HERBAL MEDICINE IN EGYPT

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RÉSUMÉ

La médecine herbale a été utilisée en Egypte depuis longtemps. Les anciens égyptiens ont connu l'importance de beaucoup de plantes médicinales et les ont utilisées pour les même raisons pour lesquelles elles sont récemment utilisées. La flora égyptienne comprend environ 2000 espèces plus certaines nouvelles, introduites et acclimatisées récemment. Plusieurs plantes ont été étudiées pour leur usage en médicine herbal et beaucoup de travail est accompli pour explorer d'autres espèces. Quelques plantes utilisées en médicine herbal et presentés au marché égyptien sont aussi inclues.

KEY-WORDS

EGYPT, MEDICINAL PLANTS, USES, HERBAL MEDICINE, RESEARCH PROJECTS

MOTS-CLES

EGYPTE, PLANTE MEDICINALE, UTILISATION, MEDICINE HERBALE, PROJET DE RECHERCHE

Medicinal plants have been used as a source of remedies since ancient times. The ancient Egyptians were familiar with many medicinal herbs and were aware of their usefulness in treatment of various diseases. The healing of sick persons was carried out by priest doctors who prescribed and prepared medicaments. The first recorded prescriptions were found in Ancient Egyptian tombs. The writing on the temple walls and in the papyri revealed that Ancient Egyptians used many herbal drugs for the same purposes as they are used today. They used drugs of animal, plant, as well as mineral origins. From the first group, they used blood, meat, horn, milk, egg, honey and excreta. Among drugs of vegetable origin that they used are acacia, aloes, gums, myrrh, pomegranate, colocynth, linseed, squill, coriander, cumin, onions, anise, grapes, castor oil and wine. They used all plant organs such as roots, rhizomes, flowers, leaves, fruits, seeds, as well as oils. They applied their medicaments in the form of powders, pills, suppositories, creams, pastes and ointments.

When the Arabs came to Egypt, Arabic medicine was practiced and the art of healing made use of all available knowledge gained from different civilizations such as the Persian, Chinese, Greek, as well as the Ancient Egyptian. The books writen by some famous workers such as Rases, Ibn Sina, Ibn El-bitar are still present and represent main references in herbal shops (known as Attars). Among these books are El-Kanoon Fil Tib (by Ibn Sina), Tazkaret Oli Albab (Dawood El-Antaki) and Mofradat El-Adwia (Ibn El-Bitar). Some people still go to such Attareen shops seeking herbal remedies since they are cheap and regarded as more safe.

Nowadays, there is an increasing trend towards the use of herbal medicine in Egypt that reflects an increasing confidence in such remedies. Recently, there are, two companies in Egypt that are specialised in the production of herbal drugs and herbal drug-based medicaments. In addition, certain extracts and/or herbal drug constituents are produced together with what is called modern or western medicine in some pharmaceutical companies.

The flora of Egypt includes about 2000 species of plants distributed in its different localities that vary in type of soil and prevailing climatic and other environmental conditions that hence encourage the growth of a wide range of plant species. In addition, many plants have been successfully introduced and acclimatized in Egypt .

About 300 drugs, mostly of local origin, can be found in Egyptian market today. The accompanying table (Table 1) shows examples of such herbal drugs, including their local and scientific names, part(s) used, and main active constituents and uses..

Our Pharmacognosy Department, as well as other similar departments in Egyptian Universities and other Research Centres, have taken on the task of studying both wild and cultivated plants with view to discovering their chemical constituents, pharmacological action and hence their possible pharmaceutical uses. The accompanying list shows the names of plants that are studied mainly for both the Master and Ph.D. degrees, in Egypt until 1989.

It is noteworthy that the occurrence of some wild growing plants in Egypt is becoming rare, and some species are threatened with extinction for a large number of reasons such as over-collection, land reclamation and the extension of building to many rural areas.

Therefore we are calling in Egypt for establishment of more protected areas to save such species from extinction. Moreover, we have projects aimed at the collection of seeds of such species and carrying out agricultural experiments to find optimum conditions for their cultivation. A study has recently been carried out on squill (*Urginea maritima*) and Egyptian henbane (*Hyoscyamus muticus*) for this purpose.

Beside native wild species, several medicinal plants are cultivated in Egypt such as liquorice (*Glycyrrhiza glabra*), *Mentha* species, *Thymus* spp., *Salvia* sp., rosemary (*Rosmarinus officinalis*), lavander (*Lavandula officinalis*), basil (*Ocimum basilicum*), several Umbelliferous plants such as fennel (*Foeniculum vulgare*), anise (*Pimpinella anisum*), caraway (*Carum carvi*), cumin (*Cuminum cyminum*), coriander (*Coriandrum sativum*), parsley (*Petroselinum crispum*), celery (*Apium graveolens*), dill (*Anethum graveolens*), ajowan (*Carum copticum*) and *Ammi visnaga* and *Ammi majus*. Other plants include fenugreek (*Trigonella foenum-graecum*), rosel (*Hibiscus sabdariffa*), aloes (*Aloe ferox*, *A. vera*), senna species (*Cassia acutifolia*), Salix species (*Salix safsaf*, *S. aiba* and *S. tetrasperma*), *Nigella sativa*, *Olea europea*, Egyptian lupin (*Lupinus termis*), certain *Datura* and *Digitalis* species , belladonna (*Atropa belladonna*), marshmallow (*Althaea officinalis*), *Eucalyptus* spp., *Ambrosia maritima*, *Cymbopogon citratus*, *C. proximus*, chamomile (*Matricaria chamomilla*) sunflower (*Helianthus annuus*), henna (*Lawsonia inermis*), white and black mustard (*Sinapis alba*, *S. nigra*), rue (*Ruta graveolens*), psyllium (*Plantago psyllium*) and others .

