

WEED FLORA OF CROPS IN THE HAMMAM DALAA REGION (M'SILA, ALGERIA)

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Abstract: The flora of the cereal fields and of the olive groves of Hammam Dalaa has 116 species belonging to 27 botanical families and 94 genera. Note the presence of native flora which finds refuge at the edge of the fields. Three families, the Asteraceae, the Poaceae and the Brassicaceae respectively dominate. Mediterranean floristics predominate and characterize the wild flora of the fields. Species biological types reveal the dominance of therophytes over all biological types, followed by hemicryptophytes and geophytes.

Keywords: weed flora, plants of economic interest, inventory, chorology, M'sila, Algeria.

1. Introduction

Algeria has an extremely rich and varied flora in the coastal regions, the mountainous massifs, the high plateaus, the steppe and the Saharan Oases. Quezel & Santa (1962-1963) listed 3,139 species including 653 endemic species [1].

Weeds are the spontaneous companions of crops, plants that grow without being sown. The term weed has no pejorative connotation; a weed only becomes a weed when it becomes unwanted, which of course depends on the species considered, its competitive power under local conditions and its density [2].

All species that enter crops are commonly referred to as "weeds" [3]. For the agronomist, a "weed" is a plant introduced spontaneously or involuntarily by man into cultivated biotopes. A weed is any plant that grows where its presence is undesirable. The term "weed" therefore involves a notion of nuisance, and in cultivated areas in particular, any species not deliberately sown is a "weed" which becomes a "weed" beyond a certain density. That is to say as soon as it leads to damage which materializes, in particular, in a drop in yield [4].

In Algeria, there are few works carried out on weeds: Chevassut (1956, 1971), Kiared (1985), Chevassut *et al.* (1988), Boulfekhar

(1989), Zermen (1989), Kadid (1989), Fenni (1991, 2003), Abdelkrim (1995), Loubezda (2005), Henni (2005), Benarab (2007), Boudjedjou (2010), Kazi Tani *et al.* (2010), Boudjedjou & Fenni (2011), Rebbas *et al.* (2012), Rebbas (2014), Rebbas *et al.* (2019), Tabbi & Chergui (2019), Melakhessou *et al.* (2020), Zedam *et al.* (2021) and read Vela *et al.* (2021) [5ab, 6, 7, 8, 9, 10, 11ab, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, s25].

The purpose of this work is to inventory the weed flora of cultivated fields in the Hammam Dalaa region, followed by a taxonomic, biological and chorological analysis of this flora from the flora of Quezel & Santa (1962-1963) [1] and the synonymic index of the Flora of North Africa by Dobignard & Chatelain (2010-2013) [26]. Thereafter it will be indicated the economic interest of this flora for the local population of Maadid.

2. Materials and methods

2.1. Geographical location of the study area

The study area is located in the north of the wilaya of M'sila, and is limited to the north by Mansoura, El Achir and to the east by Ksour, El Ach, to the west by Melouza and to the south by Tarmont and Ouled Mansour (Figure 1).

