

Full Length Research Paper

# Selected wild plant species with exotic flowers from Jordan

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The flora of Jordan with regards to the flowering vascular plant represents a high diversity in such a semi-arid country like Jordan which is part of the Eastern Mediterranean region. In this study, a number of 59 wild species with showy, exotic flowers from Jordan are illustrated; the selected species are not introduced or cultivated but rather local wild flowers selected for their showy, colorful flowers and for their medicinal, edible and ornamental values. Most of the recorded species in this study are endangered and exposed to degradation. The selected plant species are ornamental, showy with colorful flowers like *Orchids*, *Irises*, *Crocuses*, *Narcissus*, *Cyclamen*, *Ixiolirion*, *Linum*, *Anemone*, *Salvias*, *Sternbergia* and *Ornithogallum*. Some of the illustrated plant species are endemic to Jordan like: *Iris nigricans* which is the national flower of Jordan, *Crocus moabiticus*, *Iris edomensis* and *Iris petrana*, many plant species are demonstrated for their medicinal values like *Achillea fragrantissima*, *Arum palestinum*, *Glaucium arabicum*, *Erodium gruinum*, *Alcea setosa*, *Hyoscyamus reticulatus* and others. Other species are mentioned for their edible consumption like *Capparis spinosa*, *Cretaegus aronia*, *Crocus hermoneus*, *Cyclamen persicum*, *Gundelia tournefortii*, *Lupinus varius*, *Malva setosa* and others. Photographs are demonstrated for most of the selected plants.

**Key words:** Exotic flowers, wild flowers, Jordan.

## INTRODUCTION

Some plants produce showy, colorful, exotic flowers, and they are not considered exotic by definition, because exotic plants literally means “foreign” or anything unusual or extraordinary” (Morton, 1977), another definition for exotics is “from elsewhere” (Kepler, 1996). The exotics or extraordinary plants have been illustrated by Patrick and Arnold (2000), where they presented 300 selected extraordinary plant species from all over the world, exotic

plants of Bahrain were described by Shaheen (2003), who recorded 345 perennials and annual plant species in the area of her garden in Bahrain.

Flora of Jordan is highly diversified in its number of vascular, flowering plants. A number of 2078 species was recorded by (Al-Eisawi, 1982), this number had been reevaluated in the new checklist by (General Corporation for Environmental Protection and Al-Eisawi (2000) and a

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**Table 1.** Names, families, species potential (M, Ed, or), remarks, habitat and geographical distribution.

Scientific name	Family	Potential (M, OR)	Remarks, habitat and geographical distribution
<i>Acanthus syriacus</i> L.	Acanthaceae	OR	Red soil. Stony ground. Ajloun, Jarash, Irbid, Madaba, Salt.
<i>Achillea fragrantissima</i> (Forssk.) Schultz Bip.	Asteraceae	M, OR	Desert, dry places. Eastern desert, Wadi_Rum, Aqaba, Dead_Sea, Tafilah, Karak_Madaba, Mafrqa.
<i>Alcea refescens</i> (Boiss.) Boiss.	Malvaceae	M, OR, Ed	Wadis. Wadi Mujib, Dead Sea.
<i>Alcea setosa</i> (Boiss.) Alef.(Feinbr.)	Malvaceae	M, OR	Road sides. Irbid, Amman, Karak, Tafilah, Salt, Amman, Ajloun.
<i>Allium truncatum</i> Kollmann & D. Zohary	Amarylidaceae	M, OR	Waste fields, road sides. Tafilaf, Karak, Amman, Madaba, Salt, Irbid.
<i>Anemone coronaria</i> L.	Ranunculaceae	OR, M	Waste lands, mountains. Ajloun, Irbid, Jarash, Madaba, Karak, Tafilah.
<i>Anthemis palaestina</i> Reuter	Asteraceae	M, OR	Waste fields . Jordan Valley, Irbid, Jarash, Salt.
<i>Arum palaestinum</i> Boiss.	Araceae	M, OR, Ed	Mountains and rocky grounds. Amman, Salt, Ajloun, Irbid, Jarash.

number of 2500 species has been recorded in this new checklist. New publications were made for flora of Jordan in different geographical areas like Tafilah county in the south was published by (Oran, 2014), a number of plant species recorded in this recent study were also listed in Tafilah area with some exotic plants; The field guide to wild flowers of Jordan and neighboring countries by (Al-Eisawi, 1998), the book is including 488 colored plant species, many of which are exotic or with showy flowers. A taxonomic revision for the orchids of Jordan which is most exotic flowers was published by (Al-Eisawi, 1986); some showy flowering plant species were included. Lots of research has been done on the biological potentials of medicinal plants in Jordan ethnobotanical survey of the medicinal plants in the central mountains (North-South) in Jordan by (Oran and Al-Eisawi, 2015).

