

# ***Verbascum kurdistanicum* (Scrophulariaceae), a new species from Hakkâri, Turkey**

Mehmet Fırat<sup>1</sup>

<sup>1</sup> Yüzüncü Yıl University, Faculty of Education, Department of Biology, 65080 Van, Turkey

Corresponding author: Mehmet Fırat ([kuyucak65@yahoo.com](mailto:kuyucak65@yahoo.com))

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## **Abstract**

*Verbascum kurdistanicum* Fırat (Scrophulariaceae), is described and illustrated as a new species that is located in Hakkâri, Turkey. In this study, diagnostic morphological characters of this and closely related species (*V. oreophilum* K.Koch and *V. pyramidatum* M. Bieb) are discussed. Furthermore, distribution maps for the three taxa are provided.

## **Keywords**

New species, Hakkâri , Turkey, *Verbascum*

## **Introduction**

*Verbascum* L. (Scrophulariaceae) includes about 360 species distributed throughout the world (Heywood 1993). This genus in Turkey includes about 245 species, 129 hybrids and 6 imperfectly known or doubtful records. Its endemism ratio is very high with 193 (79%) species restricted to Turkey (Huber-Morath 1978, Davis et al. 1988, Vural and Aydoğdu 1993, Karavelioğulları et al. 2004, 2006, 2008a, 2009a, 2009b, 2011, 2014, Karavelioğulları 2012, Sutorý 2001, 2004, Özhataý 2006, Kaynak et al. 2006, Yilmaz and Dane 2008, Bani et al. 2010).

*Verbascum* is divided into two sections (Murbeck 1933, Huber-Morath 1971): *Aulacospermae* Murb. and *Bothrospermae* (Murb.) Kamelin. The seed morphology of their members is the most important character which differentiates the sections. They are transversely corrugated and alveolate in sect. *Bothrospermae*, whereas the seeds are

longitudinally corrugated in sect. *Aulacospermae*. Section *Bothrospermae* includes all Turkish *Verbascum* species.

The first revision of Turkish *Verbascum* for *Flora of Turkey* was carried out by Huber-Morath (1978). Thirteen species and six hybrids were later described (Vural and Aydoğdu 1993, Karavelioğulları et al. 2004, 2006, 2008a, 2009a, 2011, 2014, Karavelioğulları 2012, Sutorý 2001, 2004, Özhatay 2006, Kaynak et al. 2006, Dane and Yılmaz 2009, Dane and Yılmaz 2005, Yılmaz and Dane 2008, Karavelioğulları 2009b).

## Materials and methods

During field exploration in Hakkâri province, Turkey in 2011, an unusual population of *Verbascum* was discovered. At first glance, because of having corolla and capsule with branched eglandular hairs, glandular-hairy inflorescence and distinctly crenate lower leaves it seemed to be similar to *V. oreophilum* and *V. pyramidatum*. The specimens were cross-checked with the keys provided by Huber-Morath (1978, 1981) and the *Verbascum* accounts given in various relevant publications such as Fedchenko (1955), Feinbrun-Dothan (1978a, 1978b), Meikle (1985), Boulos (2009) and Ekim (2000). Herbarium specimens from VANF, GAZI, ANK, G and GB herbaria were also examined and compared. The threat category assessment of the new species was defined according to IUCN criteria (IUCN 2001).