It is evident that many countries borderng the Mediterranean share many plant species in common. It will be for the benefit of all countries to cooperate among themselves and exchange their experiences and the results of scientific work carried out on medicinal plants.

TABLE 1: Some herbal drugs found in the Egyptian market

Uses	Part used	Latin name & family	Local name
Demulcent, suspension. agent	Gum	*Acacia arabica* L. *Leguminosae*	Sant
Contraceptive, cosmetic, aphrodisiac	Fruits, Flowers	*Acacia farnesiana* (L.)Willd. *Leguminosae*	Fitnah
Digestive, cosmeti, anti-inflammatory	Flowering tops	*Achillea millefolium* L. *Compositae*	Hazanbal
Carminative, general tonic	Rhizomes	*Acorus calamus* L. *Araceae*	Qasab ad-dharirah
Hypotensive, hypoglyce-mic, anthelmintic	Bulbs	*Allium sativum* L. *Liliaceae*	Thawm
Laxative, cholagogue dermatitis	Juice	*Aloe vera* L. *Liliaceae*	Sabbar
Emollient , anticough.	Leaves, roots	*Althea officinalis* L. *Malvaceae*	Khitmi
Antidiabetic, anti-spasmodic, lipotropic	Herb	*Ambrosia maritima* L. *Compositae*	Damsisa
Spasmolytic, remove urinary calculi	Fruits	*Ammi visnaga* L. *Umbelliferae*	Khilla Balady
Dermatitis, lecodermia	Fruits	*Ammi majus* L. *Umbelliferae*	Khella shytani
Aphrodisiac, tonic	Roots	*Anacyclus pyrethrum* L *Compositae*	Aqir qush
Cardiotonic	Herb	*Anastatica hierochuntica* *Cruciferae*	Kaff maryam
Digestive, carminative, antispasmodic	Herb, fruits	*Anethum graveolens* L. *Umbelliferae*	Shibith
Circulatory stimulant	Herb	*Anthemis cotula* *Compositae*	Sheih
Diuretic, antispasmodic	Fruits, herb	*Apium graveolens* L. *Umbelliferae*	Karafs
Dermatitis, CN stimulant , antiarterisclerotic	Fl.heads, rhizomes	*Arnica montana* L. *Compositae*	Khaniq el Fahd
Anthelmintic	Fl. buds	*Artmesia cina* Ber. *Compositae*	Shih balady
Anthelmintic	Fl. heads	*Artemisia herba-alba* *Compositae*	Shih
Hypoglycemic, urinary infections	Fruits, leaves	*Balanites aegyptiaca* (L.) Del. *Simarubaceae*	Haglig
Laxative, contraceptive	Roots	*Bryonia alba* L. *Cucurbitaceae*	Haleq el Shar
Skin diseases, sun burns, emmenagogue	Fl.heads, leaves	*Calendula officinalis* L. *Compositae*	Oqhwan
Haemostatic, hypotensive,diaphoretic, emmenagogue	Herb, roots	*Capsella busa-pastoris* *Cruciferae*	Kis er Rai
Rubifacient, anti-rheumatic	Fruits	*Capsicum minimum* *Solanaceae*	Shattah
Digestive, carminative, antispasmodic	Fruits	*Carum carvi* L. *Umbelliferae*	Karawyah
Antispasmodic, antiseptic,in renal calculi.	Fruits	*Carum copticum* Benth. *Umbelliferae*	Nakhwah