Some of the recorded species in this study are wild plants with showy flowers like *Lupinus*, *Ixiolirion*, *papaver*, *Sternbergia*, *Linum* and others. This article aimed to present some selective showy, ornamental, colorful, wild plant species and their photographs. The plant species are chosen for their showy colorful flowers, their biological and ornamental potentials, as well as habitat and geographical distribution. Table 1 and Figure 1a to o

show the potential of each plant species included in this study, those plants with medicinal values are given abbreviation such as M, ED for edible plants and those with ornamental potential are abbreviated with OR (Table 1).

## MATERIALS AND METHODS

Plant specimens were collected, processed and identified by plant taxonomist Sawsan Oran, professor of plant taxonomy; by using the related flora of the region. Photographs were taken for plant species from different geographical areas in Jordan; they were identified by plant taxonomists, and checked using IPNI system. Voucher specimens were deposited at the herbarium allocated at the Department of Biological Sciences at the University of Jordan in Amman (AMM). Scientific names of the selected plants are given in Table 1. Photographs for the available plant species with showy, exotic flowers were taken by the author as shown in (Figure 1a to o).

## RESULTS

Fifty nine (59) species of flowering plants with selected showy, exotic flowers are shown in this manuscript for the following plant species: *Orchis anatolica*, *Ophrys lutea*, *Narcissus tazetta*, *Sternbergia clusiana*, *Crocus moabticus*, *Crocus hermoneus*, *Crocus hyamalis*,

Table 1. Contd.

<i>Asphodeline lutea</i> (L.) Reichenb.	Liliaceae	M, OR	Waste high water. Amman, Ajloun, Irbid, Salt, Ras Al-Naqab.
<i>Asphodelus aestivus</i> Brot.	Liliaceae	M, OR	Waste mountainous areas. Amman, Ajloun, Jarash, Salt, Madaba, Karak, Tafilah.
<i>Calycotome villosa</i> (Poiret) Link	Rosaceae	OR	Mountains and rocks.
<i>Capparis spinosa</i> L.	Capparaceae	M, OR, Ed	Flower buds edible.
<i>Cichorium pumilum</i> Jacq.	Asteraceae	M, OR	Waste high mountains. Amman, Salt, Irbid, Jarash, Ras Al-Naqab.
<i>Cistus creticus</i> L.	Cistaceae	M, OR	Forests, mountains. Amman, Ajloun, Irbid, Salt.
<i>Cistus salvifolius</i> L.	Cistaceae	M, OR	Forests, mountains. Amman, Ajloun, Jarash, Irbid, Salt.
<i>Colchicum hierosolymitana</i> Feinbr.	Liliaceae	M, OR	Mountains, rich soil. Amman, Salt.
<i>Convolvulus althaeoides</i> L.	Convolvulaceae	M, OR	Road sides. Amman, Irbid, Jarash, Karak, Tafilah, Mafraq.
<i>Cretaegus aronia</i> (L.) Bosc. ex DC.	Rosaceae	M, OR, Ed	Mountains, forests. Amman, Jarash, Irbid, Ajloun, Salt, Karak, Tafilah.
<i>Crocus hermoneus</i> Ky. ex Maw subsp. palaestinus Feinbr.	Iridaceae	M, OR, ED	Mountains. Amman, Salt, Jarash,
<i>Crocus hyamalis</i> Boiss. & Blanche	Iridaceae	M, OR, ED	Forests, red soil. Ajloun, Jarash.
<i>Crocus moabiticus</i> Bornm. & Dinsm. ex Bornm.	Iridaceae	M, OR, ED	Endemic. Desert Petra, Dab'a.
<i>Cyclamen persicum</i> Miller	Primulaceae	M, OR, ED	Mountains, forests. Amman, Ajloun, Irbid, Salt, Karak, Tafilah.
<i>Eremostachys laciniata</i> (L.) Bunge	Lamiaceae	M, OR	Road sides. Amman, Ajloun, Irbid, Karak, Tafilah.
<i>Erodium gruinum</i> (L.) L'He'r.	Geraniaceae	M, OR, Ed	Waste places. Ajloun, Irbid, Jarash, Salt, Karak, Tafilah, Shoubak.
<i>Gladiolus atrovioleaceus</i> Boiss.	Iridaceae	OR	In the farms and fields. Amman, Irbid, Madaba, Mafraq, Tafilah.
<i>Glaucium arabicum</i> Fresen.	Papaveraceae	M, OR	Semi dry areas. Amman, Irbid, Salt, Madaba, Tafilah, Karak, Shoubak.

