NOTES ON NATURAL HISTORY

Solanum villosum Mill. (Solanaceae): New Addition to the Flora of Rajasthan, India

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Study Area: Jaipur, Rajasthan, India

Coordinated: - 26°48' 15" to 27° 00'15" N; 75° 41'15" to 75°
53'45" E

Key words: Semi-arid, Nightshade family

Introduction:

Till date, various unique flora has been explored from the state of Rajasthan mainly for arid and semi-arid habitats (Bhandari, 1963, 1978; Puri *et al.*, 1964; Sharma & Tiagi, 1979; Singh, 1983; Shetty & Pandey, 1983; Shetty & Singh, 1991; Sharma *et al.*, 2005; Singh & Singh, 2006; Singh & Srivastava, 2007; Kotia, 2008; Kotia *et al.*, 2008). Recently, Kotia (2014), Yadav & Meena (2016); Tiwari *et al.* (2016) and Dhakad *et al.* (2019) have further added to the knowledge on the floral composition of the state. Solanaceae, the nightshade family is distributed in tropical and subtropical regions with around 100 genera and 2500 species widely distributed throughout the world. With reference to India around 29 genera and 108 species have been recorded (Kalidas & Panda, 2019). The genus *Solanum* has 49 species distributed all over the country of which only 10 species have been reported from Rajasthan.

Our observation:

During the floral exploration of Jaipur in Rajasthan, we collected plant specimens from the edges of agriculture fields, irrigated areas like parks, gardens, nurseries, and shady places. After detailed scrutiny of the regional flora, related research papers and attentive examination of the specimen, it has been concluded that *Solanum villosum* Mill. is an addition to flora of Rajasthan. Notably, *S. villosum* Mill. has been reported by Kumar *et al.* (2013); Murugan *et al.* (2017) and Taram *et al.* (2019) from Bareilly (U.P.), Eastern Ghats and Arunachal Pradesh (India), respectively. For easy identification, key to species, updated nomenclature, detailed morphological description, phenological data, field photographs and illustrations have been provided in detail.

Taxonomic description:

Solanum villosum Mill. Dict. ed. 8. No. 2. 1768; Abedin, *et al.*, 1991 (*Pak. J. Bot.* 23:271); Kumar, *et al.*, 2013 (*Indian Forest.* 139:1053), *Solanum miniatum* Bernh. Ex Willd., 1809 (*Enum. Pl.* 1: 236), *Solanum nigrum* var. *humile* (Bernh. Ox Willd.) Wu & Haung, 1978 (*Acta Phytotax. Sin.* 16:72).

Specimens examined: Corresponding author (AK) (RUBL- 211728, Date: 22/12/2019), collected from Jaipur

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Plate-1: *Solanum villosum* Mill. (A) Full grown plant (B) A twig (C) Flower & immature fruits (D) Inflorescence (E) Mature fruits

District, Rajasthan, India.

Unarmed, much-branched, annual or short-lived perennial herb upto 40-100 cm height, slightly greyish, villous, pubescent with simple (uniseriate multicellular) and glandular hairs. Stem- greenish, terret with dentate ridges on lateral sides. Leaves- simple, alternate, ovate or ovate-lanceolate 5.5-10.5 × 3.5-6.5 cm long, apex acute, base decurrent, leaves margin entire to lobed (4-6 lobed), slightly pubescent, pinnatifid venation, petiole 1-2 cm long. Inflorescence- extra axillary, sub-umbellate raceme of 4-8 white-flowered, peduncle ca. 1 cm long, erect, pedicels 5-10 mm long, glabrous, flowers regular, pentamerous, complete, actinomorphic. Calyx- lobes acute, ca. 2.5 mm long, green, finally recurved away from mature berries, persistent, macrescent. Corolla- 5- lobed, ovate, 3-4 mm long white with translucent to yellow basal star, apex acute, reflexed. Stamens- yellow, 5 in number, filaments ca. 0.5 mm long, Anthers- connivent (convergent apically without fusion), oblong, ditheous, ca. 2 mm long, basifixed, porocidal dehiscence. Style- about 3.5 mm long, densely villous at the base to middle, glabrous, exerted. Stigma-

capitate, green. Ovary- globose, < 1.5 mm long. Berries- subglobose, orange or orange-red, 5-7 mm in diameter, Seeds- discoid, pale yellow, compressed (Plate-1, Fig.-1).

Flowering & Fruiting: October to February. Note- The plant can grow on a wide range of soils but prefers organic matter rich soil. The plant shows flowering even when it has mature fruit on the lower branches and immature fruit on the middle branches.

Artificial Key

- 1a Plant armed
- 2a Flowers pale, purple or violet purple
- 3a Berries more than 1cm in diameter
- 4a Prickles straight
- 5a Fruits bright red when ripe *S.sisymbriifolium*
- 5b Fruits yellow when ripe *S.virginianum*
- 4b Prickles recurved *S.incanum*
- 3b Berries less than 1cm in diameter
- 6a Erect shrub or undershrub
- 7a Petiole and pedicle prickly
- 8a Calyx lobes acute *S.anguivi*
- 8b Calyx lobes acuminate- cordate *S.trilobatum*
- 7b Petiole and pedicel not prickly *S.albicaule*
- 6b Trailing or subscandent under-shrubs
- 2b Flowers white
- 9a Hairs present on berries *S.ferox*
- 9b Hairs absent on berries *S.torvum*
- 1b Plant unarmed 10a Leaves hastate..... *S.triquetrum*
- 10b Leaves ovate to oblong
- 11a Peduncle longer than pedicel, Fruit black when ripe *S.nigrum*
- 11b Peduncle shorter or equal to the pedicel, Fruit orange when ripe *S.villosum*

Figure-1: *Solanum villosum* Mill. 1. Twig 2. Single Flower
3. Gynoecium 4. Stamens

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