Plant diversity in Marmarica (Libya & Egypt) : a catalogue of the vascular plants reported with their biology, distribution, frequency, usage, economic potential, habitat and main ecological features, with an extensive bibliography

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ABSTRACT

LE HOUÉROU, H. N. (2004). Plant diversity in Marmarica (Libya and Egypt): a catalogue of the vascular plants reported with their biology, distribution, frequency, usage, economic potential, habitat and main ecological features, with an extensive bibliography. *Candollea* 59: 259-308. In English, English and French abstracts.

Marmarica, as it is called since antiquity, is the natural region located between the Jebel Lakhdar of Cirenaica and the Nile Delta over an E-W distance of 750 km. It covers an area of 220000 km^2 along the southern shore of the Mediterranean Sea between longitudes 23°E and 30°E. It is a typically Mediterranean arid zone in the northern fringe along the shoreline, shifting slowly to absolute desert southwards on a depth of ca. 300 km. Mean annual rainfall is slightly below 200 mm in the northernmost sites dropping to 10 mm at the oases of Jarabub and Siwa 300 km further south. The flora belongs to the Ibero-Maghribian entity of the Mediterranean phytogeographic region with some Saharo-Arabian and Irano-Turanian elements. It includes an overall 1015 vascular taxa representing 48% of the Egyptian flora and 53% of the Libyan flora. Eighteen taxa are endemic to the region. Flora and vegetation are very homogenous and strongly influenced by 3 types of farming: 1) irrigation between Alexandria and El Alamein (ca. 100 km W of the Nile); 2) runoff farming in the valleys along the wadis of the coastal plains with episodic mixed dry farming of cereals; 3) grazing on fallow, stubble and the depleted steppes on the interfluves. Vegetation and flora are strongly influenced by the impact of man: virtually all of the pristine steppe vegetation still present, and mapped in the years 1960's have now been cleared for opportunistic farming. This situation has heavily imprinted on the flora and vegetation now dominated by «weeds». The present study presents a catalogue of the native taxa reported in both the Libyan and Egyptian part of Marmarica with their biology, abundance, frequency of occurrence, geographic distribution, economic and grazing potential, utilization and ecological requirement traits in terms of climate and soils. An extensive bibliography is provided.

RÉSUMÉ

LE HOUÉROU, H. N. (2004). Diversité botanique de la Marmarique (Libye et Egypte): catalogue des plantes vasculaires inventoriées avec leur biologie, répartition, fréquence, usage économique, habitat et caractéristiques écologiques principales, suivi d'une bibliographie étendue. *Candollea* 59: 259-308. En anglais, résumés anglais et français.

La région naturelle de Marmarique, connue sous ce nom depuis l'Antiquité, est située entre le Jebel Lakhdar de Cyrénaïque et le delta du Nil sur une distance O-E de 750 km. Elle couvre une aire de 220000 km^2 le long de la côte sud de la Méditerranée entre les longitudes 23°E et 30°E. Elle se présente comme une zone aride typiquement méditerranéenne dans sa partie nord le long de la côte, évoluant progressivement vers un désert absolu sur une distance d'environ 300 km. La pluviosité

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moyenne annuelle est légèrement au-dessous de 200 mm dans les sites situés le plus au nord pour descendre progressivement à 10 mm dans les oasis de Jaraboub et de Siwa, situées à 300 km plus au sud. La flore appartient à l'entité phytogéographique ibéro-maghrébienne de la région botanique méditerranéenne avec quelques éléments saharo-arabiques et irano-touraniens. Elle comprend un total de 1015 taxa vasculaires représentant 48% de la flore égyptienne et 53% de la flore libyenne. Dix-huit taxa sont endémiques de la région. La flore et la végétation sont zonalement très homogènes et fortement influencées par la culture. Les cultures sont de trois types: 1) cultures irriguées d'Alexandrie à El Alamein à environ 100 km à l'O du Nil; 2) cultures arbustives avec utilisation du ruissellement le long des oueds dans la plaine côtière; 3) cultures sèches épisodiques de céréales avec des jachères pâturées sur les interfluves jusqu'à environ 50 km au S de la côte, là où le sol le permet. Les sols squelettiques superficiels à croûte calcaire constituent un pâturage généralement très dégradés. La végétation originelle, encore présente dans les années 1960, a maintenant été défrichée au profit de cultures céréalières opportunistes. Cette situation se répercute sur la flore et la végétation maintenant largement dominées par des «mauvaises herbes». La présente étude est un catalogue des taxa présents en Marmarique tant libyenne qu'égyptienne, avec des indications sur leur biologie, répartition géographique, fréquence, et leurs principales exigences écologiques en matière de climat et de sols, leur utilisation actuelle, leur potentiel économique et pastoral. Une bibliographie étendue est fournie.

KEY-WORDS: Mediterreanean – Arid lands – Land-use – Steppe – Rangeland – Desert – Sahara – Libya – Egypt – Phytogeography – Flora – Vegetation – Ethnobotany

1. Introduction: the geographic setting

The geographic natural region known since antiquity as Marmarica encompasses the land located immediately south of the Mediterranean Sea between longitudes 23° and 30°E, i.e. from 40 km E of Derna and Cyrenaïca's highlands to Alexandria and the Nile Delta. The region extends from the shore line (lat 31° to 32.5°N) to the oases of Jarabub and Siwa (ca. lat 29°N) some 300 km further south in the inland desert (Map 1).

Marmarica is a very homogenous region on many accounts from the stand points of climate, geology, geomorphology, flora and vegetation. Marmarica thus appears as a self contained ecologic and biogeographic unit split in two uneven parts by the political border between Libya and Egypt. The region as a whole covers ca. 220000 km^2, $^2/_3$ of which are in Egypt and $^1/_3$ in Libya. A detailed zoning is shown in § 4.2, 'area of distribution'.

From the geomorphic standpoint one may distinguish:

The shoreline generally covered with marine white dunes lying on a upper Pliocene and Holocene more or less consolidated beach of *Strombus bubonius.* The width of the dune zone may reach one km and locally more. Their height may reach 20 m and locally more. Some salt marshes may interrupt the duney offshore lines. The salt marshes are generally tied to the lower reaches of the main wadis. The area covers an area of some 750 km^2.

The coastal plain, with its valleys and wadi terraces extends from the dune zone to the first escarpment of the inland plateau. It is mainly formed of silty soils, locally moderately saline, sandier to the east, and generally cultivated either to cereals or to tree crops: fig-trees, olive, almond, grapes, date palm, etc. the width of the coastal plain varies from ca. 1 km to ca. 10 km. In the coastal plain also emerge a number (1 to 5, usually 3) ridges parallel to the shoreline made of soft oolithic Tyrrhenian (5000-15000 yrs old) sandstone/limestone, very much in demand as building material and heavily quarried between Borg et Arab and El Alamein. This Tyrrhenian oolithic calcareous sandstone bright white when fresh, turning to an ivory colour when exposed or wheathered, is common along the southern shores of the south eastern Mediterraneran from Cap Bon in Tunisia to S Turkey and everywhere popular as building material. The area covered by the coastal plain is of ca. 3750 km^2.

The inland plateau is made of Mio-Pliocene outcrops of sandy limestone interspred with sandstones, shales and occasionally unconsolidated interbedded sands (CONANT & GUDARZI, 1964). Some upper Miocene limestones may be fairly saline containing as they do 1-5% NaCl. This is quite unusual as the conditions of sedimentology of $CaCO_3$ and NaCl are normally not compatible. The salinity of these limestones is thus probably secondary, i.e. post-depositional. These saline limestones, wherever they outcrop directly, are generally covered with a halophytic steppe, often monospecific populations of *Suaeda pruinosa* and sometimes with *Limonium pruinosum* and/or *L. tubiflorum* as co-dominant companions. This is also a very unusual fact of typical perennial halophytic vegetation straight on well drained hard limestone geologic outcrops, with, of course, the exception of Triassic and other diapirs on which they are commonplace, but there are no diapirs in the region.

The inland plateau is generally covered with an upper and mid-Pleistocene calcrete 30-50 cm thick, very hard, salmon cloured with many *Helix* spp. inclusions, hence the often given name of «salmon crust of Helicideae» by the French speaking geologists and soil scientists. This calcrete is often quarried or bulldozed as a building material and/or for road construction.

One may distinguish there levels of the inland plateau raising respectively to ca. 50, 100 and ca. 200 m a.s.l., then softly declining southward (ca. 0.3% slope) to sea level or slightly below towards the oases of Siwa and Jarabub, and to -134 m at the bottom of the Qattara depression. The highest level is reached towards 50 km south of the shoreline. The inland plateau occupies an area of ca. 195 500 km^2.

The Qattara depression extends to some 25 000 km^2 in the SE corner of the region north east of Siwa to the Fayoum depression from sea level down to -134 m, and -40 m in the Fayoum. The depression is covered with dry salt marshes and locally with halophytic vegetation (*Arthrocnemum, Atriplex, Chenolea, Halocnemum, Halopeplis, Imperata, Limonium, Limoniastrum, Nitraria, Phragmites, Salicornia, Sarcocornia, Salsola, Seidlitzia, Suaeda,* etc.).

The climate is arid Mediterranean on the north to 50 km from the shoreline (REGNER, 1997), hyper-arid Mediterranean from 50 to 100 km southwards and Eremaean-Mediterranean (the scanty rain always occur in the winter season) further south. Details are shown in the ombrothermal digrammes (LE HOUÉROU, 1989) and in the data and bioclimatic classification (FANTOLI, 1952; MAGGAZINI, 1963; FATHY & MEHANNA, 1980; LE HOUÉROU, 1984; AYYAD & VAN KREULEN, 1987; LE HOUÉROU, 1989; LE HOUÉROU, 1997b). The highest mean annual rainfall is slightly below 200 mm (Alexandria, Dekheila, Ras el Hekma, Ftaiah, Martuba) to the north dropping to 10 mm in Jarabub and Siwa.

2. The sources

The present catalogue results from the following information and data base:

1. Durand and Baratte's *Plantae Libycae Prodromus* (DURAND & BARATTE, 1910) contains a synoptic table with. 303 taxa from the region called Turkish Marmarica (i.e. Libyan Marmarica).
2. The *Student's flora of Egypt* by Vivi Täckholm (TÄCKHOLM, 1974) includes 475 references to the flora of Marmarica, to which I added 155 taxa.
3. The *Flora of Egypt. Checklist* by L. Boulos (BOULOS, 1995) contains reference to 960 taxa from Marmarica, to which I added 30 taxa.
4. The *Flora of Libya* (ALI & JAFRI, 1976-1977; JAFRI & EL-GADI, 1977-1989).
5. The *Preliminary check list of the Libyan flora* by H. G. Keith (KEITH, 1965) and *Check list of the Libyan flora* by L. Boulos (BOULOS, 1977, 1979).

6. My book on the bioclimatology and biogeography of the arid steppeland north of the Sahara (LE HOUÉROU, 1995) lists 1178 species and subspecies of vascular plants in the Egyptian and Libyan steppes.
7. Data from the 146 scientific publications on the vegetation of NW Egypt, listed in the bibliography; many of these phytosociological surveys provide useful and detailed information on plant distribution in Egyptian Marmarica; all of them are not quoted in the text, tables and figures, they are nonetheless listed as a potential source of information and possible starting points for further investigations.
8. My own unpublished field data which include 250 site-surveys ("relevés" in the phytosociological jargon) in Egyptian Marmarica from 1988 to 1998 and 300 other relevés in Libyan Marmarica from 1964 to 1966 and from1981 to 1983, which makes a total of 550 site plant-lists for overall Marmarica.
9. A third check list of the Libyan flora is not yet published.

3. General

The following catalogue identifies 1009 species present in Marmarica from Alexandria to Ras el Tin (40 km E of Derna), on a depth of 300 km from the Mediterranean shore inland. There are, in addition, some 6 subspecies, i.e. a total of 1015 epithets of vascular plants (there are only 2 species of ferns and 3 gymnosperms).

The close concurrence between BOULOS (1995) and LE HOUÉROU (1995), and both of them with the following catalogue ought to be underlined.

As suggested above, the following catalogue identifies 1015 taxa; of these, some:

- 534 taxa (53% of the flora) have virtually no grazing value.
- 476 (47% of the flora) are weeds of unknown utilization to me.
- 389 (38% of the flora) have a mediocre grazing value (scoring 1 to 3 on the evaluation scale).
- 96 (10% of the flora) constitute good grazing taxa (scoring 3 to 5 on the evaluation scale).
- 12 (1% of the flora) are excellent fodder taxa, i.e. actual or potential fodder crops, including some shrubs.
- 47 (5% of the flora) are toxic to stock (see § 4.2, 'grazing value').
- 98 (10% of the flora) are shrubs and trees (see § 4.2, 'biological type').
- 118 (12% of the flora) are halophytes.
- 177 (17% of the flora) are psammophytes.
- 104 (10% of the flora) are hygrophytes.
- 33 (3% of the flora) are hydrophytes.
- 56 (6% of the flora) are nitratophytes.
- 55 (5% of the flora) are chasmophytes.
- 18 (2% of the flora) are parasites or hemi-parasites.
- 138 (14% of the flora) have an actual or potential medicinal usage; for details on these medicinal usages (see BOULOS, 1983).

The systematic order, taxonomy and synonymy utilized follow BOULOS (1995) with few exceptions e.g. *Rhamnus lycioides* subsp. *oleoides* in Boulos is *R. oleoides* here, since, rightly or

wrongly, opposite to Boulos, I consider this taxon as quite a valid species on its own right. Some species have been added (e.g. *Helianthemum kahiricum* and *Periploca angustifolia*) and others removed (e.g. *Medicago sativa*) from the Boulos checklist. Some 12 species are recorded herein for the first time in Marmarica, e.g. *Acacia ehrenbergiana* «Seyal», recently reported by a bedouin from Wadi Iskanderia, ca. 150 km NE of Siwa (100 km E of Bir Nousf) (G. S. Mikhiel, *pers. comm.*). I should specify that I did not see this tree myself. I am only reporting information collected by someone else, which seemed plausible to me, from the description of the tree, of its fruit, and from the vernacular name given to it by nomads. This information requires confirmation, this is why I report it herein.

4. Attributes Coding

4.1 General

Table 3 shows the rating of the 92 parameters mentioned below, in addition to the scientific epithets and vernacular names. They are distributed in 12 groups in Table 3.

1. & 2. Scientific name (genus, species & subspecies).
3. Botanic family.
4. Local vernacular names are, to a large part, taken in TÄCKHOLM (1974), BOULOS (1983) and LE FLOC'H (1983), and from BOULOS & EL HADIDI (1984), with some additions and corrections from my own field experience, transliteration and transcription follow the mentioned sources.
5. Frequency status.
6. Area of distribution in 5 parallel belts from the Mediterranean shore to some 150 km inland, i.e. from a mean annual rainfall (MAR) belt of ca. 150 mm to less than 25 mm, then a sixth zone between 150 and 300 km from the shoreline, corresponding to the Eremaean zone or true desert with 25 to 10 mm of MAR.
7. Biological type.
8. Life span.
9. Habitat.
10. Utilization.
11. Grazing value on an evaluation scale.
12. Biological, ecological and other miscellaneous remarks.

4.2 Codes

Below are presented explanations of codes of Table 3 for 'frequency', 'area of distribution', 'biological type', 'life span', 'habitat', 'utilization', 'grazing value' and 'remarks' respectively.

Frequency status

CC = Very common
C = Common
FC = Fairly common
FR = Fairly rare
R = Rare
RR = Very rare

This rating results from TÄCKHOLM (1974), from the many phytosociological studies published and mentioned in the bibliography and also from my own field notes.

Area of distribution

I = 0-2 km from Mediterranean shoreline: ca. 750 km^2
II = 1-10 km inland steppe: ca. 3750 km^2
III = 10-25 km inland steppe: ca. 9375 km^2
IV = 25-50 km inland desert: ca. 18750 km^2
V = 50-150 km inland hyper-arid zone: ca. 75000 km^2
VI = 150-300 km inland Eremaean zone: ca. 112500km^2 (including the Qattara depression: 25000 km^2)

The total area is ca. 220125 km^2.

Biological type

C = Crassulescent (= fleshy halophyte)
CH = Crassulescent (= fleshy herb)
Cl = Climber
F = Fern
Fr = Frutescent (= herbaceous with a woody base)
H = Herbaceous (forb & grass)
Par = Parasite & hemi-parasite
S = Shrub
CS = Crassulescent shrub (= fleshy halophyte)
DS = Dwarf shrub (h < 50 cm)
HS = Tall shrub (h > 50 cm)
TS = Trailing shrub
Su = Succulent (= fleshy glycophyte)
T = Tree (h > 3 m)

Life span

A = Annual (= therophyte)
B = Biennal
P = Perennial
Sh = Short-lived perennial (= pauciennial)

Habitat

Bra = Brackish water
Can = Canals
Cli = Cliffs
Coa = Coastal (= littoral)
Con = Continental
Cul = Cultigene, rainfed crops and fallows
Des = Desert (MAR < 100 mm)
Dne = Dunes
Frw = Fresh (sweet) water
Irr = Irrigated land
Rge = Rangeland
Roc = Rocks
Run = Runnels

Sea = Open sea water
Sha = Shallow soils
Snd = Sandy soils
Slt = Salt marshes
Ste = Steppe
Wad = Wadis & topographic depression
Wel = Wells
Wet = Wetland
Wld = Wasteland

Utilization
Cro = Crop
Fen = Fencing (live)
Fsh = Fodder shrub
Fue = Fuel wood
Gra = Grazing
Han = Handicraft
Med = Medicinal & herbal
Non = None
Orn = Ornamental
Sbi = Sand binding
Unk = Unknown
Veg = Vegetable, salad, fruit, human food
Wbr = Windbreak

Grazing value
T = Toxic
0 = No value
1 = Poor
2 = Mediocre
3 = Fair
4 = Good
5 = Excellent (fodder crops, incl. shrubs)

Remarks
Cha = Chasmophyte (craks, crevices, diaclases)
End = Endemic (restricted to Marmarica)
Ere = Eremophyte (= desert plant)
Fce = Fencing material
Fod = Fodder (actual or potential)
FoRe = Forest relict
Gly = Glycophyte (= non tolerant to salinity in generally halophytic groups)
Hal = Halophyte (salt - tolerant)
Hyd = Hydrophyte (living in free water)
Hyg = Hygrophyte (living in wet soils)
Nat = Naturalized xenophyte
Nit = Nitratophyte (on nitrates-rich soils)
Pel = Pelophyte (on clay soils)

Phr = Phreatophyte (on water table)
Psa = Psammophyte (on sandy soils)
Sil = Limonophyte (on silty/loamy soils)
SO_4 = Gypsophyte (on gypsic soils)
Sum = Summer growing
Tac = Tachytherophytes (very short lived annuals: Aacheb – Ghizzu)
Wee = Weed (in range or crop)

4.3 Interpretation of the Plant Biodiversity Table (Table 3)

4.3.1 Analysis of the flora

Table 3 contains:

86 families of vascular plants, out of a total of 121 for the overall flora of Egypt (71%) and 168 (51%) for Libya.

451 genera out of an overall 742 (61%) for Egypt and 845 (53%) for Libya.

1015 species and subspecies which contain 777 dicots, 233 monocots, 3 gymnosperms and 2 ferns.

The overall vascular flora of Egypt includes 2121 taxa; the flora of Marmarica thus represents nearly half the Egyptian flora in terms of taxa numbers (47.9%). The flora of Libya includes 1930 taxa (2200 with the xenophytes); Marmarica as a whole thus represents the equivalent of some 53% of the country's flora. But this is not a realistic account since the flora of Libyan Marmarica does not exceed 400 taxa and thus the Libyan Marmarica flora is only 21% (= 400/1930) of the national vascular flora.

The largest families are as follows for both Marmarica and Egypt:

Table 1. – Family Richness

Families	Libya		Marmarica		Egypt	
	Nr of spp.	%	Nr of spp.	%	Nr of spp.	%
Compositae	277	14.4	128	12.6	230	10.8
Gramineae	238	12.3	130	12.8	277	13.1
Leguminosae	210	10.9	104	10.2	233	11.0
Cruciferae	116	6.0	62	6.1	102	4.8
Chenopodiaceae	64	3.3	51	5.0	77	3.6
Boraginaceae	53	2.7	32	3.2	55	2.6
Caryophyllaceae	66	3.4	41	4.0	85	4.0
Umbelliferae	85	4.4	30	3.0	51	2.4
Cyperaceae	28	1.5	25	2.5	44	2.1
Convolvulaceae	18	0.9	22	2.2	48	2.3
Labiatae	64	3.3	16	1.6	55	2.6
Scrophulariaceae	38	2.0	13	1.3	62	2.9
Total	1257	65.1	654	64.4	1319	62.2

The 27 larger genera in taxa numbers are shown in Table 2.