Table 1. Contd.

<i>Gundelia tournefortii</i> L.	Asteraceae	M, OR, ED	Flower buds edible. Road sides, waste lands. Amman, Jarash, Irbid, Ajloun, Madaba, Karak, Tafilah.
<i>Himantoglossum capricum</i>	Orchidaceae	M, OR	Forests. Salt, Jarash.
<i>Hyoscyamus reticulatus</i> L.	Solanaceae	M, OR	Fields. Amman, Irbid, Jarash, Karak, Madaba, Tafila.
<i>Iris aucheri</i> (Baker) Sealy	Iridaceae	OR	Rare. Desert. Eastern desert.
<i>Iris bismarckiana</i> Regel	Iridaceae	OR	Rare. Forests. Amman, Jarash.
<i>Iris edomensis</i> sealy	Iridaceae	OR	Endemic. National flower of Jordan.
<i>Iris nigricans</i> Dinsm.	Iridaceae	M, OR	Mountains, marginal fields. Amman, madaba, Karak.
<i>Iris petrana</i> Dinsm.	Iridaceae	M, OR	Endemic. Petra, Shoubak, Tafilah.
<i>Iris regis-azzuriae</i> Feinbr.	Iridaceae	OR	Rare. Yellow soil. Ras al-Naqab.
<i>Iris vartanii</i> Foster	Iridaceae	OR	Rare. Mountains Salt.
<i>Ixiolirion tataricum</i> (Pallas) Herb.	Amaryllidaceae	OR, M	Mountains, fields. Amman, Ajloun, Jarash, Karak, Tafila.
<i>Linum mucronatum</i> Bertol.	Linaceae	M, OR, ED	Mountains. Amman, Ajloun, Jarash, Salt,
<i>Linum pubescens</i> Banks & Sol.	Linaceae	M, OR, ED	Mountains. Amman, Ajloun, Irbid, Jarash, Madaba.
<i>Lonicera etrusca</i> Santi	Caprifoliaceae	M, OR	Forests. Amman, Ajloun, Irbid, Jarash, Salt, Tafilah.
<i>Lupinus varius</i> L.	Fabaceae	M, OR, Ed	Rare. Mountains. Irbid, Salt.
<i>Alcea setosa</i> (Boiss.) Alef.	Malvaceae	M, OR	Fields, road sides. Amman, Ajloun, Jarash, Irbid, Salt, Karak, Tafila.
<i>Malva sylvestris</i> L.	Malvaceae	M, OR, Ed	Road sides, fields. Amman, Ajloun, Jarash, Madaba, Karak, Tafilah.

Table 1. Contd.