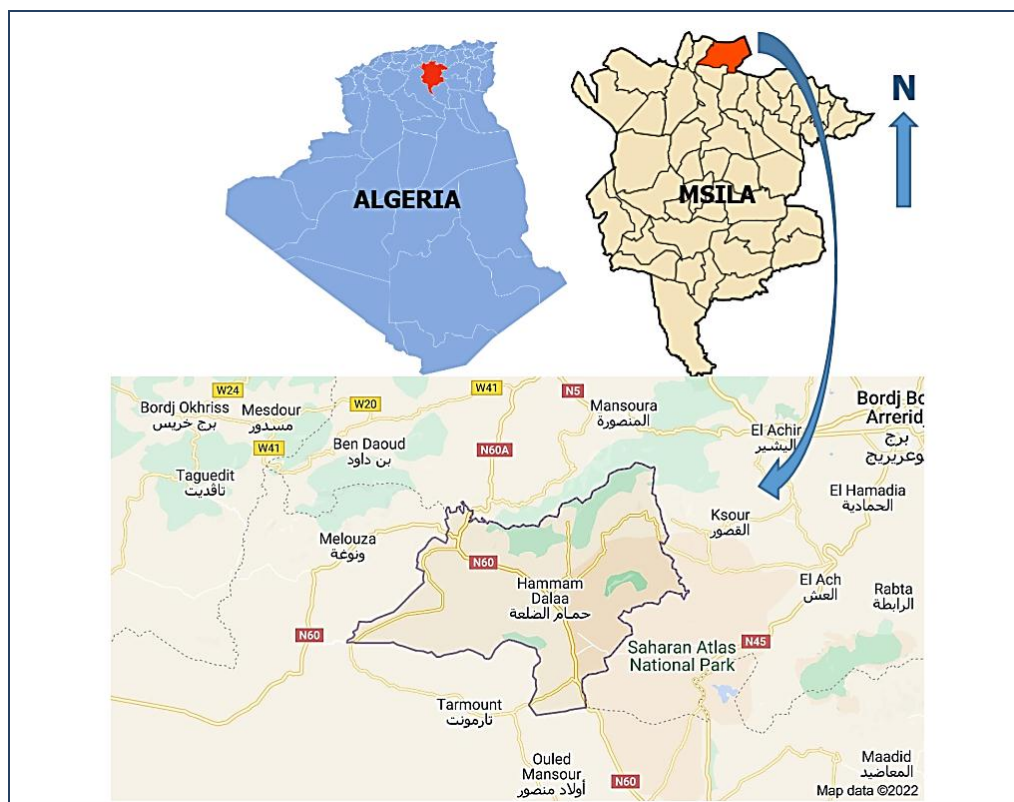


Fig. 1. Geographical location of Hammam Dalaa

2.2. Natural conditions

The Hammam Dalaa region has no weather station. The closest posts are those of M'sila and Bordj Bou Arreridj. The average annual rainfall is 221 mm at the M'sila station, on the other hand they are 385 mm at the Bordj Bou Arreridj station. The mountain ranges receive larger quantities of water, of the order of 400–500 mm in the Saharan Atlas and possibly reaching more than 600 mm in the Hodna and Aurès-Belezma mountains.

2.3. Field trip and sampling

The period of field trips is decisive for any work aimed at inventorying the vegetation and knowing the physiognomic state of the species (flowering, fruiting) which varies during the seasons. Sampling consists of collecting data by choosing elements in such a way as to obtain objective information of measurable precision on the whole of the plant communication studied.

We carried out the subjective sampling which enabled us to carry out two outings of prospecting and floristic inventory of weed plants at the level of 4 fields located in the region of Hammam Dalaa: Two fields of cereals and two other fields of cereals with olive plantation. For the preparation of a herbarium, we collected plant

samples during the months of March, April and May 2019 (Fig. 2).

2.4. Determination and nomenclature of taxa

The results of the inventory will be presented in the form of a table (Annex), following a systematic order of higher units, and alphabetically of families, genera and species. We will indicate for each taxon having changed name the corresponding one in the flora of Quezel & Santa (1962-63) [1]. The biological type of each taxon is represented using the following abbreviations: Ph: phanerophyte, Ch: chamaephyte, He: hemicryptophyte, Ge: geophyte, Th: therophyte. According to Miara *et al.* (2017) [27], the different chorological types are represented as follows: Med: Mediterranean, Iber-Maur: Ibero-Mauritanian, End NA: North African endemics, End Alg-Tun: Algerian-Tunisian endemics, End Alg-Mar: Algerian-Moroccan endemics, End Alg: Algerian endemics, Sah: (Saharan, Euras: Eurasian, Eur: European, Paleo-Temp: paleotemperate, Bor: circumboreal, Atl-Med: Atlantic Mediterranean, Eur-Med: Euro-Mediterranean, Med-As: Mediterranean Asians, Med-Sah-Sind: Mediterranean-Saharo-Sindian, Med-Ir-Tour: Iranian-Turanian Mediterranean, Neo-Trop: neotropical, Cosm: cosmopolitan.

The biological and chorological types were assessed through the bibliographical documents consulted (Quezel & Santa, 1962-63[1].; Dahmani, 1997 [28]., Rebbas, 2014 [20].), as well as our personal field observations and herbarium specimens for the types biological. We have used the symbol (*) to designate the new chorological data appearing in the index of Dobignard & Chatelain (2010-11-12-13) compared to those of Quezel & Santa (1962-63) [1]. Appreciation of Abundance and Rarity (Quezel & Santa, 1962-1963) [1]: AC, C, CC, CCC: fairly common, common, very common, particularly widespread. AR, R, RR, RRR: fairly rare, rare, very rare, extremely rare. Phytogeographic distribution in Algeria (Quezel & Santa, 1962-1963) [1]:

K1 = Greater Kabylia;
K2 = Little Kabylia;
K3 = Numidia (from Skikda to the Tunisian border);
A1 = Algiers coastal sub-sector;
A2 = Algiers sub-sector of the Tell Atlas;
C1 = Tell Constantine sector;
O1 = Oran sub-sector of the coastal Sahels;
O2 = Oran plains sub-sector; coastal ;
O3 = Oran sub-sector of the Tell Atlas;
H1 = Algerian-Oranian High Plains sub-sector;
H2 = High Plains sub-sector of Constantine;
AS1= Oran Saharan Atlas sub-sector;
AS2= Saharan Atlas sub-sector; Algerian;
AS3= Constantine Saharan Atlas sub-sector (including Aurès).



