

***SOLANUM SISYMBRIIFOLIUM* LAM. - A NEW RECORD FOR DELHI FLORA**

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ABSTRACT

Solanum sisymbriifolium Lam. (Solanaceae), an undershrub species, was first identified at along the Narela- Sonipat railway tracks of Delhi province. Morphologically the species provides a spectacular plant body by virtue of numerous long orange-red spines found along the stem and leaves to the calyx, large white flowers with bright yellow anthers, and its red ripe fruits present in Nov.-Dec. A brief account of important synonym, morphological description, flowering, fruiting season, locality, voucher specimen no., habitat description, general distribution, therapeutic properties and along with some photographs is provided for easy identification of the species, which is not yet reported from Delhi territory.

Keywords: *Solanum Sisymbriifolium*

INTRODUCTION

Solanum L. is one of the chief and most economically key genera of angiosperm (Bohsanad and Olmstead, 1997). Although the precise number of species included in *Solanum* is still unclear, estimates range from about 1000 to nearly 2000 species (D'Acry, 1979; Bohsanad and Olmstead, 1997). Family Solanaceae, include globally important food crops such as *Solanum melongena* L., *Solanum tuberosum* L., *Solanum lycopersicum* L. and *Capsicum* spp. as well as a number of widely used drug plants such as *Nicotiana tabacum* L., *Datura* Spp. and *Atropa belladonna* L. in India, *Solanum* genus is represented by 31 species (Kumari, 2004). *Solanum sisymrifolium* was recorded from Bihar (Mishra and Kumar, 1992) and also new record for Rajasthan state by Yadav and Menna (2007). Late Maheahwari (1963) reported 7 species from genus *Solanum* and Lastly, Naihani *et al.*, (2006) reported two species from this genus Viz., *Solanum incanum* and *Solanum viraum* in Delhi province.

During October 2015, in our study from Delhi region, author observed a few specimens prickly species of genus *Solanum*, and phenological properties were recorded of this specimen. The collection of the species was made near Narela railway station, where it was growing along the waste land of Delhi- Sonipat railway lines (Figure 1: a; b).



Figure 1 (a): Map of Delhi Province

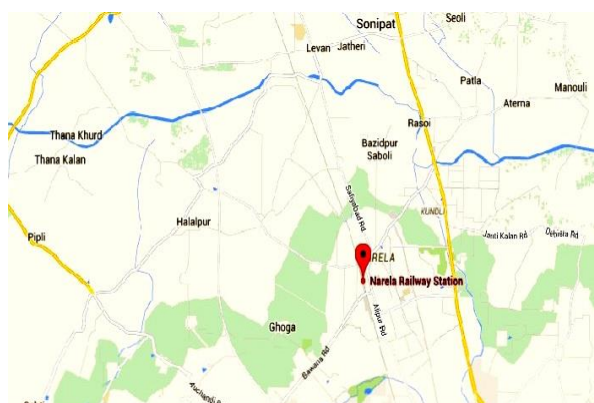


Figure 1(b): Map of Collection Site

The collected specimens were crosschecked with various *Solanum* accounts given in the relevant literature (Bole and Pathak, 1988; Cooke, 1905; Deb, 1981, 1983; Hooker, 1885; Kanjilal 1939; Prain

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1903; Shah, 1978; Shetty and Singh, 1991, and Almeida, 2001). All characters in the specimens were measured and well-studied under microscope. After critical investigations author found that this taxa is not reported from the Delhi region. Correct and updated citation (APG, 2009), important synonym, description, phenology, voucher specimen no., habitat and locality description, general distribution and medicinal properties of specimen is given in this manuscript. The collected material is deposited in Department of Botany, Jamia Hamdard University, New Delhi.