Table 2. – Number of taxa in the major genera

Genera	Nr of spp.		
	Libya	Marmarica	Egypt
Euphorbia	19	19	42
Medicago	21	16	18
Plantago	15	14	18
Allium	9	13	22
Silene	19	13	24
Trifolium	22	13	19
Erodium	16	12	14
Convolvulus	16	12	23
Astragalus	29	11	32
Atriplex	14	11	15
Centaurea	8	10	16
Cyperus	6	10	23
Helianthemum	19	10	23
Lotus	17	10	12
Salsola	12	10	20
Reseda	7	9	14
Trigonella	8	9	11
Amaranthus	4	8	11
Bromus	9	8	11
Fumaria	8	8	16
Persicaria	1	8	8
Bellevalia	1	7	8
Echium	13	7	12
Limonium	13	7	7
Scirpus	1	7	7
Suaeda	7	7	9
Vicia	11	7	9
Total n	325	276	444
% of flora	17	27	21

The above tables shows that the flora of Marmarica is, by and large, similar to that of the two countries as a whole in its proportions.

It is worth noting that genera having many taxa of hygrophytes or of halophytes are particularly well represented in Egyptian Marmarica:

Hygrophytes	Halophytes
Cyperus	*Atriplex*
Persicaria	*Limonium*
Scirpus	*Salsola*
Trigonella	*Suaeda*

The same remark applies to genera with many weeds, nitratophytes and wasteland taxa:

Hygrophytes	Halophytes
Allium	*Euphorbia*
Amaranthus	*Fumaria*
Bellevalia	*Medicago*
Bromus	*Reseda*
Centaurea	*Silene*
Echium	

In terms of endemics, BOULOS (1995) recognizes 61 endemic taxa in Egypt of which over half are from Sinaï. Marmarica is poorer in this respect since we only record 19 species and subspecies:

Allium blomfeldianum **E**	*Lepidium aucheri* **E** & **L**
Allium desertorum **E** & **L**	*Nigella arvensis* subsp. *taubertii* **E** & **L**
Allium mareoticum **E** & **L**	*Pancratium arabicum* **E** & **L**
Allium myrianthum **E**	*Silene fruticosa* **E** & **L**
Carduncellus mareoticus **E** & **L**	*Silene biappendiculata* **L**
Echinops taeckholmianus **E**	*Teucrium brevifolium* **E** & **L**.
Ebenus armitagei **E** & **L**	*Verbascum letourneuxii* **E** & **L**
Ferula marmarica **E** & **L**	*Viola scorpiuroides* **E** & **L**
Helianthemum sphaerocalyx **E**	*Zilla spinosa* subsp.*biparmata* **E** & **L**
Herniaria cyrenaica **L**	

E = Egyptian endemics; **L** = Libyan endemics.

As one can see most endemics are shared between the two sub-regions.

Microendemism (varieties are not considered in Table 3) is represented by the following:

- *Centaurea conglomerata* var. *claviceps*, *Pituranthos tortuosus* var. *virgatus* (= var. *arcuatus* Le Houérou).
- *Vicia calcarata* var. *marmarica*.

4.3.2 Floristic similarities and differences between Libyan and Egyptian Marmarica

There are some 24 taxa from the Libyan side of Marmarica that have not been reported from the Egyptian part:

Juniperus phoenicea, Paretaria lusitanica, Blitum virgatum, Atriplex mollis, Diplotaxis simplex, Sinapis pubescens, Euphorbia bivonae, Olea europaea subsp. *oleaster, Phyllirea media, Pergularia tomentosa, Calotropis procera, Convolvulus supinus, C. tricolor, Cuscuta europaea, C. epithymum, Scaligera cretica, Borago officinalis, Ballota pseudo-dictammus, Rhanterium suaveolens, Asparagus stipularis, Castellia tuberculata, Melica minuta, Elytrigia cristata, E. juncea.*

These include a number of taxa linked to the Libyan semi-arid vegetation of Cyrenaïca which extends into nearby eastern Marmarica, for reason of vicinity. Conversely there are some 625 taxa present in Egyptian Marmarica which are lacking on the Libyan side of the political border.

These are mostly hydrophytes, hygrophytes, helophytes and wetland taxa tied to canals, ponds, irrigation and agriculture such as, but not limited to, the following 21 genera and 68 species:

Persicaria, 8 species, *Ranunculus*, 4 species, *Lythrum*, 3 species, *Ammania*, 4 species, *Centaurium*, 3 species, *Damasonium*, 1 species, *Najas*, 3 species, *Potamogeton*, 4 species, *Ruppia*, 2 species, *Juncus*, 6 species, *Leersia*, 1 species, *Spirodela*, 1 species, *Lemna*, 1 species, *Pseudowolfia*, 1 species, *Typha*, 1 species, *Carex*, 2 species, *Schoenus*, 1 species, *Fimbristylis*, 2 species, *Scirpus*, 7 species, *Eleocharis*, 3 species, *Cyperus*, 10 species.

4.3.3 Frequency status (see § 4.2 for abbreviations)

Frequency status	Nr of spp.	Subtotal	%	Subtotal
CC	204	489	20.1	48.2
C	168		16.6	
FC	117		11.5	
FR	81	525	8.0	51.8
R	269		26.5	
RR	175		17.3	
Total	1014	1014	100	100

The above table shows that rare taxa are slightly more numerous than the common ones, a fact that could be interpreted as one more evidence of the intensive anthropization of the Marmarica vegetation and flora.

4.3.4 Area of distribution (see § 4.2 for abbreviations)

Area of distribution	Nr of spp.	%	
I	33	3.3	Shoreline
I-II	683	67.3	Shore and coastal plain steppe
I-III	186	18.3	Shore and steppe
I-IV	22	2.2	Shore, steppe and desert
I-VI	10	1.0	Shore, steppe, desert and Eremian zone
II-III	10	1.0	Steppe
II-IV	21	2.1	Steppe and desert
II-VI	4	0.4	Steppe, desert & Eremian
III-IV	9	0.9	Desert and Eremian
III-VI	37	3.6	Desert and Eremian
Total	1015	100	

The above table shows that the shore and steppe zones include some 90% of the taxa while less than 10% are restricted to the desert. The shore and steppe zones include the newly irrigated land west of the Nile Delta (El Amariya, El Nobariya, El Hammam, Borg el Arab, etc.) which significantly contributes to this richness.

This zone includes some 148 taxa tied to irrigation and wetlands and free water areas (canals, ponds).

4.3.5 Biotypes (see § 4.2 for abbreviations)

Biological types	Nr of spp.	%
CH	26	2.5
Cl	11	1.1
F	2	0.2
Fr	50	4.8
H	816	79.0
Par	18	1.7
S	3	0.3
CS	25	2.4
DS	20	1.9
HS	37	3.6
TS	10	1.0
Su	6	0.6
T	9	0.9
Total	1033	100

The total number of taxa is superior to 1015, the codes being not mutually exclusive.

Biotypes are largely dominated by herbaceous taxa (CH, F and H = 82% of the flora), i.e. 844 taxa. Woody or partially woody taxa (T, S and Fr) represent only 6% of the flora, i.e. 62 taxa. The number of succulent taxa (fleshy glycophytes) is negligible (6). The same remark applies to climbers (11). Crassulescent shrubs (CS) and crassulescent herbs (CH) are halophytes; they number 51; half of them are *Chenopodiaceae*.

4.3.6 Life span (see § 4.2 for abbreviations)

Life span	Nr of spp.	%
A	575	54.9
B	27	2.6
P	433	41.3
Sh	13	1.2
Total	1048	100

The total number of taxa is superior to 1015, the codes being not mutually exclusive.

Annual taxa constitute 55% of the flora; most are herbaceous. Biennials and short lived perennials (pauciennials) represent an insignifant proportion (4%).

4.3.7 Habitat (see § 4.2 for abbreviations)

Habitat	Nr of spp.	%
Bra	3	0.2
Can	24	1.3
Cli	38	2.1
Coa	31	1.7
Con	4	0.2
Cul	453	25.5
Des	36	2.0
Dne	12	0.7
Frw	24	1.3
Irr	32	1.8
Rge	288	16.2
Roc	32	1.8
Run	24	1.4
Sea	5	0.3
Sha	33	1.9
Snd	75	4.2
Slt	64	3.6
Ste	145	8.2
Wad	47	2.6
Wel	4	0.2
Wet	96	5.4
Wld	308	17.3
Total	1778	100

The total number of taxa is superior to 1015, the codes being not mutually exclusive.

The above table shows that the area under study is a very disturbed one, subjected to heavy anthropogenic pressure, since the field and fallow taxa (Cul) represent 26% of the flora while those from wastelands (Wld and Wet) are 404 i.e. another 23%. The total of taxa from disturbed land thus represents 49% of the flora. This is further confirmed by the analysis of the features related to ecology and utilization as shown below. The taxa related to water and wet soils (Bra, Can, Frw, Irr & Wet) are 179, i.e. 10% of the flora.

4.3.8 Utilization (see § 4.2 for abbreviations)

Features	Nr of spp.	%
Cro	6	0.5
Fen	6	0.5
Fsh	10	0.9
Fue	31	2.7
Gra	410	36.3
Han	8	0.7
Med	138	12.2
Non	473	41.8
Orn	18	1.6
Sbi	5	0.4
Unk	5	0.4
Veg	17	1.5
Wbr	4	0.4
Total	1131	100

The total number of taxa is superior to 1015, the codes being not mutually exclusive.

A total of 478 taxa (42% of the flora) have no use or an unknown utilization; this confirms the data from subsection 4.3.7 on habitat; a substantial number of taxa, however, is utilized for grazing (410, i.e. 36% of the flora). A third trait has a significant number: the medicinal and herbal taxa (138, i.e. 12% of the flora).

4.3.9 Grazing value (see § 4.2 for abbreviations)

Parameter	Nr of spp.	Subtotal	%	Subtotal
T	47	581	4.6	57.3
0	534		52.7	
0-1	2	337	0.2	33.2
1	126		12.4	
1-2	44		4.3	
2	132		13.0	
2-3	33		3.3	
3	54	96	5.3	9.5
3-4	13		1.3	
4	13		1.3	
4-5	4		0.4	
5	12		1.2	
Total	1014		100	100

The above table shows that 96 taxa in the flora (9.5%) have a fair to good grazing value. Unfortunately most of those have become rare and none of them is dominant. It shows, however, that the flora has still, in principle, a good potential for range regeneration, if the land

were appropriately managed. The depletion is not yet beyond repair. The number of taxa with a low grazing value is 337 (33%) while those of no grazing value or toxic (poisonous) to stock are 581 (57%); this confirms, once more, the previous diagnosis: heavy anthropozoic pressure on disturbed and depleted land and vegetation.

4.3.10 Remarks and edaphic biological and ecological classification (see § 4.2 for abbreviations)

Traits	Nr of spp.	%
Cha	55	4.4
End	18	1.4
Ere	42	3.4
Fod	14	1.1
Gly	13	1.0
Hal	118	9.5
Hyd	33	2.6
Hyg	104	8.3
Nat	10	0.8
Nit	56	4.5
Pel	24	1.9
Phr	16	1.3
Psa	177	14.2
Sil	46	3.7
SO_4	23	1.8
Sum	21	1.7
Tac	39	3.1
Wee	439	35.2
Total	1248	100

The total number of taxa is superior to 1015, the codes being not mutually exclusive.

Again, the taxa from disturbed land are in large numbers (Wee + Nit = 495 i.e. 40% of the flora).

Psammophytes are in sizeable numbers (14% of the flora) and often make up the best grazing; hygrophytes and hydrophytes make up 11% of the flora and halophytes 10%.

Chasmophytes are not in large numbers but they have a important role as cliffs and rocks constitute a refuge where species that have become rare can find shelter and relative protection due to a relative site inaccessibility to man and stock. Many cliffs, runnels and wadis constitute sites of high biodiversity, where 50 to 100 ± rare species can be found over an area of 1000 m^2. Among those one may include:

Allium mareoticum
Anabasis oropediorum
Artemisia herba-alba
Capparis rupestris
Convolvulus oleifolius
Dactylis hispanica
Dichanthium annulatum
Echiochilon fruticosum
Euphorbia dendroides
Euphorbia bivonae
Euphorbia hierosolymitana
Fagonia cretica
Globularia arabica
Helianthemum sessiliflorum
Helianthemum sphaerocalyx
Hyparrhenia hirta
Lotus creticus
Micromeria nervosa
Moricandia nitens
Oryzopsis miliacea
Periploca angustifolia
Phagnalon rupestre
Phlomis fruticosa
Polygonum equisetiforme
Prasium majus
Rhamnus oleoides
Rhus tripartita
Silene fruticosa
Silene vulgaris
Thymus capitatus
Varthemia candicans
Verbascum letourneuxii
Ziziphus lotus

As mentioned above the large number of hydrophytes and hygrophytes reflects the presence in the eastern part of Marmarica of large irrigated zones, west of Alexandria.

Biodiversity has been herein evaluated on a 6 degrees scale according to the number of species recorded, in spring-time, over a standard sampling area of 2500 m^2 (¼ hectare or 0.6 feddan):

1: 0-10 - Depleted / Desertized
2: 10-20 - Poor / Low
3: 20-40 - Fair
4: 40-60 - Medium
5: 60-80 - Good
6: > 80 - Outstanding

5. Conclusions

Marmarica is a botanically rich province, considering its climatic aridity, since it harbours almost 50% of the Egyptian flora and 21% of the Libyan flora, similar in that to Sinaï (same size: 960 taxa). The 1015 Marmarican taxa represent the equivalent of 37% of the Saharan flora on only 2.6% of the surface area. Sinaï, however, due to its high mountains, has a higher rate of biodiversity, with 31 endemic taxa vs 18 for Marmarica. The same rationale applies to the comparison between Libyan, Marmarica and Cyrenaïca. The latter, due to its semi-arid and locally sub-humid bioclimate, its forest vegetation and its geographic isolation is an «island of endemicity» with some 100 endemic taxa and many micro-endemics, for an overall flora of ca. 900 taxa, i.e. 11% vs less than 3% for Egypt, ca. 1.8% for Marmarica as a whole, 4% for the Libyan part and 1.8% for the Egyptian part.

The Marmarica flora belongs to the Ibero-Maghribian sub-province of the Mediterraneo-steppic province within the Mediterranean phytogeographic region; some Irano-Turanian and Saharo-Arabian elements are also present due to the vicinity of these two phytogeographic entities but they represent less than 10% of the flora each, while the tropical element is almost absent. But Egyptian Marmarica, likewise the Nile valley and delta, harbours a large number of cosmopolitan and pluriregional taxa tied to irrigation. Conversely Libyan Marmarica where irrigation is scant does not possess this cosmopolitan flora. These facts were carefully analysed in detail in my opus of 1995 on the bioclimatology and phytogeography of the arid steppes N of the Sahara and its more recent synthesis in English language (LE HOUÉROU, 2001).

An important characteristic of the Marmarica flora and vegetation is their high degree of anthropization. Most pristine steppes (e.g. of *Artemisia herba alba*) are reduced to a few scattered plots of a few feddans (1 feddan = 1 acre = 4200 m^2). The only one of any size I could find had about 20 ha at ca. 12 km E of Sidi Barrani along the highway to Marsa-Matruh, it was only made possible by the initiative of a «conservative» settled farmer. According to the FAO (1970) range map «Shih» steppes still covered some 220000 hectares W of El Alamein in the late 1960's mostly between El Alamein and Fuka (187500 ha) with two nuclei S and E of Sidi Barrani (12500 ha) and SW of Negheila (22500 ha) (FAO, 1970; VAN DER VEEN & al., 1968).

Species that are sought for by man and livestock find (temporary?) refuge in cliffs, runnels, wadi cañons and rocks. If some action is to be taken for the restoration of biodiversity it should be a total protection (exclosure) of these refuges.

Many other conclusions could be drawn from Table 3 through the systematic study of correlations between a number of parameters such habitat and utilization, grazing value versus families and genera, etc. I leave this studies to the potential users of the present work. I have proposed a concrete programme of conservation to protect the relict species, as a potential source of drought-tolerant and potentially economic germplasm material for arid-land revegetation (LE HOUÉROU, 1998e). As feared, nothing happened after four years, in spite of the fact that the resources were available, from a IBRD loan, to carry out such a programme.

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Table 3. – Plant biodiversity table ***(see pp. 282-307)***

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Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Adiantum	capillus-veneris	Adiantaceae	Kozbaaritel Bir	FC	I-VI	F	P	Can-Wad	Orn	0	Hyg
Aizoon	canariense	Aizoaceae	Ghassool	CC	I-III	CH	A	Ste-Wld	Non	0	Nit
Aizoon	hispanicum	Aizoaceae	Ghassool	FR	I-II	CH	A	Ste-Wld	Non	0	Nit
Mesembryanthemum	crystallinum	Aizoaceae	Ghassool	CC	I-III	CH	A	Wld	Non	0	Hal
Mesembryanthemum	nodiflorum	Aizoaceae	Ghassool	CC	I-III	CH	A	Rge-Wld	Non	0	Nit
Opophytum	forskallii	Aizoaceae	Chassool	CC	I-III	CH	A	Slt-Wld	Non	0	Hal
Alisma	gramineum	Alimastaceae	–	FR	I-II	H	P	Can-Frw	Non	0	Hyd
Damasonium	alisma	Alimastaceae	–	FR	I-II	H	P	Can-Frw	Non	0	Hyd
Amaranthus	caudatus	Amaranthaceae	Fisa al Kalb	FC	I-II	H	A	Wld	Non	0	Wee
Amaranthus	cruentus	Amaranthaceae	Ruaaf	C	I-II	H	A	Wld	Non	0	Wee
Amaranthus	graecizans	Amaranthaceae	–	CC	I-II	H	A	Wld	Non	0	Wee
Amaranthus	retroflexus	Amaranthaceae	–	R	I-II	H	A	Wld	Non	0	Wee
Amaranthus	silvestris	Amaranthaceae	–	C	I-II	H	A	Wld	Non	0	Wee
Amaranthus	tricolor	Amaranthaceae	–	R	I-II	H	A	Wld	Non	0	Wee
Amaranthus	viridis	Amaranthaceae	Amarantoun	CC	I-II	H	A	Wld	Non	0	Wee
Cornulaca	monacantha	Amaranthaceae	Haad	FC	III-IV	CS	P	Des-Snd	Gra-Med	3	Gly-Psa
Narcissus	tazetta	Amaryllidaceae	Nargis	R	I-II	H	P	Wet-Wld	Med-Orn	T	Hyg
Pancratium	arabicum	Amaryllidaceae	Sawsan	R	I-II	H	P	Coa-Snd	Orn	T	Wee
Pancratium	maritimum	Amaryllidaceae	Sawsan	CC	I	H	P	Coa-Snd	Orn	T	Hal
Pistacia	atlantica	Anacardiaceae	Batoum	RR	I-III	T	P	Des-Wad	Fue-Gra-Med	2	Phr
Pistacia	lentiscus	Anacardiaceae	Za'roor, Batoum Derw	RR	I-II	HS	P	Cli-Wad	Fue-Gra-Med	2	Cha
Rhus	tripartita	Anacardiaceae	Areen, Gdari, Ern	RR	I-III	HS	P	Cli-Run-Wad	Fen-Gra-Med	2	Cha
Nerium	oleander	Apocynaceae	Defla	R	I-II	HS	P	Run-Wad	Med-Orn	T	Nat-Phr
Arisarum	vulgare	Araceae	Neirish	C	I-II	H	P	Rge-Wld	Med	T	Wee
Eminium	speculatum	Araceae	Erqueita	C	I-II	H	P	Wet	Non	0	Wee
Asclepias	fruticosa	Asclepiadaceae	Gheil	R	I-II	HS	P	Roc	Non	T	Cha
Calotropis	procera	Asclepiadaceae	Asclepiad.Krom Berry	FR	III-VI	HS	P	Irr	Non	T	Wee
Caralluma	europaea	Asclepiadaceae	Dahmous	R	I-III	Su	P	Rge-Roc	Non	0	Cha
Cynanchum	acutum	Asclepiadaceae	Ollaiq, Mudded	FC	I-III	H	P	Irr	Non	T	Wee
Pergularia	tomentosa	Asclepiadaceae	–	FC	I-III	Fr	P	Ste	Med	T	Wee
Periploca	angustifolia	Asclepiadaceae	Hallaba	FR	I-III	HS	P	Cli-Roc-Run	Fsh-Gra	4	Cha
Leontice	leontopetalum	Berberidaceae	Rakaf	R	I-II	H	P	Cul-Wld	Orn	0	Wee
Alkanna	lehmannii	Boraginaceae	Hinna el Ghoul	CC	I-II	H	P	Cul-Rge	Gra-Med	1	Psa
Alkanna	orientalis	Boraginaceae	Libbeid	R	I-III	H	P	Cli-Run	Gra	2	Cha
Anchusa	aegyptiaca	Boraginaceae	Kahla	CC	I-III	H	A	Cul-Rge	Gra	1	Psa
Anchusa	hispida	Boraginaceae	Kahla	C	I-II	H	A	Cul-Rge	Gra	2	Psa
Anchusa	humilis	Boraginaceae	Kahla	C	I-II	H	A	Cul-Rge	Gra	1	Psa
Anchusa	milleri	Boraginaceae	Kahla	FC	I-II	H	A	Cul-Rge	Gra	1	Psa
Anchusa	undulata	Boraginaceae	Kahla	R	I-III	H	A-B	Cul-Rge	Gra	1	Psa
Arnebia	decumbens	Boraginaceae	Attan	FC	I-III	H	A	Rge-Snd-Ste	Gra	3	Psa-Tac