Fig. 2. General view of crop fields and olive tree plantations in Hammam Dalaa (Photos: K. Rebbas, 2019)

3. Results and discussion

3.1. Family and gender analysis

We presented the wild flora of the fields of cereals and olive trees in the Maadid region in annex 1 according to the nomenclature of Dobignard & Chatelain (2010-13) [26]. We counted 116 species belonging to 27 botanical families and 94 genera (Plate 1-2-3, annex 1). At the family level, the *Asteraceae* were the best

represented with 26 species (with 3 species of the *Centaurea* genus, followed by the other genus with a number of species less than 2: *Artemisia*, *Atractylis*, *Calendula*, *Carduncellus*, *Cichorium*, *Echinops*, *Galactites*, *Lactuca*, *Launaea*, *Matricaria*, *Onopordum*, *Pallenis*, *Phagnalon*, *Scolymus*, *Scorzonera*, *Silybum*, *Sonchus*, *Urospermum*). The *Poaceae* family occupies the second position with 11 dominated species essentially by *Phalaris* with 2 species. The other

genera (*Avena*, *Bromus*, *Cynodon*, *Hordeum*, *Lolium*, *Stipa*, *Triticum*) were represented by 1 species. Then Brassicaceae with 10 species occupy the third position in the inventory. Other families were moderately represented in the inventory such as Liliaceae (9 species), Apiaceae (7 species), Fabaceae (7 species), Papaveraceae (6 species), Lamiaceae (6 species), Ranunculaceae (4 species), Boraginaceae (4 species).

Finally, the other families, very poorly represented, with less than two species each: Amaranthaceae, Cistaceae, Crassulaceae, Fumariaceae, Malvaceae, Resedaceae, Oleaceae, Plantaginaceae, Solanaceae (2 species), then Aizoaceae, Anacardiaceae, Caryophyllaceae, Geraniaceae, Globulariaceae, Iridaceae, Scrophulariaceae, Thymelaeaceae, Zygophyllaceae (1 species).

3.2. The biological types analysis

Plant life forms are a valuable tool for describing the physiognomy and structure of vegetation. Biological type's sensu Raunkiaer (1934) [29], incorporate various essential aspects of plant life. According to McIntyre *et al* (1995) [30], these biological types, by their definition (position of renovation organs during the bad season), first take into account the physiology and forms of resistance of plants, hence their proven major role in the response of communities to various disturbances (Miara *et al.*, 2017) [26].

The analysis of the biological types in annex 1 clearly shows that therophytes represent the major part of the biological types in the inventory, with 64 species. The often-biennial hemicryptophytes, with 23 species, come second. Followed by geophytes with 12 species, phanerophytes with 6 species and chamaephytes (6 species) occupy the third and fourth position in the inventory respectively.

3.3. Chorological types

The analysis of the flora in the table in annex 1 reveals a high number of elements of the Mediterranean group over all the other groups with 46 species. The Mediterranean group was dominated by strictly Mediterranean elements with 46 species followed by the "wide distribution" group occupies the second position with 22 species, gathering 6 cosmopolitan species, 6 Euro-Mediterranean species, 4 circum-Mediterranean species, 3 western-Mediterranean, 3 Iranian-Turanian Mediterranean species. The Nordic group was represented by 8

Eurasian species, 3 paleo-subtropical species, 2 paleo-temperate species and 1 European species. Finally, the group of endemics was represented by 3 North African endemic species.

Conclusions

The non-exhaustive inventory of wild plants in cereal and olive fields in the Hammam Dalaa region was presented in the form of a floristic list containing 116 species belonging to 27 botanical families and 94 genera. These families were essentially dominated by Asteraceae, Poaceae and Brassicaceae. Note the presence of autochthonous flora which finds refuge at the edge of the fields. The analysis of the biological types of the species revealed the dominance of therophytes over all the biological types, followed by hemicryptophytes and geophytes.

The chorological types of the species show that we were indeed in the presence of a typical Mediterranean flora, with the dominance of the elements of the Mediterranean group over all the other groups. The group of endemics was ranked last with 3 taxa.

These plants have an ethical and cultural interest and they have been used for food, pharmacopoeia or ornamentation in gardens. Some have medicinal properties that are still widely used.

At the base of the trophic chains of the agroecosystem, crop weeds constitute an important functional element for animal biodiversity. Many phytophagous insects consume the green matter of weeds while flower insects feed on the pollen and/or nectar of flowers. Some insects would even be more or less specific hosts of certain messicoles.

Finally, many messicoles are bee plants, in particular blueberries [3]. In 1996, following the 1992 Rio Convention, the French Ministry of the Environment and Regional Planning undertook to implement a policy for the conservation and sustainable use of biological biodiversity (article 6) through a Wildlife Action Program [3].

The absence in Algeria of legislative texts taking into account the protection of the flora of cultivated fields like wild plants remains a real handicap to the safeguarding of this so original flora of rural environments. It is important to propose a list of these plants to be protected by Algerian law.

