



## ORIGINAL ARTICLE

# A new variety of *Vincetoxicum hookerianum* (Apocynaceae) from Telangana, India

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## Abstract

A new variety of *Vincetoxicum hookerianum* is described and illustrated from Komurambheem Asifabad district of Telangana state, India, as *Vincetoxicum hookerianum* var. *suneelae*. The new variety is compared with *Vincetoxicum hookerianum* var. *hookerianum*. Detailed description, comparison table, location map and photographs are provided.

**Keywords:** Endemic, Indian Flora, Novelty, Telangana state, *Vincetoxicum*

## Introduction

The genus *Vincetoxicum* Wolf consists of c. 256 species distributed in Europe, NW Africa, Socotra, Asia to SW Pacific (POWO 2023). The genus *Vincetoxicum* has been classified in the sub-tribe Tylophorinae and comprises approximately 200 species (Shah *et al.* 2018). The sub-tribe Tylophorinae comprises two genera viz., *Pentatropis* and *Vincetoxicum*. The genus *Vincetoxicum* was expanded by including *Biondia*, *Blyttia*, *Diplostigma*, *Goydera*, *Pleurostelma*, *Rhyncharrhena* and *Tylophora* (Liede–Schumann *et al.* 2012). The plants are characterized by fascicled roots, erect or twining stems, predominantly clear latex, mostly small and inconspicuous flowers, five fleshy staminal corona lobes and small round pollinia (Liede 1996, Liede Schumann *et al.* 2016).

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**Conflict of interest:** None.

## Material and methods

### Study area

The Bejjur Forest range falls in Kaghaznagar Forest division located in Komurambheem Asifabad district of Telangana state. It lies between 19° 40' - 19° 21' N and 79° 74' - 79° 90' E. The forest range shares its boundary with Kaghaznagar forest range, Sirpur forest range and Kharjelli forest range. The river Pranahita is perennial being a main water source for flora and fauna, flows in the southern boundary of this range and also Peddavagu stream flows in this forest around the year (Figure 1).

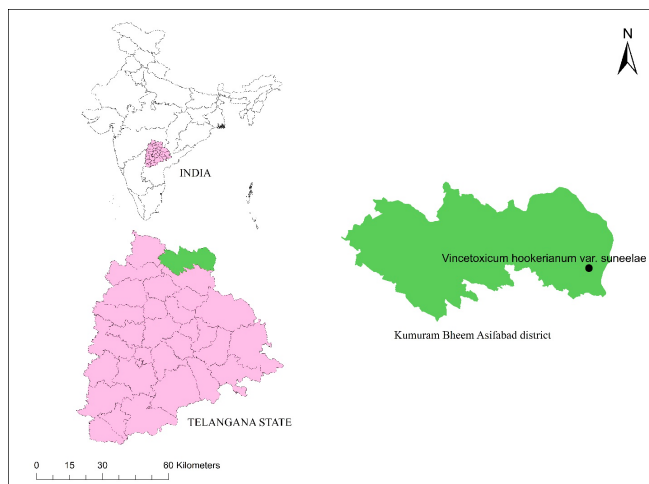
### Methodology

While exploring the flora of Komurambheem Asifabad district, the first author collected a specimen of *Vincetoxicum*. It was growing in a grass dominated dry deciduous forests of Bejjuru Reserve Forest, Komurambheem Asifabad district (erstwhile Adilabad district) of Telangana state. It did not match with any of the known species of *Vincetoxicum*, though some resemblance to *Vincetoxicum hookerianum* var. *hookerianum* Kuntze., subsequently, a closer comparison with herbarium specimens at Indian Virtual Herbarium BSID, Kew, CAL and relevant literature confirmed its novelty. Hence, the new variety is described and illustrated as *Vincetoxicum hookerianum* var. *suneelae*.

### Observations and results

#### Taxonomic treatment

*Vincetoxicum hookerianum* var. *suneelae* D. Veeranjanyulu, M. Ram Mohan, & G. Ravi var. nov.



**Figure 1:** Map showing location of the *Vincetoxicum hookerianum* var. *suneelae* in Kumuram Bheem Asifabad district

Type: INDIA. Telangana: Kammargaon, Bejjur RF, Komurambheem Asifabad district (erstwhile Adilabad), 14 August 2016, D. Veeranjanyulu 019 (holotype CAL! isotypes, BSID!).

### Diagnosis

*Vincetoxicum hookerianum* var. *suneelae* can be easily identified from *V. hookerianum* var. *hookerianum* in having leaves with glabrous upper surface and pubescent lower surface (*vs* pubescent on both surfaces in the former), acuminate, mucronate leaf apex (*vs* obtuse – mucronate in the former), axillary or extra-axillary inflorescence 3-flowered at each node (*vs* axillary inflorescence with 5 – 6 flowers in the former), and broadly ovate seeds 7–8 × 5–6 mm long (*vs* ovate – oblong seeds 10-13 × 5-7 mm in the former) Table 1.