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Arnebia	linearifolia	Boraginaceae	Kahla	FC	I-II	H	A	Rge-Snd	Gra	2	Psa
Borago	officinalis	Boraginaceae	–	FR	I-II	H	A	Cul	Non	1	Psa
Buglossoides	incrassatum	Boraginaceae	–	R	I-III	H	A	Cul-Rge	Non	0	Wee
Buglossoides	tenuiflora	Boraginaceae	–	FR	I-III	H	A	Cul-Rge	Non	0	Wee
Echium	angustifolium	Boraginaceae	–	CC	I-II	H	P	Cul-Rge-Wld	Non	0	Wee
Echium	glomeratum	Boraginaceae	–	R	I-II	H	P	Wld	Non	0	Wee
Echium	plantagineum	Boraginaceae	Lisaan el Thour	RR	I-II	H	A	Cul-Wld	Gra-Med	1	Wee
Echium	rauwolfi	Boraginaceae	Hinna el Ghoul	CC	I-II	H	A-B	Cul-Rge-Ste	Gra	1	Wee
Echium	rubrum	Boraginaceae	–	C	I-II	H	A	Wld	Non	0	Wee
Echium	sabulicola	Boraginaceae	–	R	I-II	H	A	Wld	Non	0	Wee
Echium	sericeum	Boraginaceae	–	C	I-III	H	P	Rge-Snd-Ste-Wld	Non	0	Psa
Echlochilon	fruticosum	Boraginaceae	Okroosh	FC	I-II	DS	P	Rge-Snd-Ste	Gra	4	Psa
Heliotropium	arbainense	Boraginaceae	Atana	R	III-IV	Fr	P	Des-Wad	Gra	2	Ere
Heliotropium	curassavicum	Boraginaceae	–	R	I-II	H	P	Slt	Non	1	Hal
Heliotropium	digynum	Boraginaceae	Roghl, S'gaa	CC	III-VI	Fr	P	Des-Rge-Ste	Gra-Med	2	Ere
Heliotropium	europaeum	Boraginaceae	Aqrabana	FC	I-II	H	A	Cul	Non	0	Wee
Heliotropium	hirsutissimum	Boraginaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Heliotropium	supinum	Boraginaceae	Koddeih, Zurreqa	C	I-III	H	A	Cul	Non	0	Psa
Lappula	spinocarpos	Boraginaceae	Qaliet	C	I-III	H	A	Rge-Ste	Gra	2	Psa-Tac
Moltkiopsis	ciliata	Boraginaceae	Halama	FR	III-VI	Fr	P	Des-Rge-Ste	Gra-Med	3	Psa
Nonea	melanocarpa	Boraginaceae	–	FR	I-II	H	A	Cul-Rge	Gra	1	Wee
Nonea	vivianii	Boraginaceae	–	FR	I-II	H	A	Rge-Snd-Ste	Gra	2	Psa
Ogastemma	pusillum	Boraginaceae	–	R	III-VI	H	A	Rge-Ste	Gra	2-3	Psa-Tac
Trichodesma	africanum	Boraginaceae	Hameem	FC	III-VI	H	A-B	Des-Wad	Gra	1-2	Psa
Campanula	erinus	Campanulaceae	–	RR	I-II	H	A	Irr-Wld	Non	0	Wee
Capparis	rupestris	Capparaceae	Kabbar	CC	I-III	TS	P	Cli-Roc-Wad	Med-Orn	0	Cha
Capparis	spinosa	Capparaceae	Kabbar	C	III-VI	TS	P	Cli-Roc-Wad	Med-Orn	0	Ere
Arenaria	serpyllifolia	Caryophyllaceae	Labbakh	FR	I-II	H	A	Cul	Gra	0	Wee
Gymnocarpos	decander	Caryophyllaceae	Jarad Garad	CC	I-IV	DS	P	Sha-Ste	Gra	4	Ere
Herniaria	cinerea	Caryophyllaceae	–	FC	I-II	H	A	Rge-Sha	Med	0	Wee
Herniaria	cyrenaica	Caryophyllaceae	–	RR	I-II	H	P	Rge-Sha	Gra	1	Ere
Herniaria	fontanesii	Caryophyllaceae	–	RR	I-III	H	P	Rge-Sha	Gra	1	Ere
Herniaria	hemistemon	Caryophyllaceae	–	CC	I-III	H	P	Rge-Sha	Gra	1	Ere
Herniaria	hirsuta	Caryophyllaceae	Mouker, Makir	FC	I-III	H	A	Cul	Med	2	Wee
Loeffingia	hispanica	Caryophyllaceae	–	FC	I-III	H	A	Rge-Snd-Ste	Gra	1	Tac
Minuartia	hybrida	Caryophyllaceae	–	RR	I-II	H	A	Cli-Roc-Run	Gra	1-2	Cha-Psa
Minuartia	mediterranea	Caryophyllaceae	–	RR	I-II	H	A	Cli-Roc-Run	Gra	1-2	Cha
Paronychia	arabica	Caryophyllaceae	Ramram	C	I-III	H	A-B	Snd-Ste	Gra-Med	1-2	Psa
Paronychia	argentea	Caryophyllaceae	Bessat el Ard, Tai el Areb	FC	I-III	H	P	Rge-Ste	Gra	2	Psa
Paronychia	capitata	Caryophyllaceae	–	R	I-III	H	P	Snd-Ste	Gra-Med	1-2	Psa

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Petrorhagia	illyrica	Caryophyllaceae	Sammah	FR	I-II	Fr	P	Cli-Run	Gra	2	Cha
Polycarpaea	robbairea	Caryophyllaceae	Mokoor	R	III-VI	H	A-Sh	Des-Rge	Gra	2	Ere-Tac
Polycarpon	succulentum	Caryophyllaceae	–	CC	I-II	Su	A	Cul-Snd	Non	0	Gly-Hal-Wee
Polycarpon	tetraphyllum	Caryophyllaceae	–	C	I-II	Su	A	Cul-Snd	Non	0	Gly-Hal-Tac-Wee
Pteranthus	dochotomus	Caryophyllaceae	–	FC	I-IV	CH	A	Slt	Non	0	SO4
Rhodoalsine	geniculata	Caryophyllaceae	Heriba	FR	I-II	H	A	Cli-Roc-Run	Non	1-2	Cha-Psa
Silene	aegyptiaca	Caryophyllaceae	–	RR	I-III	H	A	Cul	Non	0	Wee
Silene	apetala	Caryophyllaceae	Deheina	FC	I-II	H	A	Cul	Non	0	Wee
Silene	behen	Caryophyllaceae	Deheina	R	I-II	H	A	Cul	Non	1	Wee
Silene	biappendiculata	Caryophyllaceae	Deheina	C	I-II	H	A	Cul	Non	0	End-Wee
Silene	colorata	Caryophyllaceae	Deheina	C	I-III	H	A	Cul-Snd-Ste	Non	0	Wee
Silene	fruticosa	Caryophyllaceae	–	RR	I-II	Fr	P	Cli-Roc	Gra	1-2	Cha-End
Silene	nocturna	Caryophyllaceae	Deheina Abul Nagaf	FC	I-II	H	A	Cul	Non	0	Wee
Silene	rubella	Caryophyllaceae	Naashash	C	I-II	H	A	Cul-Rge	Gra	0	Wee
Silene	succulenta	Caryophyllaceae	Atar el Bhar	C	I	Su	P	Coa-Snd	Non	0	Psa
Silene	tridentata	Caryophyllaceae	Deheina	R	I-II	H	A	Cul-Rge	Non	0	Wee
Silene	villosa	Caryophyllaceae	Attan	R	II-IV	H	A	Con-Snd	Gra	1-2	Psa
Silene	vivianii	Caryophyllaceae	Deheina	FC	I-II	H	A	Cul	Non	0	Wee
Silene	vulgaris	Caryophyllaceae	–	R	I-II	H	P	Cli	Gra	1-2	Cha
Spergula	fallax	Caryophyllaceae	Rihay	C	I-II	H	A	Cul	Non	0	Gly-Hal-Wee
Spergularia	bocconei	Caryophyllaceae	–	R	I-II	H	A	Cul	Non	0	Hal-Wee
Spergularia	diandra	Caryophyllaceae	–	CC	I-II	H	A	Cul-Wld	Non	0	Gly-Hal-Wee
Spergularia	marina	Caryophyllaceae	Abu Ghulam	CC	I-III	CH	P	Slt	Gra	3-4	Hal
Spergularia	maritima	Caryophyllaceae	Meshit	R	I-III	CH	P	Slt	Gra-Med	3-4	Nit-Wee
Spergularia	rubra	Caryophyllaceae	Esbba Hamra	R	I-II	H	A	Cul	Med-Non	0	Hal-Wee
Stellaria	media	Caryophyllaceae	Qizzaza, Bughlan	R	I-II	CH	A	Cul-Wld	Med	0	Nit
Stellaria	pallida	Caryophyllaceae	Qizzaza	CC	I-II	CH	A	Cul-Wld	Non	0	Wee
Vaccaria	pyramidata	Caryophyllaceae	Fool el Arab	C	I-II	H	A	Cul	Med	0	Wee
Ceratophyllum	demersum	Ceratophyllaceae	Horeish	C	I-II	H	P	Frw	Non	0	Hyd
Anabasis	articulata	Chenopodiaceae	Belbel	CC	II-IV	CS	P	Roc-Sha-Ste	Gra	1	Gly
Anabasis	oropediorum	Chenopodiaceae	A'jrem	CC	I-II	DS	P	Roc-Sha-Ste	Gra	3	Gly-Sil
Arthrocnemum	macrostachyum	Chenopodiaceae	Shinaan	C	I-III	CS	P	Slt	Gra	1	Hal
Atriplex	coriacea	Chenopodiaceae	Ratam	R	I-II	CS	P	Slt-Wet	Gra	2	Hal
Atriplex	glauca	Chenopodiaceae	Qetteifa	FR	I-III	TS	P	Rge-Ste	Fsh-Gra	3	Hal
Atriplex	halimus	Chenopodiaceae	Qattaf	CC	I-IV	CS	P	Rge-Slt	Fsh-Gra-Med	3	Hal
Atriplex	inflata	Chenopodiaceae	–	FR	I-III	CH	A	Wld	Non	0	Hal-Nit-Wee
Atriplex	leucoclada	Chenopodiaceae	Roghl	R	I-II	HS	A	Rge	Fsh-Gra	2-3	Hal
Atriplex	littoralis	Chenopodiaceae	–	R	I-II	H	A	Cul-Wld	Non	0	Hal-Nit
Atriplex	mollis	Chenopodiaceae	Quattaf	R	I-II	TS	Sh	Rge-Ste	Fsh-Gra	3	Hal
Atriplex	portulaccoides	Chenopodiaceae	Qattaf bahri	C	I	TS	P	Coa-Slt	Gra	2	Hal

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Atriplex	rosea	Chenopodiaceae	–	R	I-II	H	A	Cul-Wld	Non	0	Hal-Nit-Wee
Atriplex	semibaccata	Chenopodiaceae	Qattaf	FR	I-II	TS	P	Slt-Ste	Gra	3	Hal-Nat
Atriplex	spongiosa	Chenopodiaceae	–	R	I-II	CH	A-B	Wld	Non	0	Hal-Nit-Wee
Bassia	arabica	Chenopodiaceae	Thelata	C	I-II	DS	P	Rge-Slt-Ste	Gra	0	Hal
Bassia	indica	Chenopodiaceae	–	FC	I-II	H	A-Sh	Rge-Wld	Gra	2-3	Nat-Wee
Bassia	muricata	Chenopodiaceae	Ghobbeira	CC	I-IV	H	A	Snd-Ste	Non	2-3	Gly
Beta	vulgaris	Chenopodiaceae	Salq. Dirs el Kalb	FC	I	H	A	Slt	Gra	2	Hal
Blitum	virgatum	Chenopodiaceae	–	R	I-II	H	A	Cul	Non	0	Nit
Chenopodium	album	Chenopodiaceae	Rokaab al Jamal	CC	I-III	H	A	Cul-Wld	Non	0	Nit-Wee
Chenopodium	ambrosoides	Chenopodiaceae	Nitna, Natna	CC	I-II	H	A	Wld	Med	0	Nit-Wee
Chenopodium	giganteum	Chenopodiaceae	–	RR	I-II	H	A	Wld	Non	0	Nit-Wee
Chenopodium	glaucum	Chenopodiaceae	–	R	I-III	H	A	Cul-Wld	Non	0	Nit-Wee
Chenopodium	murale	Chenopodiaceae	Lisaan et Teir, Abu Ifen	CC	I-II	H	A	Wld	Non	0	Nit-Wee
Halocnemum	strobilaceum	Chenopodiaceae	Sabad	C	I-III	CS	P	Slt	Non	0	Hal
Halopeplis	amplexicaulis	Chenopodiaceae	–	R	I-II	CH	A	Slt	Non	0	Hal
Halopeplis	perfoliata	Chenopodiaceae	–	R	I-II	CS	P	Slt	Non	0	Hal
Haloxylon	salicornicum	Chenopodiaceae	Belbel	CC	II-IV	CS	P	Rge-Snd-Ste	Fue-Gra	1	Gly
Haloxylon	scoparium	Chenopodiaceae	Remeth	CC	I-IV	DS	P	Rge-Ste	Fue-Gra-Med	1	Gly-Sil
Noaea	mucronata	Chenopodiaceae	Athir	CC	I-IV	DS	P	Roc-Sha-Ste	Fue-Gra	2	Gly
Salicornia	europaea	Chenopodiaceae	Hamd	C	I-II	CH	A	Slt	Non	0	Hal
Salicornia	fruticosa	Chenopodiaceae	Hamd	C	I-II	CS	P	Slt	Gra	1	Hal
Salicornia	perennis	Chenopodiaceae	Hamd	C	I-II	CS	P	Slt	Gra	1	Hal
Salsola	imbricata	Chenopodiaceae	Woqeid	CC	III-VI	CS	P	Des-Rge	Gra	0-1	Hal-Pel
Salsola	inermis	Chenopodiaceae	–	FC	I-II	CH	A	Roc-Sha	Non	0	Hal-Pel
Salsola	kali	Chenopodiaceae	Eshnaan	CC	I	CH	A	Coa-Dne	Non	0	Hal-Psa
Salsola	longifolia	Chenopodiaceae	Heddeid	FC	I-III	CS	P	Slt-Ste	Gra	2-3	Hal
Salsola	oppositifolia	Chenopodiaceae	–	R	I-II	CS	P	Ste-Wld	Non	0	Nit
Salsola	schweinfurthii	Chenopodiaceae	–	RR	II-IV	CS	P	Rge-Slt-Ste	Gra	1	Hal
Salsola	tetragona	Chenopodiaceae	–	RR	I-IV	CS	P	Slt	Fue-Gra	1	Hal-Phr
Salsola	tetrandra	Chenopodiaceae	Damaan	R	I-II	CS	P	Slt	Gra	2	Hal
Salsola	villosa	Chenopodiaceae	Khareet	CC	II-III	CS	P	Rge-Sha-Ste	Gra	2-3	Hal
Salsola	volkensi	Chenopodiaceae	Caremba	C	I-II	CH	A	Coa-Dne-Wad	Non	0	Hal-Psa-Wee
Suaeda	aegyptiaca	Chenopodiaceae	Soweid	CC	I-II	CH	A	Slt	Non	0	Hal
Suaeda	altissima	Chenopodiaceae	Soweid	RR	I-III	CH	A	Slt	Non	0	Hal
Suaeda	palaestina	Chenopodiaceae	Soweid	RR	I-III	CS	P	Slt	Gra	1	Hal
Suaeda	pruinosa	Chenopodiaceae	Soweid	R	I-III	CS	P	Slt	Gra	1	Hal
Suaeda	splendens	Chenopodiaceae	Soweid	RR	I-II	CH	A	Slt	Non	0	Hal
Suaeda	vera	Chenopodiaceae	Soweid	C	I-III	CS	P	Slt	Gra	1	Hal
Suaeda	vermiculata	Chenopodiaceae	Soweid	C	I-III	CS	P	Slt	Gra	1	Hal
Traganum	nudatum	Chenopodiaceae	Dhamran	FC	II-IV	CS	P	Rge-Ste	Gra	2-3	Hal-S04

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Fumana	arabica	Cistaceae	–	C	I-II	Fr	P	Rge-Sha	Gra	2	Cha
Fumana	thymifolia	Cistaceae	–	R	I-II	Fr	P	Rge-Sha	Gra	2	Cha
Helianthemum	aegyptiacum	Cistaceae	Koshein	R	I-II	H	A	Rge	Gra	2	Psa
Helianthemum	ciliatum	Cistaceae	Koshein	C	I-II	Fr	P	Rge-Sha	Gra	2-3	Cha
Helianthemum	kahiricum	Cistaceae	Koshein	CC	I-III	Fr	P	Rge-Sha-Ste	Gra	3	Cha
Helianthemum	ledifolium	Cistaceae	Koshein	R	I-II	H	A	Cul-Rge	Gra	2	Psa-Tac
Helianthemum	lippii	Cistaceae	Qadib el Raal	CC	I-III	Fr	P	Rge-Snd-Ste	Gra	3-4	Psa
Helianthemum	salicifolium	Cistaceae	Koshein	R	I-II	H	A	Cul-Rge	Gra	2	Psa
Helianthemum	sessiliflorum	Cistaceae	Qadib el Raal	FR	I-II	Fr	P	Rge-Snd-Ste	Gra	3-4	Psa
Helianthemum	sphaerocalyx	Cistaceae	Koshein	R	I-II	Fr	P	Rge-Ste	Gra	3	Cha-End
Helianthemum	stipulaceum	Cistaceae	Koshein	FC	I-II	Fr	P	Rge-Sha	Gra	2-3	Cha
Helianthemum	vesicarium	Cistaceae	Koshein	FC	I-II	Fr	P	Rge-Sha-Ste	Gra	2-3	Cha
Cleome	amblyocarpa	Cleomaceae	Zeita, Magnuna	CC	I-III	H	A	Cul-Ste-Wld	Med	T	Psa-Wee
Gynandropsis	gynandra	Cleomaceae	Abu Qara, Abu Qarn	R	I-III	H	A	Wld	Non	0	Nat-Nit-Wee
Achillea	fragrantissima	Compositae	Ge Soom	RR	III-VI	H	P	Des-Wld	Gra-Med	1	Ere
Achillea	santolina	Compositae	Bishreen, Chaihata	R	I-II	H	P	Cul-Wld	Med	0	Sil
Amberboa	crupinoides	Compositae	–	RR	I-II	H	A	Cul-Wld	Non	0	Sil
Amberboa	lippii	Compositae	Kerzaran	CC	I-III	H	A	Cul-Ste-Wld	Non	0	Sil
Ambrosia	maritima	Compositae	Damaseisa	R	I	H	B	Coa-Snd	Med	0	Psa
Anacyclus	alexandrinus	Compositae	Rigel Ghorab	CC	I-III	H	A	Rge-Ste-Wld	Gra	2	Wee
Anthemis	chia	Compositae	Arbeyaan	RR	I-II	H	A	Cul-Wld	Non	0	Wee
Anthemis	indurata	Compositae	Arbeyana	R	I-II	H	A	Cul-Wld	Non	0	Wee
Anthemis	melampodina	Compositae	Firaakomm Ali	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Anthemis	microsperma	Compositae	Arbeuaan	C	I-II	H	A	Cul-Wld	Non	0	Wee
Anthemis	pseudo-cotula	Compositae	Basoon, Iribayan	CC	I-II	H	A	Cul-Wld	Med	0	Wee
Anvillea	garcini	Compositae	Nogod	R	III-VI	Fr	P	Des-Wad	Non	0	Ere
Artemisia	herba-alba	Compositae	Sheeh	C	I-III	H	P	Rge-Ste	Fsh-Gra-Med	3	Sil
Artemisia	judaica	Compositae	Sheeb	FC	III-VI	H	P	Wad	Gra-Med	1	Ere
Artemisia	monosperma	Compositae	Aader	FC	III-VI	H	P	Des-Rge-Ste	Gra	0	Ere-Psa
Artemisia	scoparia	Compositae	–	RR	I-II	Fr	Sh	Wld	Non	0	Wee
Aster	squamatus	Compositae	–	FC	I-II	H	B	Wld	Non	0	Hal-Hyg-Sum
Asteriscus	pygmaeus	Compositae	Musmar el Ard	CC	I-III	H	A	Rge-Wld	Non	0	Ere-Sil
Asteriscus	spinosus	Compositae	–	CC	I-III	H	A	Wld	Non	0	Nit
Atractylis	cancellata	Compositae	–	FR	I-II	H	A	Rge-Wld	Non	0	Wee
Atractylis	carduus	Compositae	Akaash	CC	I-III	H	P	Rge-Wld	Non	0	Wee
Atractylis	prolifera	Compositae	–	CC	I-III	H	A	Cul-Rge-Ste	Non	0	Wee
Bidens	pilosa	Compositae	Sada	FC	I-II	H	A	Wet-Wld	Non	0	Hyg-Wee
Calendula	arvensis	Compositae	AÔsafra, Ayn el Bagar	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Carduncellus	eriocephalus	Compositae	Kharshoof	C	II-IV	H	P	Cul-Wad	Non	0	Ere
Carduncellus	mareoticus	Compositae	Sarr	CC	I-IV	H	P	Cul-Ste-Wad-Wld	Non	0-1	End-Sil-Wee

