



Oxalis europaea Jordan, *O. stricta* L. and *O. corymbosa* D.C. (Oxalidaceae): new records for the flora of Turkey

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In this study, three new species *Oxalis europaea* Jordan, *O. stricta* L. and *O. corymbosa* D.C. (Oxalidaceae) are recorded for the flora of Turkey with the specimens collected from A1(E) Edirne in European Turkey. Short morphological descriptions including photographs of the species are given. In addition, a new key that contains the new *Oxalis* species added to the flora of Turkey has been constructed.

KEY WORDS: Flora, new records, *Oxalis*, Turkey

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Oxalis L. is a taxonomically difficult genus (OBONE 2005, TOSTO 2007, OBERLANDER & DREYER 2002) and it has over 800 species throughout the world. In South America 250 species (KNUTH 1930; LOURTEIG, 1982, 1983, 1988, 1994), and in South Africa more than 200 species have been identified (SALTER 1944). Twelve species have been identified in Europe (YOUNG 1968) and six species in the Balkans (POLUNIN 1987). The genus is represented by four species according to the flora of Turkey and only one species (*O. corniculata*) is recorded in European Turkey (CULLEN 1967; DAVIS *et al.*, 1988). The number of *Oxalis* species in Turkey has become seven by adding *Oxalis europaea*, *O. stricta* and *O. corymbosa* collected from A1(E) Edirne. These were not recorded in the flora of Turkey (CULLEN, 1967; DAVIS *et al.* 1988) and the flora of European Turkey (YOUNG 1968).

The studied material of *Oxalis europaea*, *O. stricta* and *O. corymbosa* was collected in 2009. Voucher specimens were placed in the Herbarium of Trakya University (EDTU). These specimens were determined according to the Flora Europaea (YOUNG 1968). The distribution in European Turkey of these taxa is presented in Fig 1, and a description of the species is given.

In this study we present three new species records, namely *O. europaea*, *O. stricta* and *O. corymbosa* for the flora of Turkey. The localities are as follows:

1. *Oxalis stricta* L. (Figs 1, 2).

Distribution in European Turkey: A1(E) : Edirne: Center:

Kooperatif evleri, around gardens, 41°40'28"N, 26°33'39"E, 26 m, 16.06.2009, coll. F. Dane, (EDTU 11003)!

2. *Oxalis europaea* Jordan (*O. stricta* auct. plur., non L.) (Figs 1, 2).

Distribution in European Turkey: A1(E) : Edirne: Center: around Faculty of Medicine, 41°40'28"N, 26°33'39"E, 26 m, 16.06.2009, coll. F. Dane, (EDTU 11002)!

3. *Oxalis corymbosa* D.C., (*O. martiana* Zucc.) (Figs 1, 2).

Distribution in European Turkey: A1(E) : Edirne: Center: Kooperatif evleri, around gardens, 41°40'28"N, 26°33'39"E, 26 m, 16.06.2009, coll. F. Dane, (EDTU 11001)!

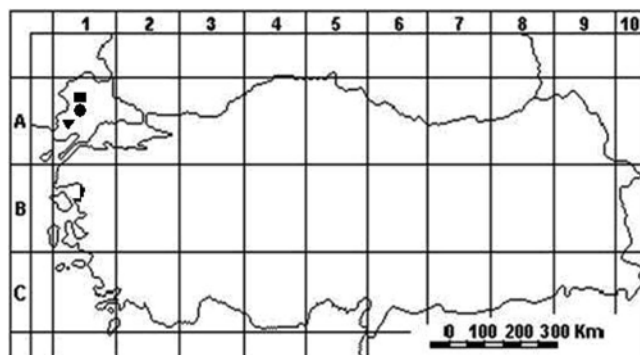


Figure 1. Localities of *Oxalis* L. species in European Turkey

● : *O. corymbosa* ■ : *O. europaea* ▼ : *O. stricta*

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Figure 2. *Oxalis stricta* L.: a. General view; b. Flower; c. Pedicel deflexed in fruit; *Oxalis europaea* Jordan: d. General view in habitat; e. General view; f. Pedicel not deflexed in fruit; *Oxalis corymbosa* D. C. : g. General view in habitat; h. General view; i. Flower.

O. corymbosa is easily distinguished from the others because of having pink flowers, bulb and being sterile. *O. corymbosa* may be misidentified as *O. articulata*. The best feature for separating these two species is occurrence of small bulbils in *O. corymbosa*. *O. europaea* has pedicels not deflexed in fruit while *O. stricta* has pedicels deflexed in fruit.

REFERENCES

- CULLEN J. 1967. *Oxalis* L. In: DAVIS PH (ed.), Flora of Turkey and the East Aegean Islands **2**, pp. 488-491, Edinburgh University Press, Edinburgh.
- DAVIS PH, MILL RR & TAN K. 1988. *Oxalis* L. In: DAVIS PH (ed.), Flora of Turkey and the East Aegean Islands (Supplement 1) **10**, pp. 106, Edinburgh University Press, Edinburgh.
- KNUTH R. 1930. Oxalidaceae. In: ENGLER A (ed.), Das Pflanzenreich **4**, pp. 1-481, Engelmann, Leipzig.
- LOURTEIG A. 1982. Oxalidaceae extra-austroamericanae IV. *Oxalis* L. sectio Articulatae Knuth. *Phytologia* **50**: 130-142.
- LOURTEIG A. 1983. Oxalidaceae. In: REITZ R (ed.), Flora Illustrada Caterinense, *Oxal.* 3-174.
- LOURTEIG A. 1988. Oxalidaceae. In: CORREA MN (ed.), Flora Patagonica **5**, Instituto Nacional de Tecnologia Agropecuaria, Buenos Aires.
- LOURTEIG A. 1994. *Oxalis* L. subgenero *Thamnoxys* Reiche emend. Lourt. *Bradea* **7**: 1-199.
- OBERLANDER KC & DREYER KJ. 2002. Biogeography of *Oxalis* (Oxalidaceae) in South Africa: a preliminary study. *Bothalia* **32**: 97-100.
- OBONE C. 2005. The systematic significance of the fruit and seed morphology and anatomy in selected *Oxalis* L. (Oxalidaceae) species. Univ. of Stellenbosch, South Africa.
- POLUNIN O. 1987. Flowers of Greece and the Balkans a field guide, pp.133, Oxford University Press, Oxford.
- SALTER TM. 1944. The genus *Oxalis* in South Africa: a taxonomic revision. *Journal of South African Botany* **1**: 1-355.
- TOSTO D. 2007. Characterization of the nuclear ribosomal DNA unit in *Oxalis tuberosa* (Oxalidaceae) and related species. *Electronic Journal of Biotechnology* 0717-3458.
- YOUNG DP. 1968. *Oxalis* L. In: TUTIN TG (ed.), Flora Europaea **2**, pp. 192-193, Cambridge University Press, Cambridge.

Botanica SERBICA



REZIME

Oxalis europaea Jordan, *O. stricta* L. i *O. corymbosa* D.C. (Oxalidaceae): novi nalazi za floru Turske

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U ovom radu se navode tri nove vrste roda *Oxalis* (Oxalidaceae): *Oxalis europaea* Jordan, *O. stricta* L. i *O. corymbosa* D.C. po prvi put zabeležene u flori Turske, konstatovane na području Jedrena u Evropskom delu Turske. U radu je dat kratak opis sa fotografijama kao i ključ koji uključuje nove vrste u flori Turske.

Ključne reči: Flora, novi nalazi, *Oxalis*, Turska

