



A new record for the Flora of Northern Cyprus: *Solanum angustifolium* Mill. (Solanaceae)

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Abstract

Solanum angustifolium Mill. collected in the fields between Yıldırım and Geçitkale villages, (Solanaceae) is reported as a new record (in Division 5) for the Northern Cyprus. The diagnostic characters of *S. angustifolium* Mill. are described and illustrated. In addition, Its habitat was indicated.

Key words: Solanaceae, *Solanum angustifolium*, new record, Geçitkale- Yıldırım, Cyprus

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Kıbrıs Florası için Yeni Bir Kayıt: *Solanum angustifolium* Mill. (Solanaceae)

Özet

Yıldırım ve Geçitkale köyleri arasında kalan tarım alanlarından toplanan *Solanum angustifolium* Mill. (Solanaceae) Kuzey Kıbrıs florası için yeni bir kayıt olarak bildirilmiştir. *S. angustifolium* Mill. türünün ayırt edici özellikleri açıklanarak fotoğrafları verilmiştir. Ayrıca yetiştirme ortamı belirtilmiştir.

Anahtar kelimeler: Solanaceae, *Solanum angustifolium*, Yeni kayıt, Geçitkale- Yıldırım, Kıbrıs

1. Introduction

Specimens of *Solanum angustifolium* Mill. (saraç itüzümü) (Güner, 2012), which were collected around agricultural fields and olive orchard between Yıldırım and Geçitkale villages, were easily distinguished from specific spiny structure. This species, which is different from other *Solanum* species in Cyprus, was first noticed by experienced botanist Mustafa Kemal Meraklı in August 2006. We were not able to identify these specimens using “Flora of Cyprus” (Meikle, 1977- 1985), “An Illustrated Flora of North Cyprus” (Viney, 1994) and Flora of Turkey and East Aegean Islands” (Davis, 1978). Afterward, the plant specimens were identified as *Solanum angustifolium* Mill. (Syn:*Solanum cornutum* Lam). according to Flora Europaea (Boissier, 1879) and Supplements of Flora of Turkey (Güner et al., 2000). This plant first referred to by Della and Iatrou (1995), collected only from Zyghi and Near Yeri that located in the southern Cyprus and this record is the first for Northern Cyprus. At the same time, it has a very localised and limited distribution to be particularly edge of the cultivated area.

2. Materials and methods

Specimens of *S. angustifolium* were collected from cultivated areas near roadsides and around olive orchard between Yıldırım and Geçitkale villages (Famagusta/Cyprus) in August 2011. Photographs of plant specimens and plant parts were taken at herbarium and natural habitats. Morphological characters were measured by a millimetric ruler under a trinocular stereo zoom microscope (BAB-SZ45). Our measurements and their comparisons with other published studies (Hawkes and Edmonds, 1964; Erik and Akaydin, 1995) have been given in Table 1.

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3. Results

Different localities and description of species is as follows (Figure 1; Table 1):

Solanum angustifolium Mill. in Gard. Dict.ed 8, no15 (1768). (Syn.: *Solanum cornutum* Lam. in Tabl. Encycl. 2:25 (1794), *Nycterium cardaminifolium* Vent. in Jard. Malm. tab 85 (1805), *N. cornutum* (Lam.)Link in Enum. Hort. Berol. Alt. 1:189 (1821), *S. angurium* Dunal in Hist. Nat. Solanum 243 (1813), *Solanum rostratum* L'Hér. ex Dunal, nom. nud. in DC., Prodr. 13(1):328 (1852), *S. macroscolum* Fernald in Proc. Amer. Acad. Sci. 35:570 (1900), *S. heudesii* H.Lev. in Report. Spec. Nov. Regni Veg. 11:295 (1912).

Much branched annual 30- 60 cm high plant. Petioles and leaves ribbed. Stems terete, dusty greyish, densely clothed with stipitate stellate and simple hairs intermixed with wide-based pale yellow prickles, up to 1cm. Leaves alternate, leaf blades ovate- oblong, 8-10 cm in length, pinnatisect almost to midrib, with many prickles densely on both sides; lobes rounded, usually 4 paired, sinuate; petioles 1-5 cm, spiny like as the stem. Inflorescence racemose, solitary, extra- axillary; pedicels 4-10 mm; at first peduncles short (2- 3 cm), later elongating 3- 6 cm. corolla yellow, 10-20 mm in diameter, with lanceolate- ovate lobes. Calyx lobes ovate- lanceolate, enlarged and nearly globular in fruit; tightly surrounding fruit; calyx tube covered with prickles, accretess to enclose berry. Stamens 5, yellow, filaments short, 4 anther equal (5-7 mm), one longer than the others distinctly (10-12 mm). Fruits 1 cm in diameter a unilocular globular, semidry berry, covered with prickly calyx on mature (Figure 2 and Figure 3).

Type: Mexico. Veracruz:sin.loc., 1729, Houstoun s.n. (Holotype, BM! Photos of BM specimen at US WIS), Chine. Liaoning Proviencie, Chang-Hai, 08.1891, Bodinier and Marie s.n. (Holotype, NY!) ; 1977, Nuttall-Thomas s.n. (type 2056878, MO!)

Solanum specimens were collected in the fifth Division of Cyprus which is divided into 8 area by Meikle (1977, 1985), considering the differences in geographical features and vegetation (Şekerciler et al., 2011). Samples from edges of the cultivated fields between Geçitkale and Yıldırım villages were examined. The plant specimens are deposited in ANK Herbarium (Figure 3). This species is a native of United States (Northern and Central Mexico) and widespread in eastwards to Europe.