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Carduus	getulus	Compositae	Horshof	CC	I-III	H	A	Cul-Wld	Non	0	Wee
Carduus	pycnocephalus	Compositae	Lisaanelkelb	C	I-II	H	A	Cul-Wld	Non	0	Wee
Carlina	involucrata	Compositae	Moraar	CC	I-III	H	P	Rge-Ste-Wld	Non	0	Wee
Carthamus	glaucus	Compositae	–	FR	I-II	H	A	Cul-Wld	Non	0	Wee
Carthamus	lanatus	Compositae	Shook Antar	CC	I-III	H	A	Cul-Wld	Non	0	Wee
Carthamus	tenuis	Compositae	Qoos	FC	I-II	H	A	Cul-Wld	Non	0	Wee
Centaurea	aegialophila	Compositae	Akash	CC	I	H	P	Coa-Snd	Med	0	Hal-Psa
Centaurea	alexandrina	Compositae	Moraar	CC	I-III	H	A	Cul-Wld	Med	0	Wee
Centaurea	calcitrapa	Compositae	Moraar, Sh¸k	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Centaurea	dimorpha	Compositae	Moraar	C	I-II	H	P	Cul-Ste-Wld	Non	0	Psa
Centaurea	furfuracea	Compositae	–	FC	II-IV	H	A	Cul-Rge-Ste	Non	0	Psa
Centaurea	glomerata	Compositae	Yamraar, Ardjaqn¸	C	I-II	H	A	Cul-Wld	Med	0	Wee
Centaurea	melitensis	Compositae	Moraar	FR	I-II	H	A	Cul-Wld	Non	0	Sil
Centaurea	pullata	Compositae	Moraar	C	I-II	H	B	Cul	Non	0	Wee
Centaurea	pumilio	Compositae	Moraar	FR	I-II	H	P	Cul-Wld	Non	0	Wee
Centaurea	solstitialis	Compositae	Moraar	RR	I-II	H	A	Cul-Wld	Non	0	Wee
Ceruana	pratensis	Compositae	Garawaan	R	I-II	H	A	Cul-Wld	Non	0	Wee
Chlamidophora	tridentata	Compositae	–	R	II-IV	H	A	Rge-Ste	Gra	2	Ere
Chrysanthemum	coronarium	Compositae	Oqhowan, Rezao˜a	CC	I-II	H	A	Cul-Wld	Med	0	Wee
Cichorium	endivia subsp. Pumilum	Compositae	Shikoria, Sires	FC	I-II	H	A-B	Cul-Wld	Gra-Med	2-3	Pel-Sil
Conyza	bonariensis	Compositae	Hashishat el Gabal	C	I-II	H	A	Cul-Wld	Med	0	Wee
Cotula	anthemoides	Compositae	Ribyaan	C	I-II	H	A	Cul-Wet	Med	0	Hyg
Cotula	cinerea	Compositae	Sakaraan, Roboua,	CC	III-IV	H	P	Des-Rge	Gra-Med	1	Ere
Crepis	bulbosa	Compositae	–	FR	I	H	P	Snd-Wld	Gra	1-2	Psa
Crepis	clausonis	Compositae	–	RR	I-II	H	P	Cul-Rge	Gra	1	Wee
Crepis	libyca	Compositae	–	R	I-II	H	P	Cul-Rge-Ste	Gra	2	Tac-Wee
Crepis	micrantha	Compositae	–	FC	I-II	H	A	Cul-Rge	Gra	2	Wee
Crupina	crupinastrum	Compositae	–	RR	I-II	H	A	Cul	Non	0	Sil
Cynara	cornigera	Compositae	Karshoof, Khorshef	FC	I-II	H	P	Cul-Rge-Wld	Med-Veg	0	Pel-Wee
Echinops	galatensis	Compositae	Kasheer	C	I-III	H	P	Cul-Rge	Non	0	Wee
Echinops	spinossimus	Compositae	Kaddad	CC	I-III	H	P	Cul-Rge	Med	0	Wee
Echinops	spinosus	Compositae	Kasheer, Sh¸k el Gamel	CC	I-III	H	P	Rge-Sha	Med	0	Wee
Echinops	taeckholmianus	Compositae	Korshof	R	I-II	H	P	Rge-Wld	Non	0	End
Eclipta	alba	Compositae	Sada, Suwwed	R	I	H	A	Wet-Wld	Med	0	Hyg-Wee
Ethulia	conyzoides	Compositae	Hashishel Faras	C	I-II	H	A	Cul	Non	0	Wee
Filago	contracta	Compositae	–	FC	I-III	H	A	Cul-Rge	Non	2	Wee
Filago	desertorum	Compositae	–	CC	I-III	H	A	Cul-Wld	Non	0	Sil-Tac
Filago	mareotica	Compositae	–	C	I-II	H	A	Slt	Non	0	Hal
Flaveria	contrayerba	Compositae	Sada	R	I-II	H	A	Wet-Wld	Non	0	Hyg-Sum
Garhadiolus	angulosus	Compositae	–	CC	I-II	H	A	Cul-Wld	Gra	2	Wee

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Geropogon	hybridus	Compositae	Thanal al Faras	FC	I-II	H	B	Cul	Gra	2	Wee
Gnaphalium	crispatulum	Compositae	–	R	I-II	H	A	Wld	Non	0	Wee
Gnaphalium	luteo-album	Compositae	Saboon Afre'et	FC	I-II	H	A	Wet	Non	0	Hyg
Gnaphalium	polycaulon	Compositae	–	R	I-II	H	A	Wld	Non	0	Wee
Grangea	maderaspatana	Compositae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Gymnarrhena	micrantha	Compositae	Kirsheif	FR	III-IV	H	A	Rge-Sha-Ste	Non	0	Cha-Tac
Hedypnois	rhagadioloides	Compositae	–	CC	I-II	H	A	Cul-Wld	Gra	2	Wee
Helichrysum	conglobatum	Compositae	–	RR	I-II	H	P	Cli-Snd	Non	0	Cha-Psa
Helichrysum	orientale	Compositae	–	C	I-II	H	P	Cli-Roc	Non	0	Cha
Hyoseris	radiata	Compositae	–	CC	I-II	H	A	Cul-Wld	Gra	2	Wee
Hyoseris	scabra	Compositae	–	RR	I-II	H	A	Cul-Wld	Gra	2	Wee
Ifloga	labillardieri	Compositae	Krayshif el Gadi	CC	I-IV	H	A	Rge	Gra	2	Ere-Psa
Ifloga	spicata	Compositae	Krayshif el Gadi	CC	I-IV	H	A	Rge-Ste	Gra	0	Ere-Psa
Inula	crithmoides	Compositae	Zeita	C	I	H	P	Coa-Roc	Non	0	Cha
Inula	viscosa	Compositae	Magramam	R	I-II	H	P	Wet-Wld	Med	0	Nit-Pel
Koelpinia	linearis	Compositae	–	C	II-IV	H	A	Rge-Snd-Ste	Gra	3	Psa-Tac
Lactuca	saligna	Compositae	Hawa, Khass el Bagar	R	I-II	H	A-B	Cul	Med	0	Wee
Lasiopogon	muscoides	Compositae	Kreishit el Gadge	FR	I-III	H	A	Wld	Non	0	Nit-Wee
Launaea	angustifolia	Compositae	Noqod	C	III-IV	H	A-B	Rge-Ste	Gra	2	SO4
Launaea	capitata	Compositae	Hoadaah	CC	III-IV	H	A	Rge-Snd	Gra	3	Tac
Launaea	nudicaulis	Compositae	Howaa	CC	I-III	H	A	Cul-Rge-Wld	Non	0	Wee
Launaea	resedifolia	Compositae	–	FC	I-III	H	B-P-Sh	Rge-Snd-Ste	Gra	3-4	Psa
Launaea	tenuiloba	Compositae	Silen	FR	III-IV	H	A-B	Rge-Ste	Gra	3	Psa
Leontodon	hispidulus	Compositae	–	FC	I-II	H	A	Cul-Wld	Gra	2	Wee
Leontodon	simplex	Compositae	Hawthan	FR	I-II	H	A	Cul-Wld	Non	0	Wee
Leontodon	tuberosus	Compositae	Hawthan	FR	I-II	H	P	Cul-Wld	Gra	2	Wee
Mantisalca	salmantica	Compositae	–	RR	I-II	H	A	Cul-Wld	Non	0	Sil-Wee
Matricaria	aurea	Compositae	Qommeydi	FR	I-II	H	A	Wet	Non	0	Hyg
Matricaria	recutita	Compositae	Baboonig	R	I-II	H	A	Wet	Med-Veg	0	Hyg-Nat
Nauplius	graveolens	Compositae	Rabd	FR	III-VI	H	P	Des-Wad	Non	0	Ere
Notobasis	syriaca	Compositae	Kirshef	FR	I-II	H	A	Cul-Wld	Non	0	Wee
Onopordon	alexandrinum	Compositae	Shood el Hanash	CC	I-III	H	B	Cul-Wld	Non	0	Psa
Ormenis	mixta	Compositae	–	RR	I-II	H	A	Wet-Wld	Non	0	Hyg
Otanthus	maritimus	Compositae	Shiba	R	I	H	P	Coa-Snd	Med	0	Hal
Phagnalon	barbeyanum	Compositae	Khanaanit	R	I-II	H	P	Cli	Gra	1-2	Cha
Phagnalon	rupestre	Compositae	Taan el Arneb	FC	I-II	H	P	Cli-Ste	Gra	1-2	Cha
Picris	asplenoides	Compositae	Halawaa	CC	I-II	H	A	Cul-Wld	Gra	2	Wee
Picris	cyanocarpa	Compositae	–	RR	I-II	H	A	Cul-Wld	Gra	2	Tac
Picris	sprengeriana	Compositae	Moraar	FC	I-II	H	A	Cul-Wld	Gra	1	Wee
Pluchea	dioscoridis	Compositae	Barn¸f	R	I-II	H	P	Wld	Non	0	Wee

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Pulicaria	arabica	Compositae	Abou AÔn Safra	FC	I-III	H	A	Wet-Wld	Non	0	Hyg
Pulicaria	crispa	Compositae	Ghobbeira, Aarfeg	FR	III-VI	H	P	Des-Wad	Med	0	Ere
Reichardia	picroides	Compositae	Morrir	FR	I-II	H	P	Cul-Rge	Gra	3	Sil
Reichardia	tingitana	Compositae	Galaween	FC	I-III	H	P	Cul-Rge-Ste	Gra	3	Sil
Rhagadiolus	stellatus	Compositae	–	C	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Rhanterium	suaveolens	Compositae	A'arfej	R	II-IV	S	P	Rge	Gra	3	Psa
Scolymus	hispanicus	Compositae	–	FR	I-II	H	A-Sh	Cul-Wld	Non	0	Wee
Scorzonera	undulata	Compositae	Dabbah	CC	I-III	H	P	Rge-Ste	Gra-Veg	3	Wee
Senecio	coronopifolius	Compositae	«Moraar; Q$_3$rres»	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Senecio	glaucus	Compositae	Moraar	C	I-II	H	A	Cul-Wld	Non	0	Wee
Senecio	vulgaris	Compositae	Moraar	C	I-II	H	A	Cul-Wld	Non	0	Wee
Silybum	marianum	Compositae	Shook Sinnari, Si el Gamel	FR	I-II	H	P	Cul-Wld	Med	0	Nit
Sonchus	asper	Compositae	–	FC	I-II	H	A	Cul-Wld	Non	0	Wee
Sonchus	macrocarpus	Compositae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Sonchus	oleraceus	Compositae	Go'odeid, Galawen	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Sonchus	tenerrimus	Compositae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Spheranthus	suaveolens	Compositae	Habaqbaq	R	I-III	H	P	Rge	Non	0	Wee
Taraxacum	minimum	Compositae	–	RR	I-II	H	P	Cul-Wld	Gra	2	Wee
Urospermum	picroides	Compositae	Galawein, Salis	FC	I-II	H	A	Cul-Wld	Gra	1-2	Pel-Wee
Varthemia	candicans	Compositae	–	FC	I-II	H	P	Cli-Roc-Ste	Med	0	Cha-Pel
Xanthium	spinosum	Compositae	Shobbeit	FR	I-II	H	A	Wld	Non	0	Wee
Xanthium	strumarium	Compositae	Karakh el Bhar, Shabka	R	I-II	H	A	Wld	Non	0	Wee
Calystegia	silvatica	Convolvulaceae	–	RR	I-II	Cl-H	P	Cul	Non	0	Wee
Convolvulus	althaeoides	Convolvulaceae	Maddah, Luwwaya	CC	I-II	Cl-H	P	Cul	Med	0	Psa-Wee
Convolvulus	arvensis	Convolvulaceae	Araaryeh, Ulleq, Lebena	CC	I-II	H	P	Cul	Gra	1	Sil-Wee
Convolvulus	fatmensis	Convolvulaceae	–	FR	I-III	H	A	Rge-Wld	Gra	1	Sil
Convolvulus	humilis	Convolvulaceae	–	RR	I-II	Cl-H	A	Cul	Non	0	Sil-Wee
Convolvulus	lanatus	Convolvulaceae	Bayaad	CC	I-III	Fr	P	Con-Snd	Non	3-4	Psa
Convolvulus	lineatus	Convolvulaceae	–	RR	I-II	H	P	Cul	Gra	2	Wee
Convolvulus	oleifolius	Convolvulaceae	–	FR	I-II	Fr	P	Cli-Run-Ste	Non	3	Cha
Convolvulus	pilosellifolius	Convolvulaceae	–	FR	I-II	H	P	Cul	Gra	2	Wee
Convolvulus	siculus	Convolvulaceae	–	FC	I-II	Cl-H	A	Cul	Non	0	Sil-Wee
Convolvulus	stachydifolius	Convolvulaceae	–	RR	I-II	H	P	Rge	Gra	2	Psa
Convolvulus	supinus	Convolvulaceae	–	FR	I-II	Cl-H	P	Cul	Non	0	Wee
Convolvulus	tricolor	Convolvulaceae	–	FR	I-II	Cl-H	P	Cul	Non	0	Wee
Cressa	cretica	Convolvulaceae	Molleih, Mellina	CC	I-III	H	A	Slt	Non	0	Hal
Cuscuta	campestris	Convolvulaceae	–	RR	I-II	Par	P	Cul-Rge	Non	0	Wee
Cuscuta	epithymum	Convolvulaceae	–	FC	I-II	Par	P	Cul-Rge	Non	0	Wee
Cuscuta	europaea	Convolvulaceae	–	C	I-II	Par	P	Cul-Rge	Non	0	Wee
Cuscuta	palaestina	Convolvulaceae	–	RR	I-II	Par	P	Cul-Rge	Non	0	Wee

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Cuscuta	pedicellata	Convolvulaceae	Hamul	CC	I-II	Par	P	Cul-Rge	Non	0	Wee
Cuscuta	planiflora	Convolvulaceae	Hariret al Zaatar	CC	I-II	Par	P	Cul-Rge	Med	0	Wee
Ipomaea	cairica	Convolvulaceae	–	FC	I-II	Cl-H	P	Irr	Non	0	Sum
Ipomaea	imperati	Convolvulaceae	–	R	I-II	Cl-H	P	Irr	Non	0	Sum
Crassula	alata	Crassulaceae	–	RR	II-III	Su	A	Wld	Non	0	Nit
Umbilicus	horizontalis	Crassulaceae	Widna	R	I-II	Su	A	Wld	Non	0	Nit
Alyssum	desertorum	Cruciferae	–	RR	II-III	H	A	Rge	Gra	1-2	Wee
Alyssum	simplex	Cruciferae	–	RR	II-III	H	A	Cul-Rge	Gra	1-2	Wee
Anastatica	hierochuntica	Cruciferae	Keff Maryam, Hidd M.	CC	III-VI	H	A	Des-Ste	Med	0	Ere-Pel-Tac
Biscutella	depressa	Cruciferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Biscutella	didyma	Cruciferae	Sofra	R	I-II	H	A	Cul-Wld	Non	0	Wee
Brassica	nigra	Cruciferae	Libsaan, Khardal Abiad	CC	I-II	H	A	Irr	Med	0	Wee
Brassica	rapa	Cruciferae	–	C	I-II	H	B	Irr	Non	0	Wee
Brassica	tournefortii	Cruciferae	Shilltam	CC	I-IV	H	A	Cul-Snd	Non	0	Psa-Wee
Cakile	maritima	Cruciferae	Figl el Gamel	CC	I	CH	A	Coa-Snd	Non	0	Psa
Camelina	hispida	Cruciferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Camelina	rumelica	Cruciferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Capsella	bursa-pastoris	Cruciferae	Kes el RaÔ	CC	I-II	H	A	Wld	Med	0	Nit
Carrichtera	annua	Cruciferae	Qineybra	CC	I-III	H	A	Cul-Rge-Ste-Wld	Non	0	Sil-Wee
Conringia	orientalis	Cruciferae	–	RR	II-III	H	A	Cul	Non	0	Wee
Coronopus	squamatus	Cruciferae	Rashaad, Harra	C	I-II	H	A-B	Wet	Non	0	Hyg-Pel
Descurainia	sophia	Cruciferae	–	RR	I-II	H	A	Wld	Non	0	Wee
Didesmus	bipinnatus	Cruciferae	–	C	II-IV	H	A	Cul-Rge	Gra	1	Wee
Diplotaxis	erucoides	Cruciferae	–	R	I-II	H	A-B	Cul-Wld	Non	2	Wee
Diplotaxis	simplex	Cruciferae	–	C	I-II	H	A	Cul	Non	0	Wee
Diplotaxis	viminea	Cruciferae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Enarthrocarpus	lyratus	Cruciferae	Shiltaam	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Enarthrocarpus	pterocarpus	Cruciferae	–	R	I-III	H	A	Cul-Wld	Non	0	Wee
Enarthrocarpus	strangulatus	Cruciferae	–	C	I-II	H	A	Cul-Wld	Non	0	Wee
Eremobium	aegyptiacum	Cruciferae	Dakhayaan	CC	I-III	H	P	Snd-Ste	Gra	1	Psa
Eruca	sativa	Cruciferae	Gergeer, Gargir	R	I-III	H	A	Cul-Ste-Wld	Gra-Med	2-3	Wee
Erucaria	crassifolia	Cruciferae	Kromb sahra	R	III-VI	H	A	Rge	Gra	2	S04
Erucaria	hispanica	Cruciferae	Rawq	C	I-II	H	A	Cul	Non	0	Wee
Erucaria	microcarpa	Cruciferae	–	R	II-III	H	A	Cul-Rge	Gra	1	Wee
Erucaria	pinnata	Cruciferae	Saleek	C	I-IV	H	A	Cul-Rge	Gra	1	Wee
Erysimum	repandum	Cruciferae	–	RR	I-II	H	A	Cul-Rge	Non	0	Wee
Farsetia	aegyptiaca	Cruciferae	Garba	CC	II-VI	H	P-Sh	Rge	Gra	1-2	Ere
Farsetia	longisiliqua	Cruciferae	Hook	R	III-VI	H	P	Rge	Gra	1-2	Ere
Isatis	lusitanica	Cruciferae	Sofeira	R	I-II	H	A	Cul	Non	0	Wee
Isatis	microcarpa	Cruciferae	–	R	I-II	H	A	Cul	Non	0	Wee

