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***Solanum sisymbriifolium* Lam. (Solanaceae): An extended distribution in Uttar Pradesh, India.**

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Abstract- *Solanum sisymbriifolium* Lam. of family Solanaceae is a prickly invasive taxon in Uttar Pradesh and now naturalized in Uttar Pradesh. Still it is reported only from northern tarai region from Saharanpur and Gorakhpur districts of Uttar Pradesh and now extended to Sonbhadra and Ghazipur district of South-East area of Uttar Pradesh. Brief description is provided along with up to date citation, phenology, ecology and geographical distribution.

Key words: Extended distribution, *Solanum sisymbriifolium* Lam., invasive, Uttar Pradesh

INTRODUCTION

The overall vegetation of study area (Uttar Pradesh) is mixed dry deciduous and scrubby forest. It lies between altitude 23° 45' –24° 38' N and longitude 82° 30' –83° 33' E. The average temperature of the area fluctuates from 32°C- 46°C in summer and 5°C-18°C in the winter. *Solanum sisymbriifolium* Lam. of family Solanaceae shows peculiar character like orange-red spine all over the body and large white calyx. It was first introduced in lower Bengal in 19th century and reported by D. Prain in (1896)¹. After that subsequently in Assam (Kanjilal *et al.*, 1939)², Madras (Gamble, 1956)³, Uttarakhand (Raizada, 1976)⁴, Bihar (Mishra & Kumar, 1992)⁵, Rajasthan (Yadav & Meena, 2007)⁶, Maharashtra (Rahul B. Kamble *et al.*, 2013)⁷, Tripura (Saha & Dutta, 2013)⁸, Gujarat (Tiwari & Ravi Kumar, 2014)⁹, Jharkhand (Panda *et al.*, 2014)¹⁰, Delhi (Mishra, 2015)¹¹, Chhattisgarh (Singh, 2016)¹²,

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Odisha (Sahu *et al.*, 2017)¹³ and Jammu and Kashmir (Bhellum, 2019)¹⁴. Recently it is published as additions from Gorakhpur and Saharanpur by Srivastava *et al.* (2015)¹⁵ and Mohammed *et al.*, (2019)¹⁶ respectively. During botanical exploration, the author has collected *Solanum sisymbriifolium* Lam. from Sonbhadra and Ghazipur district of South-East Uttar Pradesh. (Plate- 1)

The genus *Solanum* is represented by 42 species and 3 varieties distributed in different parts of India (Kalidass and Panda, 2019)¹⁷ and 7 species has been reported from upper gangetic plain (Duthie, 1903-1929)¹⁸ while *Solanum sisymbriifolium* Lam. has been published by Sahni & Naithani (1974)¹⁹ from Rishikesh, District Dehra Dun. Floristic and ethno-botanical studies have been revealed that there is no published record of this species from South-East Uttar Pradesh. Therefore, the present finding of the species is more considerable with respect to the extended distribution in Uttar Pradesh. A brief taxonomic description along with up to date

nomenclature, illustration and phenology are helpful for the identification of plant species. The herbarium specimen of this plant has been deposited in the Duthie Herbarium, Department of Botany, University of Allahabad, Prayagraj.

Description

Solanum sisymbriifolium Lam. Tabl. encycl. 2: 25 (1794).; Prain, J. Asiat. Soc. Bengal 65:542. 1896; J.S. Gamble, Fl. Pres. Madras Vol. 2 (Part 4), 658. 1956; Sahni & Naithani, in Acta Botanica India 2:151. 1974; Raizada, Suppl. Fl. Upper. Gan. Plain 176. 1976. *Solanum balbisii* Dunal – Sims, Bot. Mag. 52: t. 2568. 1825; vern.; Lal Bhatkatayia.

