pumpkin
calabacilla, calabaza d	GP3	Pumpkin, squash, cusl	Pepo pumpkin
zapote negro montés, :	TG4	Black sapote	Persimonio
zapote negro montés, :	TG4	Black sapote	Zapote negro
	0 TG4	Black sapote	Persimonio
	0 TG4	Black sapote	Zapote negro
	0 TG4	Black sapote	Persimonio
	0 TG4	Black sapote	Zapote negro
algodoncillo, listoncillo	GP3	Cotton	Cotton
algodoncillo, listoncillo	GP3	Cotton	Sea island cotton
algodoncillo, listoncillo	GP3	Cotton	Short-staple cotton
algodoncillo, listoncillo	GP3	Cotton	Tree cotton
American Pima cotton, GP1		Cotton	Cotton
American Pima cotton, GP1		Cotton	Sea island cotton
American Pima cotton, GP3		Cotton	Short-staple cotton
American Pima cotton, GP3		Cotton	Tree cotton
	0 GP3	Cotton	Cotton
	0 GP3	Cotton	Sea island cotton
	0 GP3	Cotton	Short-staple cotton
	0 GP3	Cotton	Tree cotton
American cotton, Amei	GP1	Cotton	Cotton
American cotton, Amei	GP1	Cotton	Sea island cotton
American cotton, Amei	GP3	Cotton	Short-staple cotton
American cotton, Amei	GP3	Cotton	Tree cotton
	0 GP3	Cotton	Cotton
	0 GP3	Cotton	Sea island cotton
	0 GP3	Cotton	Short-staple cotton
	0 GP3	Cotton	Tree cotton
	0 GP3	Cotton	Cotton
	0 GP3	Cotton	Sea island cotton
	0 GP3	Cotton	Short-staple cotton
	0 GP3	Cotton	Tree cotton
sunflower, girasol	GP1	Sunflower	Sunflower

California sunflower	GP3	Sunflower	Sunflower
blueweed, blueweed s	GP3	Sunflower	Sunflower
slender sunflower	GP3	Sunflower	Sunflower
bristly sunflower, hairy	GP3	Sunflower	Sunflower
jagged-edge sunflower	GP3	Sunflower	Sunflower
snowy sunflower	GP2	Sunflower	Sunflower
snowy sunflower	GP2	Sunflower	Sunflower
Algodones Dunes sunf	GP2	Sunflower	Sunflower
pitahaya, pitaya roja	TG4	Pitahaya	Pitahaya
	0 GP2	Sweet-potato	Sweet-potato
	0 GP3	Sweet-potato	Sweet-potato
	0 GP2	Sweet-potato	Sweet-potato
	0 Progenitor	Sweet-potato	Sweet-potato
	0 GP3	Sweet-potato	Sweet-potato
	0 GP2	Sweet-potato	Sweet-potato
	0 Progenitor	Sweet-potato	Sweet-potato
little-bell	GP3	Sweet-potato	Sweet-potato
palo de barril, papaya	GP3	Papaya	Papaya
bonete, coahuayote, pi	GP3	Papaya	Papaya
	0 GP2	Papaya	Papaya
chiritos, jarrillo, toritos,	GP2	Papaya	Papaya
	0 TG2	Physic nut	Physic nut
	0 TG2	Physic nut	Physic nut
	0 TG2	Physic nut	Physic nut
	0 TG2	Physic nut	Physic nut
	0 TG2	Physic nut	Physic nut
	0 TG4	Lead tree	Lead tree
	0 TG4	Lead tree	Lead tree
guaje	TG4	Lead tree	Lead tree
	0 TG4	Lead tree	Lead tree
coffeebush, horse-tam	TG1B	Lead tree	Lead tree
yuca cimarrona, yuca c	GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
	0 GP3	Cassava	Cassava
Walker's manioc	GP3	Cassava	Cassava
	0 TG4	Naseberry, gum tree	Zapote chiclero
	0 TG4	Naseberry, gum tree	Zapote chico, chico:
chicle, naseberry, sapc	TG4	Naseberry, gum tree	Zapote chiclero
chicle, naseberry, sapc	TG4	Naseberry, gum tree	Zapote chico, chico:
	0 TG3	Opuntia	Prickly Pear, nopal,
	0 TG2	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle

	0 TG3	Opuntia	Joconostle
	0 TG2	Opuntia	Prickly Pear, nopal,
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Prickly Pear, nopal,
	0 TG3	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
	0 TG3	Opuntia	Prickly Pear, nopal,
	0 TG3	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
tuna cactus, prickly-pe	TG1B	Opuntia	Prickly Pear, nopal,
tuna cactus, prickly-pe	TG3	Opuntia	Joconostle
tuna cactus, prickly-pe	TG3	Opuntia	Joconostle
tuna cactus, prickly-pe	TG3	Opuntia	Joconostle
nopal cascarón, nopal	TG3	Opuntia	Prickly Pear, nopal,
nopal cascarón, nopal	TG3	Opuntia	Joconostle
nopal cascarón, nopal	TG2	Opuntia	Joconostle
	0 TG3	Opuntia	Prickly Pear, nopal,
	0 TG3	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
	0 TG2	Opuntia	Joconostle
large round-leaf prickly	TG3	Opuntia	Prickly Pear, nopal,
large round-leaf prickly	TG3	Opuntia	Joconostle
large round-leaf prickly	TG2	Opuntia	Joconostle
cardona-pear, nopal cæ	TG3	Opuntia	Prickly Pear, nopal,
cardona-pear, nopal cæ	TG3	Opuntia	Joconostle
cardona-pear, nopal cæ	TG2	Opuntia	Joconostle
cardona-pear, nopal cæ	TG2	Opuntia	Joconostle
	0 TG2	Opuntia	Prickly Pear, nopal,
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
velvet opuntia	TG3	Opuntia	Prickly Pear, nopal,
velvet opuntia	TG2	Opuntia	Joconostle
velvet opuntia	TG3	Opuntia	Joconostle
velvet opuntia	TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Prickly Pear, nopal,
	0 TG2	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
	0 TG3	Opuntia	Joconostle
Mexican-potato, potatc	GP1	Yam-bean	Yam-bean
	0 GP2	Yam-bean	Yam-bean
avocado, aguacate, pa	GP1	Avocado	Avocado
coyo avocado, chinini,	GP3	Avocado	Avocado
coyo avocado, chinini,	Graftstock	Avocado	Avocado
tepary bean, escomite	GP3	Bean	Common bean
tepary bean, escomite	GP3	Bean	Scarlet runner bean
	0 GP3	Bean	Common bean
	0 Progenitor	Bean	Tepary bean
frejolillo, ejotillo	GP1	Bean	Tepary bean
frejolillo, ejotillo	GP3	Bean	Common bean
	0 GP2	Bean	Common bean
	0 GP2	Bean	Scarlet runner bean
	0 GP3	Bean	Common bean
	0 GP3	Bean	Common bean
	0 GP3	Bean	Tepary bean

