



**A new record for the flora of Turkey: *Lepidium didymum* L. (Brassicaceae)**

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**Abstract**

*Lepidium didymum* L. (Brassicaceae) is recorded for the first time (A8 Artvin) for the flora of Turkey. Detailed morphological description, including photograph of the new record is given.

**Key words:** *Lepidium*, New record, Turkey, *Brassicaceae*

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**Türkiye florası için yeni bir kayıt: *Lepidium didymum* L. (Brassicaceae)**

**Özet**

*Lepidium didymum* L. (Brassicaceae) türü Türkiye florası için (A8 Artvin) ilk defa kaydedilmiştir. Yeni kaydın detaylı morfolojik betimi ve fotoğrafı verilmiştir.

**Anahtar kelimeler:** *Lepidium*, Yeni kayıt, Türkiye, *Brassicaceae*

**1. Introduction**

*Lepidium* L. (tere) is a cosmopolitan genus of about 250 species distributed on all continents except Antarctica. Recent molecular data strongly suggest that the genera *Coronopus* and *Stroganowia* are polyphyletic and, together with *Cardaria*, are nested with *Lepidium* (Al-Shehbaz, 2002; 2012).

*Coronopus didymus* (L.) Sm. (is a synonym of *Lepidium didymum*) is cited in second supplement of Flora of Turkey from the Aegean Island (Rodhos) but not from the Turkish mainland (Yıldırım, 2000). For this reason this species did not include in Türkiye Bitkileri Listesi (Damarlı Bitkiler) (Mutlu, 2012). Since the second supplement to the *Flora of Turkey and the East Aegean Island*, (Volume 11), also a lot of new records and new taxa have been published (Özhatay et al., 2006; Özhatay et al., 2009; Özhatay et al., 2011; Dönmez and Uğurlu, 2010; Yaprak and Başköse, 2012).

The genus *Lepidium* is represented by 12 species in Flora of Turkey and the East Aegean Islands (Hedge, 1965). The nomenclature of Turkish *Lepidium* updated to bring the account of the family in line with the current classification and nomenclature. As a result of these studies, *Lepidium* is represented by 15 species in Turkey (Al-Shehbaz et al., 2007; Mutlu, 2012). Total species of *Lepidium* in Turkey reaches 16 with the addition of *Lepidium didymum* (topuz tere).

**2. Materials and methods**

In 2003, during a botanical trip to Black sea region, second author collected fruiting specimens of Brassicaceae. This specimen was identified as a *Coronopus didymus* according to Flora Europaea (Ball, 1964). Photographs of plant parts were taken at herbarium material. The herbarium specimens are kept at the Herbarium of the Faculty of Pharmacy in Istanbul University, Istanbul, Turkey (ISTE).

### 3. Results

**Lepidium didymum** L., Syst. Nat., ed. 12, 2: 433. 1767; *Coronopus didymus* (L.) Smith, Fl. Brit. 2: 691. 1804; *Senebiera didyma* (L.) Pers., Syn. Pl. 2: 185. 1807; *Carara didyma* (L.) Britton in Britton & A. Brown, III. Fl. N. U.S., ed. 2, 2: 167 (1913) (Figure 1, 2).

**TYPE:** lectotype designated By Fawcett & Rendle (Fl. Jamaica 3: 244. 1914), Herb. Linn. No. 824.16 (LINN photo!).

Herbs, annual or rarely biennial, fetid, glabrous or pilose with straight trichomes to 1 mm. Stems 10–45(–75) cm, procumbent or erect, usually several from base, branched above. Basal leaves not rosulate, pinnatisect or bipinnatisect, 4–10 cm; lateral lobes 2–7(–10) on each side of rachis, variable in size, entire, dentate, or incised, acute; middle cauline leaves similar to basal ones, 1.5–3.5(–4.5) × 0.5–1.2 cm, progressively smaller and less divided upward, shortly petiolate to subsessile, not auriculate at base; lobes lanceolate to oblong or elliptic, entire to serrate or incised. Racemes terminal or lateral and leaf opposed; fruiting pedicels slender, ascending to divaricate or slightly reflexed, straight or recurved, 1.5–2.5(–4) mm, glabrous or pubescent. Sepals ovate, 0.5–0.7(–0.9) mm, caducous, ascending to spreading, glabrous or pubescent; petals white, elliptic to linear, 0.4–0.5 mm; stamens 2 median; filaments white, dilated at base, 0.3–0.6 mm; anthers ovoid, 0.1–0.2 mm. Fruits didymous, breaking into indehiscent valves, 1.3–1.7(–2) × 2–2.5(–4) mm, compressed, emarginate at apex and base; valves subreniform, thick, semicircular, or suboblong, prominently reticulate-rugose, rounded on back; apical notch emarginate; style absent, sometimes obsolete, included in apical notch. Seeds oblong, curved, finely reticulate, 1–1.3(–1.9) × 0.7–0.9 mm.  $2n = 32$ .