3.1 Specimens collected

Cyprus: Division 5: Kıbrıs/Yıldırım-Geçitkale köyleri arası, tarım arazileri kenarı, 147 m 13.08.2011 Şekerciler 2789.

3.2 Previous records

Zyghi, in cucumis melo field, June 1991, A.Della in ARI 3713; Near Yeri, cultivated and fallow land, 150 m, July 1992, V. Pantelas in FD 1437.

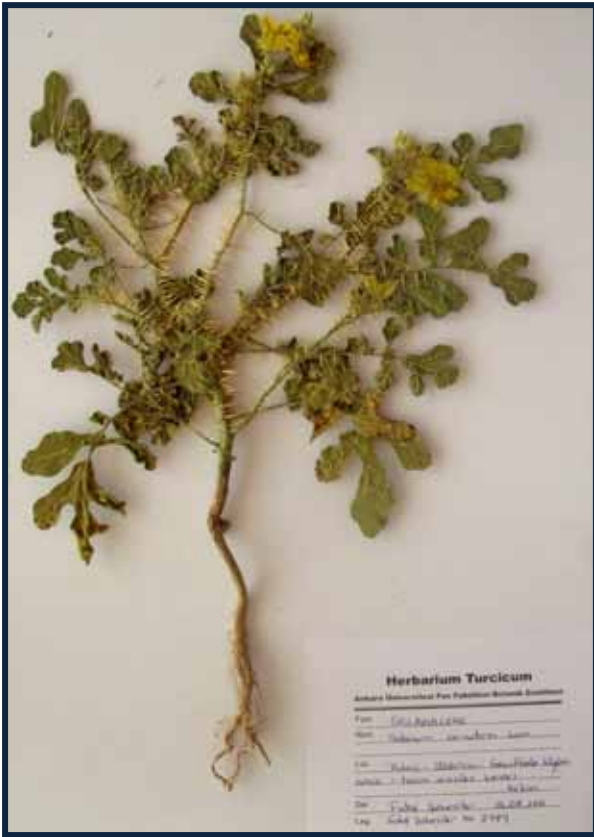


Şekil 1: *Solanum angustifolium* Mill., Kıbrıs'taki dağılışı

Figure 1: The distribution of *Solanum angustifolium* Mill. in Cyprus



Şekil 2. *Solanum angustifolium* Mill., arazideki genel görünüşü
Figure 2. A view of *Solanum angustifolium* Mill. (saraç itüzümü) from field



Şekil 3. *Solanum angustifolium* Mill.'un herbarium örneği
Figure 3. Herbarium material of *Solanum angustifolium* Mill.



Şekil 4. *Solanum angustifolium* Mill.'in çiçek örtüsü, anterleri ve çiçek durumunun görünüşü
Figure 4. View of perianth, anthers and indumentum of *Solanum angustifolium* Mill.

4. Conclusions

The genus *Solanum* L. is represented in Cyprus by 2 native and 5 cultivated taxa (Meikle, 1977-1985). This taxon resemble perennial plant *Solanum sisimbriifolium* Lam. inasmuch as spiny leaves and stems; however can be distinguished its spiny fruits and from that it is an annual plant (Karaer and Kutbay, 2007).

This tropical plant has been spread much of the world (Tanji and Talch, 1977). Usually, located in Australia, Bangladesh, Mexico, New Zealand and South Africa in cultivated ground and waste places. Researches have shown

that, locally naturalized in Bulgaria, France, Germany, Greece, Hungary and Russia. However, this species is South West United States originated. *Solanum angustifolium* has been founded as alien in Turkey, in many locations around Istanbul (Baytop, 1992) and Ankara (Erik and Akaydın, 1995).

There was some confusion about naming this plant. Especially; *Solanum angustifolium* Mill., *Solanum cornutum* Lam, *Solanum rostratum* L'Hér. ex Dunal were defined as different plant taxa, but the last two are the synonyms of *S. angustifolium* Mill.. Then it was noticed that they represent the same species, and the first nomenclature *Solanum angustifolium* Mill. accepted (Knapp et al., 2012; Güner, 2012).

An identification key for *Solanum angustifolium* Mill. is provided below. Besides; differences between the characters of samples located in Europe, Ankara (Turkey) and Cyprus are given (Table 1).

1. Leaves pinnate or deeply pinnatisect:
 2. Tuberous herbs with thick, fleshy stems..... *S. tuberosum*
 2. Not tuberous herbs:
 3. Glabrous plant; woody climbers with slender stems..... *S. seafortianum*
 3. Plant stipitate stellate and simple hairs intermixed with wide-based pale yellow prickles..... *S. angustifolium*
 1. Leaves simple, entire or variously lobed:

Tablo 1: Avrupa, Ankara (Türkiye) ve Kıbrıs'ta bulunan örneklerin karakterleri arasındaki farklar
 Table 1: Differences between the characters of samples located in Europe, Ankara (Turkey) and Cyprus

Characters	Europe	Ankara (Turkey)	Cyprus
Stem	30-60 cm	30-40 cm	15-25 cm
Leaves (length, width)	6-12, 4-8 cm	5-10, 3-7 cm	8-10, 3-6 cm
Indumentum	3-10 floret	2-12 floret	3-12 floret
Peduncle	30-60 mm	15-55mm	15-40 mm
Equal anthers	4-6 mm	6-7 mm	5-7 mm
Longer anther	8-12 mm	9-10 mm	10-12 mm

Acknowledgements

We thank Prof. Dr. Osman KETENOĞLU, Assist. Prof. Dr. A. Emre YAPRAK and Specialist Tuğrul KÖRÜKLÜ for their helpful discussions.

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(Received for publication 15 August 2012; The date of publication 01 April 2013)