multiflora bean, runner	GP2	Bean	Common bean
multiflora bean, runner	GP2	Bean	Year bean
multiflora bean, runner	GP3	Bean	Tepary bean
	0 GP1	Bean	Scarlet runner bean
	0 GP2	Bean	Common bean
	0 GP2	Bean	Scarlet runner bean
	0 GP1	Bean	Year bean
	0 GP3	Bean	Common bean
	0 GP3	Bean	Tepary bean
	0 GP3	Bean	Common bean
	0 GP3	Bean	Lima bean
	0 GP2	Bean	Tepary bean
	0 GP3	Bean	Common bean
	0 GP3	Bean	Year bean
bean	GP2	Bean	Scarlet runner bean
bean	GP2	Bean	Year bean
bean	GP3	Bean	Tepary bean
	0 GP1	Bean	Common bean
	0 GP2	Bean	Scarlet runner bean
	0 GP3	Bean	Tepary bean
	0 Progenitor	Bean	Common bean
Wright's ground-cherry	TG2	Husk tomato	Husk tomato
	0 TG2	Husk tomato	Husk tomato
angular winter-cherry,	TG2	Husk tomato	Husk tomato
	0 TG2	Husk tomato	Husk tomato
	0 TG2	Husk tomato	Husk tomato
	0 GP3	Husk tomato	Ground-cherry
	0 TG2	Husk tomato	Husk tomato
husk-tomato, large-flo	TG1B	Husk tomato	Husk tomato
	0 TG2	Husk tomato	Husk tomato
ayacahuite pine, Mexic	TG3	Pinyon	Pinyon
pinyon pine, Mexican r	TG2	Pinyon	Pinyon
	0 TG2	Pinyon	Pinyon
single leaf pinyon pine	TG2	Pinyon	Pinyon
Parry pinyon, nut pine,	TG2	Pinyon	Pinyon
blackbead, camachile,	TG1B	Blackbead	Blackbead
odora	TG4	Poreleaf, pipicha	Poreleaf
odora	TG4	Poreleaf, pipicha	Pipicha
	0 TG4	Poreleaf, pipicha	Poreleaf
	0 TG4	Poreleaf, pipicha	Pipicha
yerba porosa	TG4	Poreleaf, pipicha	Poreleaf
yerba porosa	TG4	Poreleaf, pipicha	Pipicha
	0 TG4	Poreleaf, pipicha	Poreleaf
	0 TG4	Poreleaf, pipicha	Pipicha
	0 TG4	Poreleaf, pipicha	Poreleaf
	0 TG4	Poreleaf, pipicha	Pipicha
	0 TG4	Purslane	Purslane
	0 TG4	Purslane	Purslane
	0 TG4	Marmalade-plum, yellc	Marmalade-plum
	0 TG4	Marmalade-plum, yellc	Yellow sapote
canistel, eggfruit-tree,	TG4	Marmalade-plum, yellc	Marmalade-plum
canistel, eggfruit-tree,	TG4	Marmalade-plum, yellc	Yellow sapote
	0 TG4	Marmalade-plum, yellc	Marmalade-plum
	0 TG4	Marmalade-plum, yellc	Yellow sapote
	0 TG4	Marmalade-plum, yellc	Marmalade-plum
	0 TG4	Marmalade-plum, yellc	Yellow sapote
	0 TG4	Marmalade-plum, yellc	Marmalade-plum
	0 TG4	Marmalade-plum, yellc	Yellow sapote
	0 TG4	Marmalade-plum, yellc	Marmalade-plum
	0 TG4	Marmalade-plum, yellc	Yellow sapote
	0 TG4	Marmalade-plum, yellc	Marmalade-plum

blue sage	TG4	Chia, sage	Sage
chía de campo	TG3	Chia, sage	Chia
chía de campo	TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
mountain sage	TG3	Chia, sage	Chia
mountain sage	TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
bonfire salvia, scarlet s	TG3	Chia, sage	Chia
bonfire salvia, scarlet s	TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 TG3	Chia, sage	Chia
	0 TG4	Chia, sage	Sage
	0 GP3	Chayote	Chayote
chayote de caballo, hu	GP3	Chayote	Chayote
chayote de monte, eriz	GP1	Chayote	Chayote
chayotillo	GP3	Chayote	Chayote
goatnut, jojoba	GP1	Goatnut	Jojoba
	0 GP3	Potato	Potato
heart-leaf nightshade	GP3	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP3	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP3	Potato	Potato
	0 GP2	Potato	Potato
	0 GP2	Potato	Potato
	0 GP3	Potato	Potato
Fendler's nighshade	GP2	Potato	Potato
	0 GP3	Potato	Potato
	0 GP3	Potato	Potato
	0 GP2	Potato	Potato
hog-plum, Jamaica-plu	TG4	Purple mombin	Purple mombin
hog-plum, purple mom	TG4	Yellow mombin	Yellow mombin
octopus cactus, cina, r	TG4	Pitaya, cina	Cina
octopus cactus, cina, r	TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina

	0 TG4	Pitaya, cina	Pitaya
pitaya, pitayo de agua:	TG4	Pitaya, cina	Cina
pitaya, pitayo de agua:	TG4	Pitaya, cina	Pitaya
pitaya, pitaya de mayo	TG4	Pitaya, cina	Cina
pitaya, pitaya de mayo	TG4	Pitaya, cina	Pitaya
dagger cactus, pitahay	TG4	Pitaya, cina	Cina
dagger cactus, pitahay	TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
pitaya, pitaya de Quer:	TG4	Pitaya, cina	Cina
pitaya, pitaya de Quer:	TG4	Pitaya, cina	Pitaya
Pitire	TG4	Pitaya, cina	Cina
Pitire	TG4	Pitaya, cina	Pitaya
pitaya marismefña	TG4	Pitaya, cina	Cina
pitaya marismefña	TG4	Pitaya, cina	Pitaya
pitaya, xoconochтли	TG4	Pitaya, cina	Cina
pitaya, xoconochтли	TG4	Pitaya, cina	Pitaya
organ pipe cactus/pitay	TG4	Pitaya, cina	Cina
organ pipe cactus/pitay	TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
	0 TG4	Pitaya, cina	Cina
	0 TG4	Pitaya, cina	Pitaya
tunillo	TG4	Pitaya, cina	Cina
tunillo	TG4	Pitaya, cina	Pitaya
African marigold, Amei	TG4	Marigold	Marigold
Irish-lace, Irish-lace m:	TG4	Marigold	Marigold
	0 TG4	Marigold	Marigold
	0 TG4	Marigold	Marigold
Mexican mint marigold	TG4	Marigold	Marigold
licorice marigold	TG4	Marigold	Marigold
	0 TG4	Marigold	Marigold
	0 TG4	Marigold	Marigold
	0 TG4	Marigold	Marigold
cacao, cocoa, árbol de	GP1	Cacao	Cacao
Guatemalan grass	GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
Mexican gama grass	GP3	Maize	Maize
	0 GP3	Maize	Maize
grama-Guatemala, pa:	GP3	Maize	Maize
zacatón maizar	GP3	Maize	Maize
	0 GP3	Maize	Maize
maizillo	GP3	Maize	Maize
	0 GP3	Maize	Maize
	0 GP3	Maize	Maize
Bourbon vanilla, vanill:	GP1	Vanilla	Vanilla
Guadeloupe vanilla, pc	GP2	Vanilla	Vanilla
diploperennial teosinte	GP2	Maize	Maize

Florida teosinte, Guate GP2
Central Plateau teosint GP1
Balsas teosinte, Guerr GP1
Balsas teosinte, Guerr Progenitor
perennial teosinte GP2

Maize
Maize
Maize
Maize
Maize

Maize
Maize
Maize
Maize
Maize

Crop taxa	Crop use	Crop general use	Uses	Energy (Kcal/cap)
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA
Agave weberi		0 Industrial		1 NA
Agave tequilana	Source of destile be\	Industrial		1 NA
Agave salmiana	Beverage base pulq\	Industrial		1 NA
Agave potatorum		0 Industrial		1 NA
Agave fourcroydes	Fiber	Industrial		1 NA
Agave angustifolia de	Fiber	Industrial		1 NA
Agave angustifolia	Beverage base baca	Industrial		2 NA

Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave tequilana	Source of destile be\	Industrial	1 NA
Agave salmiana	Beverage base pulqu	Industrial	1 NA

Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Agave weberi		0 Industrial	1 NA
Agave salmiana	Beverage base pulqi	Industrial	1 NA
Agave potatorum		0 Industrial	1 NA
Agave fourcroydes	Fiber	Industrial	1 NA
Agave angustifolia de	Fiber	Industrial	1 NA
Agave angustifolia	Beverage base baca	Industrial	2 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus polygonc		0 Vegetable	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus caudatus		0 Cereal	1 NA
Amaranthus cruentus		0 Pseudo-cereal, Vegetabl	2 NA
Amaranthus dubius		0 Vegetable	1 NA
Amaranthus hypocho	Ornamental, Pseudo	Pseudo-cereal, Vegetabl	5 NA

Soursop	0 Fruit		1 NA	
Sugar apple	0 Fruit		1 NA	
Annona reticulata	0 Fruit		1 NA	
Annona cherimola	0 Fruit		1 NA	
Soursop	0 Fruit		1 NA	
Sugar apple	0 Fruit		1 NA	
Annona reticulata	0 Fruit		1 NA	
Annona cherimola	0 Fruit		1 NA	
Soursop	0 Fruit		1 NA	
Sugar apple	0 Fruit		1 NA	
Annona reticulata	0 Fruit		1 NA	
Annona cherimola	0 Fruit		1 NA	
Soursop	0 Fruit		1 NA	
Sugar apple	0 Fruit		1 NA	
Annona reticulata	0 Fruit		1 NA	
Annona cherimola	0 Fruit		1 NA	
Soursop	0 Fruit		1 NA	
Sugar apple	0 Fruit		1 NA	
Bixa orellana	0 Medicine and Spice		1 NA	
Byrsonyma crassifolia	0 Fruit		1 NA	
Capsicum annuum var	Spice, Ornamental, \	Vegetable	4	5.6
Capsicum chinense	Spice, Medicine	Medicine and Spice	2	5.6
Capsicum frutescens	Spice, Medicine	Medicine and Spice	2	5.6
Capsicum pubescens	Spice	Medicine and Spice	1	5.6
Capsicum frutescens	Spice, Medicine	Vegetable	2	5.6
Capsicum annuum var	Spice, Ornamental, \	Medicine and Spice	4	5.6
Capsicum chinense	Spice, Medicine	Medicine and Spice	2	5.6
Capsicum pubescens	Spice	Medicine and Spice	1	5.6
Carica papaya	Fruit, Medicine, Indu	Fruit	3 NA	
Carya illinoensis	Nut, Charcoal, Wood	Nut	3 NA	
Carya illinoensis	Nut, Charcoal, Wood	Nut	3 NA	
Carya illinoensis	Nut, Charcoal, Wood	Nut	3 NA	
Carya illinoensis	Nut, Charcoal, Wood	Nut	3 NA	
Crataegus mexicana	0 Fruit		1 NA	
Crataegus mexicana	0 Fruit		1 NA	
Crataegus mexicana	0 Fruit		1 NA	
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3 NA	
Cucurbita argyrosper	Fruit, Seeds	Fruit, Medicine and Spice	2 NA	
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2 NA	
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3 NA	
Cucurbita pepo	Medicine	Vegetable	1 NA	
Cucurbita maxima	Fruit, Medicine, Relic	Fruit	3 NA	
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5 NA	
Cucurbita maxima	Fruit, Medicine, Relic	Fruit	3 NA	
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3 NA	
Cucurbita pepo	Medicine	Vegetable	1 NA	
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2 NA	
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5 NA	
Cucurbita maxima	Fruit, Medicine, Relic	Fruit	3 NA	
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3 NA	
Cucurbita pepo	Medicine	Vegetable	1 NA	
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2 NA	
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5 NA	
Cucurbita maxima	Fruit, Medicine, Relic	Fruit	3 NA	
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3 NA	
Cucurbita pepo	Medicine	Vegetable	1 NA	
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2 NA	
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5 NA	
Cucurbita maxima	Fruit, Medicine, Relic	Fruit	3 NA	

Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5	NA
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2	NA
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Cucurbita maxima	Fruit, Medicine, Reliç	Fruit	3	NA
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2	NA
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5	NA
Cucurbita maxima	Fruit, Medicine, Reliç	Fruit	3	NA
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2	NA
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5	NA
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Fruit, Vegetable	5	NA
Cucurbita maxima	Fruit, Medicine, Reliç	Fruit	3	NA
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2	NA
Cucurbita pepo	Medicine	Fruit, Vegetable	1	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita argyrosper	Fruit, Seeds	Medicine and Spice	2	NA
Cucurbita maxima	Fruit, Medicine, Reliç	Fruit	3	NA
Cucurbita ficifolia	Fruit, Seeds, Vegeta	Vegetable	5	NA
Cucurbita moschata	Fruit, Seeds, Medicir	Fruit	3	NA
Cucurbita maxima	Fruit, Medicine, Reliç	Fruit	3	NA
Cucurbita pepo	Medicine	Vegetable	1	NA
Diospyros virginiana		0 Fruit	1	NA
Diospyros digyna		0 Fruit	1	NA
Diospyros virginiana		0 Fruit	1	NA
Diospyros digyna		0 Fruit	1	NA
Diospyros virginiana		0 Fruit	1	NA
Diospyros digyna		0 Fruit	1	NA
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Gossypium hirsutum	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium barbaden	Fiber, Medicine	Industrial	2	9.7
Gossypium herbaceu	Oil, Fodder, Fiber, M	Industrial	4	9.7
Gossypium arboreum	Fiber, Medicine	Industrial	2	9.7
Helianthus annuus	Honey, Ornamental, Industrial		10	8.8

Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Opuntia ficus-indica		0 Forrage, Vegetable, Fruit	3 NA	
Opuntia durangensis		0 Fruit	1 NA	
Opuntia hyptiacantha		0 Fruit	1 NA	
Opuntia spinulifera		0 Fruit	1 NA	
Pachyrhizus erosus	Vegetable, Forage	Vegetable	2 NA	
Pachyrhizus erosus	Vegetable, Forage	Vegetable	2 NA	
Persea americana	Fruit, Medicine	Fruit	2 NA	
Persea americana	Fruit, Medicine	Fruit	2 NA	
Persea americana	Fruit, Medicine	Fruit	2 NA	
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus coccineus	Pulse	Legume	1	96.4
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus acutifolius	Pulse	Legume	1	96.4
Phaseolus acutifolius	Pulse	Legume	1	96.4
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus coccineus	Pulse	Legume	1	96.4
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus vulgaris v2	Pulse, Vegetable, Fc	Legume	4	96.4
Phaseolus acutifolius	Pulse	Legume	1	96.4

Zea mays subsp. may Sweetener, Ornameı Cereal, Forrage	9	1008.2
Zea mays subsp. may Sweetener, Ornameı Cereal, Forrage	9	1008.2
Zea mays subsp. may Sweetener, Ornameı Cereal, Forrage	9	1008.2
Zea mays subsp. may Sweetener, Ornameı Cereal, Forrage	9	1008.2
Zea mays subsp. may Sweetener, Ornameı Cereal, Forrage	9	1008.2

NA	NA	0	0	2
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NA	NA	0 //P		1
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	0.25	0.1	0	0	0
	0.25	0.1	0	0	0
	0.25	0.1	0	0	0
	0.25	0.1 Cytoplasmic male sterilit		0	1
	0.25	0.1 Cytoplasmic male sterilit		0	1
	0.25	0.1 Cytoplasmic male sterilit		0	1
	0.25	0.1 Cytoplasmic male sterilit		0	1
NA	NA		0 DD//		18
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NA	NA	Disease resistance for P		0	4

NA	NA	Disease resistance for P	0	4
NA	NA	Disease resistance for P	0	4
NA	NA	Disease resistance for P	0	4
NA	NA	Disease resistance for P	0	4
NA	NA	Disease resistance for P	0	7
NA	NA	Disease resistance for P	0	7
NA	NA	Disease resistance for P	0	7
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NA	NA	Disease resistance for P	0	7
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NA	NA	0	0	2
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NA	NA	0	0	0
NA	NA	0 //P		0
NA	NA	0 //P		0
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NA	NA	0	0	1
0		1.1 Pest resistance for Cottc	0	6
0		1.1 Pest resistance for Cottc	0	6
0		1.1 Pest resistance for Cottc	0	6
0		1.1 Pest resistance for Cottc	0	6
0		1.1 Crop quality for Cotton	0	7
0		1.1 Crop quality for Cotton	0	7
0		1.1 Crop quality for Cotton	0	7
0		1.1 Crop quality for Cotton	0	7
0		1.1	0	0
0		1.1	0	0
0		1.1	0	0
0		1.1	0	0
0		1.1	0	25
0		1.1	0	25
0		1.1	0	25
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0		1.1	0	1
0		1.1	0	1
0		1.1	0	1
0		0.99 Cytoplasmic male sterilit LC//		10

0		0.99 Disease resistance for S LC//		0
0		0.99 Disease resistance for S	0	0
0		0.99	0	0
0		0.99 Pest resistance for Sunfl LC//		0
0		0.99	0	0
0		0.99 Crop quality for Sunflowe DD//		0
0		0.99	0	0
0		0.99	0	0
NA	NA	0 LC//		6
0	0	0	0	1
0	0	0 Gene transfer for Sweet-	0	1
0	0	0	0	0
0	0	0	0	0
0	0	0	0	1
0	0	0 Disease resistance for S	0	1
0	0	0 Disease resistance for S	0	1
0	0	0 Drought resistance for S	0	1
NA	NA	0	0	4
NA	NA	0	0	11
NA	NA	0	0	4
NA	NA	0	0	4
NA	NA	0	0	3
NA	NA	0	0	1
NA	NA	0	0	2
NA	NA	0	0	5
NA	NA	0	0	1
NA	NA	0	0	0
NA	NA	0 Cold tolerance for leuca	0	3
NA	NA	0	0	9
NA	NA	0	0	6
NA	NA	0	0	13
0	0	0	0	14
0	0	0 Crop quality for Cassava	0	17
0	0	0	0	2
0	0	0	0	10
0	0	0 Source of waxy-starch, F	0	10
0	0	0 Source of waxy-starch	0	3
0	0	0	0	3
0	0	0	0	5
0	0	0	0	3
0	0	0	0	1
0	0	0	0	1
0	0	0	0	2
0	0	0 Crop quality for Cassava	0	5
0	0	0	0	15
0	0	0	0	0
0	0	0 Cold tolerance for Cassa	0	6
0	0	0	0	0
0	0	0	0	0
0	0	0	0	3
0	0	0	0	3
0	0	0	0	1
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NA	NA	0	0	2
NA	NA	0	0	14
NA	NA	0	0	14
NA	NA	0 //I/		5
NA	NA	0 //I/		5
NA	NA	0 //I/		5