<i>Muscari commutatum</i> Guss.	Iridaceae	OR	Mountains. Amman, Karak, Shubak, Mafraq.
<i>Narcissus tazetta</i> L.	Iridaceae	OR	Rare. Mountains. Amman, Salt.
<i>Ononis natrix</i> L.	Fabaceae	M, OR	Road sides. Amman, Ajloun, Irbid, Madaba, Salt, Karak, Tafilah.
<i>Orchis anatolica</i> Boiss.	Orchidaceae	M, OR	Rare. Forests. Amman, Ajloun, Jarash, Salt.
<i>Ophrys lutea</i> (Gouan) Cav.	Orchidaceae	M, Or	Rare. Forests. Ajloun, Jarash.
<i>Ornithogalum montanum</i> Cyr.	Liliaceae	OR, M	Mountains. Amman, Ajloun, Jarash, Salt.
<i>Ornithogalum</i> sp.	Liliaceae	OR	Mountains, Fields. Amman, Ajloun, Irbid, Jarash, Salt.
<i>Papaver syriacum</i> Boiss. & Blanche	Papaveraceae	M, OR	Mountains and deserts. Amman, Jarash, Irbid, Karak, Tafilah.
<i>Pyrus syriaca</i> Boiss.	Rosaceae	M, OR, ED	Forests. Amman, Jarash, Ajloun, Salt.
<i>Rubus sanguineous</i> Friv.	Rosaceae	M, OR, ED	Fields, sides of water canals. Amman, Salt, Tafila, Al-Hemmeh.
<i>Salvia hierosolymitana</i> Boiss.	Lamiaceae	M, OR, ED	Fields. Amman, Jarash, Salt, Irbid, Ajloun, Tafilah.
<i>Salvia palaestina</i> Bentham	Lamiaceae	M, OR	Fields, road sides. Amman, Salt, Jarash, Irbis, Tafilah.
<i>Scolymus maculatus</i> L.	Asteraceae	OR	Fields Amman, Ajloun, Jarash, Irbid, Karak.
<i>Senecio vernalis</i> Waldest. & Kit.	Asteraceae	OR	Common. Fields, mountains. Amman, Ajloun Irbid, Jarash, Salt, Jordan Valley, Karak, Tafila.
<i>Sternbergia clusiana</i> Ker-Gawler	Amarylidaceae	M, OR	Rare. Mountains. Amman, Salt, Jarash Karak, Ras Al-Naqab.
<i>Tulipa stylosa</i> Stapf	Iridaceae	OR, M	Rare. Mountains, marginal lands. Amman, Salt, Shoubak, Ras Al-Naqab.

M, Medicinal; OR, ornamental; ED, edible.



*Crocus hermoneus*



*Crocus moabiticus*



*Crocus hyemalis*



*Cistus creticus*



*Cistus salvifolius*

**Figure 1a.** Exotic Plants in Jordan (Photographed by Sawsan Oran).



*Rubus Saguineus* with fruits



*Rubus sanguineus* in flowers



*Cyclamen persicum*



*Sternbergia Clusiana*

**Figure 1b.** Exotic Plants in Jordan.



*Tulipa stylosa*



*Lupinus varius*



*Ornithogalum montanum*



*Senecio vernalis*

**Figure 1c.** Exotic Plants in Jordan.



*Iris edomensis* Sealy



*Iris nigricans* Dinsm



*Iris petrana* Dinsm



*Iris regis-uzziae* Feinbrn

**Figure 1d.** Exotic flowers from Jordan.



*Iris aucheri* (Baker) Sealy



*Iris bismarckiana* Regel



*Narcissus tazetta* L.



*Acanthus syriacus* Boiss

**Figure 1e.** Exotic flowers from Jordan.



*Eremostachys laciniata* (L.) Bunge



*Ophrys lutea* (Gouan) Cav.



*Orchis anatolica* Boiss



*Ononis natrix* L.

**Figure 1f.** Exotic flowers from Jordan.





*Anemone coronaria* L.



*Papaver syriacum* Boiss & Blanche



*Convolvulus althaeoides* L.



*Colchicum hierosolymitanum* Feinbr

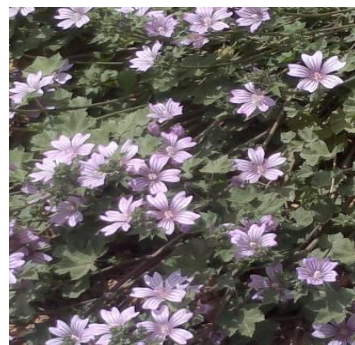
**Figure 1g.** Exotic flowers from Jordan.



*Capparis spinosa* L.



*Ixiolirion tataricum* (Pallas) Herb



*Malva sylvestris* L.



*Scolymus maculatus* L.

**Figure 1h.** Exotic flowers from Jordan.



*Anthemis palaestinum* Reuter



*Crataegus aronia* (L.) Bosc. ex DC.