Annual, much spiny some time erect, perennial, under shrub, up to 1 m tall. Stem woody at the base, with sharp yellow prickles up to 1.5 cm long, erect, branched. Leaves alternate, simple, pinnately, ovate-oblong, petiolate; lamina 10-16 x 7-12 cm long, deeply pinnatifid with many spines along with the white veins on both surface and petioles 2- 5.5cm long. Inflorescence extra auxiliary raceme, 10-15 cm long, 9 -13 flowered, peduncle unbranched and 6-8 cm long covered with red spine. Flower white, hermaphrodite, actinomorphic and perianth is biseriate, dichlamydeous. Calyx yellowish green, sepals 5, gamosepalous, lanceolate, involute aestivation, covered with pinkish spines and some time persistent. Corolla white, petal 5, gamopetalous, lobed, rotate. Stamens 5, epipetalous, yellow, lanceolate, anther- lobes longer than filament. Ovary and style glabrous, superior ovary, bicarpillary, syncarpous and axile placentation. The fruit is berry bright red and spiny. (Plate- 2.)

Flowering and Fruiting: Throughout the year in the study area.

Ecology: This plant species commonly grows along roadsides and wastelands.

Distribution

Solanum sisymbriifolium Lam. is a native of Central and South America (Argentina, southern Brazil, Paraguay, Uruguay, Bolivia, and Colombia). The known introduced ranges of this species are North America, Europe (Hawkes & Edmonds, 1964)²⁰, Africa, Australasia, Asia (China, Taiwan, India), India (West Bengal, Tamil Nadu, Assam, Uttarakhand, Maharashtra, Bihar, Rajasthan, Jammu and Kashmir, Odisha, Tripura, Gujarat, Jharkhand, Karnataka, Delhi, Chhattisgarh and Uttar Pradesh).

Voucher specimen: India: Uttar Pradesh: Sonbhadra District, Renukut, Renukut railway station, Sept. 01. 2019, Prabhat Kumar, 35135 (Duthie). (N 24° 12' 11.88"; E 83° 02' 23.64") and Ghazipur District, Karamahari, Zamania, beside Karmanasa River, Sept. 23. 2020. Prabhat Kumar, 35225 (Duthie), (N 25° 20' 54. 68"; E 83° 39' 11.21").

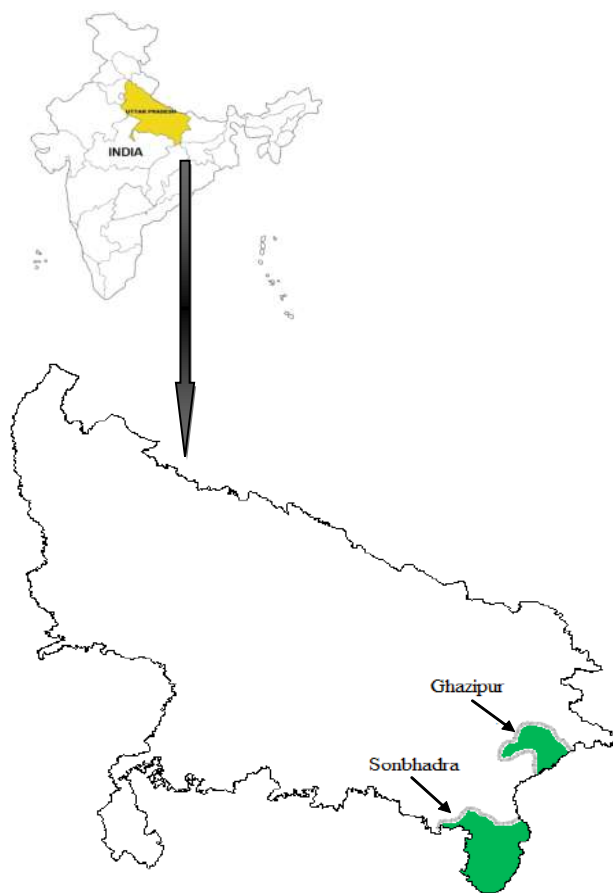


Plate 1. Map of Uttar Pradesh showing the collection site



Fig. A



Fig. B



Fig. C



Fig. D



Fig. E

Plate 2. *Solanum sisymbriifolium* Lam.: **Fig. A.** Plant habit and habitat; **Fig. B.** Inflorescence; **Fig. C.** Flower; **Fig. D.** Ripe berries (fruit) and prickles **Fig. E.** Fruit with seeds.

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