NA	NA	0 /II/		5
NA	NA	0 /II/		0
NA	NA	0 /II/		0
NA	NA	0 /II/		0
NA	NA	0 /II/		0
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NA	NA	0 DD/II/		8
NA	NA	0 DD/II/		8
NA	NA	0 LC/II/		11
NA	NA	0 LC/II/		11
NA	NA	0 LC/II/		11
NA	NA	0 LC/II/		12
NA	NA	0 LC/II/		12
NA	NA	0 LC/II/		12
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NA	NA	0 LC/II/		13
NA	NA	0 LC/II/		13
NA	NA	0 LC/II/		13
NA	NA	0 /II/		0
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NA	NA	0 /II/		0
NA	NA	0 /II/		0
NA	NA	0 DD/II/		4
NA	NA	0 DD/II/		4
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NA	NA	0 LC/II/		6
NA	NA	0 LC/II/		6
NA	NA	0 LC/II/		6
NA	NA	0 LC/II/		6
NA	NA	0	0	0
NA	NA	0	0	0
NA	NA	0	0	13
NA	NA	0 VU//		2
NA	NA	0 VU//		2
5.22	0.44	Disease resitance for Cc	0	0
5.22	0.44	Disease resitance for Cc	0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44		0	0
5.22	0.44	Cold tolerance for Comr	0	0
5.22	0.44		0	0
5.22	0.44		0	0

5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	0	0	0
5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	Disease resistance for Cc	0	0
5.22	0.44	0	0	0
5.22	0.44	0	0	0
5.22	0.44	Disease resistance for Li	0	0
5.22	0.44	Disease resistance for Li	0	0
5.22	0.44	0	0	0
5.22	0.44	0	0	0
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5.22	0.44	0	0	0
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NA	NA	0	0	1
NA	NA	0	0	2
NA	NA	0	0	0
NA	NA	0	0	21
NA	NA	0 LC//		20
NA	NA	0 EN//P		2
NA	NA	0 LC//Pr		1
NA	NA	0 LC//Pr		4
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NA	NA	0	0	0
NA	NA	0	0	11
NA	NA	0	0	11
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NA	NA	0 VU//		1
NA	NA	0 VU//		1
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NA	NA	0	0	2
NA	NA	0 EN//		1

NA	NA	0 EN//		1
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NA	NA	0	0	1
NA	NA	Potential for disease resi	0	4
NA	NA	Potential for disease resi	0	4
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NA	NA	0	0	25
NA	NA	0	0	11
NA	NA	0	0	11
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NA	NA	0	0	4
NA	NA	0	0	2
0.73	0.08	Disease resistance for P	0	2
0.73	0.08		0	0
0.73	0.08		0	1
0.73	0.08	Cold tolerance for Potatc	0	1
0.73	0.08		0	1
0.73	0.08		0	0
0.73	0.08		0	0
0.73	0.08	Disease resistance for P	0	0
0.73	0.08	Disease resistance for P	0	0
0.73	0.08	Disease resistance for P	0	2
0.73	0.08		0	2
0.73	0.08		0	1
0.73	0.08	Disease resistance for P	0	0
0.73	0.08	Disease resistance for P	0	1
0.73	0.08		0	0
0.73	0.08	Cold tolerance for Potatc	0	0
0.73	0.08	Disease resistance for P	0	1
0.73	0.08		0	0
0.73	0.08		0	0
0.73	0.08	Disease resistance for P	0	1
NA	NA	0	0	8
NA	NA	0	0	9
NA	NA	0 VU/II/		2
NA	NA	0 VU/II/		2
NA	NA	0 NT/II/		4
NA	NA	0 NT/II/		4
NA	NA	0 EN/II/		2
NA	NA	0 EN/II/		2
NA	NA	0 DD/II/		2
NA	NA	0 DD/II/		2
NA	NA	0 LC/II/A		2

NA	NA		0 LC//A			2
NA	NA		0 LC//I/			5
NA	NA		0 LC//I/			5
NA	NA		0 LC//I/			1
NA	NA		0 LC//I/			1
NA	NA		0 LC//I/			3
NA	NA		0 LC//I/			3
NA	NA		0 LC//I/			4
NA	NA		0 LC//I/			4
NA	NA		0 EN//I/Pr			1
NA	NA		0 EN//I/Pr			1
NA	NA		0 LC//I/			2
NA	NA		0 LC//I/			2
NA	NA		0 LC//I/			8
NA	NA		0 LC//I/			8
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NA	NA		0 LC//I/			4
NA	NA		0 LC//I/			5
NA	NA		0 LC//I/			5
NA	NA		0 //I/			0
NA	NA		0 //I/			0
NA	NA		0 //I/			0
NA	NA		0 //I/			0
NA	NA		0 LC//I/			1
NA	NA		0 LC//I/			1
NA	NA		0	0		25
NA	NA		0	0		21
NA	NA		0	0		12
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NA	NA		0	0		25
NA	NA		0	0		22
NA	NA		0	0		5
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NA	NA		0	0		8
	0.14	0.2	0	0		9
	25.74	12.13	0	0		3
	25.74	12.13	0	0		2
	25.74	12.13	Pest resistance for Maize	0		16
	25.74	12.13	0	0		12
	25.74	12.13	0	0		2
	25.74	12.13	0	0		1
	25.74	12.13	0	0		4
	25.74	12.13	0	0		13
	25.74	12.13	0	0		6
	25.74	12.13	0	0		8
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	25.74	12.13	0	0		0
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	25.74	12.13	Disease resistance for N //A			1