*Arum palaestinum* Boiss



*Cichorium pumilum* Jacq.

**Figure 1i.** Exotic Plants from Jordan.



*Linum pubescens* Banks & Sol



*Muscari commutatum* Guss



*Gladiolus atroviolaceus* Boiss



*Glaucium arabicum* Fresen

**Figure 1j.** Exotic flowers from Jordan.



*Asphodelus aestivus* Brot.



*Asphodeline lutea* (L.) Reichenb.



*Allium truncatum* (Feinbr.)  
Kollmann & Zohary



*Hyoscyamus reticulatus* L.

**Figure 1k.** Exotic flowers from Jordan.



*Alcea rufescens* (Boiss.) Boiss.



*Alcea setosa* (Boiss.) Alef.



*Salvia hierosolymitana* Boiss.



*Salvia palaestina* Benth

**Figure 1m.** Exotic flowers from Jordan.



*Gundelia tournefortii* L.



*Linum mucronatum* Bertol.



*Achillea fragrantissima* (Forsk.) Schultz Bip.

**Figure 1n.** Exotic flowers from Jordan.



*Erodium gruinum* (L.) L'He'r.



*Ornithogallum* sp.



*Calycotome villosa* (Poiret) Link



*Lonicera etrusca* Santi

**Figure 1o.** Exotic flowers from Jordan.

*Anthemis palestinum*, *Linum pubescens*, *Linum macronatum*, *Iris nigricans*, *Iris bismarckiana*, *Iris vartanii*, *Iris regis-azzuriae*, *Iris edomensis*, *Iris petrana*, *Iris aucheri*, *Eremostachys laciniata*, *Cyclamen persicum*, *Anemone coronaria*, *Ixiolirion tataricum*, *Tulipa stylosa*, *Lupinus varius*, *papaver syriacum*, *Capparis spinosa*, *Cichorium pumilum*, *Salvia hierosolymitana*, *Salvia palestina*, *Calycotome vilosa*, *Colchicum hierosolymitanum*, *Malva sylvestris*, *Gundelia tournefortii*, *Ononis natrix*, *Senecio vernalis*, *Acanthus syriacus*, *Cistus creticus*, *Cistus salvifolius*, *Ornithogallum montanum*, *Ornithogallum laciniatum*, *Muscari commutatum*, *Allium truncatum*, *Himanthoglossum caprinum*, *Asphodeline lutea*, *Gladiolus atroviolaceus*, *Asphodelus aestivus*, *Glaucium arabicum*, *Hyoscyamu reticulatus*, *Pyrus syriaca*, *Crataegus aronia*, *Achillea fragrantissima*, *Malva sylvestris*, *Arum palaestinum*, *Rubus sanguineus*, *Convolvulus althaeoides*, *Scolymus maculatus*, *Alcea setosa*, *Alcea rufescens*, *Erodium gruinum* and *Lonicera etrusca* (Table 1 and Figure 1a to o).

## DISCUSSION

The recorded plant species included in this article represents selected wild plant species from flora of Jordan with showy, colorful flowers of medicinal, ornamental or edible values. The photographs are shown for some selected plant species belonging to different families and different genera, and species from one or different families of vascular flowering plants. The shown photographs represent a variety of colorful species, with different biological potentials. Some are considered to have medicinal values that can be used in folk medicine or can be implemented in pharmaceutical industry, for example, *Lupinus*, *Ixiolirion*, *Salvia*, *Calycotome*, *Irises* species as well as *Narcissus*, *Ornithogallum*, *Sternbergia* and other mentioned species (Oran et al., 1998); some recorded species can be that with ornamental flowers like *Anemone*, *Papaver*, *Orchids*, *Cyclamen*, *Sternbergia* and others; other species are edible plants like *G. tournefortii*, *C. aronia*, *Capparis spinosa*, *M. setosa* and some others (Tukan et al., 1998). However, the aim of this work was to focus on some wild plant species that have exotic or showy flowers, or for their medicinal, ornamental and edible interests. Most of the mentioned plant species are endangered and serious measures should be implemented for conservation and protection of such valuable wild flowers.

## Conflict of interests

The authors did not declare any conflict of interest.

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