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Annex 1. List of plants inventoried in the cultivated fields of Hammam Dalaa (M'Sila, Algeria)

Family	Species	Vernacular and local name	Habitat / Distribution in Algeria	Biological type	Chorological type
Aizoaceae	<i>Aizoanthemum hispanicum</i> (L.) HEKHartmann	Aizoon of Spain, Rh'as, Ghassul, Taghassult	Arid or clayey pastures / C. throughout Algeria, except in the Algerian-Constantine Tell	Th.	Med-Iran- Tour.
Amaranthaceae	<i>Beta vulgaris</i> L.	Beet, Common Chard, "Silk" "Bendjar"	Cultivated beet / Often $\pm$ spontaneous in Algeria	Th.	Euras .- Med.
Amaranthaceae	<i>Atriplex halimus</i> L.	Sea purslane, Halime orache, L'gtaf, Armasse	Rockerries, clay slopes, salty db / C. spreading areas throughout Algeria. SS, SO, SC: Common in the mountains	Ph.	Cosm.
Anacardiaceae	<i>Pistacia lentiscus</i> L.	Lentisk pistachio tree, "Derou", "Tadist"	Forests, scrub, maquis / CC: throughout Algeria	Ph.	Med.
Apiaceae	<i>Bunium bulbocastanum</i> L.	Ground nut, Ground chestnut, Talghouda	Fields, harvests / R: here and there throughout Algeria.	Ge.	End. N / A
Apiaceae	<i>Petroselinum crispum</i> (Mill.) Fuss.	Parsley, "Maadnous", "Imzi"	Hedges, fields, gardens / Here and there throughout Algeria, Cultivated.	Th.	Eur.
Apiaceae	<i>Bifora testiculata</i> (L.) Spreng.	Bifora testicle	Harvests, crops / AC: throughout the Tell.	Th.	Med.
Apiaceae	<i>Foeniculum vulgare</i> Mill.	Fennel, "Besbaca", "Chbets"	Fields, hedges, lawns / CC: throughout Algeria.	Th.	Med.
Apiaceae	<i>Thapsia garganica</i> L.	"Derias"	Fields, brush / CC: throughout Algeria	Ge.	Med.
Apiaceae	<i>Scandix pectenvenenis</i> L.	"Mechta el rhoul".	Fields / CC: throughout Algeria	Th.	Eur. Med.
Apiaceae	<i>Turgenia latifolia</i> (L.) Hoffm.	Broad-leaved Turgenia	Harvest / C: in the Tell	Th.	Med.
Asteraceae	<i>Phagnalon saxatile</i> (L.) Cass.	Phagnalon of the rocks, "Foddia", "Arfedj"	Brush, rocks / CC: everywhere.	Ch.	W. Med.
Asteraceae	<i>Echinops spinosus</i> L.	Fouga el djemel, Kashir, Sor.	Lawn, rockery / CC: throughout Algeria.	He.	S. Med. Sah.
Asteraceae	<i>Cichorium intybus</i> subsp. <i>Intybus</i> M.	Wild chicory, Siress, Handba baria, Isan bagra, Tilfaf	Uncultivated fields , pastures / CC: everywhere.	Th.	Med.
Asteraceae	<i>Urospermum picroides</i> (L.) Scop. ex F.W.Schmidt	False picrid urosperm, Zouzouga.	Rocks , paths , sterile places / CC: throughout the Tell	Th.	Eur-med.
Asteraceae	<i>Silybum marianum</i> (L.) Gaertn. - check	Milk thistle, Chouk el nassara, Chawk bounagar, Chouq boutli , Zaz.	Fields, ditches, waste places, rubble Nitrophil / CCC: throughout the Tell.	He.	cosm.
Asteraceae	<i>Centaurea calcitrapa</i> L.	Caltrop , star thistle , Hassak, Bou Neggar.	Pastures, crops, waste places and rubble/CCC everywhere.	He.	Eur-med.
Asteraceae	<i>Pallenis spinosa</i> (L.) Cass.	Spiny Pallenis, Nougda , Rebian.	Open forests, pastures, waste places	Th.	Eur-med.