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Lepidium	aucheri	Cruciferae	–	RR	I-II	H	A	Cul-Wld	Non	0	End-Wee
Lepidium	draba	Cruciferae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Lepidium	latifolium	Cruciferae	Rashad	R	I-II	H	P	Cul-Wld	Non	0	Wee
Lobularia	arabica	Cruciferae	Dahyaan	C	I-III	H	A	Cul-Snd	Non	0	Psa
Lobularia	libyca	Cruciferae	Khorn el Ibra	C	I-III	H	A	Cul-Snd	Gra	1	Psa
Lobularia	maritima	Cruciferae	Aguerma	FR	I	H	A	Coa-Dne	Med	0	Psa
Malcomia	nana	Cruciferae	–	RR	I-II	H	A	Rge	Gra	2-3	Psa
Malcomia	pygmaea	Cruciferae	Shigara	R	I-II	H	A	Rge-Wld	Gra	2-3	Psa
Matthiola	bicornis	Cruciferae	–	RR	I-III	H	A	Cul	Gra	2	Psa
Matthiola	fruticulosa	Cruciferae	Mantoor	RR	I-II	H	P	Sha-Snd-Ste	Gra	3	Psa
Matthiola	livida	Cruciferae	Shigara	CC	III-VI	H	A	Des	Gra	2	Ere
Matthiola	longipetala	Cruciferae	–	CC	I-III	H	A	Cul-Rge-Ste	Gra	2	Psa
Matthiola	pumilio	Cruciferae	–	CC	I-II	H	A	Cul	Gra	2	Psa
Moricandia	nitens	Cruciferae	H'mim	FC	I-II	Fr	P	Cul-Rge	Fsh-Gra	3-4	Sil-SO4
Nasturtiopsis	coronopifolia	Cruciferae	–	R	I-III	H	A	Rge-Wld	Med	0	Sil-SO4
Nasturtium	officinale	Cruciferae	Qurrat el Ayn	C	I-II	H	P	Can-Frw	Med-Veg	2-3	Hyd
Neotorularia	torulosa	Cruciferae	–	R	I-II	H	A	Rge-Wld	Non	0	Wee
Ochthodium	aegyptiacum	Cruciferae	–	R	I-II	H	A	Cul	Non	0	Wee
Pseuderucaria	clavata	Cruciferae	–	R	II-III	CH	A	Rge-Ste	Gra	2	SO4
Raphanus	raphanistrum	Cruciferae	Figl, Mechtehiya	RR	I-II	H	A	Irr	Non	0	Wee
Rapistrum	rugosum	Cruciferae	–	CC	I-III	H	A	Cul-Wld	Non	0	Wee
Rorippa	palustris	Cruciferae	–	C	I-II	H	A-Sh	Can-Frw	Non	0	Hyg
Schouwia	thebaica	Cruciferae	Mahad	R	III-VI	H	A	Des-Wad	Gra	3	Ere
Sinapis	alba	Cruciferae	Khardal	R	I-II	H	A	Irr	Med	0	Wee
Sinapis	arvensis	Cruciferae	Khardal	CC	I-II	H	A	Irr	Med	0	Wee
Sinapis	pubescens	Cruciferae	Khardal	C	I-II	H	A	Cul	Med	0	Wee
Sisymbrium	irio	Cruciferae	Shillyat, Figl el Gamal	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Zilla	spinosa subsp. biparmata	Cruciferae	Zilla, Shebrom	C	III-VI	DS	P	Des-Wad	Gra-Med	3	End-Ere
Bryonia	cretica	Cucurbitaceae	Tafwa, Fashira	R	I-II	Cl	P	Cul-Snd	Med	0	Psa
Citrullus	colocynthis	Cucurbitaceae	Handal	CC	I-IV	Cl	P	Rge-Snd-Ste	Med	0	Psa
Juniperus	phoenicea	Cupressaceae	A'arar	R	I-II	HS-T	P	Roc	Fue-Gra-Med	1	FoRe
Cymodocea	nodosa	Cymodoceaceae	Qoshr	C	I	H	P	Sea	Non	0	Hyd
Cynomorium	coccineum	Cynomoriaceae	Zab et Ard	FC	I-III	Par	P	Slt	Med	0	Hal
Carex	divisa	Cyperaceae	Sard	C	I-II	H	P	Cul-Wet	Non	0	Hyg
Carex	extensa	Cyperaceae	–	R	I-II	H	P	Cul-Wet	Non	0	Hyg
Cyperus	alopecuroides	Cyperaceae	Koosh, Samar	CC	I-II	H	P	Wet	Non	0	Hyg
Cyperus	capitatus	Cyperaceae	S'eed	C	I-II	H	P	Wet	Non	0	Hyg
Cyperus	conglomeratus	Cyperaceae	Oshb	C	II-VI	H	P	Des-Snd	Gra	3	Ere-Psa
Cyperus	difformis	Cyperaceae	Ageera	C	I-II	H	A	Wet	Non	0	Hyg
Cyperus	digitatus	Cyperaceae	Qorreih	C	I-II	H	P	Wet	Non	0	Hyg

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Cyperus	esculentus	Cyperaceae	Habb el Azeez	R	I-II	H	P	Irr-Wet	Med-Veg	0	Hyg
Cyperus	fuscus	Cyperaceae	S'ed	R	I-II	H	P	Wet	Non	0	Hyg
Cyperus	laevigatus	Cyperaceae	Dees, S'eed, Burbet	CC	I-II	H	P	Wet	Non	0	Hyg
Cyperus	rotundus	Cyperaceae	S'ed el Homaar	CC	I-II	H	P	Irr-Wet	Med	0	Hyg
Cyperus	schimperianus	Cyperaceae	S'eed	R	I-II	H	P	Wet	Non	0	Hyg
Eleocharis	geniculata	Cyperaceae	–	R	I-II	H	A-Sh	Wet	Non	0	Hyg
Eleocharis	palustris	Cyperaceae	–	C	I-II	H	P	Wet	Non	0	Hyg
Eleocharis	parvula	Cyperaceae	–	RR	I-II	H	P	Wet	Non	0	Hyg
Fimbristylis	bisumbellata	Cyperaceae	Forrysh, Shaara	CC	I-II	H	A	Wet	Non	0	Hyg
Fimbristylis	pubescens	Cyperaceae	Shaara	R	I-II	H	P	Wet	Non	0	Hyg
Schoenus	nigricans	Cyperaceae	–	R	I-II	H	P	Slt-Wet	Non	0	Hal-Hyg
Scirpus	articulatus	Cyperaceae	Smaar	RR	I-II	H	A	Wet	Non	0	Hyg
Scirpus	holoschenus	Cyperaceae	Dees	R	I-II	H	P	Slt-Wet	Non	0	Hal-Hyg
Scirpus	inclinatus	Cyperaceae	Samaar	R	I-II	H	P	Wet	Non	0	Hyg
Scirpus	litoralis	Cyperaceae	Khabb	CC	I-II	H	P	Wet	Non	0	Hyg
Scirpus	maritimus	Cyperaceae	Smaar	CC	I-II	H	P	Slt-Wet	Non	0	Hal-Hyg
Scirpus	praelongus	Cyperaceae	Dees	C	I-II	H	P	Wet	Non	0	Hyg
Scirpus	supinus	Cyperaceae	Khabb	R	I-II	H	A	Wet	Non	0	Hyg
Cephalaria	syriaca	Dipsacaceae	Siwaan	R	I-II	H	A	Rge-Wld	Gra	1	Wee
Pterocephalus	plumosus	Dipsacaceae	Sofeira	FR	I-III	H	A	Rge	Gra	1	Tac-Wee
Scabiosa	eremophila	Dipsacaceae	Kaahel Ghazal	R	I-III	H	A	Rge	Gra	1	Wee
Scabiosa	rhizantha	Dipsacaceae	Siwaan	R	I-II	H	A	Rge	Gra	1	Wee
Ephedra	alata	Ephedraceae	Ald, Alendra	R	III-IV	HS	P	Des-Snd	Gra-Med	1-2	Ere
Ephedra	aphylla	Ephedraceae	Algam, Naad	FC	I-II	HS	P	Cli-Run-Wad	Gra-Med	3	Cha
Chrozophora	tinctoria	Euphorbiaceae	Ghobbeira	FC	I-III	H	A	Wld	Non	T	Sum
Euphorbia	arguta	Euphorbiaceae	Libbein	C	II-III	H	A	Rge-Wld	Non	T	Wee
Euphorbia	bivonae	Euphorbiaceae	Libbein	R	I-II	S	P	Roc	Non	T	Cha
Euphorbia	bivonae	Euphorbiaceae	Libbein	FR	I-II	DS	P	Cli	Non	T	Cha
Euphorbia	chamaepeplus	Euphorbiaceae	Bena	RR	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	dendroides	Euphorbiaceae	Libbein	R	I-II	DS	P	Cli-Roc	Non	T	Cha
Euphorbia	falcata	Euphorbiaceae	Libbein	RR	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	forskallii	Euphorbiaceae	Shaarel Agouz	C	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	helioscopia	Euphorbiaceae	Libbein, Saada	C	I-II	H	A	Cul-Wld	Med	T	Nit-Wee
Euphorbia	hirta	Euphorbiaceae	Libbein	C	I-II	H	A	Wld	Non	T	Wee
Euphorbia	mauritanica	Euphorbiaceae	Libbein	R	I-II	H	P	Wld	Non	T	Wee
Euphorbia	paralias	Euphorbiaceae	Shagaret el Hanash	C	I	Fr	P	Coa-Snd	Non	T	Psa
Euphorbia	parvula	Euphorbiaceae	Libbein	RR	I-II	H	A	Wld	Non	T	Wee
Euphorbia	peplis	Euphorbiaceae	Libbein	R	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	peplus	Euphorbiaceae	Widenia	CC	I-II	H	A	Cul-Wld	Med	T	Wee
Euphorbia	prostrata	Euphorbiaceae	Libbein	C	I-II	H	A	Cul-Wld	Non	T	Wee

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Euphorbia	pterococca	Euphorbiaceae	Libbein	RR	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	punctata	Euphorbiaceae	Libbein	RR	I-II	H	A	Cul-Wld	Non	T	Wee
Euphorbia	retusa	Euphorbiaceae	No'manya	C	III-VI	Fr	P	Des-Rge-Ste	Non	T	Ere
Euphorbia	terracina	Euphorbiaceae	Libbein	C	I-III	Fr-H	P	Cul-Ste-Wld	Non	T	Wee
Haplophyllum	tuberculatum	Euphorbiaceae	Shag. el Kelb, F$_3$el	CC	I-III	Fr	P	Cul-Wld	Med	T	Sum
Mercurialis	annnua	Euphorbiaceae	Halboob	R	I-II	H	A-B	Cli-Run-Wld	Med	T	Nit
Phyllanthus	rotundifolius	Euphorbiaceae	Tarlanoi hindi	FC	I-II	H	A	Cul-Wld	Non	0	Wee
Ricinus	communis	Euphorbiaceae	Kreroua, Kherwa	FR	I-II	TS	P	Snd-Wad-Wld	Med	T	Nat-Psa
Frankenia	hirsuta	Frankeniaceae	Molleih	R	I-IV	H	P	Slt	Non	0	Hal
Frankenia	pulverulenta	Frankeniaceae	Molleih	C	I-IV	H	A	Slt	Non	0	Hal
Frankenia	revoluta	Frankeniaceae	–	RR	III-VI	Fr	P	Slt	Non	0	Hal
Fumaria	bracteosa	Fumariaceae	–	C	I-II	H	A	Cul	Non	0	Wee
Fumaria	capreolata	Fumariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Fumaria	densiflora	Fumariaceae	Zeita	CC	I-II	H	A	Cul	Non	0	Wee
Fumaria	gaillardotii	Fumariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Fumaria	judaica	Fumariaceae	–	R	I-II	H	A	Cul	Med	0	Wee
Fumaria	microstachys	Fumariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Fumaria	officinalis	Fumariaceae	–	RR	I-II	H	A	Cul	Med	0	Wee
Fumaria	parviflora	Fumariaceae	Shahatrag, H. al Sabyan	CC	I-II	H	A	Cul	Med	0	Wee
Hypecoum	aegyptiacum	Fumariaceae	–	C	I-II	H	A	Des-Rge	Gra	0	Psa-Tac
Hypecoum	aequilobum	Fumariaceae	–	R	I-III	H	A	Cul-Rge	Gra	0	Psa-Tac
Hypecoum	littorale	Fumariaceae	–	RR	I	H	A	Coa-Snd	Non	0	Psa
Hypecoum	pendulum	Fumariaceae	Saleek	RR	I-III	H	A	Cul-Rge-Ste	Non	2	Psa-Tac
Hypecoum	procumbens	Fumariaceae	–	RR	I-II	H	A	Cul-Rge	Non	0	Psa-Tac
Centaurium	maritimum	Gentianaceae	–	RR	I-II	H	A	Slt	Non	0	Hal-Psa
Centaurium	pulchellum	Gentianaceae	Kantarion	CC	I-III	H	A	Slt	Med	0	Hal-Hyg
Centaurium	spicatum	Gentianaceae	Menash el Dibban	C	I-II	H	A	Slt	Med	0	Hal-Hyg
Erodium	arborescens	Geraniaceae	Dahma	R	I-III	CH	P	Rge-Ste-Wld	Non	0	SO4
Erodium	chium	Geraniaceae	Ghazlan	R	I-III	H	A	Cul-Rge	Gra	2	Wee
Erodium	ciconium	Geraniaceae	Abu Mosfa	R	I-II	H	A	Cul-Rge	Gra	2	Wee
Erodium	cicutarium	Geraniaceae	Dahmyea abu Ghazal	FC	I-II	H	A	Cul-Rge	Gra-Med	2	Wee
Erodium	crassifolium	Geraniaceae	–	C	I-II	H	P	Cul-Rge-Ste	Gra	1	Nit
Erodium	glaucophyllum	Geraniaceae	Timmeir	CC	I-III	CH	P	Rge-Ste-Wld	Non	0	Sil-SO4
Erodium	gruinum	Geraniaceae	Abu Mosfa	R	I-II	H	A	Cul-Rge	Gra	2	Wee
Erodium	laciniatum	Geraniaceae	Moryhaal	CC	I-III	H	A	Cul-Rge	Gra	2-3	Psa
Erodium	malacoides	Geraniaceae	Oqqeil	CC	I-II	H	A	Cul-Rge-Ste	Gra	2-3	Sil
Erodium	moschatum	Geraniaceae	Meseika	R	I-II	H	A	Cul-Rge	Gra	2	Wee
Erodium	neuradifolium	Geraniaceae	–	C	I-II	H	A	Cul-Rge	Gra	2-3	Psa
Erodium	oxyrhynchum	Geraniaceae	–	C	I-II	H	P	Cul-Rge-Ste	Gra	1	Wee
Geranium	dissectum	Geraniaceae	–	R	I-II	H	A	Cul	Non	0	Wee

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Geranium	molle	Geraniaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Globularia	alypum	Globulariaceae	Zrega	FR	I-II	H	P	Cli-Roc-Ste	Gra-Med	2	Cha
Globularia	arabica	Globulariaceae	Zrega	FC	I-II	H	P	Cli-Roc-Ste	Gra-Med	2	Cha
Aegylops	bicornis	Gramineae	Shaer el Ides	CC	I-II	H	A	Cul-Rge-Wld	Gra	1	Wee
Aegylops	geniculata	Gramineae	–	FR	I-II	H	A	Cul-Rge-Wld	Gra	1	Wee
Aegylops	kotschyi	Gramineae	Shaer el Fahr	C	I-II	H	A	Cul-Rge-Wld	Gra	1	Wee
Aegylops	longissima	Gramineae	–	R	I-II	H	A	Cul-Rge-Wld	Gra	1	Wee
Aegylops	peregrina	Gramineae	–	RR	I-II	H	A	Cul-Rge-Wld	Gra	1	Wee
Aegylops	ventricosa	Gramineae	Shaer el Fahr	RR	I-II	H	A	Cul-Rge-Wld	Gra	2	Wee
Aeluropus	lagopoides	Gramineae	Akreesh	CC	I-III	H	P	Slt	Gra	1	Hal
Agropyron	cristatum	Gramineae	–	R	I-II	H	P	Cul	Gra	3	Wee
Alopecurus	myosuroides	Gramineae	–	R	I-II	H	P	Wet	Gra	2	Hyg
Ammochloa	palaestina	Gramineae	–	FC	I-II	H	A	Cul-Rge	Non	0	Hal
Ammophila	arenaria	Gramineae	Gazzoof	CC	I	H	P	Coa-Snd	Non	0	Hal-Psa
Aristida	funiculata	Gramineae	Qaw	R	II-IV	H	A	Rge-Snd	Gra	2	Psa
Arundo	donax	Gramineae	Ghaab, B$_3$s	CC	I-III	H	P	Wet	Han-Wbr	2	Hyg
Avena	barbata	Gramineae	Khafoor	CC	I-III	H	A	Cul-Wld	Gra	2	Wee
Avena	fatua	Gramineae	Khafoor, Zummayr	FC	I-II	H	A	Cul-Wld	Gra	2	Wee
Avena	sterilis	Gramineae	Khafoor	FC	I-II	H	A	Cul-Wld	Gra	2	Wee
Brachiaria	mutica	Gramineae	Moddeid	R	I-II	H	P	Irr	Gra	5	Fod-Hyg-Sum
Brachiaria	reptans	Gramineae	Nissela	R	I-II	H	P	Wet	Gra	2-3	Hyg-Sum
Brachypodium	distachyum	Gramineae	Shaer Barri	CC	I-III	H	A	Rge-Ste-Wld	Non	1	Wee
Briza	maxima	Gramineae	Sahlah	R	I-II	H	A	–	Gra	1-2	Wee
Briza	minor	Gramineae	Sahlah	RR	I-II	H	A	Wld	Gra	1-2	Wee
Bromus	aegyptiacus	Gramineae	Khafoor	–	I-II	H	A	Cul-Wld	Gra	2	Wee
Bromus	diandrus	Gramineae	Saf Soof	R	I-II	H	A	Cul-Wld	Gra	2	Wee
Bromus	fasciculatus	Gramineae	–	CC	I-III	H	A	Cul-Rge-Wld	Gra	2	Wee
Bromus	japonicus	Gramineae	Saf Soof	RR	I-II	H	A	Cul-Wld	Gra	2	Wee
Bromus	madritensis	Gramineae	–	R	I-II	H	A	Cul-Wld	Gra	2	Wee
Bromus	rubens	Gramineae	–	C	I-III	H	A	Cul-Rge-Wld	Gra	2	Wee
Bromus	scoparius	Gramineae	Sabal el Fahr	C	I-II	H	A	Cul-Wld	Gra	2	Wee
Bromus	tectorum	Gramineae	Sabal abu Hossein	R	I-II	H	A	Cul-Wld	Gra	2	Wee
Castellia	tuberculata	Gramineae	–	R	I-II	H	A	Rge	Gra	2	Psa
Catapodium	rigidum	Gramineae	–	RR	I-II	H	A	Cul-Wld	Gra	1	Psa
Cenchrus	ciliaris	Gramineae	Hada	RR	I-III	H	P	Cli-Run	Gra	5	Fod-Psa
Centropodia	forskallii	Gramineae	Migel en Naga	FR	II-IV	H	P	Rge-Snd	Gra	2	Ere-Psa
Corynephorus	divaricatus	Gramineae	–	FR	I-II	H	A	Coa-Snd	Non	0	Psa
Crithopsis	delileana	Gramineae	–	RR	I-II	H	A	Rge-Ste-Wld	Gra	1	Wee
Crypsis	aculeata	Gramineae	–	R	I-II	H	A	Wet	Non	0	Hyg
Crypsis	alopecuroides	Gramineae	–	R	I-II	H	A	Wet	Non	0	Hyg

