

# A NEW SHRUBBY SOLANUM (SOLANACEAE) SPECIES FOR THE FLORA OF IRAN

B. Eslami & A. Naqinezhad

Received 09.11.2010. Accepted for publication 10.08.2011.

Eslami, B. & Naqinezhad A. 2011 12 31: A new shrubby *Solanum* (Solanaceae) species for the flora of Iran. -Iran. J. Bot. 17 (2): 254-256. Tehran.

*Solanum sisymbriifolium* Lam. (Solanaceae) is reported as a new record for Iranian flora and an illustration of it is given.

Bahman Eslami, Department of Agriculture, Islamic Azad University of Ghaemshahr, Iran. -Alireza Naqinezhad (correspondence < a.naqinezhad@umz.ac.ir>), Department of Biology, Faculty of Science, University of Mazandaran, Babolsar, Mazandaran, Iran.

Key Words. New record, Solanaceae, Solanum, Iran.

گزارش گونه‌ای درختچه‌ای از جنس *Solanum* (Solanaceae) برای اولین بار از فلور ایران  
بهمن اسلامی، استادیار گروه کشاورزی دانشگاه آزاد اسلامی واحد قائم‌شهر.

علیرضا نقی نژاد، استادیار گروه زیست‌شناسی دانشگاه مازندران.

گونه *Solanum sisymbriifolium* (Solanaceae) برای اولین بار برای فلور ایران گزارش می‌شود و تصویری از آن ارائه می‌گردد.

## INTRODUCTION

*Solanum* L. is one of the largest and most economically important genera of angiosperms (Bohs & Olmstead, 1997). Although the precise number of species included in *Solanum* is still unclear, estimates range from about 1000 to nearly 2000 species (D'Arcy 1979; Bohs & Olmstead, 1997).

Following floristic and vegetation studies in many parts of N Iran, some *Solanum* species were collected. At first glance in the field, one of the collected specimens looked like *Solanum surrattense* Burm. (Khatamsaz, 1998; Schonbeck-Temasy, 1972; Nasir, 1985) because of the habit, stem, leaf and calyx shapes and spines. After closer examination and consultation with the Flora of Iran and Flora Iranica, it was apparent that the specimens were quite different from *S. surrattense* and other *Solanum* species. As a result of further comparative studies and using different flora keys and descriptions, we determined that this specimen is *S. sisymbriifolium* Lam. (sticky nightshade), which is a new record for Iranian flora. With this new record, the total number of recorded *Solanum* in Iran has reached 14.

## MATERIAL AND METHODS

During 2009-2010, large numbers of samples were collected in Gilan and Mazandran and the population

sizes and phenological properties were observed. The first collection of the species was made in Gilan (Talesh) coastal line where it grew on sand dune parts. The collected specimens were crosschecked with various *Solanum* accounts given in the relevant literature (e.g., Boissier, 1879; Parsa, 1949; Hawkes & Edmonson, 1964; Schonbeck-Temasy, 1972; Baytop, A. 1978; D'Arcy, 1979; Nasir, 1985; Pojarkova, 1997; Khatamsaz, 1998; Zhi-Yun et al. 1994). All characters in the specimens were surveyed by striomicroscope (Nikon: SMZ-1). The material recorded here is deposited in Mazandaran University Herbarium, Ghaemshahr Azad University Herbarium and a duplicate in the herbarium of Research Institute of Forests and Rangelands (TARI).

## RESULTS AND DISCUSSION

*Solanum sisymbriifolium* Lam., Tabl. Encycl. 2: 25. 1794. (Fig. 1).