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Footnotes

† GP1: Primary Gene Pool; GP2: Secondary Gene Pool; GP3: Tertiary Gene Pool; TG1b: Taxon Group
‡ From the NOM-059-SEMARNAT-2010, Pr: Subject to special protection; P: Endangered; A: Threatened
§ Number of states in which the taxon occurs

› 1b; TG2: Taxon Group 2; TG3: Taxon Group 3; TG4: Taxon Group 4
ed. From IUCN Red List of Threatened Species, NT: Near Threatened; V: Vulnerable; EN: Endangerec

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No.	Citation	Reference
1	Arias and Zavala-Hurtado 2013a	Arias, S., and A. Zavala-Hurtado. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
2	Arias and Zavala-Hurtado 2013b	Arias, S., and A. Zavala-Hurtado. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0012
3	Arias et al., 2013a	Arias, S., H. Arreola, R. Bárcenas Luna, M. Cházaro, C. Gómez-Hernández, H. Arreola, M. Cházaro, C. Gómez-Hernández, R. Durán, B. Hammel, J.L. Tapia, H.I. Arreola, H. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0013
4	Arias et al., 2013b	Arias, S., H. Arreola, M. Cházaro, C. Gómez-Hernández, R. Durán, B. Hammel, J.L. Tapia, H.I. Arreola, H. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0014
5	Arias et al., 2013c	Arias, S., R. Durán, B. Hammel, J.L. Tapia, H.I. Arreola, H. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0015
6	Arreola, 2013	Arreola, H. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0016
7	Arreola and Nassar, 2013	Arreola, H., and J. Nassar. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0017
8	Arreola and Terrazas, 2013a	Arreola, H., and T. Terrazas. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0018
9	Arreola and Terrazas, 2013b	Arreola, H., and T. Terrazas. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0019
10	Arreola et al., 2013a	Arreola, H., R. Bárcenas Luna, M. Cházaro, J. Arreola, H., M. Ishiki, and T. Terrazas. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0020
11	Arreola et al., 2013b	Arreola, H., M. Ishiki, and T. Terrazas. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0021
12	Burquez Montijo and Felger, 2013a	Burquez Montijo, A., and R.S. Felger. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0022
13	Burquez Montijo and Felger, 2013b	Burquez Montijo, A., and R.S. Felger. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0023
14	Burquez Montijo and Porter, 2013	Burquez Montijo, A., and J.M. Porter. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0024
15	Burquez Montijo et al., 2013a	Burquez Montijo, A., R.S. Felger, and T. Van der Meer. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0025
16	Burquez Montijo et al., 2013b	Burquez Montijo, A., J.M. Porter, and R.S. Felger. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0026
17	CITES, 2015	CITES. 2015. The Convention on International Trade in Endangered Species of Wild Fauna and Flora. http://www.cites.org/
18	CONABIO, 2008	CONABIO. 2008. Capital natural de México, vol. 1. CONABIO, México.
19	CONABIO, 2011	CONABIO. 2011. Global Project of Native Maize Cultivars. CONABIO, México.
20	Contreras et al., 2016a	Contreras, A. 2016. <i>Carica papaya</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2016-0011
21	Contreras et al., 2016b	Contreras, A., L. Rhodes, and N. Maxted. 2016. <i>Carica papaya</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2016-0012
22	Contreras et al., 2016c	Contreras, A., L. Rhodes, and N. Maxted. 2016. <i>Carica papaya</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2016-0013
23	Contreras et al., 2016d	Contreras, A., L. Rhodes, and N. Maxted. 2016. <i>Carica papaya</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2016-0014
24	Contreras, 2016	Contreras, A., L. Rhodes, and N. Maxted. 2016. <i>Carica papaya</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2016-0015
25	DOF, 2015	DOF. 2015. Modificación del Anexo Normativo de Especies en Peligro de Extinción. Diario Oficial de la Federación.
26	FAO, 2017	FAO. 2017. FAOSTAT. Food and Agriculture Organization of the United Nations. http://www.fao.org/faostat/
27	Farjon, 2013a	Farjon, A. 2013a. <i>Pinus cembroides</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
28	Farjon, 2013b	Farjon, A. 2013b. <i>Pinus maximartinezii</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0012
29	Farjon, 2013c	Farjon, A. 2013c. <i>Pinus monophylla</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0013
30	Farjon, 2013d	Farjon, A. 2013d. <i>Pinus quadrifolia</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0014
31	Guadalupe Martínez et al., 2013	Guadalupe Martínez, J., E. Sánchez, R. Bárcenas Luna, H. Arreola, P., and IPK (Institute of Plant Genetics and Crop Science). 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0015
32	Hanelt and IPK 2001	Hanelt, P., and IPK (Institute of Plant Genetics and Crop Science). 2001. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2001-0011
33	Hernández et al., 2013	Hernández, H.M., M. Cházaro, and C. Gómez-Hernández. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0012
34	INEGI, 2007	INEGI. 2007. Censo Agrícola, Ganadero y Forestal. Instituto Nacional de Estadística y Geografía.
35	IUCN. 2016	IUCN. 2016. The IUCN Red List of Threatened Species. http://www.iucn.org/
36	Khoury et al., 2013	Khoury, C.K., S. Greene, J. Wiersema, N. Maxted, and J. B. Grace. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
37	Missouri Botanical Garden, 2017	Missouri Botanical Garden. 2017. Tropicos. http://www.tropicos.org/
38	Molina and Córdova, 2006	Molina, J.C and L. Córdova, editors. 2006. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2006-0011
39	Puente, 2013	Puente, R. 2013. <i>Opuntia wilcoxii</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
40	SIAP, 2017	SIAP. 2017. Sistema de Información Agroalimentaria y Pesquera. Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación.
41	Terrazas et al., 2013a	Terrazas, T., M. Cházaro, and H. Arreola. 2013a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
42	Terrazas et al., 2013b	Terrazas, T., M. Cházaro, and H. Arreola. 2013b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0012
43	Terrazas et al., 2013c	Terrazas, T., Arreola, H. & Cházaro, M. 2013c. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0013
44	Terrazas et al., 2013d	Terrazas, T., Cházaro, M. & Arreola, H. 2013d. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0014
45	Terrazas et al., 2013e	Terrazas, T., Cházaro, M. & Arreola, H. 2013e. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0015
46	Terrazas et al., 2013f	Terrazas, T., Cházaro, M. & Arreola, H. 2013f. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0016
47	USDA–ARS–GRIN, 2017	USDA–ARS–GRIN. 2017. National Plant Germplasm System. http://npgs.ars-grin.gov/
48	Vincent et al., 2013	Vincent, H., J. Wiersema, S. Kell, H. Fielder, S. Kell, and S. Kell. 2013. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-2013-0011
49	World Conservation Monitoring Centre, 1998a	World Conservation Monitoring Centre. 1998a. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-1998-0011
50	World Conservation Monitoring Centre, 1998b	World Conservation Monitoring Centre. 1998b. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-1998-0012
51	World Conservation Monitoring Centre, 1998c	World Conservation Monitoring Centre. 1998c. <i>Stenocereus pruinosus</i> . The IUCN Red List of Threatened Species. doi:10.2305/CI-1998-0013