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Crypsis	schoenoides	Gramineae	–	R	I-II	H	A	Wet	Non	0	Hyg
Cutandia	dicthotoma	Gramineae	Sammah	CC	I-III	H	A	Con-Snd-Ste	Gra	2	Psa-Tac
Cutandia	maritima	Gramineae	Sammah	RR	I	H	A	Coa-Wld	Gra	1	Psa
Cutandia	memphitica	Gramineae	Sammah	CC	I-III	H	A	Coa-Snd-Ste	Gra	2	Psa-Tac
Cynodon	dactylon	Gramineae	Nigel, Negem	CC	I-III	H	P	Cul	Gra-Med	5	Fod-Psa-Wee
Cynosurus	coloratus	Gramineae	Sahlah	R	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Cynosurus	echinatus	Gramineae	Sahlah	R	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Dactylis	hispanica	Gramineae	–	C	I-II	H	A	Cli-Run	Gra	4	Cha
Dactyloctenium	aegyptium	Gramineae	Na'eem el Saleeb	CC	I-II	H	A	Cul-Wld	Gra	2	Psa-Sum
Desmaziera	philistaea subsp. rholfsiana	Gramineae	Khafoor	RR	I-II	H	A	Rge-Snd	Gra	2	Psa
Dichanthium	annulatum	Gramineae	Abu Qoseiba, Himmera	RR	I-II	H	P	Cli-Run-Wad	Gra	3	Sum
Digitaria	sanguinalis	Gramineae	Dafira	R	I-II	H	A	Cul-Wet	Gra	1	Hyg-Sum
Dinebra	retroflexa	Gramineae	Deneeb, Nigl al Nimr	C	I-II	H	A	Irr	Gra	1	Hyg-Wee
Echinochloa	colona	Gramineae	Moddeid, Abu Rukba	CC	I-II	H	A	Irr	Gra	2	Hyg-Sum
Echinochloa	crus-galli	Gramineae	Deneiba	CC	I-II	H	A	Irr	Gra	2	Sum-Wee
Echinochloa	stagnina	Gramineae	Omshaat	RR	I-II	H	P	Can	Gra	4-5	Hyd-Sum
Elymus	elongatus	Gramineae	Gazzoof	CC	I	H	P	Coa-Snd	Gra	0	Psa
Elymus	farctus	Gramineae	Gazzoof	CC	I	H	P	Coa-Snd	Non	0	Psa
Elytrigia	cristata	Gramineae	–	FR	I	H	P	Coa-Dne	Gra	1	Psa
Elytrigia	juncea	Gramineae	–	FR	I	H	P	Coa-Dne	Gra	1	Psa
Eragrostis	aegyptiaca	Gramineae	Qaw	C	I-II	H	A	Cul-Snd	Gra	1	Psa-Wee
Eragrostis	barrelieri	Gramineae	–	R	I-II	H	A	Cul-Snd	Gra	1	Psa-Wee
Eragrostis	cilianensis	Gramineae	Ti raab	C	I-II	H	A	Wld	Gra	1	Wee
Eragrostis	pilosa	Gramineae	Heelagoog	C	I-II	H	A	Wet	Gra	1	Hyg-Wee
Gastridium	phleoides	Gramineae	–	R	I-II	H	A	Wld	Non	0	Wee
Hemarthria	altissima	Gramineae	Roqeybe	R	I-II	H	P	Can-Wet	Gra	2	Hyd-Hyg
Hordeum	marinum	Gramineae	Reish Hosny	CC	I-II	H	A	Slt	Gra	1	Hal
Hordeum	murinum	Gramineae	Reesh	CC	I-III	H	A	Cul-Wld	Gra	2	Nit
Hordeum	spontaneum	Gramineae	–	RR	I-III	H	A	Cul-Wad	Gra	2	Wee
Hyparrhenia	hirta	Gramineae	Saf Soof	FR	I-II	H	P	Run-Ste-Wad	Gra	3	Sum
Imperata	cylindrica	Gramineae	Halfa, Del al Qutt	CC	I-II	H	P	Cul-Wet	Gra-Med	1	Hyg-Wee
Lagurus	ovatus	Gramineae	–	C	I-II	H	A	Snd-Wld	Non	0	Psa
Lamarkia	aurea	Gramineae	Sahlah	FC	I-II	H	A	Wld	Non	0	Nit
Lasiurus	scindicus	Gramineae	Hada	RR	III-VI	H	P	Des-Dne-Ste	Gra	3	Ere-Fod-Psa
Leersia	hexandra	Gramineae	Sholleik	R	I-II	H	P	Wet	Gra	3	Hyd-Hyg
Leptochloa	fusca	Gramineae	Sey foon	FC	I-II	H	P	Wet	Gra	2	Hyg-Pel
Lolium	multiflorum	Gramineae	Simbil, Samma	FC	I-II	H	A-B	Cul-Irr	Gra	5	Wee
Lolium	perenne	Gramineae	Gazoon, Hashish al Faras	R	I-II	H	P-Sh	Cul-Irr	Gra-Med	5	Wee
Lolium	rigidum	Gramineae	Sahlah	C	I-II	H	A	Cul-Rge-Ste-Wld	Gra	3	Psa
Lolium	temulentum	Gramineae	Zawaan	R	I-II	H	A-B-Sh	Cul-Irr	Gra-Med	4	Fod-Wee

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Lygeum	spartum	Gramineae	Halfa Mahbouba	CC	I-III	H	P	Rge-Sha-Ste	Han	1	S04
Melica	minuta	Gramineae	–	RR	I-II	H	P	Rge	Gra	3	Psa
Oryza	sativa	Gramineae	Rooz	R	I-II	H	P	Can-Frw	Cro-Gra	3	Hyd
Oryzopsis	miliacea	Gramineae	Himaar/Hemri	FC	I-II	H	P	Cli-Run	Gra	4	Cha
Panicum	antidotale	Gramineae	–	RR	I-III	H	P	Wad	Gra	4-5	Fod-Psa
Panicum	coloratum	Gramineae	Qasaba	FC	I-II	H	P	Irr	Gra	4	Fod-Sum-Wee
Panicum	repens	Gramineae	Nigel, Zummar	FR	I-II	H	P	Cul-Wet	Gra	2-3	Hyg
Panicum	turgidum	Gramineae	Abu Rokba	C	III-VI	HS	P	Des-Ste-Wad	Gra-Med-Sbi	2	Ere
Parapholis	filiformis	Gramineae	–	FC	I-II	H	A	Slt	Non	0	Hal
Parapholis	incurva	Gramineae	–	R	I-II	H	A	Slt	Non	0	Psa
Parapholis	marginata	Gramineae	–	R	I-II	H	A	Slt	Non	0	Hal
Paspalidium	geminatum	Gramineae	Sayfoon, Nisela	C	I-II	H	P	Wet	Gra	2	Hyg-Sum
Paspalidium	obtusifolium	Gramineae	Moddeid	R	I-II	H	P	Wet	Gra	2	Hyg-Sum
Paspalum	distichum	Gramineae	Mudded	R	I-II	H	P	Wld	Gra	4	Fod-Hyg-Sum
Pennisetum	divisum	Gramineae	Tommam	RR	III-VI	HS	P	Des-Ste-Wad	Gra	2	Ere-Psa
Pennisetum	setaceum	Gramineae	Sabat	R	II-IV	H	P	Run-Ste-Wad	Gra	1	Cha-Psa
Phalaris	canariensis	Gramineae	–	C	I-II	H	A	Cul	Gra	3	Sil
Phalaris	minor	Gramineae	Shaer el Fahr	CC	I-III	H	A	Cul-Rge	Gra	2	Sil
Phalaris	paradoxa	Gramineae	–	CC	I-III	H	A	Cul-Rge	Gra	1	Pel
Phragmites	australis	Gramineae	Qasab Hagana, Ghab	CC	I-III	H	P	Slt	Han-Med-Wbr	1	Hal-Hyg
Poa	annua	Gramineae	–	FC	I-II	H	A	Cul-Wld	Gra	1	Nit-Wee
Poa	infirma	Gramineae	Sahlah	FC	I-II	H	A	Cul	Gra	1-2	Nit-Wee
Polypogon	monspeliensis	Gramineae	Deil el Qott	C	I-II	H	A	Slt	Non	0	Hal
Polypogon	viridis	Gramineae	Deir el Fahr	C	I-II	H	P	Slt	Non	0	Hal
Rostraria	cristata	Gramineae	–	C	I-II	H	A	Cul-Rge	Gra	2	Sil
Rostraria	hispida	Gramineae	–	CC	I-III	H	A	Cul-Rge-Ste	Gra	2	Psa
Rostraria	pumila	Gramineae	–	CC	I-III	H	A	Cul-Rge	Gra	2	Psa
Saccharum	spontaneum	Gramineae	Boos	C	I-II	H	P	Cul-Wet	Gra-Sbi-Wbr	2	Hyg
Schismus	arabicus	Gramineae	Bahma	CC	I-II	H	A	Rge-Snd-Ste	Gra	3	Psa
Schismus	barbatus	Gramineae	Bahma	CC	I-II	H	A	Rge-Snd-Ste	Gra	3	Psa
Setaria	verticillata	Gramineae	Yadaab, Qamb al Far	CC	I-II	H	A	Cul-Wld	Gra	1	Sum-Wee
Setaria	verticilliformis	Gramineae	Del el Far	R	I-II	H	A	Cul-Wld	Gra	1	Sum-Wee
Sorghum	halepense	Gramineae	Djarrapp	R	I-II	H	P	Cul-Wet	Gra	3	Hyg-Wee
Sorghum	virgatum	Gramineae	Garawa	R	I-II	H	A	Wet	Non	0	Hyg-Wee
Sphenopus	divaricatus	Gramineae	–	CC	I-II	H	A	Slt	Non	0	Hal
Sporobolus	pungens	Gramineae	Shakaam	C	I	H	P	Coa-Snd	Gra	0	Hal
Sporobolus	spicatus	Gramineae	Sammah	C	I-II	H	P	Slt	Gra	2	Hal
Stipa	capensis	Gramineae	Behma/Sabat	CC	I-III	H	A	Rge-Sha-Ste	Gra	1	Sil
Stipa	lagascae	Gramineae	Gawther	FR	I-III	H	P	Rge-Snd-Ste	Gra	3-4	Psa
Stipa	parviflora	Gramineae	Safsoof	CC	I-III	H	P	Roc-Sha-Ste	Gra	3	Cha

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Stipagrostis	ciliata	Gramineae	Assahn	FC	I-III	H	P	Rge-Ste	Gra	2	Sil-SO4
Stipagrostis	lanata	Gramineae	Shaf Shoof	R	II-III	H	P	Dne-Rge	Gra	2	Psa
Stipagrostis	obtusa	Gramineae	Saf Soof	FR	II-IV	H	P	Rge-Snd-Ste	Gra	2	Psa
Stipagrostis	plumosa	Gramineae	Nawa Beida	FR	II-IV	H	P	Rge-Snd-Ste	Gra	2	Psa
Stipagrostis	scoparia	Gramineae	Sabat	FR	II-IV	H	P	Dne-Rge	Gra-Med-Sbi	1	Psa
Taeniatherum	caput-medusae	Gramineae	Salsoof	RR	I-II	H	A	Cul-Wld	Gra	1	Wee
Triplachne	nitens	Gramineae	–	R	I-II	H	A	Coa-Dne-Slt	Non	0	Hal-Psa
Trisetaria	macrochaeta	Gramineae	–	FR	I-II	H	A	Cul-Rge	Gra	2	Wee
Vulpia	brevis	Gramineae	Sahlah	R	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Vulpia	bromoides	Gramineae	Sahlah	RR	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Vulpia	fasciculata	Gramineae	Sahlah	R	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Vulpia	myuros	Gramineae	Sahlah	RR	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Vulpia	pectinella	Gramineae	Sahlah	R	I-II	H	A	Cul-Wld	Gra	1-2	Wee
Halophila	stipulacea	Hydrocharitaceae	–	RR	I-II	H	P	Can-Frw	Non	0	Hyd
Najas	graminea	Hydrocharitaceae	–	R	I-II	H	A	Can-Frw	Non	0	Hyd
Najas	marina	Hydrocharitaceae	Horreish	FC	I-II	H	A	Bra-Can	Non	0	Hyd
Najas	minor	Hydrocharitaceae	–	R	I-II	H	A	Can-Frw	Non	0	Hyd
Ottelia	alismoides	Hydrocharitaceae	Widna	FR	I-II	H	A	Can-Frw	Non	0	Hyd
Gladiolus	italicus	Iridaceae	Seil el Ghoraab	R	I-II	H	P	Cul-Wld	Orn	0	Wee
Gynandriris	monophylla	Iridaceae	Kheita	C	I-III	H	P	Rge-Wld	Non	0	Wee
Gynandriris	sisyrinchium	Iridaceae	Kheita	CC	I-III	H	P	Rge-Ste-Wld	Non	0	Wee
Juncus	acutus	Juncaceae	Samaar/mor	CC	I-III	H	P	Slt-Wet	Han-Med	0	Hal-Hyg
Juncus	bufonius	Juncaceae	Shaar el Kird	C	I-II	H	A	Wet-Wld	Non	0	Hyg
Juncus	fontanesii	Juncaceae	–	R	I-II	H	P	Wet-Wld	Non	0	Hyg
Juncus	hybridus	Juncaceae	–	R	I-II	H	A	Wet-Wld	Non	0	Hyg
Juncus	rigidus	Juncaceae	Samaar	CC	I-III	H	P	Slt-Wet	Non	0	Hal-Hyg
Juncus	subulatus	Juncaceae	Haleyn	C	I-II	H	P	Wet-Wld	Han	0	Hyg
Ajuga	iva	Labiatae	Shandagoara	R	I-II	H	P	Cli-Run	Med	0	Cha
Ballota	damascena	Labiatae	Asaghan	FC	I-II	H	P	Wld	Non	0	Nit
Ballota	pseudo-dictammus	Labiatae	–	FR	I-II	Fr	P	Wld	Non	0	Wee
Lamium	amplexicaule	Labiatae	Taqiyit el Ghorah	CC	I-II	H	A	Cul	Non	0	Wee
Marrubium	alysson	Labiatae	Frasiyoun, Marriout	CC	I-III	H	P	Wld	Non	0	Nit
Marrubium	vulgare	Labiatae	Robeia	C	I-II	H	P	Wld	Med	0	Nit
Phlomis	floccosa	Labiatae	Zeheira	FC	I-II	HS	P	Cli-Run	Non	0	Cha
Prasium	majus	Labiatae	Shoofal	FC	I-II	Fr	P	Cli-Run	Non	1	Cha
Salvia	aegyptiaca	Labiatae	Raahl	FC	I-III	Fr	P	Sha-Ste	Gra	1	Sil
Salvia	lanigera	Labiatae	Nameia	FC	I-III	H	P	Rge-Ste	Gra	3	Sil
Salvia	spinosa	Labiatae	Marymya	R	I-II	H	A	Wld	Non	0	Sil
Salvia	verbenaca	Labiatae	Thalaba	FC	I-III	H	P	Rge-Ste	Gra	3	Psa
Satureja	nervosa	Labiatae	–	FC	I-II	Fr	P	Cli-Roc	Gra	2	Cha

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Teucrium	brevifolium	Labiatae	–	FR	I-III	Fr	P	Rge	Gra	1	Cha-End
Teucrium	polium	Labiatae	Ga'da	CC	I-III	Fr	P	Rge-Sha-Ste	Med	0	Cha
Thymus	capitatus	Labiatae	Zaater	R	I-II	DS	P	Cli-Roc-Ste	Med-Veg	1	Cha
Acacia	ehrenbergiana	Leguminosae	Seyal	RR	III-VI	HS-T	P	Des-Wad	Gra-Med	1	Ere-Phr
Acacia	raddiana	Leguminosae	Talh	R	III-VI	HS-T	P	Des-Wad	Gra-Med	3	Ere-Phr
Alhagi	graecorum	Leguminosae	Agool, Aq,l	FC	III-VI	Fr	P	Slt-Wld	Gra-Med	1	Hal-Phr
Anagyris	foetida	Leguminosae	Garood, Karroub el Khinzir	RR	I-II	HS	P	Cul-Rge	Med	T	Sil
Anthyllis	vulneraria	Leguminosae	–	RR	I-II	H	A-P	Cul-Rge-Ste	Gra-Med	2-3	Wee
Argyrolobium	uniflorum	Leguminosae	–	FR	I-VI	DS	P	Rge-Snd-Ste	Gra	4	Psa
Astragalus	asterias	Leguminosae	Abu Eqeifa	R	I-II	H	A	Cul-Rge	Gra	1-2	Psa
Astragalus	boeticus	Leguminosae	Mehallaq	C	I-II	H	A	Cul-Wld	Non	0	Wee
Astragalus	caprinus	Leguminosae	–	C	I-III	H	P	Rge-Ste-Wld	Non	0	Psa
Astragalus	fruticosus	Leguminosae	–	C	I-III	Fr	P	Rge	Non	0	Ere
Astragalus	hamosus	Leguminosae	Qorein	C	I-II	H	A	Cul-Wld	Non	0	Sil-Wee
Astragalus	hauarensis	Leguminosae	Danel Farah	R	III-VI	H	A	Rge-Snd	Gra	3-4	Psa-Tac
Astragalus	hispidulus	Leguminosae	–	R	III-IV	H	A	Des-Rge	Gra	2	Psa-Tac
Astragalus	mareoticus	Leguminosae	–	R	I-III	H	A	Rge	Gra	2	Psa
Astragalus	spinosus	Leguminosae	–	CC	III-VI	DS	P	Rge-Wad	Gra	1	Ere
Astragalus	tribuloides	Leguminosae	Bel et Gamel	CC	I-II	H	A	Cul-Rge	Non	0	Psa-Tac-Wee
Astragalus	trigonus	Leguminosae	–	FC	III-VI	DS	P	Des-Wad	Gra	1	Ere
Ebenus	armitagei	Leguminosae	–	RR	I	Fr	P	Rge-Roc	Gra	2	Cha-End
Hedysarum	coronarium	Leguminosae	–	RR	I-II	H	A-B	Irr	Gra	5	Fod-Pel
Hedysarum	spinosissimum	Leguminosae	–	R	I-III	H	A	Rge-Snd-Ste	Gra	3	Psa
Hippocrepis	areolata	Leguminosae	–	CC	I-II	H	A	Rge-Ste	Gra	3	Psa
Hippocrepis	cyclocarpa	Leguminosae	–	CC	I-II	H	A	Cul-Rge	Gra	2	Sil
Hippocrepis	unisiliquosa	Leguminosae	Omm Danara	RR	I-III	H	A	Rge-Ste	Gra	3	Psa
Hymenocarpus	circinnatus	Leguminosae	–	R	I-II	H	A	Cul-Rge-Ste	Gra	1	Wee
Lathyrus	aphaca	Leguminosae	Hamaam al Burg	C	I-II	H	A	Cul	Gra	3	Wee
Lathyrus	hirsutus	Leguminosae	Hada, Duhreg	C	I-II	H	A	Cul	Gra	2	Wee
Lathyrus	marmoratus	Leguminosae	–	CC	I-II	H	A	Cul	Gra	2	Wee
Lathyrus	pseudocicera	Leguminosae	–	FC	I-II	H	A	Cul	Gra	2	Wee
Lathyrus	sativus	Leguminosae	–	C	I-II	H	A	Cul	Gra	2	Wee
Lathyrus	setifolius	Leguminosae	–	RR	I-II	H	A	Cul	Gra	2	Wee
Lotus	corniculatus	Leguminosae	Rigl al Asfur	RR	I-II	H	P	Cul-Wet	Gra	5	Hyg
Lotus	creticus	Leguminosae	Eshb	C	I-II	H	P	Rge-Snd-Ste	Gra	4	Psa
Lotus	cytisioides	Leguminosae	Eshb	RR	I-II	H	P	Coa-Rge-Snd	Gra	3	Hal-Psa
Lotus	edulis	Leguminosae	–	R	I-II	H	P	Cul	Gra	1	Wee
Lotus	halophilus	Leguminosae	Herbith	CC	I-III	H	A	Cul-Rge-Ste	Gra	1-2	Psa
Lotus	ornithopodioides	Leguminosae	Ommelkheishat	R	I-II	H	A	Cul	Gra	1	Wee
Lotus	palustris	Leguminosae	–	RR	I-II	H	P	Cul-Wet	Gra	3	Hyg

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Lotus	pedunculatus	Leguminosae	–	RR	I-II	H	P	Cul-Wet	Gra	4	Hal-Hyg
Lotus	polyphyllus	Leguminosae	–	C	I	H	P	Coa-Dne	Gra	0	Hal-Psa
Lotus	tetragonolobus	Leguminosae	Asal el Arous	C	I-II	H	P	Cul-Wet	Gra	4	Hal-Hyg
Medicago	arabica	Leguminosae	–	R	I-II	H	A	Cul	Gra	2	Wee
Medicago	coronata	Leguminosae	–	R	I-II	H	A	Cul-Wld	Gra	2-3	Wee
Medicago	hypogea	Leguminosae	Adreis	RR	I-II	H	A	Cul-Rge-Ste	Gra	2	Wee
Medicago	intertexta	Leguminosae	Khasag	RR	I-II	H	A	Cul-Rge	Gra	2-3	Wee
Medicago	laciniata	Leguminosae	–	FC	I-IV	H	A	Cul-Rge-Ste	Gra	2-3	Psa-Tac
Medicago	littoralis	Leguminosae	–	CC	I-III	H	A	Cul-Rge-Ste	Gra	2-3	Psa
Medicago	lupulina	Leguminosae	–	R	I-II	H	A-B-Sh	Cul-Wld	Gra	2-3	Wee
Medicago	marina	Leguminosae	–	C	I	H	P	Coa-Snd	Non	0	Hal
Medicago	minima	Leguminosae	–	FR	I-IV	H	A	Rge-Ste	Gra	1	Psa
Medicago	monspeliaca	Leguminosae	–	R	I-II	H	A	Cul-Rge	Non	0	Hal
Medicago	orbicularis	Leguminosae	–	R	I-II	H	A	Cul	Gra	3	Wee
Medicago	polyceratia	Leguminosae	–	R	I-II	H	A	Cul-Rge	Non	0	Hal
Medicago	polymorpha	Leguminosae	Oqqeil, Nafal	CC	I-II	H	A	Cul	Gra	3-4	Wee
Medicago	rigidula	Leguminosae	–	RR	I-II	H	A	Cul-Rge	Gra	2-3	Sil
Medicago	truncatula	Leguminosae	–	C	I-III	H	A	Cul-Rge-Ste	Gra	2-3	Psa
Medicago	tuberculata	Leguminosae	–	RR	I-II	H	A	Cul-Rge	Gra	2-3	Wee
Melilotus	elegans	Leguminosae	Handekoeq	RR	I-II	H	A	Cul-Rge	Non	0	Hal-Wee
Melilotus	indicus	Leguminosae	Handekoeq	CC	I-II	H	A	Cul-Rge	Med	0	Hal-Wee
Melilotus	sulcatus	Leguminosae	Handekoeq	R	I-II	H	A	Cul-Rge	Non	0	Hal-Wee
Onobrychis	crista-galli	Leguminosae	Seleisa	C	I-II	H	A	Rge-Snd	Gra	2	Psa
Ononis	mitissima	Leguminosae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Ononis	natrix subsp. natrix	Leguminosae	Littein	FR	I-II	DS	P	Rge	Gra	1	Psa
Ononis	reclinata	Leguminosae	Hotteiba	C	I-II	H	A	Cul	Non	0	Psa
Ononis	serrata	Leguminosae	–	C	I-II	H	A	Cul-Snd	Non	0	Psa
Ononis	sicula	Leguminosae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Ononis	vaginalis	Leguminosae	–	CC	I	DS	P	Coa-Snd	Non	0	Psa
Pisum	sativum	Leguminosae	–	R	I-II	H	A	Cul	Gra	4-5	Wee
Prosopis	farcta	Leguminosae	–	R	I-II	DS	P	Cul-Irr-Wld	Fue	0	Phr-Wee
Prosopis	juliflora	Leguminosae	–	FC	I-II	HS-T	P	Wld	Fen-Fue-Fsh-Gra	2-3	Nat-Phr
Retama	monosperma	Leguminosae	R'tam	RR	I-II	HS	P	Rge-Wad	Fue-Gra-Sbi	1-2	Psa
Retama	raetam	Leguminosae	R'tam	FR	I-VI	HS	P	Rge-Wad	Fue-Gra-Med-Sbi	1-2	Psa
Scorpiurus	muricatus	Leguminosae	Thanab al Aqrab	CC	I-II	H	A	Cul	Gra	3	Pel
Securigera	securidaca	Leguminosae	–	RR	I-II	H	A	Cul	Non	0	Wee
Sesbania	sesban	Leguminosae	Seseebaan	Fc	I-II	HS	P	Irr	Wbr	–	Nat
Trifolium	alexandrinum	Leguminosae	Berseem	CC	I-II	H	A	Irr	Cro	5	Fod
Trifolium	angustifolium	Leguminosae	–	RR	I-II	H	A	Cul	Gra	1	Wee
Trifolium	argutum	Leguminosae	–	R	I-II	H	A	Cul	Gra	1	Wee