Anticholestrlemic, emmenagogue, anti-inflammatory	Flowers	*Carthamus tinctorius* L. *Compositae*	Osfur
Laxative ,diaphoretic	Leaves &fruits	*Cassia acutifolia* Del. *Leguminosae*	Sanna makki
Laxative	Pods	*Cassia fistula* L. *Leguminosae*	Khiyar shamber
Antidiarrhoea, refreshing drink	Pods	*Ceratonia siliqua* L. *Leguminosae*	Kharrub
Anthelmintic	Leaves, fruits	*Chenopodium ambrosioides* L. *Chenopodiaceae*	Zorbeih
Tonic, lipotropic, hypoglycemic, laxative	Roots, seeds,	*Cichorium intybus* L. *Compositae*	Shikoryah
Carminative, flavouring agent antiseptic, mild astringent cathartic	Bark	*Cinnamomum zeylanicum* *Lauraceae*	Kerfa
Cathartic, diuretic, dermatitis	Fruit pulp, seeds	*Citrullus colocynthis* Schrad *Cucurbitaceae*	Hanzal
Antiscurbutic ,anti-rheumatic,disinfectant.	Fruit ,peels	*Citrus limon* L. *Rutaceae*	Laymun
Disinfectant, antidysenteric, dermatitis	Oleo gum resin	*Commiphora mukul* L. *Burseraceae*	Mur
Digestive, carminative, hypoglycemic	Fruits & herb	*Coriandrum sativum* L. *Umbelliferae*	Kuzbarah
Appetizer,carminative, antispasmodic, emmenagogue	styles & stigmas	*Crocus sativus* L. *Iridaceae*	Zafraan
Prostrate adjuvant, vermifuge	Seeds	*Cucurbita pepo* L. *Cucurbitaceae*	Kusah
Digestive, carminative, antispasmodic	Fruits	*Cuminum cyminum* L. *Umbelliferae*	Kammun
Antidiabetic, control of blood level	Gum	*Cyamobsis tetragonolobus* *Leguminosae*	Guar
Demulcent	Fruits	*Cydonia oblonga* Miller *Rosaceae*	Safargal
Antispasmodic , antiseptic, cosmetic insect repellent,	Leaves	*Cymbopogon citratus* (Nees) Stapf *Gramineae*	Hashishet el-lymun
Antispasmodic, removes urinary calculi	Herb	*Cymbopogon proximus* *Gramineae*	Halfa Barr
Cholagogue, antidiabetic, diuretic	Leaves	*Cynara scolymus* DC. *Compositae*	Kharshuf
Control of urination	Tubers	*Cyperus longus* DC. *Cyperaceae*	Sud
Aphrodisiac, diuretic	Seeds, roots	*Daucus carota* L. *Umbelliferae*	Gazar baladi
Lipotropic, laxative, abortifacient	Fruits	*Ecballium elaterium* (L.) A.Rich. *Cucurbitaceae*	Qitha el-himar
Aphrodisiac, diuretic	Seeds, leaves	*Eruca sativa* Miller *Cruciferae*	Gargirr
Tonic, emollient.	Fruits	*Ficus carica* L. *Moraceae*	Tin barri
Antidiarrhoea,dermatitis	Fruits, latex	*Ficus sycomorus* L. *Moraceae*	Gummayz

Carminative, antispasmodic	Fruits	*Foeniculum vulgare* Miller *Umbelliferae*	Shamar
Demulcent, tonic	Roots	*Glossostemon bruguieri* Desf. *Leguminosae*	Sahlab
Anticough, antiulcer, laxative, digestive	Roots	*Glycyrrhiza glabra* *Leguminosae*	Erq Sus
Expectorant	Roots	*Gypsophila struthium* Loefl. *Caryophyllaceae*	Kundus
Hypocholesterolemic	Seeds, leaves	*Helianthus annuus L.* *Compositae*	Abbad esh shams
Hypotensive, refreshing drink	Calyx	*Hibiscus sabdariffa* L. *Malvaceae*	Karkadeih
Sedative, diuretic,anti-inflammatory	Female infloresc.	*Humulus lupulus* L. *Cannabinaceae*	Hashishet ed-dinar
Antidiarrhoea, antirheumatic	Berries, leaves	*Juniperus oxycedrus* L. *Cupressaceae*	Arar
Digestive, carminative, antiseptic	Leaves, fruits	*Laurus nobilis* *Lauraceae* L.	Ghar
Antispasmodic, stimulant, cosmetic	Fl.tops	*Lavandula officinalis* L. *Labiatae*	Khuzami
Antiseptic, antifungal, colouring matter	Leaves	*Lawsonia inermis* L. *Lythraceae*	Henna
Antiasthma, expectorant.	Herb, seeds	*Lepidium latifolium* L. *Leguminosae*	Ussab
Emollient, anticough	Seeds	*Linum usitatissimum* L. *Linaceae*	Kattan
Antidiabetic, dermatitis	Seeds	*Lupinus termis* Forssk. *Leguminosae*	Termis
Emollient, anticough, skin diseases.	Leaves, flowers	*Malva sylvestris* L. *Malvaceae*	Khubbazi
Anticough, bronchial disorders	Leaves, Fl. tops	*Marrubium vulgare* L. *Labiatae*	Sharir
Antispasmodic, dermatitis, sedative	Fl. heads	*Matricaria chamomilla* L. *Compositae*	Babung
Carminative, anti-spasmodic, antiseptic	Leaves, fl.tops	*Mentha piperita* L. *Labiatae*	Nanaa
Antislimming, tonic.	Seeds	*Moringa peregrina* L. *Moringaceae*	Yasar
Antidiabetic, astringent, haemostatic	Leaves, flowers	*Myrtus communis* L. *Myrtaceae*	As
Bronchial asthma, immunostimulant, diuretic	Seeds	*Nigella sativa* L. *Ranunculaceae*	Habbet el barakah
Antispasmodic, digestive, galactagogue	Leaves , Fl.tops	*Ocimum basilicum* L. *Labiatae*	Rayhan
Nutrient, antidiarrhoea	Under-ground parts	*Orchis mascula* L. *Orchidaceae*	Sahlab
Digestive, mouth wash, bronch.disorders,	Herb	*Origanum majoranum* L. *Labiatae*	Mardaqush
Anthelmintic, antirheumatic	Seeds	*Peganum harmala* L. *Zygophyllaceae*	Harmal
Diuretic, antirheumatic, emmenagogue.	Fruits , herb	*Petroselinum sativum* (L.) Hoffm. *Umbelliferae*	Maqdunis
Carminative, sedative, mild diuretic, anti-spasmodic	Fruits	*Pimpinella anisum* L. *Umbelliferae*	Yansun

