

Giant Fennel *Ferula communis* L. (Apiaceae) – a New Species in the Flora of Bosnia and Herzegovina

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Ferula communis L., a Mediterranean plant species, has been recorded for the first time in Bosnia and Herzegovina in two anthropogenic habitats south of the city of Mostar. This study reports the newly discovered localities and presents a short morphological description of the species.

Key words: distribution, *Ferula*, Herzegovina, new records, vascular flora.

INTRODUCTION

The genus *Ferula* L. (Apiaceae) includes about 170 species extending from central Asia westward throughout the Mediterranean region to northern Africa (Pimenov and Leonov, 1993). According to Hand (2011), ca 20 species from the genus *Ferula* occur in Europe, of which only five are growing in the Balkans (Hayek, 1927; Hand, 2011). There are only three species of *Ferula* in the flora of former Yugoslavia: *Ferula communis* L., *Ferula glauca* L. and *Ferula heuffelii* Heuff. (Hand, 2011). Previously, no species of the genus had been recorded in the territory of Bosnia and Herzegovina. Many species of the genus have been known since antiquity as sources of aromatic resins used in traditional medicine.

F. communis is native to southern and central Europe, the lands around the Mediterranean Sea, the Middle East, the Canary Islands, the Balkan Peninsula, the Apennine Peninsula, the Iberian Peninsula and North Africa. In the European region the plant is common, occurring from Portugal to Greece, Spain, France, Italy, Croatia, Montenegro, Albania and Cyprus. The plant is introduced in Great Britain. (Rankou et al, 2015).

In the territory of former Yugoslavia, *F. communis* was known only in Croatia (Hayek, 1927; Hand, 2011; Nikolić, 2016) and Montenegro (Hayek, 1927; Rohlena, 1942; Hand, 2011). In the literature available to me, this plant was not known in the flora of Bosnia and Herzegovina, and may now be considered a new member of it. Even Beck (Beck, 1927) did not mention it in the flora of Bosnia and Herzegovina.

MATERIAL AND METHODS

Ferula communis was found at two sites during floristic investigations in the spring of 2015 and the spring of 2016 in the southern part of the Neretva valley (Bosnia and Herzegovina). Digital photographs and GPS coordinates were taken in the field.

Identification of the specimens was performed according to Cannon (1968) and Pesmen (1972). The taxonomy and nomenclature of species have been adjusted according to Hand (2011). Herbarium samples (No. inv. 51839) are stored in the Herbarium of the National Museum of Bosnia and Herzegovina (SARA).

The paper presents a short morphological description of the species based mainly on the collected specimens, as well as the distribution of the taxon.

RESULTS AND DISCUSSION

Ferula communis L., Sp. Pl.: 246. 1753. (Heterotypic synonym: *Ferula meoides* L., Sp. Pl.: 247. 1753), also known as Giant Fennel, and the alien Giant Hogweed *Heracleum mantegazzianum* Sommier & Levier, are the largest herbaceous plants in the European flora.

To identify this new species, I propose an adjusted key to the species that grow in the neighbouring countries, according to Cannon (1968) and Pesmen (1972).

1. Sheaths of uppermost leaves very large, situated close beneath and enveloping the developing umbels; rays of terminal umbel (15-) 20-40.2
1. Sheaths of uppermost leaves not very large and conspicuous; rays of terminal umbel not more than 15. *F. heuffelii*
2. Leaf lobes 0.3-0.8 mm wide, green on both faces. *F. communis*
2. Leaf lobes 1-3 mm wide, green above and glaucous beneath *F. glauca*

F. communis (Fig. 1.) is a glabrous perennial herb up to 3 m, occasionally more, very robust, rather pungent, with stout, hollow stems. Leaves 3-6 pinnate, triangular-ovate in outline, 25-45 × 20-30 cm. Ultimate segments always linear 10-50 × 0.3-3 mm, green on both faces. Sheaths strongly inflated, coriaceous, amplexicaul. Upper leaves becoming progressively reduced to a large sheath with or without a small blade, conspicuous especially just before flowering. Umbels large and rounded, bright yellow-green, the terminal umbel stalkless, surrounded by smaller, stalked, umbels, with 20-40 rays; bract absent, secondary bracts, few, linear-lanceolate. Fruits strongly compressed dorsally, elliptical, 10-16 × 5-10 mm with filiform dorsal ribs, lateral wings 1-1.5 mm wide. 2n=22 (Cannon, 1968; Pesmen (1972).

According to Sánchez Cuxart (2003) and Hand (2011) *Ferula communis* L. is divided into three subspecies, namely *F. communis* L. subsp. *communis*, *F. communis* subsp. *cardonae* Sánchez-Cux. & M. Bernal, and *F. communis* subsp. *catalaunica* (C. Vicioso) Sánchez-Cux. & M. Bernal. Only *F. communis* L. subsp. *communis* occurs in the Eastern Mediterranean area and the Balkans.

The first finding of this species for Bosnia and Herzegovina is from South Herzegovina in the village of Žitomislíči, between Buna and Čapljina, on the left bank of the Neretva river, ca 400 m south of the junction to the village of Pijesci (43° 20' 14.98" N; 17° 78' 63.13" E), (Fig. 2.). A single specimen only was recorded on April 11th 2015, on the roadside between the main M 17 road and the Neretva river. In March 30th 2016 three specimens were found at the second site, in the vicinity of the village of Buna, along the edge of the ditch on the left side of the main M 17 road, between the junction to Hodbina and the bridge over the river Buna (43° 24' 43.17" N; 17° 83' 53.49" E), (Fig. 2.).

CONCLUSION

F. communis flowers from March to July and reproduces easily by seeds which can be distributed over large distances. The origin and distribution of this species in Bosnia and Herzegovina is not clear. It is difficult to determine whether



Figure 1. *Ferula communis* in the vicinity of the village of Žitomislići, between Buna and Čapljina a. habitat b. whole plant c. umbels d. flowers (Photos by Semir Maslo).



Figure 2. The distribution of *Ferula communis* in Bosnia and Herzegovina

F. communis is native to Bosnia and Herzegovina or is introduced. This estimate is particularly difficult, because the flora of the South Herzegovina has not been systematically explored for a long time. The species is relatively common in the neighbouring Dalmatia, especially in the vicinity of Dubrovnik, and there is a possibility it has been introduced in Bosnia and Herzegovina from that area. Future detailed floristic research in the Mediterranean area of Herzegovina should provide an answer.

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SAŽETAK

U ovom radu navodi se po prvi put nalaz vrste *Ferula communis* L. u flori Bosne i Hercegovine.

Vrsta je sakupljena u naselju Žitomislići početkom aprila 2015. kao i u naselju Buna krajem marta 2016. U oba slučaja vrsta je nađena uz rubove magistralnog puta M 17.

U radu se donosi kratak opis morfoloških karakteristika vrste, kao i karta distribucije.

Ključne riječi: *Ferula*, nova vrsta, flora, rasprostranjenje, Hercegovina.

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