**Habitat:** roadsides, waste areas, fields, disturbed grounds.

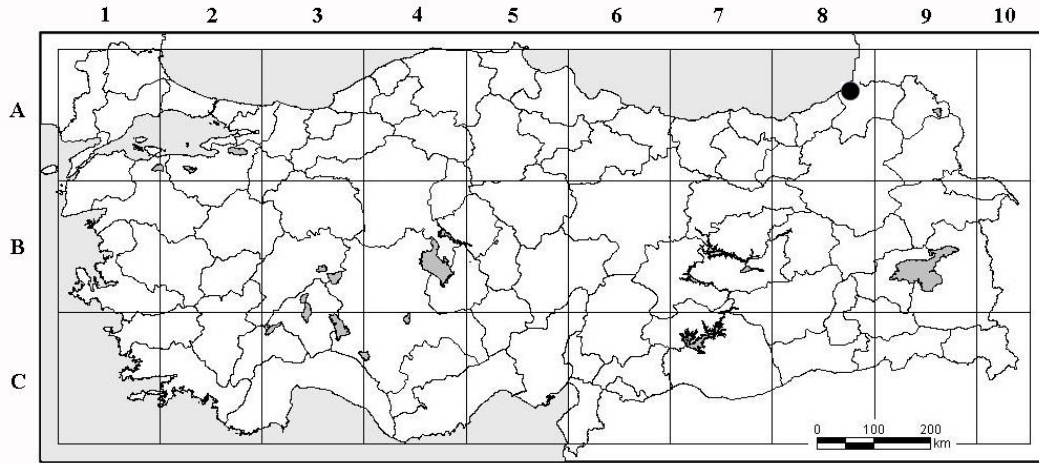
**Distribution:** Native to southern South America, naturalized in Central and North America, Europe, Asia, Africa, Australia.

Turkey. NE Anatolia, A8 Artvin, Hopa: from Hopa to Sarp, rocky place, 1 m, 01.08.2003, *M. Keskin* 2980 (ISTE 98883).

Associated with: *Trifolium arvense* L. var. *arvense*, *Cerastium fontanum* Baumg. subsp. *triviale* (L.) Jalas, *Senecio* sp., *Apium nodiflorum* (L.) Lag., *Euphorbia peplus* L., *Campanula alliariifolia* Willd. *L. didymum* is very closed to *L. coronopus* (L.) Al.Shehbaz. The differences are summarized in the Table and key to these species provided as follows.



Figure 1: *Lepidium didymum*. **a** general view of the plant, **b-c** fruits, **d** middle cauline leaf (ISTE 98883)

Figure 2: Distribution of *Lepidium didymum* (●) in TurkeyTable . A comparison between the diagnostic characters of *L. didymum* and *L. Coronopus*

Characters		<i>Lepidium didymum</i>	<i>Lepidium coronopus</i>
Basal leaves		not rosulate	rosulate
Flowers	sepals	caducous, ovate, 0.5-0.7 mm	persistent, oblong, 1-1.5 mm
	petals	elliptic to linear, 0.4-0.5 mm	obovate to obovate-oblong
	stamens	2	6
Fruits		didymous, 1.3-1.7 × 2-2.5 mm, apical notch 0.2-0.4 mm deep; style absent or obsolete, included in apical notch	reniform to ovate-cordate, 2.3-3.4 × 3-4.4 mm, apical notch absent; style 0.2-0.7 mm

1-Fruits reniform to ovate-cordate, 2.3-3.4 mm, apically not notched, with ridges;  
stamens 6..... *L.coronopus*

1-Fruits didymous, 1.3-1.7 mm, apically notched, without ridges; stamens 2.....*L. didymum*

### Acknowledgements

We are grateful to Prof. Dr. Ihsan A. Al-Shehbaz from Missouri Botanical Garden, for his kind help.

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(Received for publication 07 January, 2013; The date of publication 15 December 2013)