Asteraceae	<i>Sonchus oleraceus</i> L.	Porbeagle sowthistle, Tifelf Wagerrir	Cultures / CCC everywhere .	Th.	cosm.
Asteraceae	<i>Lactuca seriola</i> L.	Sacarole, Necalen.	Paths, vineyards, rockeries, scrub / AC: Tell, Hauts plateaux.	Th.	Paleotemp.
Asteraceae	<i>Centaurea hyalolepis</i> Boiss.	Hyaline-scaled Knapweed, Dardar	Fields, waste places, pastures, roadsides .	He.	Germany, Saudi Arabia, Belgium, Cyprus, Egypt, France, Spain, Great Britain, Greece, Iran, Israel, Italy, Iraq, Jordan, Lebanon, Morocco, Palestine, Syria, Turkey, Yemen, Algeria
Asteraceae	<i>Atractylis cancellata</i> L.	Latticed atractyle, Nedjemma.	Forests, pastures, fields / CCC: all of Algeria.	Th.	Circummed.
Asteraceae	<i>Scolymus maculatus</i> L.	Stained Scolyma, Isri	Uncultivated places , especially clay / CC: throughout the Tell.	He.	Circummed.
Asteraceae	<i>Scolymus grandiflorus</i> Desf.	Large-flowered moss	Crops, pastures, sands, rubble. CC: in the Tell, AR: in Orania	He.	Eur-med.
Asteraceae	<i>Scolymus hispanicus</i> L.	Yellow thorn , Spanish thistle, Garnina	Crops , pastures , sands, rubble / CC: throughout Algeria.	He.	Med.
Asteraceae	<i>Mantisalca salmantica</i> (L.) Briq. & Cavill.	Salamanca Centaury	Dry places /CC everywhere: Forest clearings, pastures	He.	Eur-med.
Asteraceae	<i>Centaurea melitensis</i> L.	Maltese Cross, Alitime	Fields, arid pastures/ AC: throughout Algeria	He.	Circummed.
Asteraceae	<i>Glebionis coronaria</i> (L.) Spach	Garden Chrysanthemum, Edible Chrysanthemum or Crown Chrysanthemum	Fields, at roadsides - AC: throughout Algeria	Th.	Med.
Asteraceae	<i>Galactites tomentosa</i> Moench.	Milky Thistle, Cottony Galactite, Akichaou , Chouq el A mir.	Waste places , paths, rockeries / CCC: all the Tell.	He.	Circummed.
Asteraceae	<i>Onopordum macracanthum</i> Schousb.	Badourd	Fields, waste places, pastures, forests / CC: throughout the Tell	Hey.	Ibero-Maur.
Asteraceae	<i>Calendula arvensis</i> (Vaill.) L.	Field marigold, Djamir, Razehi7na.	Fields, vineyards , waste places .	Th.	Sub-med.
Asteraceae	<i>Artemisia herba alba</i> Asso.	Mugwort, Chih , Ifsi , Zezzare.	Polymorphic plant. Clay steppes , rocky pastures /CCC. H , SS , AR: 01-2-3, Cl, SC: in the mountains.	Ch.	Esp., from the Canaries to Egypt, Asia Occ.
Asteraceae	<i>Catananche lutea</i> L	Cupidone, Kidan el Acefleur, Zehla	Dry places / CC: throughout Algeria	Th.	Med.
Asteraceae	<i>Carduncellus helenioides</i> (Desf.) Hanelt (<i>Carthamus helenioides</i> Desf.)	Zitset	Clay places / CC: 01-2, R: Hl- 2, Cl	He.	Alg.Mar.
Asteraceae	<i>Matricaria chamomilla</i> L.	Chamomile feverfew	Ggardens, uncultivated fields.	Th.	Euras. Macar. Mar.
Asteraceae	<i>Scorzonera undulata</i> subsp. <i>Alexandrina</i> (<i>Boiss.</i>) M.	Guiz	CC: H, AS, SS	Th.	Sub-med. Bb.
Asteraceae	<i>Launaea nudicaulis</i> Hook.f.	Elgouram	fields, and pastures of dry and desert regions / R: A2, CC: H, AS, SS, SC, SO	Th.	Med. Sah.-Sind.
Boraginaceae	<i>Anchusa italica</i> Retz. (<i>A. azurea</i> Mill.)	Blue, or Italian bugloss	Fields, harvests/ CC: throughout Algeria	Th.	Eur- Med.