ocereus stellatus. The IUCN Red List of Threatened Species 2013: e.T151821A565126. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151821A565126>.

ocereus treleasei. The IUCN Red List of Threatened Species 2013: e.T152818A682262. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152818A682262>.

Jázar, J. Guadalupe Martínez, E. Sánchez, and T. Terrazas. 2013a. *Opuntia lasiacantha*. The IUCN Red List of Threatened Species 2013: e.T152818A682262. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152818A682262>.

Hernández, H.M. Hernández, and T. Terrazas. 2013b. *Opuntia streptacantha*. The IUCN Red List of Threatened Species 2013: e.T152818A682262. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152818A682262>.

Hernández, M. Véliz. 2013c. *Stenocereus eichlamii*. The IUCN Red List of Threatened Species 2013: e.T152139A601673. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152139A601673>.

Stenocereus griseus. The IUCN Red List of Threatened Species 2013: e.T152521A646244. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152521A646244>.

Stenocereus beneckeii. The IUCN Red List of Threatened Species 2013: e.T151847A568136. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151847A568136>.

Stenocereus standleyi. The IUCN Red List of Threatened Species 2013: e.T152938A697361. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152938A697361>.

Guadalupe Martínez, E. Sánchez, and T. Terrazas. 2013a. *Stenocereus queretaroensis*. The IUCN Red List of Threatened Species 2013: e.T151706A552100. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151706A552100>.

Stenocereus ficus-indica. The IUCN Red List of Threatened Species 2013: e.T151706A552100. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151706A552100>.

Stenocereus montanus. The IUCN Red List of Threatened Species 2013: e.T152672A664049. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152672A664049>.

Stenocereus thurberi. The IUCN Red List of Threatened Species 2013: e.T151842A567498. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151842A567498>.

Stenocereus eruca. The IUCN Red List of Threatened Species 2013: e.T152511A645047. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152511A645047>.

Jevender. 2013a. *Stenocereus alamosensis*. The IUCN Red List of Threatened Species 2013: e.T15921A643636. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T15921A643636>.

Jevender. 2013b. *Stenocereus gummosus*. The IUCN Red List of Threatened Species 2013: e.T152500A643636. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152500A643636>.

Trade in Endangered Species of Wild Fauna and Flora. <https://cites.org/eng> (accessed 10 Mar. 2017).

CONABIO. 1: Conocimiento actual de la biodiversidad. Comisión Nacional para el Conocimiento y Uso de la Biodiversidad, National Commission for Knowledge and Use of Biodiversity. <http://www.biodiversidad.gob.mx/gene>.

Stenocereus. The IUCN Red List of Threatened Species 2016: e.T20681422A20694916. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RL.T20681422A20694916>.

Helianthus annuus. The IUCN Red List of Threatened Species 2016: e.T19073408A47600755. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RL.T19073408A47600755>.

Helianthus californicus. The IUCN Red List of Threatened Species 2016: e.T20694276A20695281. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RL.T20694276A20695281>.

Helianthus hirsutus. The IUCN Red List of Threatened Species 2016: e.T64990398A64990486. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RL.T64990398A64990486>.

Helianthus niveus. The IUCN Red List of Threatened Species 2016: e.T20694323A20695326. <http://dx.doi.org/10.2305/IUCN.UK.2016-3.RL.T20694323A20695326>.

SEMARNAT. III, Lista de especies en riesgo de la Norma Oficial Mexicana NOM-059-SEMARNAT-2010, Protección Ambiental. Secretaría de Medio Ambiente y Recursos Naturales. <http://faostat3.fao.org/home/E> (accessed 7 Mar. 2017).

Stenocereus. The IUCN Red List of Threatened Species 2013: e.T42350A2974560. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T42350A2974560>.

Stenocereus. The IUCN Red List of Threatened Species 2013: e.T30975A2799675. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T30975A2799675>.

Stenocereus. The IUCN Red List of Threatened Species 2013: e.T42381A2976514. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T42381A2976514>.

Stenocereus. The IUCN Red List of Threatened Species 2013: e.T42407A2977910. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T42407A2977910>.

Luna, and C. Gómez-Hinostrosa. 2013. *Opuntia hyptiacantha*. The IUCN Red List of Threatened Species 2013: e.T151723A5542. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151723A5542>.

Mansfeld's world database of agricultural and horticultural crops. IPK Gatersleben. <http://www.cipot.mx>.

Hinostrosa. 2013. *Opuntia velutina*. The IUCN Red List of Threatened Species 2013: e.T151723A5542. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151723A5542>.

Instituto Agropecuario. Instituto Nacional de Estadística y Geografía. México. <http://www.inegi.org.mx/est/contenidos/resultados/>.

IUCN Red List of Threatened Species. Version 2016–3. International Union for Conservation of Nature and Natural Resources. <http://www.iucn.org>.

Jarvis, A. Jarvis, and P.C. Struik. 2013. An Inventory of Crop Wild Relatives of the United States. Crop Science Society of America, Crop Science Society of Mexico, and Crop Science Society of India. St. Louis, Missouri, <http://www.tropicos.org> (accessed 1 June 2017).

Cursos Fitogenéticos de México para la Alimentación y la Agricultura: Informe Nacional 2006. Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Forestal. <http://www.siap.gob.mx/cierre-de-la-produccion-agricola-por-cultivo/> (accessed 1 Mar. 2017).

Stenocereus chrysocarpus. The IUCN Red List of Threatened Species 2013: e.T152821A682609. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152821A682609>.