## Taxonomy

### *Verbascum kurdistanicum* Fırat, sp. nov.

urn:lsid:ipni.org:names:77148112-1

Figs 1–2

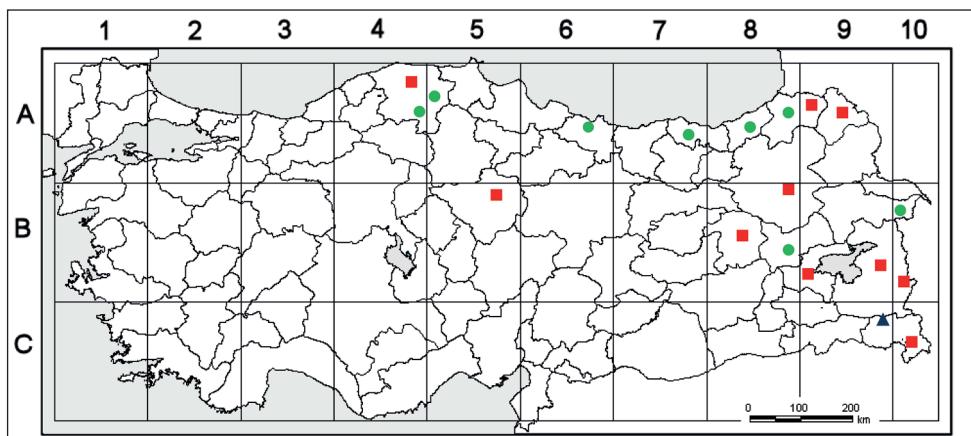
**Type. TURKEY. C9 Hakkâri:** Berçelan Plateau, 37°40'57"N, 043°43'21"E, 2600–2800 m, limestone rocks and steppe, 21 July 2011, M. Fırat. 27584. (Holotype: VANF, Isotype: ANK, GAZI, HUB, VANF, E).

**Diagnosis.** *Verbascum kurdistanicum* differs from *V. oreophilum* and *V. pyramidatum* by being biennial; having 8–30 (incl. petiole) × 2.5–4.5 cm, lanceolate, crenate basal leaves; linear-lanceolate calyx lobes; 4 stamens; two anterior filaments that are glabrous near apex; 10–15 × 6–8 mm, ovate to oblong capsule.

**Description.** Biennial, 35–170 cm, densely stellate below, sparsely stellate, densely stalked glandular above. Stem robust, terete, erect, branched. Basal leaves 8–30 (inc. petiole) × 2.5–4.5 cm, mostly congested at base, densely rosulate, lanceolate, entire, distinctly undulate, obtuse, gradually attenuate at base. Cauline leaves 2.5–4 × 0.5–1 cm, oblong-lanceolate, entire, acute, decreasing in size towards the inflorescence racemose, ascending-erect. Bracts 2–3 × 1–2 mm, ovate-lanceolate, entire, acute, each bract with a solitary flower. Pedicels 5–10 mm. Bracteoles absent. Calyx 3–10 mm,



**Figure 1.** *Verbascum kurdistanicum* Firat: **a** habit **b** corolla **c** capsule.



**Figure 2.** Distribution map of *V. kurdistanicum* ( $\blacktriangle$ ) and also closely related species *V. oreophilum* ( $\blacksquare$ ) and *V. pyramidatum* ( $\bullet$ ).

divided almost to base, with linear-lanceolate acute lobes. Corolla 20–30 mm diam, yellow, tube 1–2 mm, with unequal and orbicular lobes, without pellucid-punctate glands, with sparsely stalked glandular, stellate outside. Stamens 4, 6–8 mm, filaments 5–6 mm, with purple-violet wool, two anterior glabrous near apex, anthers 1–2 mm, reniform. Ovary ovate. Style 5–7 mm, filiform. Stigma spathulate. Capsule 10–15  $\times$  6–8 mm, ovate, densely stellate hairs, rarely soon glabrescent.

Flowering time June-July and Fruiting time July-August, *limestone rocks and steppe*, 2600–2800 m.

**Vernacular name.** In Hakkâri Province, indigenous people use the name “Masî-jark” for *Verbascum* (Fırat 2013).

### Examined representative specimens:

***Verbascum oreophilum*: Turkey. C10 Hakkâri:** Van-Hakkâri 113. km, c. 2400 m, 19 July 1956, alpine meadow, *H.Birand & K.Karamanoğlu* 471 (ANK).

Other herbarium materials of *Verbascum oreophilum* and *Verbascum pyramidatum* which were collected from Turkey have been examined. VANF, GAZI, ANK, G and GB herbarium have been visited for representative specimens.

**Red list assessment:** The extent of occurrence for *Verbascum kurdistanicum* was less than 100 km<sup>2</sup> (approximately between 10–20 km<sup>2</sup>). 304 mature individuals have been counted. This species was found in a single location. It grows in limestone rocks and steppe. Its habitat continues to decline because of agricultural activities and other local uses. Hence, the threat category of *Verbascum kurdistanicum* is suggested as CR [B1ab (i, ii, iii) + 2ab (i, ii, iii)].

### Results and discussion

Because of having 4 stamens, *Verbascum kurdistanicum* belongs to the group A according to the Flora of Turkey (Huber-Morath 1978, Davis et al. 1988). This group comprises 30 species with the addition of *Verbascum kurdistanicum*.