Expectorant, antiseptic, renal colic	Resin	*Pistacia lentiscus* L. *Anacardiaceae*	Fustuq
Tonic, antifebrile , anthelmintic	Bark , leaves	*Populus* spp. *Salicaceae*	Hawr
Emollient, antihemorrhoids	Herb	*Portulaca oleracea* L. *Portulacaceae*	Reglah
Tonic	Root	*Prunus mahaleb* L. *Rosaceae*	Mahlab
Antidiarrhoea, haemo-static, anthelmintic	Seed, fruit, bark	*Punica granatum* L. *Punicaceae*	Rumman
Carminative, cholagogue, antiseptic	Leaves, Fl.tops	*Rosmarinus officionalis* L. *Labiatae*	Hassa luban
Laxative, diuretic, cholagogue, lipotropic	Root stock	*Rubia tinctorium* L. *Rubiaceae*	Fuwwah
Haemostatic, astringent	Rhizomes	*Ruscus sculentus* L. *Liliaceae*	As barri
Anthelmintic, emmenagogue, capillary fragility	Leaves	*Ruta graveolens* L. *Rutaceae*	Sdhab
Antirheumatic, antipyretic	Leaves , barks	*Salix* spp. *Salicaceae*	Safsaf
Emollient, gargle, digestive, cholagogue,	Leaves , fl. tops	*Salvia officinalis* L. *Labiatae*	Maryamiya
Expectorant,diaphoretic, antirheumatic	Rhizomes	*Saponaria officinalis* L *Caryophyllaceae*	Sabuniyah
Soothing, cooking purposes	Seeds	*Sesamum indicum* L *Pedaliaceae*	Simsim
Antihepatotoxic	Fruits	*Silybum marianum* (L.) Gaertn. *Compositae*	Atub
Appetizer, condiment, antirheumatic	Seeds	*Sinapis alba* L. *Cruciferae*	Khrdal abiad
Appetizer, condiment,antirheumatic	Seeds	*Sinapis nigra* L. *Cruciferae*	Khardal aswad
Laxative	Fruits, leaves	*Tamarindus indica* L. *Tamaricaceae*	Tmr hindi
Antiseptic, antispasmodic,	Leaves, fl.tops	*Thymus vulgaris* L. *Labiatae*	Satar
Anticough, sedative	Infloresc, bark	*Tilia sylvestris* *Tiliaceae*	Zayzafun
Demulcent, nutritive	Seeds	*Trigonella foenum-graecum* L. *Leguminosae*	Helbah
Diuretic, diaphoretic, antipyretic , emmenagogue	Herb	*Verbena officinalis* L. *Verbenaceae*	Ri el hamam
Relieve sore throat.	Fruits	*Ziziphus jujuba* Miller *Labiatae*	Unnab