Boraginaceae	<i>Echium plantagineum</i> L.	Plantain leaf bugloss, Leçane el Tsour	Pastures, fields/ CC: throughout the Tell	Th.	Med.
Boraginaceae	<i>Echium asperrimum</i> Lam.	Very rough bugloss	Fields, crops, hedges / CC: throughout the Tell	He.	Med.
Boraginaceae	<i>Borago officinalis</i> L.	Borage, Harcha, Bouchenaf, Bou Kerich	Fields, crops, hedges / CC: throughout the Tell	Th.	W. Med.
Brassicaceae	<i>Rapistrum rugosum</i> (L.) All.	Rough rapist	AC: in the Tell. A: South. polymorphic type	Th.	Med.
Brassicaceae	<i>Carrichtera annua</i> (L.) DC. (<i>Vella annua</i> L.)	Annual carrichter	Brushwood, steppes / AC: throughout Algeria, except in well-watered areas	Th.	Med.
Brassicaceae	<i>Lepidium sativum</i> L. subsp. <i>sativum</i> _	Garden cress. "Rechad".	Cultivated, sometimes spontaneous / E. Med.	Th.	E. Med.
Brassicaceae	<i>Raphanus raphanistum</i> L.	Ravenella.	Cultures / AC: in the Tell. A: elsewhere	He.	Med.
Brassicaceae	<i>Eruca vesicaria</i> (L.) Char.	Arugula, "Semna", Hiagan	Fields, pastures / C: throughout Algeria. AR: SS / Med.	Th.	Med.
Brassicaceae	<i>Hirschfeldia incana</i> (L.) Lagr.-Foss	Rocket, "Lebsane".	Fields, rubble / AC: throughout Algeria	Th.	Med.
Brassicaceae	<i>Sinapis alba</i> L.	White mustard, White mustard, Kherdel el abiod	Fields, rubble / C: in the Tell.	Th.	Paleo-temp.
Brassicaceae	<i>Sinapis arvensis</i> L.	Field mustard, Khardel.	Fields, sands / AC: in the Tell. A: elsewhere	Th.	Paleo-Temp.
Brassicaceae	<i>Psychine stylosa</i> Desf.	Psychine	Clay-gypsum soils. AC: in the Tell and on the high plateaus	Th.	End NA
Brassicaceae	<i>Moricandia arvensis</i> (L.) DC.	Moricandie, Cabbage, Gdem, Kromb el Djemel, Tammadjei.	polymorphic type	Th.	Med. - Sah. - Sind.
Caryophyllaceae	<i>Silene tridentata</i> Desf.	Three-tooth silenous	Rocky pastures / R: K1, Al, AC: O1-2-3, Hl, AS1	Th.	Ibero-Maur
Cistaceae	<i>Fumana thymifolia</i> (L.) Spach ex Webb	Fumana with thyme leaves	Open forests, rock gardens, pastures / CC by all Polymorph	He.	Euras. Af. seven.
Cistaceae	<i>Helianthemum violaceum</i> (Cav.) Pers. (<i>Helianthemum pilosum</i> (L.) Desf.)	Hairy Rockrose, Ergiga, Fegga, Serd, Zefzel	Open forests, brush and dry places	He.	Med.
Crassulaceae	<i>Sedum sediforme</i> (Jacq.) Pau	Nice Stonecrop	Rocailles / C: throughout Algeria except in the Algerian-Constantinian Tell	Ch.	Med.
Crassulaceae	<i>Sedum caespitosum</i> (Cav.) DC.	Grass stonecrop	Pastures, rockeries / AC: in the Tell	He.	Med.
Fabaceae	<i>Scorpiurus sulcatus</i> L.	Furrowed Caterpillar, Covered Fruit Scorpiure	Pasture fields / C: throughout the Tell.	Th.	Med.
Fabaceae	<i>Lathyrus clymenum</i> L.	Grass pea	Brush, pasture. Polymorphic plant	Th.	Med.
Fabaceae	<i>Spartium junceum</i> L.	Spanish Broom, Tertak, Kessaba, Boutertak.	clay hills / AR: in the Tell	Ph.	Med.
Fabaceae	<i>Medicago sativa</i> L.	Alfalfa, Fassa, Safsafa, Netel, Sefsa	Fields, brush / CC: throughout Algeria, except in the Tell, coast. Commonly grown plant	Th.	Eur. As. become sub-cosmop
Fabaceae	<i>Tripodion tetraphyllum</i> (L.) Fourr (<i>Anthyllis tetraphylla</i> L.)	Four-leaved beetle, Oudna	Pastures/ C: in the Tell.	Th.	Med.
Fabaceae	<i>Vicia faba</i> L.	Bean; Foul	Cultivated and often more or less subspontaneous	Th.	Med.
Fagaceae	<i>Quercus ilex</i> L.	Holm oak, Baloute, Kouriche	C: in the Tell in the mountains, especially sublimestone, R. and dispersed elsewhere	Ph.	Med.
Fumariaceae	<i>Fumaria agraria</i> Lag. *	Fumitory	Cultures / C: throughout the Tell.	Th.	Med.
Fumariaceae	<i>Fumaria parviflora</i>	Small-flowered	Fields / C: in all Algeria	Th.	Med.