*Verbascum kurdistanicum* is morphologically similar to *V. oreophilum* and *V. pyramidatum* because of having the corolla and capsule with branched eglandular hairs; glandular-hairy inflorescence and distinctly crenate lower leaves, but differs from being biennial; having different basal leaves; stamen; filaments and capsule (Table 1).

**Table I.** Diagnostic characters of *Verbascum kurdistanicum* compared with the related *V. oreophilum* and *V. pyramidatum*.

Characters	<i>V. kurdistanicum</i>	<i>V. oreophilum</i>	<i>V. pyramidatum</i>
Plant	Biennial, 35–160 cm	Perennial, 60–160 cm	Perennial, 45–150 cm
Basal leaves	8–30 (incl. petiole) × 2.5–4.5 cm, lanceolate, crenate	10–40 × 5–20 cm, lanceolate-oblong to ovate-elliptic coarsely crenate or bi crenate, more rarely dentate-loped	7–40 × 3–15 cm, lanceolate-oblong to obovate, coarsely bicrenate, crenata-dentate or weakly lobed
Calyx	lobes linear-lanceolate	lobes oblong	lobes oblong
Stamens	4	4–rarely 5	5–rarely 4
Filaments	two anterior glabrous near apex	two anterior woolly to anthers or glabrous near apex	all woolly
Capsule	10–15 × 6–8 mm, ovate to oblong	4–6 × 3–5.5 mm, ellipsoid-ovate or subglobose	4–8 × 3–5 mm, broadly elliptic to ovate

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## References

- Bani B, Adıguzel N, Karavelioğulları FA (2010) A new species (*Verbascum turcicum* sp. nov., Scrophulariaceae) from South Anatolia, Turkey. *Annales Botanici Fennici* 47: 489–492.
- Boulos L (2009) Flora of Egypt Check list. Al-Hadara Publishing, Cairo. doi: 10.5735/085.047.0608
- Brummitt RK, Powell CE (1992) Authors of Plant Names. Royal Botanic Gardens, Kew Publishing, 732 pp.
- Dane F, Yılmaz G (2005) New records for the flora of European Turkey: *Verbascum roripifolium* and *V. ovalifolium* subsp. *thracicum* (Scrophulariaceae). *Botanika Chronika* 18(2): 11–16.
- Dane F, Yılmaz G (2009) A new natural hybrid of *Verbascum* (Scrophulariaceae) from European Turkey. *Phytologia Balcanica* 15(2): 159–162.
- Davis PH, Mill RR, Tan K (1988) Flora of Turkey and the East Aegean Islands (Suppl.1). Vol. 10. Edinburgh University Press, Edinburgh, 191–193.
- Ekim T (2000) *Verbascum* L. In: Güner A, Ozhatay N, Ekim T, Başer KHC (Eds) Flora of Turkey and the East Aegean Islands (Suppl. 2). Vol. 11. Edinburgh University Press, Edinburgh, 193.
- Fedchenko BA (1955) *Verbascum* L. In: Schischkin BK, Bobrow EG (Eds) Flora of U.S.S.R. Vol. 22. Izdatel'stvo Akademii Nauk S.S.S.R., Leningrad, 132–197.
- Feinbrun-Dothan N (1978a) *Verbascum* L. In: Zohary M, Feinbrun-Dothan N (Eds) Flora Palaestina (Text). Vol. 3. Academic Press, Jerusalem, 282–302.
- Feinbrun-Dothan N (1978b) *Verbascum* L. In: Zohary M, Feinbrun-Dothan N (Eds) Flora Palaestina (Plates). Vol. 3. Academic Press, Jerusalem, 170–182.
- Fırat M (2013) Ferhenga Navêrî Riwekê Bi Kurdi/Kürtçe Bitki Adları Sözlüğü / Dictionary of Plant Names in Kurdish. Kalkan Ofset, Ankara, 1–652.
- Heywood VH (1993) Flowering Plants of the World. Oxford University Press, New York.
- Holmgren PK, Holmgren NH (1990) Index Herbariorum. New York Botanical Garden.
- Huber-Morath A (1971) Die Türkischen Verbasseen. Kommissionsverlag von Gebruder Fretz A. G. Zürich.
- Huber-Morath A (1978) *Verbascum* L. In: Davis PH (Ed.) Flora of Turkey and the East Aegean Islands. Vol. 6. Edinburgh University Press, Edinburgh, 461–603.
- Huber-Morath A (1981) *Verbascum* L. In: Rechinger KH (Ed.) Flora Iranica. Vol. 147. Akademische Drucku-Verlagsanstalt, Graz, 1–51.
- IUCN (2001) IUCN Red List Categories and Criteria: Version 3.1: IUCN Species Survival Commission. IUCN, Gland, Switzerland & Cambridge, UK.
- Karavelioğulları FA, Duran A, Hamzaoglu E (2004) *Verbascum tuna-ekimii* (Scrophulariaceae) a new species from Turkey. *Annales Botanici Fennici* 41: 227–231.