LIST OF PLANTS INCLUDED IN SCIENTIFIC THESES AND RESEARCH PAPERS

1. *Abrus precatorius* L.
2. *Acacia arabica* L.
3. *Acacia farnesiana* L.
4. *Acacia senegalensis* L.
5. *Achillea fragrantissima* Sch.B.p.
6. *Achillea santolina* L.
7. *Acokanthera spectabilis* Hook fil.
8. *Adhatoda vasica* Nees
9. *Adonis autumnalis* L.
10. *Adonis dentata* Del.
11. *Aegialophila pumila* (Jusl.) Boiss.
12. *Aegle marmelos* (L.) Corr.
13. *Aerva lanata* Juss.
14. *Aerva tomentosa* Forsk.
15. *Agave americana* L. *var. marginata*
16. *Agave decipiens* Baker
17. *Agave sisalana (Engelm.)* Drumm. & Prain.
18. *Ajuga iva* L.
19. *Albizia julibrissin* Durazz.
20. *Alhagi maurorum* Medic.
21. *Allium aschersonianum* Barb.
22. *Allium cepa* L.
23. *Allium sativum* L.
24. *Aloe grandidentata* S.D.
25. *Aloe vera* L.
26. *Althea officinalis* L.
27. *Althea rosea* L.
28. *Amberboa tubuliflora* Murb.
29. *Ambrosia maritima* L.
30. *Ammi majus* L.
31. *Ammi visnaga* L.
32. *Anabasis articulata* L.
33. *Anagallis arvensis* L.
34. *Anastatica hierochuntica* L.
35. *Anchusa milleri* Willd.
36. *Annona cherimola* Miller
37. *Annona glabra* L.
38. *Annona muricata* L.
39. *Annona squamosa* L.
40. *Anthemis nobilis* L.
41. *Anthemis pseudocotula* Boiss.
42. *Antirrhinum majus* L.
43. *Apium graveolens* L.
44. *Argemone mexicana* L.
45. *Arisarum vulgare* Schott.
46. *Aristolochia elegans* Mast.
47. *Artemisia absinthium* L.
48. *Artemisia argentea* L'Hér.
49. *Artemisia argyi* Levl. & Vant.
50. *Artemisia cina* Berg.
51. *Artemisia herba alba* L.
52. *Artemisia judaica* L.
53. *Artemisia monosperma* L.
54. *Arthrocnemum glaucum* (Del.) Ung - Sternb.
55. *Asclepias curassavica* L.
56. *Asparagus stipularis* Forssk.
57. *Aster squamatus* L.
58. *Asteriscus graveolens* Less.
59. *Astragalus alexandrinus* Boiss.
60. *Astragalus boeticus* L.
61. *Astragalus cremophilos* Boiss.
62. *Astragalus tomentosus* Lam.
63. *Astragallus trigonus* DC.
64. *Atrocarpus integrifolia* Link
65. *Atropa belladonna* L.
66. *Avicennia officinalis* L.
67. *Barleria cristata* L.
68. *Bassia muricata* Murr.
69. *Bauhinea purpurea* L.
70. *Bauhinia variegata* L.
71. *Beamontia grandiflora* Wall.
72. *Bolusanthus speciosus* (Bolus) Harms
73. *Brassica juncea* (L.) Czern.
74. *Brassica nigra* L.
75. *Brassica oleracea* L. *var. capitata* L.
76. *Bryonia cretica* L.
77. *Calendula arvensis* L.
78. *Calendula officinalis* L.
79. *Calligonum comosum* L'Her.
80. *Callistemon lanceolatus* DC.
81. *Callistemon rigidus* R.Br.
82. *Calotropis procera* (Aiton) R.Br.
83. *Calycodendron milnei* (A.Gray) A.C.Smith.
84. *Canavalia obtusifolia* DC.
85. *Canna flaccida* Salisb.
86. *Canna indica* L.
87. *Canna orientalis* Roscoe
88. *Cannabis sativa* L.
89. *Cardiospermum halicacabum* L.
90. *Carduncellus eriocephalus* Boiss.
91. *Carduus getulus* Pomel
92. *Carduus nutans* L.
93. *Carica papaya* L.
94. *Carissa carandas* L.
95. *Carissa grandiflora* DC.
96. *Carthamus glaucus* Bieb.subsp. *alexandrinus*
97. *Carthamus mariuticus* Del.
98. *Carthamus tinctorius* L.
99. *Carum copticum* Benth.
100. *Carum carvi* L.
101. *Cassia acutrifolia* Del.
102. *Cassia didymobotrya* Fres.
103. *Cassia fistula* L.

104. *Cassia javanica* L.
105. *Cassia nigricans*
106. *Cassia obovata* Coll.
107. *Cassia siamea* Lam.
108. *Cassia spectabilis* DC.
109. *Catha edulis* Forssk.
110. *Centaurea aegyptiaca* Del.
111. *Centaurea alexandrina* Del.
112. *Centaurea calcitrapa* L.
113. *Centaurea cineraria* L.
114. *Centaurea moschata* L.
115. *Centaurea ragusina L. subsp.* ragusina
116. *Centaurium pulchellum* Sw.
117. *Centaurium spicatum* (L.) Fritsch
118. *Ceratonia siliqua* L.
119. *Cerbera odollam* Gaertn.
120. *Cestrum aurantiacum* Lindl.
121. *Cestrum diurnum* L.
122. *Cestrum elegans* (Brogn.) Schlect.
123. *Chenopodium ambrosiodes* L.
124. *Chenopodium murale*
125. *Corchorus olitorius* L.
126. *Chrysanthemum anethifolium* Brouss.
127. *Chrysanthemum cinerarifolium* Visiani
128. *Chrysanthemum coronarium* L.
129. *Chrysanthemum manifolium* Ramat.
130. *Cichorium intybus* L.
131. *Cichorium pumilum* L.
132. *Citrullus colocynthis* (L.) Schrader
133. *Citrus aurantifolia* Swingle
134. *Citrus aurantium* L.
135. *Citrus aurantium* L. *var. amara*
136. *Citrus aurantium* L. *var. deliciosa*
137. *Citrus aurantium* L. *var. sinensis*
138. *Citrus bergamia* (Risso & Poiteau) Wight & Arn.
139. *Citrus limetta* L.
140. *Citrus limon* (L.) Burm. fil.
141. *Citrus nobilis Lour*
142. *Citrus* × *paradisi* Macfad.
143. *Citrus reticulata* Blanco
144. *Citrus sanguinea* Engl.
145. *Citrus trifoliata* L.
146. *Cleistopholis patens* Engl.& Diels.
147. *Cleome amblycarpa* Barr. & Murb.
148. *Cleome droserifolia* (Forssk) Del.
149. *Clerodendron inermis* L.
150. *Clivia miniata* Regel
151. *Cocculus laurifolius* DC.
152. *Coffea arabica* L.
153. *Convolvulus althaeoides* L.
154. *Convolvulus arvensis* L.
155. *Convolvulus lanatus* Vahl
156. *Conyza dioscorides* (L.) Desf.
157. *Conyza linifolia* Willd.
158. *Cordia myxa* L.
159. *Coriandrum sativum* L.
160. *Cornulacca monacantha* Del.
161. *Cotula cinerea* Del.
162. *Crinum americanum* L.
163. *Crinum augustum* Rox.
164. *Crinum bulbispermum* Milne
165. *Crotolaria aegyptiaca* Bentham
166. *Crotolaria madurensis* R. Wight
167. *Crucianella maritima* L.
168. *Cucumis melo* L.
169. *Cucurbita maxima* Duchesne
170. *Cucurbita pepo var. medullosa* Alef.
171. *Cuminum cyminum* L.
172. *Cupressus arizonica* Greene
173. *Cupressus lusitanica* Miller
174. *Cupressus sempervirens* L.
175. *Curcuma longa* L.
176. *Cyamopsis tetragonoloba* Taub.
177. *Cymbopogon citratus* L.
178. *Cymbopogon nardus* Rendle
179. *Cymbopogon proximus* Stapf.
180. *Cynandropsis pentaphylla* Harhus
181. *Cyperus rotundus* L.
182. *Datura discolour* Berth.
183. *Datura fastusa* L.
184. *Datura ferox* L.
185. *Datura innoxia* Miller
186. *Datura metel* L.
187. *Datura metelolides* DC.
188. *Datura stramonium* L.
189. *Datura stramonium var. inermis* Safford
190. *Datura tatula* L.
191. *Datura tatula* L. var. *inermis* Safford
192. *Daucus carota L. var. boissieri* Schweinf.
193. *Daucus glaber* Forssk
194. *Delphinium ajacis* L.
195. *Delphinium barbeyi* Huth.
196. *Delphinium belladonna* Kelw.
197. *Derris elliptica* L.
198. *Digitalis lanata* Ehrh.
199. *Digitalis mertonensis* Buxt. & Darl.
200. *Digitalis parviflora* Jacq.
201. *Digitalis purpurea* L.
202. *Digitalis purpurea var. miniana* Sampaio
203. *Digitalis viridiflora* Lindl.
204. *Dioscorea opposita* Thunb.
205. *Discorea tokoro* Makino
206. *Dolichois lablab* L.
207. *Ducrosia ismaelis* Aschers.
208. *Duranta plumeri* Jacq.