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Trifolium	campestre	Leguminosae	–	R	I-II	H	A	Cul	Gra	1	Wee
Trifolium	dasyurum	Leguminosae	–	R	I-II	H	A	Cul-Irr	Gra	1-2	Wee
Trifolium	fragiferum	Leguminosae	–	RR	I-II	H	P	Wet	Cro	5	Fod-Hal
Trifolium	nigrescens	Leguminosae	–	RR	I-II	H	A	Cul	Gra	1	Wee
Trifolium	patens	Leguminosae	–	RR	I-II	H	A	Wet	Gra	1-2	Wee
Trifolium	purpureum	Leguminosae	–	R	I-II	H	A	Cul	Cro	5	Fod
Trifolium	resupinatum	Leguminosae	Qort	CC	I-II	H	A	Wet	Cro	5	Fod-Hal
Trifolium	scabrum	Leguminosae	–	RR	I-II	H	A	Cul	Gra	1	Wee
Trifolium	stellatum	Leguminosae	–	R	I-II	H	A	Cul	Gra	1-2	Wee
Trifolium	tomentosum	Leguminosae	Kreishit	C	I-II	H	A	Rge-Wet	Gra	1-2	Wee
Trigonella	anguina	Leguminosae	–	FC	I-IV	H	A	Cul-Wld	Non	0	Hal-Tac-Wee
Trigonella	arabica	Leguminosae	Wideina	R	I-II	H	A	Cul-Snd	Gra	4	Psa
Trigonella	berythea	Leguminosae	–	RR	I-II	H	A	Cul	Non	0	Wee
Trigonella	cyllindrica	Leguminosae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Trigonella	glabra	Leguminosae	Deraaq, Ishb al Malik	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Trigonella	laciniata	Leguminosae	Deraaq	CC	I-II	H	A	Cul-Wld	Non	0	Wee
Trigonella	maritima	Leguminosae	Deraaq	C	I-II	H	A	Cul-Wld	Non	0	Hal-Wee
Trigonella	occulta	Leguminosae	–	R	I-II	H	A	Wld	Non	0	Wee
Trigonella	stellata	Leguminosae	Gargas	C	I-II	H	A	Cul-Wld	Non	0	Hal-Wee
Tripodion	tetraphyllum	Leguminosae	–	RR	I-II	H	A	Cul-Ste-Wld	Non	0	Sil-Wee
Vicia	ervilia	Leguminosae	–	RR	I-II	H	A	Cul	Gra	2	Wee
Vicia	lutea	Leguminosae	Bakr	C	I-II	H	A	Cul	Gra	2	Wee
Vicia	monantha	Leguminosae	Khareg	CC	I-III	H	A	Cul-Rge	Gra	3	Psa
Vicia	narbonensis	Leguminosae	Nooman Berri	C	I-II	H	A	Cul	Gra	2	Pel-Wee
Vicia	peregrina	Leguminosae	–	R	I-II	H	A	Cul	Gra	2	Wee
Vicia	sativa	Leguminosae	Eddeis	CC	I-II	H	A-B	Cul	Cro-Med	5	Fod
Vicia	villosa	Leguminosae	–	RR	I-II	H	A	Cul	Gra	3	Wee
Lemma	gibba	Lemnaceae	Ades el Mya	CC	I-II	H	P	Can-Frw-Wel	Non	0	Hyd
Pseudowolfia	hyalina	Lemnaceae	Ades el Mya	C	I-II	H	P	Can-Frw-Wel	Non	0	Hyd
Spirodela	polyrrhiza	Lemnaceae	Ades el Mya	FC	I-II	H	P	Can-Frw-Wel	Non	0	Hyd
Allium	ampeloprasum	Liliaceae	Thoam	FR	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	aschersonianum	Liliaceae	–	R	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	barthianum	Liliaceae	–	R	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	blomfeldianum	Liliaceae	–	RR	I-II	H	P	Cul-Wld	Non	0	End-Wee
Allium	curtum	Liliaceae	–	R	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	desertorum	Liliaceae	Thoam Hanash	RR	I-II	H	P	Cul-Rge-Ste	Non	0	End-Wee
Allium	erdelii	Liliaceae	–	RR	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	mareoticum	Liliaceae	–	R	I-II	H	P	Cul-Wld	Non	0	End-Wee
Allium	myrianthum	Liliaceae	Lawas	RR	I-II	H	P	Cul-Wld	Non	0	End-Wee
Allium	pallens	Liliaceae	–	R	I-II	H	P	Cul-Wld	Non	0	Wee

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Allium	roseum	Liliaceae	–	R	I-IV	H	P	Cul-Wld	Gra-Veg	3	Psa
Allium	sphaerocephalon	Liliaceae	Sennel Ghazal	R	I-II	H	P	Cul-Wld	Non	0	Wee
Allium	trifoliatum	Liliaceae	–	RR	I-II	H	P	Cul-Wld	Non	0	Wee
Asparagus	aphyllus	Liliaceae	Aqool	FC	I-III	H	P	Rge-Run-Wld	Non	0	Cha
Asparagus	stipularis	Liliaceae	Sekkum	R	I-III	S	P	Wld	Fue	0	Fce
Asphodelus	ramosus	Liliaceae	Ansal	CC	I-III	H	P	Rge-Ste-Wld	Gra	2	Nit-Psa
Asphodelus	tenuifolius	Liliaceae	Baroos	C	I-II	H	A	Rge-Ste-Wld	Non	0	Nit-Psa
Asphodelus	viscidulus	Liliaceae	Berouagh	CC	I-II	H	A	Rge-Ste-Wld	Non	0	Nit-Psa-Tac
Bellevalia	eigii	Liliaceae	Bosseil	RR	I-II	H	P	Cul	Non	0	Wee
Bellevalia	flexuosa	Liliaceae	Bosseil	C	I-II	H	P	Cul	Non	0	Wee
Bellevalia	macrobotrys	Liliaceae	Bosseil	RR	I-II	H	P	Cul	Non	0	Wee
Bellevalia	mauritanica	Liliaceae	Bosseil	RR	I-II	H	P	Cul	Non	0	Wee
Bellevalia	romana	Liliaceae	Bosseil	RR	I-II	H	P	Cul	Non	0	Wee
Bellevalia	sessiliflora	Liliaceae	Bosseil	RR	I-II	H	P	Cul	Non	0	Wee
Bellevalia	trifoliata	Liliaceae	Bosseil	R	I-II	H	P	Cul	Non	0	Wee
Colchicum	ritchii	Liliaceae	Okna	FR	I-II	H	P	Cul-Ste-Wld	Non	T	Sil-Wee
Dipcadi	erythraeum	Liliaceae	Hankal-ay	R	I-II	H	P	Rge-Ste-Wld	Non	0	Psa
Gagea	dyana	Liliaceae	–	R	I-II	H	P	Rge-Wld	Non	0	Wee
Gagea	fibrosa	Liliaceae	–	R	I-II	H	P	Rge-Wld	Non	0	Wee
Gagea	reticulata	Liliaceae	–	R	I-II	H	P	Rge-Wld	Non	0	Wee
Muscari	albiflorum	Liliaceae	Bosseil	RR	I-II	H	P	Cul-Wld	Non	0	Wee
Muscari	bicolor	Liliaceae	Bosseil	RR	I-II	H	P	Cul-Wld	Non	0	Wee
Muscari	comosum	Liliaceae	Bosseil	CC	I-II	H	P	Cul-Wld	Non	0	Wee
Muscari	neglectum	Liliaceae	Bosseil	R	I-III	H	P	Cul-Wld	Non	0	Wee
Muscari	parviflorum	Liliaceae	Bosseil	R	I-II	H	P	Cul-Wld	Non	0	Wee
Ornithogalum	narbonense	Liliaceae	–	RR	I-II	H	P	Cul	Non	0	Wee
Ornithogalum	trichophyllum	Liliaceae	Basol Hanash	R	I-II	H	P	Cul	Non	0	Wee
Scilla	peruviana	Liliaceae	–	R	I-II	H	P	Rge-Wld	Non	T	Wee
Urginea	undulata	Liliaceae	–	C	I-II	H	P	Rge-Ste-Wld	Gra	1	Wee
Linum	decumbens	Linaceae	–	RR	I-II	H	A	Cul-Rge	Gra	1	Psa
Linum	strictum	Linaceae	Kittan	R	I-II	H	A	Cul-Rge	Gra	1	Psa
Ammania	auriculata	Lythraceae	Rig el Hamma	R	I-II	H	A	Wet	Non	0	Hyg
Ammania	baccifera	Lythraceae	Rig el Hamma	C	I-II	H	A	Wet	Non	0	Hyg
Ammania	multiflora	Lythraceae	Rig el Hamma	RR	I-II	H	A	Wet	Non	0	Hyg
Ammania	senegalensis	Lythraceae	Rig el Hamma	R	I-II	H	A	Wet	Non	0	Hyg
Lythrum	hyssopifolia	Lythraceae	–	C	I-III	H	A	Wet	Non	0	Hyg
Lythrum	junceum	Lythraceae	–	R	I-II	H	P	Wet	Non	0	Hyg
Lythrum	tribracteatum	Lythraceae	–	R	I-II	H	A-B	Wet	Non	0	Hyg
Alcea	acaulis	Malvaceae	Khatma	RR	I-II	H	A	Cul-Wld	Non	0	Wee
Althaea	ludwigii	Malvaceae	Khatma	FC	II-IV	H	A	Rge-Wld	Gra	2	Ere-Psa

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Hibiscus	trionum	Malvaceae	Teel Sheitani	FC	I-II	H	A	Cul	Non	0	Pel
Lavatera	cretica	Malvaceae	Khatma	R	I-II	H	A-B	Cul	Orn	0	Wee
Malva	aegyptia	Malvaceae	Raqma	FR	I-III	H	A	Rge-Wld	Gra-Veg	1-2	Psa
Malva	nicaensis	Malvaceae	Khobbiza	FC	I-II	H	A	Cul-Wld	Gra-Veg	1-2	Nit
Malva	parviflora	Malvaceae	Khobbiza	CC	I-II	H	A	Rge-Wld	Gra-Med-Veg	1-2	Nit
Malva	sylvestris	Malvaceae	Khobbiza	FC	I-II	H	A	Cul-Wld	Gra-Med-Veg	1-2	Nit
Sida	alba	Malvaceae	–	FC	I-III	H	P	Rge-Wld	Gra	1	Wee
Marsilea	aegyptiaca	Marsileaceae	Qoreyta	R	I-II	F	P	Can-Wel	Non	0	Hyd
Glinus	lotoides	Molluginaceae	Ghobbeira, Mughera	R	I-III	H	A	Wld	Non	0	Hal
Neurada	procumbens	Neuradaceae	Losseiq	CC	II-VI	H	A	Rge-Snd-Ste	Non	0	Psa-Tac
Nymphea	coerulea	Nympheaceae	Bashneen azreg	C	I-II	H	P	Frw	Orn	0	Hyd
Nymphea	lotus	Nympheaceae	Bashneen abiod	C	I-II	H	P	Frw	Med-Orn	0	Hyd
Olea	europaea subsp. oleaster	Oleaceae	Zebuj	RR	I-II	TS	P	Roc	Fsh-Non	3	FoRe
Phyllirea	media	Oleaceae	–	RR	I-II	TS	P	Roc	Fue	3	FoRe
Epilobium	hirsutum	Onagraceae	Alfa, Sikh	FC	I-II	H	P	Wet	Non	0	Hyg
Ludwigia	stolonifera	Onagraceae	–	R	I-II	H	P	Wet	Non	0	Hyg
Cistanche	phelypaea	Orobanchaceae	Halook, Danum	CC	I-II	Par	P	Cul	Med	0	Hal-Wee
Cistanche	tubulosa	Orobanchaceae	–	FR	I-II	Par	P	Cul	Non	0	Hal-Wee
Cistanche	violacea	Orobanchaceae	–	FR	I-II	Par	P	Cul	Non	0	Hal-Wee
Orobanche	cernua	Orobanchaceae	–	R	I-II	Par	A	Cul	Non	0	Wee
Orobanche	crenata	Orobanchaceae	Haluk Mitabi	CC	I-II	Par	A	Cul	Non	0	Wee
Orobanche	lavandulacea	Orobanchaceae	–	RR	I-III	Par	A	Cul	Non	0	Wee
Orobanche	minor	Orobanchaceae	–	R	I-II	Par	A	Cul	Non	0	Wee
Orobanche	ramosa	Orobanchaceae	Halook	CC	I-III	Par	P	Cul	Non	0	Wee
Orobanche	schultzii	Orobanchaceae	–	RR	I-III	Par	A	Cul	Non	0	Wee
Oxalis	corniculata	Oxalidaceae	Hamd	FC	I-II	H	P	Cul-Wld	Non	0	Wee
Oxalis	pes-caprae	Oxalidaceae	Hamd	C	I-II	H	P	Cul-Wld	Non	0	Wee
Phoenix	dactylifera	Palmae	Naghla	CC	I-VI	H	P	Cul-Run-Wad	Han-Med-Veg	0	Phr
Glaucium	arabicum	Papaveraceae	–	R	I-II	H	P	Cul	Non	0	Wee
Glaucium	corniculatum	Papaveraceae	–	R	I-II	H	A	Cul-Wld	Non	0	Wee
Glaucium	grandiflorum	Papaveraceae	–	R	I-II	H	A	Wld	Non	0	Wee
Papaver	argemone	Papaveraceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Papaver	dubium	Papaveraceae	–	R	I-II	H	A	Cul	Med	0	Wee
Papaver	humile	Papaveraceae	–	R	I-II	H	A	Cul	Non	0	Wee
Papaver	hybridum	Papaveraceae	–	C	I-II	H	A	Cul	Non	0	Wee
Papaver	rhoeas	Papaveraceae	Ben Na'am	CC	I-II	H	A	Cul	Med	0	Wee
Roemeria	hybrida	Papaveraceae	–	R	I-II	H	A	Cul	Non	0	Tac-Wee
Potamogeton	cripus	Patamogetonaceae	Horreish	CC	I-II	H	P	Can-Frw	Orn	0	Hyd
Potamogeton	lucens	Patamogetonaceae	–	RR	I-II	H	P	Can-Frw	Orn	0	Hyd
Potamogeton	nodosus	Patamogetonaceae	–	FC	I-II	H	P	Can-Frw	Orn	0	Hyd

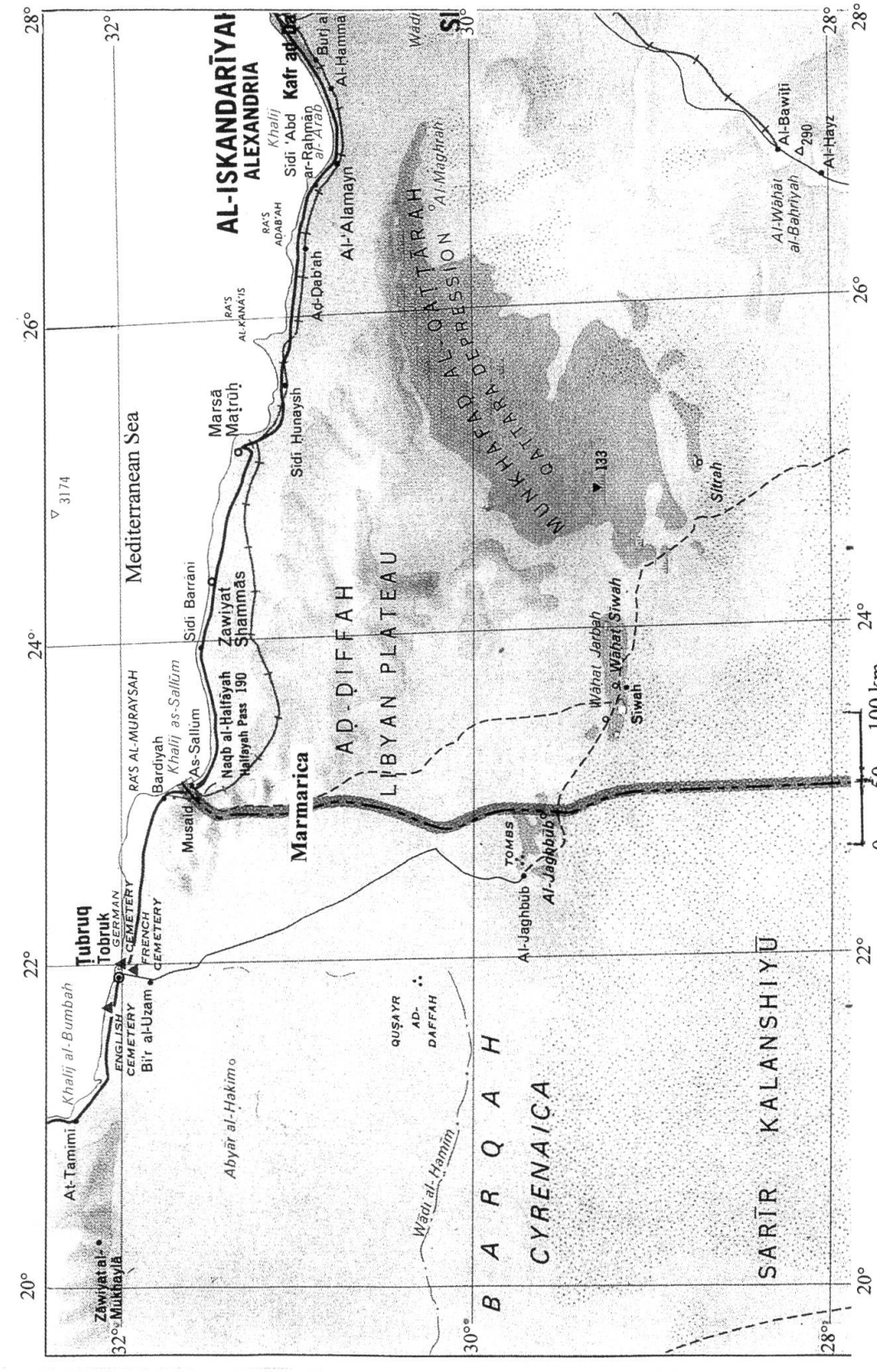
Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Potamogeton	pectinatus	Patamogetonaceae	–	CC	I-II	H	P	Can-Frw	Orn	0	Hyd
Plantago	afra	Plantaginaceae	Qotoona, Aslouj	R	I-II	H	A	Cul-Wld	Med	0	Psa-Tac
Plantago	albicans	Plantaginaceae	Yanam	CC	I-III	H	P	Rge-Snd-Ste	Gra	4-5	Psa
Plantago	arenaria	Plantaginaceae	–	R	I-II	H	A	Cul	Non	0	Psa
Plantago	coronopus	Plantaginaceae	Wideina	CC	I-III	H	A	Wld	Gra-Med	1	Hal
Plantago	crassifolia	Plantaginaceae	–	FR	I-II	H	P	Slt	Gra	3	Hal
Plantago	crypsoides	Plantaginaceae	–	CC	I-III	H	A	Wld	Gra	2	Hal
Plantago	cylindrica	Plantaginaceae	Berkhemi	FR	I-II	H	A	Irr	Non	0	Wee
Plantago	lagopus	Plantaginaceae	Widna	FC	I-II	H	A	Irr	Non	0	Sil
Plantago	major	Plantaginaceae	Waraaq, Lisaan al Hamal	R	I-II	H	A	Irr	Med	0	Hyg-Nit-Sil
Plantago	notata	Plantaginaceae	Yanam	R	I-II	H	A	Rge	Gra	2	Psa
Plantago	ovata	Plantaginaceae	Gesseima	CC	I-III	H	A	Rge	Gra	2	Sil
Plantago	phaeostoma	Plantaginaceae	–	R	I-II	H	A	Cul-Rge	Gra	1	Psa-Tac
Plantago	squarrosa	Plantaginaceae	–	C	I-II	H	A	Cul	Non	0	Sil
Plantago	weldenii	Plantaginaceae	Gesseima	R	I-III	H	A	Cul-Rge	Gra	1	Hal
Limoniastrum	guyonianum	Plumbaginaceae	Zeita	RR	I-III	HS	P	Slt	Fue	0	Hal
Limoniastrum	monopetalum	Plumbaginaceae	Zeita	C	I-III	HS	P	Slt	Fue	0	Hal
Limonium	echioides	Plumbaginaceae	–	RR	I-II	H	A	Rge-Ste	Non	0	Hal-Psa
Limonium	lobatum	Plumbaginaceae	–	CC	I-III	H	A	Rge-Sha-Ste	Non	0	Gly
Limonium	narbonense	Plumbaginaceae	–	R	I-II	H	P	Slt	Non	0	Hal
Limonium	pruinosum	Plumbaginaceae	Molleih	CC	I-III	Fr	P	Rge-Sha-Ste	Non	0	Hal-SO4
Limonium	raddianum	Plumbaginaceae	–	R	I-II	H	P	Slt	Non	0	Hal
Limonium	sinuatum	Plumbaginaceae	–	FC	I-III	H	A	Rge-Sha-Ste	Non	0	Gly
Limonium	tubiflorum	Plumbaginaceae	Bahman	C	I-III	H	P	Rge-Sha	Non	0	Cha-Hal
Calligonum	comosum	Polygonaceae	Artha	FR	III-VI	HS	P	Con-Dne	Fue-Gra	2	Psa
Emex	spinosus	Polygonaceae	Dirs el Aggooz	CC	I-III	H	A	Wld	Unk	0	Nit
Fallopia	convolvulus	Polygonaceae	–	R	I-II	H	A	Cul	Non	0	Hyg-Wee
Persicaria	aviculare	Polygonaceae	Quordab	R	I-II	H	P	Wet	Non	1	Hyg
Persicaria	bellardi	Polygonaceae	Quordab	CC	I-II	H	A	Wet	Non	0	Hyg
Persicaria	limbata	Polygonaceae	Quordab	RR	I-II	H	P	Wet	Non	0	Hyg
Persicaria	maculosa	Polygonaceae	Quordab	R	I-II	H	A	Wet	Non	0	Hyg
Persicaria	maritimum	Polygonaceae	Quordab	FR	I	Fr-DS	P	Coa-Dne	Non	0	Psa
Persicaria	plebeium	Polygonaceae	Quordab	CC	I-II	H	P	Wet	Non	0	Hyg
Persicaria	salicifolia	Polygonaceae	Quordab	CC	I-II	H	P	Wet	Non	0	Hyg
Persicaria	senegalensis	Polygonaceae	Quordab	C	I-II	H	P	Wet	Non	0	Hyg
Polygonum	equisetiforme	Polygonaceae	Quordab	FC	II-III	Fr-DS	P	Rge-Ste	Gra	3-4	Psa
Rumex	cyprius	Polygonaceae	Khamsees	C	I-II	H	A	Wet	Unk	2-3	Cha
Rumex	dentatus	Polygonaceae	Hommeid	R	I-II	H	A	Irr-Wet	Unk	0	Hyg-Wee
Rumex	pictus	Polygonaceae	Hommeid	C	I-II	H	A	Wet	Unk	0	Hyg-Wee
Rumex	vesicarius	Polygonaceae	Hambeit, Hummad	FC	I-III	H	A	Rge-Ste	Gra-Med-Veg	0	Nit