Solanum sisymbriifolium Lamarck, Tabl. Encycl. 2: 25. 1794, (Figure 2)

Synonym: *Solanum sisymbriifolium* f. *lilacinum* Kuntze

Shrubby, perennial. Stems 70 cm. to 2 m, erect, much branched, up to 4 cm. diameter at woody base, viscousvillous, sparsely stellate, glandular, eglandular and simple hairy; prickles dense, yellow or orangeyellow, 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 stellatehairy above, densely so beneath; petiole spiny. Inflorescence racemose, 6-14 flowerd. Peduncles up to 20 cm long, un-branched, glandular and simple pilose, densely spiny; pedicels slender, glandular-pilose, and slightly spinulose, up to 1.5 cm. Calyx cup shaped, green, united at base, 0.6-0.9 x 0.2-0.4 cm. deeply 5-parted, with prickles in hermaphrodite flowers. Corolla whitish or lilacs, bluish and pale violet, rotate, 1.8 x 3.0 cm in diameter, with broadly triangular lobes, stellate-pilose outside. Stamens equal; filaments slender, glabrous, ca. 0.2 cm. long; anthers 0.70-0.80 cm. long. Ovary ovoid, 0.2 cm, superior, glabrous; style 1-1.2 cm., long. Fruiting pedicels deflexed, densely glandular-pilose and viscid; fruiting calyx enlarged 1.1-1.3 x 0.4-0.6 cm., enveloping most berry, ultimately flaring wide and exposing it. Berry bright red (green in young fruit0, subglobose, 0.6-1.4 cm., diam., mostly decrement when ripped. Seeds reniform, foveolate, ca. 0.22 x 0.25 cm diam.

Flowering & Fruiting: September-December

Locality: The species is recorded along the railway-tracks of Narala- Sonipat of Delhi.

Voucher Specimen No. -AKM 764; 22-10-2015

Habitat Description: In India, the species is naturalized and grows on waste places, roadsides, fence rows, and dykes, landfills, and plowed fields.

General Distribution: This species is a native of Central and South America (Hill and Hulley, 1995) and was introduced to North America, Europe (Spain, the Netherlands), Africa (South Africa, Congo, Swaziland), Australasia (Australia, New Zealand) and Asia (India, China, Taiwan). It was introduced in India around 1980 (Jain and Borthakur, 1986).

It is now mainly distributed in Andhra Pradesh, Assam, Bihar, Uttar Pradesh, Gujarat, Kerala, Karnataka, Maharashtra, Manipur, Orissa, Punjab, Sikkim, Tripura and West Bengal. In north India, it was reported in Punjab (Saha and Datta, 2013).

After first glance in the field, collected specimens looked like *Solanum virginianum* L. because of the habitat, stem, leaf and calyx shapes and spines. After closer examination and consultation with the Flora of British India, Assam, Bengal Plants, Rajasthan, Gujarat, Saurashtra, Tripura, and Flora of Presidency of Bombay, it was apparent that the specimens were relatively different from *Solanum virginianum* L. and other *Solanum* species.

As a result of further relative studies and using different flora keys and descriptions, author and various taxonomy experts determined that this specimen is *Solanum Sisymbriifolium* Lam. (Sticky nightshade), which is a new record for Delhi flora. With this new record, the total number of recorded *Solanum* in Delhi has reached to 10.

Medicinal Properties of *Solanum Sisymbriifolium*: It is a perennial herb that has been used as a traditional medicine possessing diuretic and antihypertensive properties in Paraguay. In Argentina, the roots of the plant were traditionally used as diuretic, analgesic, contraceptive, antisymphilitic and hepatoprotective, while the aerial parts of the plant were used in treatment of diarrhea, infections of respiratory and urinary tracts. The flowers are used in India as analgesic and the leaves are used as febrifuge in Peru (Ibarrola *et al.*, 1996; Ferro *et al.*, 2005). The solasodine, the steroidal saponin isolated from the plant was found very potent for the treatment of neurological disorders (Chauhan *et al.*, 2011).

