

Solanum diphyllum L. (Solanaceae)—A new record for Madhya Pradesh, India

Tinku Kumar^{1*}, Amit Jugnu Bishwas², Pramod Kumar Khare³

¹ Ph.D Scholar, Department of Botany, Dr. Harisingh Gour Central University, Sagar, Madhya Pradesh, India

² Assistant Professor, Department of Botany, Dr. Harisingh Gour Central University, Sagar, Madhya Pradesh, India

³ Professor, Department of Botany, Dr. Harisingh Gour Central University, Sagar, Madhya Pradesh, India

Abstract

Solanum diphyllum L. of Solanaceae family was collected from Sagar, Madhya Pradesh during the floristic survey. After critical taxonomic analysis and going through the various flora as well as published literature the *Solanum diphyllum* L. is found to be new record for flora of Madhya Pradesh. The genus *Solanum* is about 75 % of the Solanaceae family and predominantly a tropical genus, with only a few species found in cool temperate climates. This plant grows in the moist places as well as near the drainage. A detailed description, illustrations and photograph are provided for easy identification.

Keywords: *Solanum diphyllum*, new record, Madhya Pradesh

Introduction

Solanum is the largest genus in the Solanaceae family, with over 2000 species dispersed throughout the world (Kaunda & Zhang, 2019) [4]. It is native to tropical America (Zhang *et al.*, 1994) [10]. Only a few species of *Solanum* can be found in cool temperate areas. South and Central America, as well as Australia, have more species diversity; Africa, on the other hand, has a high number of endemics. There are nine species of *Solanum* found in the Madhya Pradesh (Mudgal *et al.* 1997) [5]. Eurasia has a low number of species (Jaeger Peter-Martin Lind, 1985) [3]. As a result, it has been reported as a new record Madhya Pradesh (Fig. 1).

Methodology

Study area: The study was carried out in Sagar district, Madhya Pradesh. Teak (*Tectona grandis*) is the dominant species in the tropical dry deciduous forest vegetation in the study area. The climate of the Sagar district may be classified as seasonal based on average annual rainfall, temperature, and humidity. The year is divided into three distinct seasons: rainy, winter and summer. The rainy season starts around the middle of June and lasts until the end of September.

Winter season starts from mid-October to the end of February and summer starts from mid-March to till June. The area's average annual rainfall is around 1200 mm. During the southwest monsoon season, which runs from June to September, roughly 90% of the yearly rainfall falls, whereas just 5.5 percent and 4.5 percent fall during the winter and summer seasons, respectively. The coldest month is January, with temperatures as low as 5°C and as high as 30°C. During the month of May, the highest temperature reaches 48 degrees Celsius. (Fig. 2).

During the floristic investigation the fresh plant specimens of *Solanum* were collected from Sagar, Madhya Pradesh. The habit, habitat and geographical coordinates (23°49'58" N and 78°45'55" E) were recorded. Macro and micro-morphological characters of the freshly collected plant material were critically examined and identified with the help of various published literature (Singh P., 2015; Kumari R., 2004, 2013; Das *et al.*, 1997; Paul and Biswas, 1995; Zhang *et al.*, 1994) [7, 2, 6, 10]. The specimens were processed and herbarium vouchers prepared following standard methods and the specimens deposited in the herbarium of Department of Botany, Dr. Harisingh Gour Vishwavidyalaya (A Central University), Sagar, Madhya Pradesh. The specimens were identified as *Solanum diphyllum* L. Therefore, it is reported for the first time from Madhya Pradesh. A detailed description, phenology, floral biology and photographs are given to facilitate easy identification.