- Karavelioğulları FA, Vural M, Polat H (2006) Two new taxa from Central Anatolia Turkey. Israel Journal of Plant Sciences 54(2): 105–111. doi: 10.1560/IJPS\_54\_2\_105
- Karavelioğulları FA, Uzunhisarcıklı ME, Çelik S (2008a) *Verbascum ozturkii* (Scrophulariaceae), a new species from East Anatolia, Turkey. Pakistan Journal of Botany 40(4): 1595–1599.
- Karavelioğulları FA, Aytaç Z (2008b) Revision of the genus *Verbascum* L. (Group A) in Turkey. Botany Research Journal 1(1): 9–32.
- Karavelioğulları FA, Ocak A, Ekici M, Cabi E (2009a) *Verbascum eskisehirensis* sp. nov. (Scrophulariaceae) from central Anatolia, Turkey. Nordic Journal of Botany 27: 222–227.
- Karavelioğulları FA (2009b) A new record *Verbascum szovitsianum* Boiss. var. *szovitsianum* (Scrophulariaceae) from Turkey. Biodicon 2(2): 68–70. doi: 10.1111/j.1756-1051.2008.00250.x
- Karavelioğulları FA, Çelik S, Baser B, Yavru A (2011) *Verbascum ergin-hamzolui* (Scrophulariaceae), A New Species From South Anatolia, Turkey. Turkish Journal of Botany 35: 275–283.
- Karavelioğulları FA (2012) *Verbascum* L. In: Güner A, Aslan S, Ekim T, Vural M, Babaç MT (Eds) Türkiye Bitkileri Listesi (Damarlı Bitkiler). Nezahat Gökyiğit Botanik Bahçesi ve Flora Araştırmaları Derneği Yayıni, İstanbul, 850–870.
- Karavelioğulları FA, Yüce E, Başer B (2012) *Verbascum duzgunbabadagensis* (Scrophulariaceae), a new species from eastern Anatolia, Turkey. Phytotaxa 181(1): 47–53. doi: 10.11646/phytotaxa.181.1.3
- Kaynak G, Daşkın R, Yılmaz O, Erdoğan E (2006) *Verbascum yurtkuranum* Scrophulariaceae a new species from north west Anatolia, Turkey. Annales Botanici Fennici 43: 456–459.
- Meikle RD (1985) *Verbascum* L. In: Meikle RD (Ed.) Flora of Cyprus. Vol. 2. Royal Botanic Gardens, Kew, 1196–1200.
- Murberck S (1925) Monographie Der Gattung Celsia. Acta Universitatis Lundensis ser. 22(1): 1–239.
- Murberck S (1933) Monographie Der Gattung *Verbascum*. Acta Universitatis Lundensis ser. 29(2): 1–630.
- Özhatay N (2006) Check-list of additional taxa to the Supplement Flora of Turkey III. Turkish Journal of Botany 30: 281–316.
- Sutory K (2001) Two new hybrids of *Verbascum* from Turkey and Spain. Bocconeia 13: 457–460.
- Sutory K (2004) New hybrids of *Verbascum* (Scrophulariaceae) from Turkey. Turkish Journal of Botany 28: 261–262.
- Vural M, Aydoğdu M (1993) A new species from central Anatolia *Verbascum gypsicola* (Scrophulariaceae). The Karaca Arboretum Magazine 2(2): 75–78.
- Yılmaz G, Dane F (2008) *Verbascum samniticum* Ten. (Scrophulariaceae): A new record for the flora of Turkey. Turkish Journal of Botany 32(5): 411.