209. *Duranta repens* L.
210. *Ecballium elaterium* A.Rich.
211. *Echiochilon fruticosum* Desf.
212. *Echium sericeum* Vahl
213. *Eclipta prostrata* (L.) L.
214. *Emex spinosus* (L.) Campd.
215. *Eminium spiculatum* (Blume) Schott.
216. *Enterolobium cyclocarpum* Griseb.
217. *Ephedra alata* Decne
218. *Ephedra alta* C.A.Meyer
219. *Ephedra sinica* Stapf
220. *Erigeron crispus* Pourr.
221. *Eruca sativa Mill.*
222. *Erucaria pinnata* Tackl.
223. *Erythraea spicata* L. = Centaurium spicatum (L) Fritsch
224. *Erythrina variegata* L.
225. *Eschscholtzia californica* Cham.
226. *Ethulia conyzoides* L.f. var. *gracilis* Asch & Schweinf.
227. *Eucalyptus citriodora* Hooker
228. *Eucalyptus cornuta* Labill.
229. *Eucalyptus goniocalyx* F.J.Muell.
230. *Eucalyptus globuls* Labill.
231. *Eucalyptus macrocarpa* Hooker
232. *Eucalyptus maculata var. citriodora* Bailey
233. *Euphorbia hypericifolia* L.
234. *Euphorbia geniculata* Ort.
235. *Euphorbia helioscopia* L.
236. *Euphorbia heterophylla* L.
237. *Euphorbia paralias* L.
238. *Euphorbia peplus* L.
239. *Euphorbia plucherrina* Willd
240. *Euphorbia retusa* Forssk.
241. *Euphoirbia terracina* L.
242. *Fagonia arabica* L.
243. *Fagonia bruguieri* DC.
244. *Fagonia cretica* L.
245. *Fagonia glutinosa* Del.
246. *Fagonia mollis* Del.
247. *Fagonia parviflora* Boiss.
248. *Fagopyrum esculentum* L.
249. *Farsetia aegyptia* Turra
250. *Ficus benghalensis* L.
251. *Ficus benjamina* L.
252. *Ficus elastica* Roxb.
253. *Ficus platyphylla* Del.
254. *Fuymaria densiflora* DC.
255. *Fumaria judaica* Boiss.
256. *Glacium flavum* Crantz
257. *Glossostemon bruguieri* Desf.
258. *Glycyrrihiuza glabra* L.
259. *Gossypium barbadense* L.
260. *Haemanthus multiflorus* Martyn
261. *Haloxylon salicornicum* auct .non Bunge
262. *Haplophyllum tuberculatum* (Forssk) A.Juss.
263. *Hedera helix* L.
264. *Helianthus annuus* L.
265. *Heliotropium digynum* Forssk.
266. *Hemerocallis aurantica*
267. *Hibiscus sabdariffa* L.
268. *Hippeastrum vittatum* L'Her.
269. *Hyoscyamus albus var. desertorum*
270. *Hyoscyamus muticus* L.
271. *Hyoseris lucida* L.
272. *Hypecoum aegyptiacum* (Forssk.) Asch & Schweinf.
273. *Hyossopus officinalis* L.
274. *Inula crithmoides* L.
275. *Iochioma lanceolatum*
276. *Iphiona mucronata* (Forssk) Asch & Schweinf
277. *Iphiona scabra* DC.
278. *Ipomoea batatas* (L.)Lam.
279. *Iris germanica* L. *var. alba*
280. *Jasminium mesnyi* Hance
281. *Jasminum grandiflorum* L.
282. *Jasminum sambac* (L.)Aiton
283. *Jasonia montana* (Vahl) Botsch.
284. *Jatropha curcas* L.
285. *Joannesia principes* Veil.
286. *Khaya senegalensis* A. Juss.
287. *Lactuca saligna* L.
288. *Lagenaria breviflora* Robert.
289. *Lagenaria siceraria* (Mol.) Standl.
290. *Lantana camara* L.
291. *Launea mucronata* Forssk
292. *Launaea nudicaulis* (L.) Hook.f.
293. *Launaea resedifolia* (Willd.) Kuntze
294. *Launaea spinosa* Forssk.
295. *Launaea tenuiloba* Boiss.
296. *Laurus nobilis* L.
297. *Lavandula officinalis* L.
298. *Lawsonia inermis* L.
299. *Ligustrum ovalifolium* Hassk.
300. *Limonium sinuatum* Mill.
301. *Limonium tubiflorum* (Del.) Ktze.
302. *Linum usitatissimum* L.
303. *Lotus arabicus* L.
304. *Lotus creticus* L.
305. *Lupinus termis* Forssk.
306. *Lycium shawii* Roem & Sch.
307. *Lycopersicum prumiforme* Miller
308. *Lygos raetam* (Forssk.) Heywood
309. *Magnolia grandiflora* L.
310. *Majorana hortensis* Moench
311. *Malabaila suaveolens* Coss.
312. *Malva arborea* L.