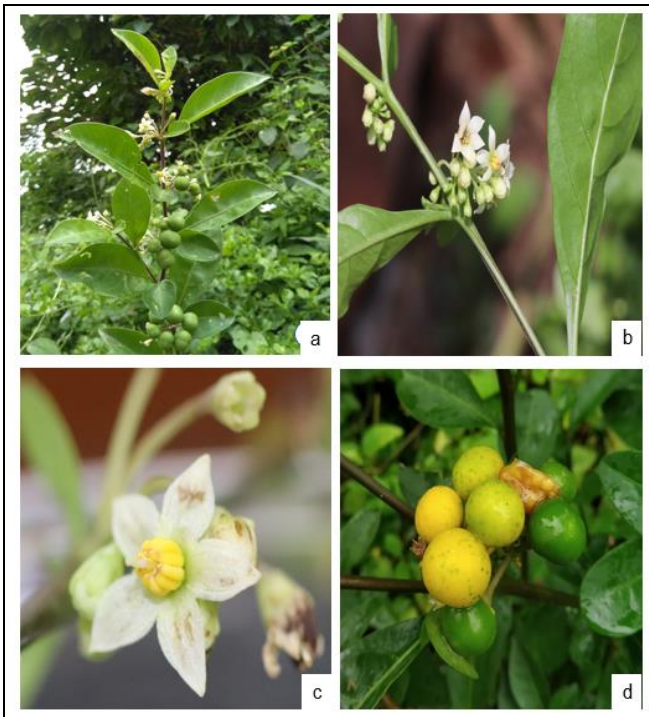


Fig 1

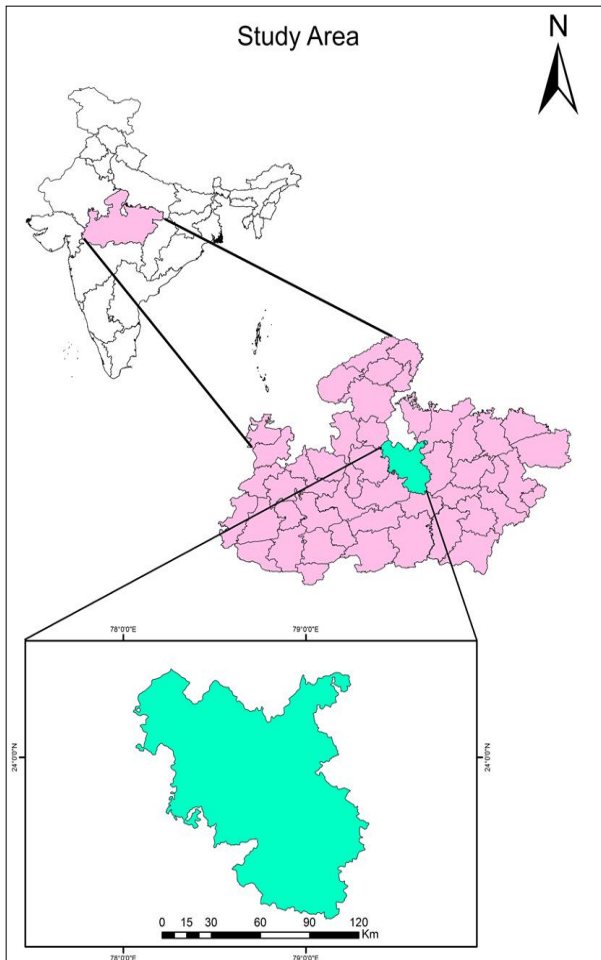


Fig 2

Taxonomic Description

Solanum diphyllum L., Sp. Pl. 184. 1753; D'Arcy in Ann. Missouri Bot. Gard. 61: 845. 1974; Zhi Y. Zhang *et al.* in C.Y. Wu and P.H. Raven, Fl. China 17: 317. 1994; M. Das *et al.*, J. Econ. Taxon. Bot. 21: 158. 1997; T.K. Paul and M.C. Biswas in Bull. Bot. Surv. India 37: 137. 2000; M. Reema Kumari in Rheedia 23(1) 50-51. 2013; Singh P. in Indian Forester 141 (9): 1001-1002 (Fig.1).

Shrub, up to 3 m high, minutely pubescent. Stem terete, green to brown; internodes up to 8 cm long. Leaves 2 at each node, unequal, elliptic, oblong-elliptic or linear-obovate, acute or decurrent into petiole, entire at margins, acute or obtuse at apex, 1 - 10 × 0.5 - 4 cm; lateral nerves 4-7 on either side, faintly minute-hairy; petioles up to 5 mm long. Inflorescence a racemose fascicle, up to 10 - flowered; peduncles up to 7 mm long. Calyx cupular, 1.5- 2 × 2 - 2.5 mm, minutely pubescent, 5- lobed; lobes broadly triangular, acute, 0.5 × 0.8 mm, hirsute; pedicels up to 1 cm long. Corolla stellate, 5 - 8 mm across, creamy white, 5-lobed; lobes equal, elliptic or linear-ovate, acute, 4 - 5 × 2.5 - 3 mm, incurved, hyaline; tube 1-2 mm long. Stamens 5, equal, epipetalous, introrse; filaments 1 mm long, flat; anthers oblong, 2 × 1 mm, basifixed, yellow, initially dehiscent poricidally, later longitudinally. Pollen grains 17 - 21-micron diam. Ovary globose, 1 mm long; style 4 - 5 mm long. Berries globose, slightly constricted in middle, 7 - 12 mm diam, glabrous, yellow or reddish yellow; seeds reniform or discoid, 3 × 2 mm, thickened at margins, creamy yellow.

Flowering and Fruiting: March-October.

Habitat: *Solanum diphyllum* grown on Moist places.

Distribution: *Solanum diphyllum* is a native to tropical America. In India it is found as an escape in some parts of Karnataka, Maharashtra, Tamil Nadu, West Bengal, Uttar Pradesh and recently in Madhya Pradesh.

Specimens examined: Specimen examined: INDIA, Madhya Pradesh, Sagar district, Department of Botany, Dr. Harisingh Gour Vishwavidyalaya (A Central University), 28.01.2021, Tinku Kumar, Bot/H/05/113/01.

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