	Lam.	fumitory			
Geraniaceae	<i>Erodium malacoides</i> (L.) L'Her.	False Mauve Erodium, Moudjaïh	Fields, crops / CC: throughout Algeria	Th.	Med.
Globulariaceae	<i>Globularia alypum</i> L.	Globular, Ain l'arnab Tasalgha, Chebra, Zerga	Rock gardens, scrubland/ CC: throughout Algeria.	Ch.	Med.
Iridaceae	<i>Gladiolus segetum</i> Ker.-Gawl.	Gladiolus , Kheta , Sifer r'orab	Fields, cultivated land / C: in the Tell	Ge.	Med.
Lamiaceae	<i>Marrubium alysson</i> L.	Marrioua, Timersate	Pastures, especially clayey / CC: everywhere except on the Algerian-Constantine coast	He.	Ibero-Mar.
Lamiaceae	<i>Marrubium vulgare</i> L.	White Horehound, Common Horehound, Mchichtro - Tafergana, Marriout	Rubble, hedges / CC: throughout Algeria	He.	Cosm.
Lamiaceae	<i>Salvia verbenaca</i> (L.) Briq.	False verben sage, Zergtoun, Koussa.	Highly variable plant / CC: throughout Algeria	He.	Med. Atl.
Lamiaceae	<i>Salvia argentea</i> L.	Silver sage, "Ferrache en neda"	Rocky and arid pastures, C: Hl-2	He.	Med.
Lamiaceae	<i>Thymus ciliatus</i> Desf.	Thyme, Djertil	Lawns, brush / CC: throughout Algeria.	Ch.	End. N / A
Lamiaceae	<i>Teucrium pseudochamaepitys</i> L.	Germander small pine	Lawns, scrubland/CC especially in the Tell	Ch.	W Med.
Liliaceae	<i>Allium cyrilli</i> Ten. *	Cyrillic garlic	Fields, pastures,/ R: Alg.	Ge.	Eur. Alg.
Liliaceae	<i>Allium nigrum</i> L.*	Black garlic	Fields, pastures, forests / C: in the Tell	Ge.	Med.
Liliaceae	<i>Allium cupani</i> Raf.	Little Allium	Brush, pasture, forest / C: Tell, Hts Pl. Atl. Sah.	Ge.	E. Med.
Liliaceae	<i>Allium cepa</i> L.	Onion, Bsel	Cultivated	Ge.	Med.
Liliaceae	<i>Allium sativum</i> L.	Garlic, Thum	Cultivated	Ge.	Med.
Liliaceae	<i>Allium scaberrimum</i> J. Serres*	Very coarse garlic, Very scabrous garlic	Cereal fields, roadsides in an agricultural context (Rebbas et al. 2019)	Ge.	Endemic to the Mediterranean region
Liliaceae	<i>Tulipa sylvestris</i> L.	Tulip, "Bou zouzou", "Nefed", "Nouar el Azra", "El Azoul"	Forests; pastures, crops, rocks (especially in the mountains)	Ge.	Eur.-Med.
Liliaceae	<i>Muscari comosum</i> (L.) Mill.	Tail-of-leek, Muscari hairy , Kikout, Azoul, Bou Tesel, Beçal ed dib, Boulbous.	Brush, pasture, forest / C: Tell, Hts Pl., Atl. Sah.	Ge.	Med.
Liliaceae	<i>Muscari neglectum</i> Guss.	Sloppy grape hyacinth, grape hyacinth	Forests, scrub / AC: in Oranie and Constantinois: var. atlanticum B. and R.	Ge.	Eur. Med.
Malvaceae	<i>Malva parviflora</i> L.	Small-flowered mallow	Cultivated fields, rubble / CC: throughout Algeria, SS, SC	Th.	Med.
Malvaceae	<i>Malva sylvestris</i> L.	Wild mallow	Rubble, fields, crops / CC: throughout Algeria, SS	He.	Euras.
Oleaceae	<i>Olea europea</i> L.	The wild olive tree (Zabbouj, Zitoun l'bari). The cultivated olive tree (Zitoun, Tezamourt, azemour)	CC throughout Algeria. The olive tree is widely cultivated throughout Algeria in its var. sativa DC.	Ph.	Med.
Oleaceae	<i>Jasminum fruticans</i> L.	Bou lila, Agourmi	Forests, brush / CC except on the High plateaus	Ph.	Med.
Papaveraceae	<i>Papaver rhoeas</i> L.	Poppy, Large poppy, Bellaâmane	Fields/ C: throughout Algeria	Th.	Paleo-temp.
Papaveraceae	<i>Papaver hybridum</i> L.	Hybrid poppy	Fields / C: throughout Algeria	Th.	Med.
Papaveraceae	<i>Papaver dubium</i> L. subsp. <i>dubia</i>	Questionable poppy	Fields / C: throughout Algeria	Th.	Med.
Papaveraceae	<i>Hypecoum pendulum</i> L.	Cumin pendant, Djehira, Sag el IVorab	Rocky fields and pastures / C: throughout Algeria	Th.	Med.- Iran-Tour .
Papaveraceae	<i>Roemeria hybrida</i> (L.) DC.	Hybrid Roemery, "Djehira"	Cultivated fields, rubble / AC: everywhere	Th.	Med.-Iran-Tour.