313. *Malva rotundifolia* Desf.
314. *Malva sylvestris* L.
315. *Malva viscosus arborea* L.
316. *Marrubium alysson* L.
317. *Mathiola livida* (Del.) DC.
318. *Matricaria chamomilla* L.
319. *Medicago sativa* L.
320. *Melia azedarch* L.
321. *Melilotus indica* (L.) All. var. *tommasinii* Jord.
322. *Melilotus siculus* Turra
323. *Mentha piperita* L.
324. *Mentha pulegium* L.
325. *Mentha spicata* L.
326. *Mentha viridis* L.
327. *Moltkiopsis ciliata* Johnst.
328. *Montanoa bipinnatifida* Kock.
329. *Murraya exotica* L.
330. *Muscari comosum* Miller
331. *Myrtus communis* L.
332. *Narcissus tazetta* L.
333. *Nerium oleander L.*
334. *Nicotiana glauca* R.C Grah.
335. *Nicotiana rustica* L.
336. *Nicotiana tabacum* L.
337. *Nigella sativa* L.
338. *Nitraria retusa* (Forssk) Asch.
339. *Nymphaea lotus* L.
340. *Ocimum basilicum* L.
341. *Ocinum canum* Sims.
342. *Ocimum gratissimum* L.
343. *Ocimum rubrum* L.
344. *Ononis vaginalis* Vahl.
345. *Opuntia ficus-indica* L.
346. *Orchradenus baccatus* Del.
347. *Origanum majorana* L.
348. *Oropordum alexandrinum* Boiss.
349. *Oryza sativa* L.
350. *Oxandra xylopioides* Diels
351. *Pancratium maritimum* L.
352. *Pancratium sickenbergerei* Asch. & Schweinf. ex Boiss.
353. *Panicum turgidum* Forssk.
354. *Papaver argemone* L.
355. *Papaver bracteatum* L.
356. *Papaver dubium* L.
357. *Papaver nudicaule* L.
358. *Papaver orientale* L.
359. *Papaver rhoeas* L.
360. *Papaver somniferum* L.
361. *Pastinaca sativa* L.
362. *Peganum harmala* L.
363. *Pelargonium fragrans* Willd.
364. *Pelargonium graveolens* L'Hér.
365. *Pergularia tomentosa* L.
366. *Petroselinum sativum* Hoffm.
367. *Phlomis aurea* Decne.
368. *Phoenix dactylifera* L.
369. *Physalis peruviana* L.
370. *Phytolacca americana* L.
371. *Pimenta acris* Kostel.
372. *Pimenta dioica* (L.) Merr.
373. *Pimpinella anisum* L
374. *Pituranthus triradiatus* (Hochst.) Asch. & Schweinf.
375. *Pituranths tortuosrus* (Desf.) Benth.
376. *Plantago albicans* L.
377. *Plantago coronopus* L.
378. *Plantago crypsoides* Boiss.
379. *Plantago cylindrica* Forssk.
380. *Plantago major* L.
381. *Plantago notata* Lag.
382. *Plantago ovata* Forssk.
383. *Plantago psyllium* L.
384. *Plumbago capenis* Thunb.
385. *Plumeria rubra* L.
386. *Polianthus tuberosa* L.
387. *Polycarpaea repens* Forssk.
388. *Polycarpon alsinifolium* (Biv.) DC.
389. *Polygonum salicifolium L.*
390. *Portulaca oleracea* L.
391. *Pseudorlaya pumila* (L.) Murb.
392. *Psidium guajava* L.
393. *Pulicaria crispa* Forssk.
394. *Pulicaria dysenterica* L.
395. *Pulicaria incisa* (Lam.) DC.
396. *Pulicaria undulata* L.
397. *Ranunculus sativus* L.
398. *Ranunculus sceleratus* L.
399. *Rauwolfia canescens* L.
400. *Reseda pruirosa* Del.
401. *Reaumuria hirtella* Jaub & Sp.
402. *Ricinus communis* L.
403. *Rosa rugosa* Thunb.
404. *Rosmarinus officinalis* L.
405. *Rubia tinctorium* L.
406. *Rumex confertus* Willd.
407. *Rumex crispus* L.
408. *Rumex dentatus* L.
409. *Rumex obtusifolius* L.
410. *Ruscus hypoglossum* L.
411. *Ruta graveolens* L.
412. *Saccarum officinarum* L.
413. *Salix babylonica* L.
414. *Salix safsaf* L.
415. *Salix tetrasperma* Roxb.
416. *Salvadora persica* L.
417. *Salvia aegyptiaca L.*
418. *Salvia farenaceae* Benth.
419. *Salvia lanigera* Poir.
420. *Salvia officinalis* L.
421. *Salvia triloba* L.
422. *Salvia verbenaca* L.
423. *Sambucus nigra* L.