Stenocereus martinezii. The IUCN Red List of Threatened Species 2013: e.T152657A662348. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152657A662348>.

Hylocereus ocamponis. The IUCN Red List of Threatened Species 2013: e.T151854A568944. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T151854A568944>.

Stenocereus fricii. The IUCN Red List of Threatened Species 2013: e.T152242A613859. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152242A613859>.

Stenocereus kerberi. The IUCN Red List of Threatened Species 2013: e.T152497A643608. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152497A643608>.

Stenocereus quevedonis. The IUCN Red List of Threatened Species 2013: e.T152016A587534. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RL.T152016A587534>.

National Plant Germplasm System (NPGS). Agricultural Research Service–Germplasm Resources Information Network. <http://www.ars-grin.gov>.

Dobbie, N.P. Castañeda-Álvarez, L. Guarino, R. Eastwood, B. León, and N. Maxted. 2013. A prioritized list of crop wild relatives. <http://www.cropwildrelatives.org>.

Persea schiedeana. The IUCN Red List of Threatened Species 1998: e.T34402A9863895. <http://dx.doi.org/10.2305/IUCN.UK.1998-1.RL.T34402A9863895>.

Pouteria belizensis. The IUCN Red List of Threatened Species 1998: e.T37695A10067842. <http://dx.doi.org/10.2305/IUCN.UK.1998-1.RL.T37695A10067842>.

Pouteria rhynocharpa. The IUCN Red List of Threatened Species 1998: e.T34412A9865563. <http://dx.doi.org/10.2305/IUCN.UK.1998-1.RL.T34412A9865563>.

g/10.2305/IUCN.UK.2013-1.RLTS.T151821A565126.en (accessed 12 June 2017).
 g/10.2305/IUCN.UK.2013-1.RLTS.T152818A682262.en (accessed 12 June 2017).
 ed List of Threatened Species 2013: e.T152681A665228. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152681A665228>.
 eated Species 2013: e.T152896A692072. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152896A692072>.
 2013: e.T152494A643182. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152494A643182>.en (accessed 12 June 2017).
 013-1.RLTS.T152139A601673.en (accessed 12 June 2017).
 5/IUCN.UK.2013-1.RLTS.T152521A646244.en (accessed 12 June 2017).
).2305/IUCN.UK.2013-1.RLTS.T151847A568136.en (accessed 12 June 2017).
).2305/IUCN.UK.2013-1.RLTS.T152938A697361.en (accessed 12 June 2017).
 ed List of Threatened Species 2013: e.T152705A668212. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152705A668212>.
 i.org/10.2305/IUCN.UK.2013-1.RLTS.T151706A552100.en (accessed 12 June 2017).
 .doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152672A664049.en. (accessed 12 June 2017).
 i.org/10.2305/IUCN.UK.2013-1.RLTS.T151842A567498.en. (accessed 12 June 2017).
 g/10.2305/IUCN.UK.2013-1.RLTS.T152511A645047.en (accessed 12 June 2017).
 12A794280. <http://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T159212A794280>.en (accessed 12 June 2017).
 55. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152500A643955>.en. (accessed 12 June 2017).

diversidad, México.

s/proyectoMaices.html (accessed 15 Mar. 2017).

16-3.RLTS.T20681422A20694916.en (accessed 12 June 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T19073408A47600755>.en (accessed 12 June 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T20694276A20695281>.en (accessed 12 June 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T64990398A64990486>.en (accessed 12 June 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2016-3.RLTS.T20694323A20695326>.en (accessed 12 June 2017).

ón ambiental—Especies nativas de México de flora y fauna silvestres—Categorías de riesgo y especificaciones de uso—Especies amenazadas (Categorías de riesgo y especificaciones de uso) (2017).

I.RLTS.T42350A2974560.en (accessed 12 June 2017).

3-1.RLTS.T30975A2799675.en (accessed 12 June 2017).

.RLTS.T42381A2976514.en (accessed 12 June 2017).

RLTS.T42407A2977910.en (accessed 12 June 2017).

pecies 2013: e.T152544A649160. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152544A649160>.en (accessed 12 June 2017).

¿ Gatersleben. <http://mansfeld.ipk-gatersleben.de/apex/f?p=185:4> (accessed 9 Mar. 2017).

:21. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T151723A554221>.en (accessed 12 June 2017).

contenidos/proyectos/agro/ (accessed 5 Mar. 2017).

<http://www.iucnredlist.org> (accessed 13 Mar. 2017).

i. 53:1–13. doi: 10.2135/cropsci2012.10.0585.

a de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación y Sociedad Mexicana de Fitogenética (2017).
 .RLTS.T152789A678592.en (accessed 12 June 2017).

lar. 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152821A682609>.en (accessed 12 June 2017).

<http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152657A662348>.en (accessed 12 June 2017).

x.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T151854A568944.en. Downloaded on 26 July 2017.

org/10.2305/IUCN.UK.2013-1.RLTS.T152242A613859.en. Downloaded on 26 July 2017.

oi.org/10.2305/IUCN.UK.2013-1.RLTS.T152497A643608.en. Downloaded on 26 July 2017.

'dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T152016A587534.en. Downloaded on 26 July 2017.

nline Database. <http://www.ars-grin.gov/> (accessed 10 May 2017).

ed crop wild relative inventory to help underpin global food security. *Biol. Conserv.* 167:265–275. doi: 10.1016/j.biocon.2013.08.021.

i.org/10.2305/IUCN.UK.1998.RLTS.T34402A9863895.en (accessed 12 June 2017).

oi.org/10.2305/IUCN.UK.1998.RLTS.T37695A10067842.en (accessed 12 June 2017).

c.doi.org/10.2305/IUCN.UK.1998.RLTS.T34412A9865563.en (accessed 12 June 2017).

.LTS.T152681A665228.en (accessed 12 June 2017).
A692072.en (accessed 12 June 2017).
essed 12 June 2017).

TS.T152705A668212.en (accessed 12 June 2017).

2017).

ciones para su inclusión, exclusión o cambio—Lista de especies en riesgo, publicada el 30 de diciembre

en (accessed 12 June 2017).

tica, A.C. Chapingo, México.

).1016/j.biocon.2013.08.011.

de 2010. Diario Oficial de la Federación. http://dof.gob.mx/nota_detalle.php?codigo=5420810&fecha=

21/12/2015 (accessed 1 Mar. 2017).