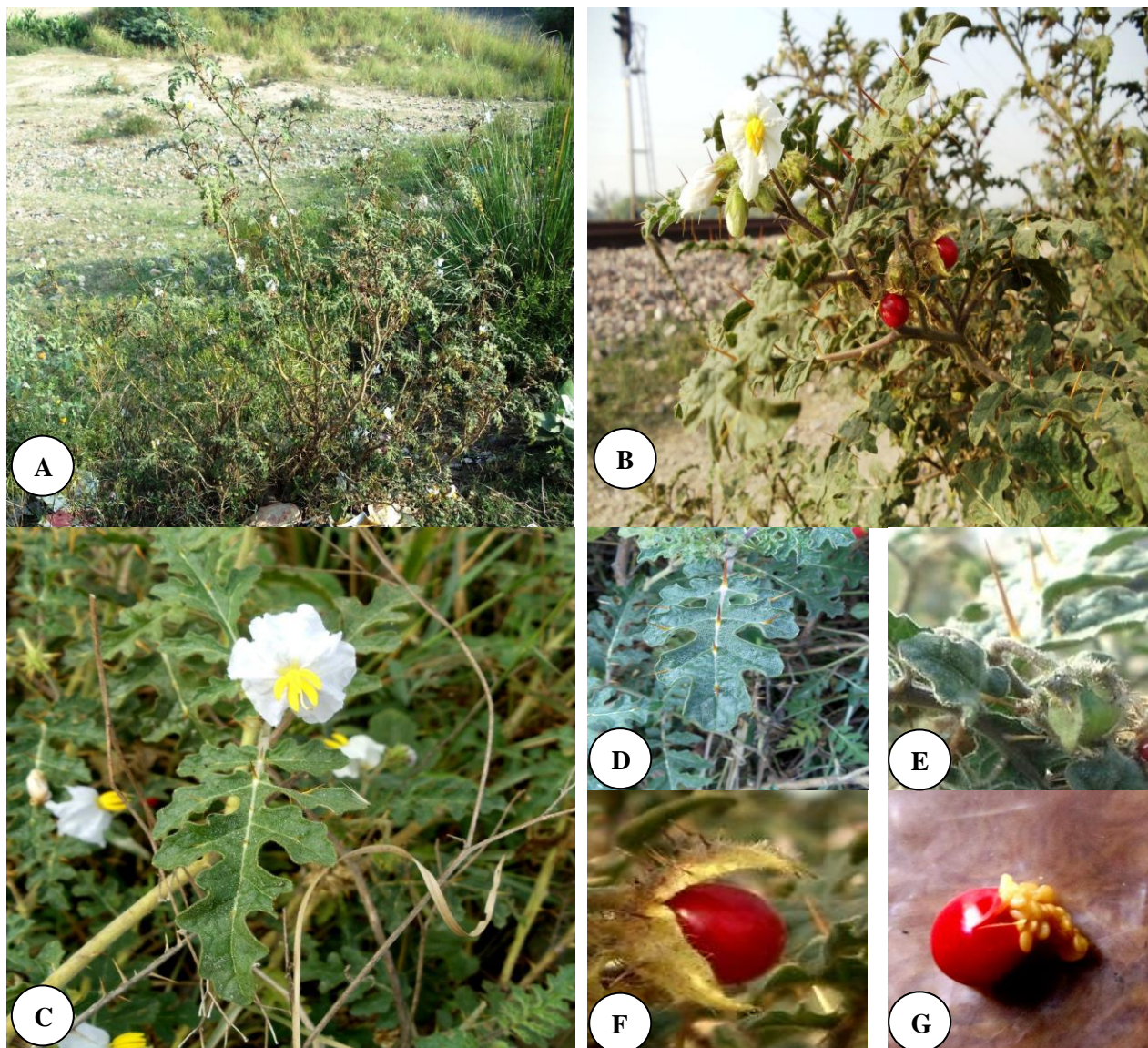


Figure 2: Habit, flowering and fruiting of *Solanum sisymbriifolium* Lam. A, plant body with flower under natural habitat; B, A flowering branch with fruits with numerous prickles; C, A flower twig; D, Leaf with prickles; E, unripe mature berry; F, Ripe berry.; G, Berry along with Seeds

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