*Examined specimen.* Gilan province, Talesh, Ghorroogh village, coastal sand dunes, 37° 51' 10" N, 048° 57' 38" E, -20 m b.s.l., A. Naqinezhad, 950- Herbarium of Mazandaran University. Mazandaran province: on the old road between Bahnamir (Babolsar) and Sari, near to bifurcation of Dunchal village, 36° 41' 19.2" N, 052° 52' 21.1" E, -8 m b.s.l., 22.10.2010, A. Naqinezhad, 1011- Herbarium of Mazandaran University, duplicate



Fig. 1. Different parts of *Solanum sisymbriifolium* in its habitat (Naqinezhad, 1011-Mazandaran University Herbarium).

in TARI; Bahnamir, Kiakola to Joybar, roadside, 07.2010, B. Eslami, 255-Herbarium of Azad University, Ghaemshahr.

Shrubby, perennial. Stems 70 cm to 2 m, erect, much-branched, up to 4 cm diameter at woody base, viscid-villous, sparsely stellate, glandular, eglandular and simple hairy; prickles dense, yellow or orange-yellow, subulate, up to 17 mm long, very sharp. Leaves alternate, leaf-blades ovate-oblong, 10-15 x 5-10 cm, deeply pinnatisect or pinnatifid with many prickles along main veins on both surfaces, sparsely stellate-hairy above, densely so beneath; petiole spiny. Inflorescence racemose, 6-14 flowered. Peduncles up to 20 cm long, unbranched, glandular and simple pilose, densely spiny; pedicels slender, glandular-pilose, and slightly spinulose, up to 15 mm. Calyx cup-shaped, green, united at base, 6-9 x 2-4 mm, deeply 5-parted, with lanceolate acuminate lobes, densely with prickles in hermaphrodite flowers. Corolla whitish or lilacs, bluish and pale violet, rotate, 18-30 mm in diameter, with broadly triangular lobes, stellate-pilose outside. Stamens equal; filaments slender, glabrous, ca. 2 mm long; anthers 7-8 mm long. Ovary ovoid, glabrous; style 1-1.2 cm long. Fruiting pedicels deflexed, densely

glandular-pilose and viscid; fruiting calyx enlarged 11-13 x 4-6 mm, enveloping most berry, ultimately flaring wide and exposing it. Berry bright red (green in young fruit), subglobose, 6-14 mm diam., mostly deccent when ripped, Seeds reniform, foveolate, ca. 2.2 x 2.5 mm diam.

#### Taxonomic treatment:

*Solanum sisymbriifolium* is rather morphologically close to other prickly *Solanum* species, e.g. *S. surratense*. The most important distinguishing characters between these two species are prostrate stems in the latter which is different from erect stem in the former, the occurrence of glandular hairs in the former, yellow berry in the latter in contrary to red berry in the former.

Most determination keys on the genus *Solanum* are started with the presence or absence of character spine or prickle on the stem and leaves of the specimens. Two spiny *Solanum* species has been documented by now in Iran, i.e. *S. incanum* L. and *S. surratense* Burm. (Khatamsaz, 1998; Schonbeck-Temasy, 1972). Moreover, another prickly species with entire leaves (i.e. *S. elaeagnifolium* Cav.) has been also reported for the flora of Iran in Yazd province (Mozaffarian, 1994).

*Solanum sisymbriifolium* is another spiny shrubby species in Iran.

### General distribution

*Solanum sisymbriifolium* is a native of Central and South America (Argentina, southern Brazil, Paraguay, Uruguay, Bolivia, and Colombia). It has been naturalized in North America (Canada, Mexico, the United States, Europe (Spain, the Netherlands), Africa (South Africa, Congo, Swaziland) and Asia (Turkey, Iran, India, China, Taiwan), Australia and New Zealand (Zhi-Yun et al. 1994). The nearest location to our collection in Iran is new reported place of occurrence of this species in N Turkey (Karaer & Kutbay, 2007).

### Habitat description

*Solanum sisymbriifolium* is found along roadsides and in waste places, landfills, and plowed fields both in its native South America (Hill and Hulley, 1995) as well as most of its nonnative range. In Iran, the species is naturalized and grows on coastal sands and along roadsides.

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