Papaveraceae	<i>Glaucium corniculatum</i> (L.) H. Rudolph	Horned poppy, “Bougaraoum”, Semsema”.	Pastures, rubble / C: throughout Algeria, especially towards the south	Th.	Med.
Plantaginaceae	<i>Plantago albicans</i> L.	Yalma, Heulma, Nemla	Lawns, arid pastures /CC: throughout Algeria, but rarer in the Tell littoral	He.	Med.
Plantaginaceae	<i>Plantago afra</i> L. (<i>P. psyllium</i> L)	Asloudj, Merouach	Lawns, pastures, mostly sandy / CC throughout Algeria, AS: SS, R: SC	Th.	Sub.-Med.
Poaceae	<i>Stipa tenacissima</i> L.	Halfa, Lgadime, Tizzi, Demmoug	Forest clearings, steppes Abundant on all the high plateaus and the Saharan Atlas; lacking on the coast of Constantine and Algiers, very abundant in Oranie	He.	Iber.-Maur.
Poaceae	<i>Cynodon dactylon</i> (L.) Pers.	Quackgrass, Nijil, nagir, Njem	Crops, pastures, wetlands Everywhere in Algeria; Saharan wetlands	Ge.	Thermocosm.
Poaceae	<i>Phalaris canariensis</i> L.	Canary grass	Cultivated, Fields	Th.	Med.
Poaceae	<i>Echinaria capitata</i> (L.) Desf.	Echinaria to head	Fields	Th.	Med.
Poaceae	<i>Phalaris minor</i> Retz.	Phalaris lesser, Charfal canary seed	Fields, pastures / C: throughout Algeria. AR. SS, SC	Th.	Paleo-subtrop
Poaceae	<i>Triticum turgidum</i> L.	Durum wheat	Cultivated	Th.	Med. Eur. Asia. Bitter...
Poaceae	<i>Lolium perenne</i> L.	Perennial ryegrass, Zaouane, Oallab, Dhelif, Maddoun	Brush, pasture, clearings/C: Tell	Th.	Atl. Sah. Circumbor.
Poaceae	<i>Avena sativa</i> L.	The Kortale, Azqûn	Cultivated	Th.	(Europe, W Asia and N Africa)
Poaceae	<i>Hordeum murinum</i> subsp. <i>leporinum</i> (Link) Asch. and Gr.	Rat barley, Elfar dumpling	Pastures, crops, rubble, clearings / CC: from the coast to the edge of the Sahara sept. Oasis of the latter.	Th.	Circumbor.
Poaceae	<i>Bromus rubens</i> L.	Hamraw, Dil el Djerd, Zehaf el begueur	Steppes, scrub, pastures, forests	Th.	Paleo-subtrop.
Ranunculaceae	<i>Adonis annua</i> L.	Autumn Adonis, Annual Adonis, Ben naman, Choulletan	Cultivated fields / AC: in the Tell: ssp. autumnalis (L.) Maire and Weiller	Th.	Euras.
Ranunculaceae	<i>Adonis aestivalis</i> L.	Summer Adonis, "drop of blood" or "pheasant's eye"	Fields, pastures / AC: in the Tell. R; elsewhere	Th.	Euras.
Ranunculaceae	<i>Nigella damascenna</i> L.	Capuchin grass, Damascus nigella. “Nouar el Mequitfa”.	Fields, pastures / C: in the Tell	Th.	Med.
Ranunculaceae	<i>Ceratocephala falcata</i> (L.) Pers.	False Ceratocephalus	Arid lawns, fields	Th.	Med-Iran-Tour.
Resedaceae	<i>Reseda luteola</i> L.	Yellow reseda	Pastures / AC: in the Tell. A: elsewhere	Th.	Euras.
Resedaceae	<i>Reseda alba</i> L.	White reseda, “Qaua el Kherouf”	AC: in the Tell as far as the northern Sahara	Th.	Euras.
Scrophulariaceae	<i>Linaria triphylla</i> (L.) Miller	Toadflax in threes	Fields, lawns / CC: throughout Algeria	Th.	Med.
Solanaceae	<i>Solanum nigrum</i> subsp. <i>eu-nigrum</i> Rouy	Black nightshade, Aneb adib, Merhnenou, Messilla	Fields, crops, rock gardens / CC: throughout Algeria, R: SC, CC.	Th.	Cosm.
Solanaceae	<i>Solanum nigrum</i> subsp. <i>villosum</i> (L.) Ball.	Yellow nightshade, Aneb adib	AR: throughout the Tell	Th.	Cosm.
Thymelaeaceae	<i>Thymelaea hirsuta</i> (L.) Endl.	Bristly passerine, Zaytoun ardh, Methnan djabal	Sands, pastures / CC: throughout Algeria and especially on the coast	He.	Med.
Zygophyllaceae	<i>Peganum harmala</i> L.	Harmal	Arid pastures, steppes /CC: 01-2-3, HI-2, ASI-2-3, SS. A: SC, in the mountains	Th.	Iran-Tour.-Eur.