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Eichhornia	crassipes	Pontederiaceae	Halassandi	CC	I-II	H	P	Can-Frw	Orn	2	Hyd-Nat-Wee
Portulaca	oleracea	Portulacaceae	Rigla, Rashad	CC	I-II	CH	A	Wld	Med-Veg	2	Nit
Posidonia	oceanica	Posidoniaceae	Shetenaara	RR	I	H	P	Sea	Non	0	Hyd
Anagallis	arvensis	Primulaceae	Ebeila, Ayn al Gamal	CC	I-III	H	A	Cul-Wld	Non	0	Wee
Asterolinon	linum-stellatum	Primulaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Coris	monspeliensis	Primulaceae	–	RR	I-III	CH	P	Rge-Ste	Non	0	S04
Samolus	valerandi	Primulaceae	Sboon Arab	R	I-II	H	P	Wet	Non	0	Hyg
Adonis	dentata	Ranunculaceae	Naab el Gemel	CC	I-III	H	A	Cul-Rge-Wld	Gra-Med	1	Psa-Tac
Amaranthus	blitoides	Ranunculaceae	–	R	I-II	H	A	Wld	Non	0	Wee
Anemone	coronaria	Ranunculaceae	Zaghleel	C	I-II	H	A	Cul-Wld	Non	T	Wee
Consolida	flava	Ranunculaceae	–	RR	I-II	H	A	Cul-Rge-Wld	Non	0	Wee
Delphinium	bovei	Ranunculaceae	–	RR	I-II	H	A	Cul-Rge	Non	0	Psa
Nigella	arvensis subsp. taubertii	Ranunculaceae	Kamoun Aswad	R	I-II	H	A	Cul	Non	0	Wee
Nigella	deserti	Ranunculaceae	Zorbeb	RR	I-II	H	A	Cul-Wld	Non	0	End-Wee
Ranunculus	asiaticus	Ranunculaceae	Shaqeeq	C	I-II	H	A	Cul-Wld	Non	0	Wee
Ranunculus	millefolius	Ranunculaceae	–	RR	I-II	H	P	Frw	Non	0	Hyd
Ranunculus	muricatus	Ranunculaceae	–	RR	I-II	H	A	Frw	Non	0	Hyg
Ranunculus	peltatus	Ranunculaceae	Zaghanta	RR	I-II	H	A	Wld	Non	0	Hyd
Caylusea	hexagyna	Resedaceae	Denaaba	FC	II-IV	H	A	Cul-Rge	Gra	1	Tac-Wee
Ochradenus	baccatus	Resedaceae	Qordi	RR	III-VI	H	P-Sh	Des-Wad	Fue-Gra	1-2	Psa
Oligomeris	linifolia	Resedaceae	Denaaban	FC	II-VI	H	A	Cul-Rge	Gra	1	Ere-Tac
Randonia	africana	Resedaceae	–	FR	III-VI	DS	P	Des-Wad	Gra	1-2	Ere
Reseda	alba	Resedaceae	–	R	I-II	H	A	Cul-Rge	Gra	1	Wee
Reseda	arabica	Resedaceae	Deil	CC	I-III	H	A	Cul-Rge-Ste	Gra	1	Tac-Wee
Reseda	decursiva	Resedaceae	Rigl Gorab	CC	I-III	H	A-B	Cul-Rge-Ste	Gra	2-3	Psa
Reseda	lutea	Resedaceae	Weyba	RR	I-III	H	A	Cul-Rge	Gra-Med	1	Wee
Reseda	luteola	Resedaceae	Baqm, Bli ha	R	I-III	H	A	Cul-Rge	Gra	1	Wee
Reseda	orientalis	Resedaceae	Deil	RR	I-III	H	A	Cul-Rge	Gra	1	Wee
Reseda	phyteuma	Resedaceae	–	RR	I-II	H	A	Cul-Rge	Gra	1	Wee
Reseda	pruinosa	Resedaceae	Denaaba	CC	I-II	H	A	Cul-Rge	Gra	1	Wee
Reseda	urnigera	Resedaceae	–	R	I-III	H	A	Cul-Rge	Gra	1	Wee
Rhamnus	oleoides	Rhamnaceae	Saloufa	RR	I-II	HS	P	Cli-Run	Fsh-Gra	3-4	Cha
Ziziphus	lotus	Rhamnaceae	Sidra	RR	I-II	HS	P	Cli-Wad	Fen-Fue-Med	2	Phr
Ziziphus	spina-christi	Rhamnaceae	Nabq, Zegzeg	RR	I-IV	T	P	Des-Wad	Fue-Med-Veg	2	Phr
Rubus	sanctus	Rosaceae	Ward Barrir	R	I-II	Cl	P	Wld	Non	0	Nit
Sanguisorba	minor	Rosaceae	Abu Greisaf	R	I-II	H	P	Cul-Rge	Gra	3-4	Wee
Callipeltis	cucullaris	Rubiaceae	Baseesa	FR	I-II	H	A	Cli-Roc	Non	0	Cha-Nit
Crucianella	aegyptiaca	Rubiaceae	–	C	I-II	H	P	Cul	Non	0	Psa
Crucianella	maritima	Rubiaceae	–	C	I	Fr	P	Coa-Snd	Non	0	Psa
Galium	canum	Rubiaceae	–	RR	I-II	H	P	Cul	Non	0	Wee

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Galium	murale	Rubiaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Galium	tricornutum	Rubiaceae	–	C	I-II	H	A	Cul	Non	0	Wee
Valantia	hispida	Rubiaceae	–	FR	I-II	H	A	Roc	Non	0	Cha
Ruppia	cirrhosa	Ruppiaceae	Hamool	RR	I-II	H	P	Sea-Bra	Non	0	Hyd
Ruppia	maritima	Ruppiaceae	Reem	RR	I-II	H	P	Sea-Bra	Non	0	Hyd
Salix	subserrata	Salicaceae	Safsaf	R	I-II	HS-T	P	Wet	Orn	1	Hyg
Salix	tetrasperma	Salicaceae	Safsafbeladi	R	I-II	HS-T	P	Wet	Fue	1	Hyg
Thesium	humile	Santalaceae	Habb el Kreish	FC	I-II	H-Par	A	Cul-Rge	Unk	0	Wee
Antirrhinum	orontium	Scrophulariaceae	Saysam	C	I-II	H	A	Cul-Rge	Gra	2	Psa
Kickxia	aegyptiaca	Scrophulariaceae	Thal el Fahr	CC	I-III	Fr	P	Rge-Sha-Ste	Gra	2	Psa
Kickxia	elatine	Scrophulariaceae	–	C	I-II	H	A	Cul-Rge	Gra	1	Psa
Linaria	albifrons	Scrophulariaceae	–	FC	I-II	H	P	Cul	Non	0	Wee
Linaria	chalepensis	Scrophulariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Linaria	haelava	Scrophulariaceae	Halawa	C	I-II	H	A	Cul-Rge	Gra	1	Wee
Linaria	micrantha	Scrophulariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Scrophularia	canina	Scrophulariaceae	Qarsa	FR	I-III	Fr	P	Rge-Snd	Non	0	Psa
Striga	asiatica	Scrophulariaceae	Odaar	RR	I-II	Par	A	Cul-Irr	Non	0	Wee
Verbascum	letourneuxii	Scrophulariaceae	–	FC	I-II	Fr	P	Rge-Sha	Non	0	End
Veronica	persica	Scrophulariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Veronica	polita	Scrophulariaceae	–	FC	I-II	H	A	Cul	Non	0	Wee
Veronica	syriaca	Scrophulariaceae	–	RR	I-II	H	A	Cul	Non	0	Wee
Datura	metel	Solanaceae	–	R	I-II	H	A	Wld	Med	T	Nit
Datura	stramonium	Solanaceae	Semmel Fahr	R	I-II	H	A	Wld	Med	T	Nit
Hyosciamus	albus	Solanaceae	Bing	FC	I-II	H	P	Wld	Med	T	Nit
Hyosciamus	muticus	Solanaceae	Sakaraan	FC	I-VI	H	P	Wad-Wld	Med	T	Ere-Pel
Lycium	aschersoni	Solanaceae	Awsaj.	R	I-II	HS	P	Wld	Fen-Fue	0	SO4
Lycium	barbarum	Solanaceae	Awsaj.	C	I-II	HS	P	Rge-Wad	Fue-Gra	1	SO4
Lycium	europaeum	Solanaceae	Awsaj.	R	I-II	HS	P	Wld	Fen-Fue	1	SO4
Lycium	schweinfurthii	Solanaceae	Awsaj.	R	I-II	HS	P	Wld	Fen-Fue	0	SO4
Lycium	shawii	Solanaceae	Awsaj.	CC	I-III	HS	P	Rge-Wad	Fue-Gra-Med	1	SO4
Nicotiana	glauca	Solanaceae	Massasa	CC	I-II	HS	P	Wld	Med	T	Nat-Nit
Solanum	nigrum	Solanaceae	Anab al dib	R	I-II	H	A	Wad	Non	T	Nit
Reaumuria	hirtella	Tamaricaceae	Molleih	CC	I-III	Fr	P	Rge-Sha-Ste	Gra	2	Hal-SO4
Reaumuria	vermiculata	Tamaricaceae	Molleih	R	I-III	Fr	P	Rge-Sha-Ste	Gra	1-2	Hal-SO4
Tamarix	aphylla	Tamaricaceae	Ethel	C	I-VI	T	P	Des-Wad	Fue	0	Phr
Tamarix	nilotica	Tamaricaceae	Moor	CC	I-VI	HS	P	Slt	Fue	0	Hal-Phr
Tamarix	passerinoides	Tamaricaceae	–	C	I-IV	HS	P	Wad	Fue	0	Hal-Phr
Tamarix	tetragyna	Tamaricaceae	Tarfa	C	I-VI	HS	P	Slt	Fue	0	Hal-Phr
Thymelaea	hirsuta	Thymelaeaceae	Mitnan	CC	I-III	HS	P	Rge-Wld	Fue-Han-Med	T	Psa
Corchorus	olitorius	Tiliaceae	Melokhyia	CC	I-III	H	A	Irr	Gra-Veg	0	Wee

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Typha	domingensis	Typhaceae	Typhaceae	CC	I-III	H	P	Can-Frw	Han	0	Hyd-Hyg
Ammi	majus	Umbelliferae	Khilla Baladi	C	I-II	H	A	Cul	Med	0	Pel-Sil-Wee
Ammi	visnaga	Umbelliferae	Khilla sheitani	R	I-II	H	A	Wet-Wld	Med	T	Hyg-Pel
Apium	crassipes	Umbelliferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Apium	graveolens	Umbelliferae	Karafs	CC	I-II	H	A	Cul	Non	0	Wee
Apium	leptophyllum	Umbelliferae	–	FC	I-II	H	A	Cul	Non	0	Wee
Apium	nodiflorum	Umbelliferae	–	R	I-II	H	P	Wet	Non	0	Hyg
Brachyapium	dichotomum	Umbelliferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Bupleurum	lancifolium	Umbelliferae	Halawaan	C	I-II	H	A	Cul	Non	0	Pel-Wee
Bupleurum	nanum	Umbelliferae	–	R	I-II	H	A	Cul	Non	0	Wee
Bupleurum	nodiflorum	Umbelliferae	–	R	I-II	H	A	Cul	Non	0	Pel-Wee
Bupleurum	semicompositum	Umbelliferae	–	FC	I-II	H	A	Cul-Wld	Non	0	Hal-Pel
Coriandrum	sativum	Umbelliferae	Kozbara	C	I-II	H	A	Irr	Non	0	Wee
Crithmum	maritimum	Umbelliferae	–	RR	I	C-Fr	P	Roc	Med	0	Cha
Daucus	guttatus	Umbelliferae	Shamarel Gemel	R	I-II	H	A	Cul	Non	0	Wee
Daucus	litoralis	Umbelliferae	Gezzah	C	I-II	H	A	Cul-Wld	Non	0	Wee
Daucus	syrticus	Umbelliferae	Shamarel Gemel	CC	I-III	H	A	Cul-Rge	Gra	2	Psa-Tac
Deverra	tortuosa	Umbelliferae	Qezzah	CC	I-IV	DS	P	Cul-Rge	Gra-Med	2-3	Psa
Eryngium	campestre	Umbelliferae	Foqq'aa	C	I-II	H	P	Cul-Rge-Ste	Med	0	Pel-Sil
Eryngium	creticum	Umbelliferae	Shaqaqool	R	I-II	H	P	Cul-Rge	Non	0	Pel-Sil-Wee
Ferula	marmarica	Umbelliferae	Felkh	RR	I-II	H	P	Sha-Ste	Non	T	End
Malabaila	suaveolens	Umbelliferae	Tel ghoodi	FC	I-II	H	P	Cul-Rge	Non	0	Wee
Petroselinum	crispum	Umbelliferae	–	RR	I-II	H	P	Wet	Non	0	Hyg
Pseudorlaya	pumila	Umbelliferae	Shamarel Gemel	C	I	H	A	Coa-Snd	Non	0	Psa-Tac
Scandix	specten-veneris	Umbelliferae	Misheita	C	I-II	H	A	Cul	Non	0	Wee
Tordylium	aegyptiacum	Umbelliferae	–	RR	I-II	H	A	Cul	Non	0	Wee
Torilis	arvensis	Umbelliferae	Shamarel Gemel	R	I-II	H	A	Cul	Non	0	Wee
Torilis	bracteosa	Umbelliferae	–	R	I-II	H	P	Cul	Non	0	Wee
Torilis	nodosa	Umbelliferae	Shamarel Gemel	CC	I-II	H	A	Cul-Wld	Non	0	Sil-Wee
Torilis	radiata	Umbelliferae	Ghazzar Frangi	R	I-II	H	A	Cul	Non	0	Wee
Torilis	tenella	Umbelliferae	Shamarel Gemel	R	I-II	H	A	Cul	Non	0	Wee
Parietaria	judaica	Urticaceae	Widein	FC	I-II	H	A	Wld	Med	0	Nit
Parietaria	lusitanica	Urticaceae	Widein	R	I-II	H	A	Roc	Med	0	Nit
Urtica	pilulifera	Urticaceae	Qorreis	FC	I-II	H	A	Wld	Med	0	Nit
Urtica	urens	Urticaceae	Qorreis, Hurreq	FC	I-II	H	A	Wld	Med	0	Nit
Valerianella	discoidea	Valerianaceae	Gesseima	RR	I-II	H	A	Rge-Wld	Gra	1	Wee
Valerianella	petrovitchii	Valerianaceae	Gesseima	RR	I-II	H	A	Cul-Wld	Gra	1	Wee
Phyla	nodiflora	Verbenaceae	Libbya	FC	I-II	H	P	Wad-Wet	Gra	1	Hyg
Verbena	officinalis	Verbenaceae	Rigl al Hammam	FR	I-II	H	P	Cul	Med-Veg	0	Hyg
Verbena	supina	Verbenaceae	Morreig	FC	I-II	H	A	Wad	Gra	1	Hyg

Genus	Species	Family	Vernacular name	Frequency	Area of distribution	Biological type	Life span	Habitat	Utilization	Grazing value	Remarks
Viola	scorpiuroides	Violaceae	–	FR	I-II	Fr	P	Cli	Gra	1	Cha-End
Zannichellia	palustris	Zannichelliaceae	Lahm el Naga	CC	I-II	H	P	Can-Frw	Non	0	Hyd
Zostera	noltii	Zosteraceae	Hamool	RR	I	H	P	Sea	Non	0	Hyd
Fagonia	arabica	Zygophyllaceae	–	FR	III-VI	Fr	P	Des-Rge	Non	0	Psa
Fagonia	bruguieri	Zygophyllaceae	Hallawa	FR	III-VI	Fr	P	Des-Rge	Non	0	Psa-Tac
Fagonia	cretica	Zygophyllaceae	Hallawa	C	I-III	Fr	P	Cli-Roc-Run	Non	0	Cha
Fagonia	glutinosa	Zygophyllaceae	Hallawa	FC	II-IV	Fr	P	Rge-Ste	Non	0	Psa
Nitraria	retusa	Zygophyllaceae	Ghardaq	FC	I-III	TS	P	Rge-Wld	Fue-Gra	1	Phr-SO4
Peganum	harmala	Zygophyllaceae	Harmel	CC	I-III	H	P	Rge-Ste-Wld	Non	T	Nit
Tetradiclis	tenella	Zygophyllaceae	–	RR	I-III	H	A	Slt	Non	0	Hal
Tribulus	terrestris	Zygophyllaceae	Shiq Shiq	CC	I-III	H	A	Rge-Wld	Non	0	Psa-Tac
Zygophyllum	aegyptium	Zygophyllaceae	Belbel	R	II-IV	Fr	P	Rge-Slt	Non	0	End
Zygophyllum	album	Zygophyllaceae	Belbel	CC	I-VI	CS	P	Rge-Wld	Non	0	Hal-SO4
Zygophyllum	coccineum	Zygophyllaceae	Qarlam	FC	III-VI	CS	P	Des-Wad	Non	0	Pel
Zygophyllum	geslini	Zygophyllaceae	Belbel	C	I-VI	CS	P	Wld	Non	0	Hal-SO4



Map 1. – Map of the Marmarica.