424. *Sansevieria cylindrica* Bojer.
425. *Santolina chamaecyprissus* L.
426. *Saponaria officinalis* L.
427. *Schinus molle L.*
428. *Schinus terebinthifolius* Radd.
429. *Scrozonera alexandrina* Boiss.
430. *Scrophularia desertii* Del.
431. *Securinega suffruticesa* Rehd.
432. *Senecio coronopifolius* Desf.
433. *Senecio desfontainei* Druce
434. *Senecio vulgaris* L.
435. *Sequoia sempervirens* Endl.
436. *Sesbania aegyptiaca* Pers.
437. *Silene succulenta* Forssk.
438. *Silene villosa* Forssk.
439. *Solenostemma argel* (Del.) Hayne
440. *Solanum aviculare* Forst.
441. *Solanum laciniatum* Ait.
442. *Solanum macranthum* Dun.
443. *Solanum macrocarpum* Pers.
444. *Solanum melongena* L.
445. *Solanum nigrum* L.
446. *Solanum oleraceum* L.
447. *Solanum pseudocapsicum* L.
448. *Solanum sodomeum* L.
449. *Sonchus macrocarpus* Boulos & Jeffrey
450. *Sophora flavexens* Ait.
451. *Sophora japonica* L.
452. *Sophora secundiflora* Ortega
453. *Sterculia diversifolia* Don
454. *Sylibum marianum* (L.) Gaertn.
455. *Tabebuia guayacan* Hemsl.
456. *Tabebuia pentaphylla* (L.) Hemsl.
457. *Tabernaemontana coronaria* Willd.
458. *Tabebuia chrysotricha* (Mart. ex DC.) Standl.
459. *Tabebuia argentea* (Bur.& Schum.) Britt.
460. *Tagetes erecta* L.
461. *Tanacetum santolinoides* (DC.) Feinbr.
462. *Tecoma stans* (L.). HBK
463. *Terminalia chebula Retz.*
464. *Teucrium polium* L.
465. *Thea sinensis L.*
466. *Thymelea hirsuta L.*
467. *Thymus bovei Benth .*
468. *Thymus capitatus* (L.) Hoffmgg. & Link
469. *Tithonia diversifolia* Gray
470. *Tradescantia bracteata* Small
471. *Tribulus alatus* L.
472. *Trifolium alexandrinum* L.
473. *Trigonella foenum-graecum* L.
474. *Trigonella maritima* Del.
475. *Trigonella stellata* Forssk.
476. *Urginea maritima* L.
477. *Urginea maritima var. pancratium* (Steinh.) Bak.
478. *Urospermum picroides* L.
479. *Valeriana officinalis* L.
480. *Varthemia montanas* (Vahl.) Boiss.
481. *Verbena officinalis* L.
482. *Vernonia amygdalina* Del.
483. *Vicia calcarata* Desf.
484. *Vicia faba* L.
485. *Vicia sativa* L.
486. *Vinca rosea* L.
487. *Vitex agnus-castus* L.
488. *Withania somnifera* L.
489. *Wrightia coccinea* Sims.
490. *Xanthium occidentale* Bert.
491. *Xanthium pungens* Wahl.
492. *Xanthium spinosum* L.
493. *Xylopia aethiopica* A.Rich.
494. *Zilla spinosa* (Turra) Prantl
495. *Ziziphus spina-christi* L.
496. *Zygophyllum album* L.
497. *Zygophyllumm coccineum* L.
498. *Zygophyllum decumbens* Del.