### Description

A slender twining perennial herb, to 75 cm high. Roots many, thick, fascicled, c. 2.5 mm thick. Stems many, sub-erect at base, upper portion often twining, un-branched, terete, ridged, strigose; hairs reflexed; internodes c. 8 cm long,

c.2 mm thick. Leaves simple, opposite decussate, petioled; petiole 0.5–2.8 cm long, grooved, sparsely pubescent; lamina 2–7.5 × 0.5–3 cm, elliptic-ovate or lanceolate or lanceolate-ovate or lanceolate-elliptic or rarely basal leaves broadly ovate, apex acuminate and mucronate, base cuneate or rounded or truncate, margin entire and ciliate, glabrous, vein glabrous or rarely hairy; lateral veins generally 3-6 pairs. Inflorescence in umbellate cymes, axillary or extra-axillary (arising near the petiole); peduncles 4.5–5.5 mm long, cylindrical, densely strigose, flowers 3 on each node, branched and simple to 2 and zigzag; pedicels 4–8 mm long, filiform, densely strigose; bracts 1.5–2 × c.1 mm, lanceolate, acute or acuminate, margins with hairs; bracteoles 2-4, c. 1 mm long, subulate, margins with hairs, deciduous. Calyx 5-lobed; lobes 5, 1.6–2 × c.0.6 mm, lanceolate or narrowly triangular, hairy, veined, green. Corolla deep maroon-red inner surface and light maroon in outer surface; corolla tube short, less than 1 mm long; lobes 5, 3.5–5 × 2.5–3 mm, erect, ovate when spread out, obtuse or truncate at apex, with 5-branched veins, inner surface densely covered with white hairs above the middle and sparsely hairy or glabrous below the middle; margins of lobes (near the base) all along strongly recurved and gain near tubular appearance, with densely covered white hairs. Corona uniseriate, deep maroon-red, copular, 5-lobed; lobes completely adnate and shorter than the staminal column, fleshy, 1–1.2 mm long, c. 1 mm broad near the base, broadly ovate, rounded at base, abruptly obtuse at apex. Stamens c. 1.8 mm long, erect with small inflexed membranous appendages; Pollinaria 5, pollinia- 2 per pollinarium, retinacula horizontal, yellow; pollinium c. 180 × c.120 μm, oblong-ovoid or ovoid, longer than corpuscle and caudicle; corpuscle ∩-shaped and dark-brown; caudices arm-shaped and light brown. Ovary c.1.8 mm long, glabrous; ovules many, ovoid; style cylindraceous; stigma dome-shaped, disciform. Follicles solitary, 7–9 cm long, striate, spindle-lanceolate, obtuse at apex, glabrous; seeds 7–8 × 5–6 mm, broadly ovate, winged, glabrous, dark brown with light brown margins; coma silky-white, c. 2 cm long (Figure 2).

**Table 1:** Morphological comparison of *Vincetoxicum hookerianum* var. *suneelae* with *V. hookerianum* var. *hookerianum*

Sl.No.	Characters	var. <i>suneelae</i>	var. <i>hookerianum</i>
1	Habit and Habitat	Twining herb, up to 75 cm high, rocky areas in moist deciduous forests	Slender erect, undershrub, up to 55 cm high, grass lands
2	Leaves	Glabrous above, pubescent beneath	Pubescent on both sides
3	Leaf apex	Acuminate and mucronate	Obtuse – mucronate
4	Leaf margin	Entire	Slightly wavy
5	Veins	3-6 pairs, glabrous or rarely hairy	5-6 pairs, hairy
6	Inflorescence	Axillary or extra axillary, 3 flowers per node	Axillary, 5-6 flowers per node
7	Corolla	Deep maroon-red inner surface and light maroon in outer surface, erect, ovate when spread out, obtuse or truncate at apex, hairy	Brown, rotate, ovate-lanceolate, apex acutely obtuse, glabrous
8	Seeds	Seeds many, 7–8 × 5–6 mm, broadly ovate, c. 2 cm long.	Seeds many, 10-13 × 5-7 mm ovate-oblong, c. 3 cm long



**Figure 2:** *Vincetoxicum hookerianum* var. *suneelae* A. Habit, B. Roots, C. Stem portion, D. Leaf, E. Flower bud, F. Flower, G. Inflorescence, H. Pollinaria, I. Fruit.

**Etymology:** The new variety is coined in honour to Dr. M. Suneela ENVIS Coordinator, EPTRI, Hyderabad, Telangana state, India.

**Distribution and Habitat:** *Vincetoxicum hookerianum* var. *suneelae* is currently known only from the type locality in Kammargaon, Bejjur RF, Komurambheem Asifabad district, Telangana state, India. Here, 20 well established individuals were observed within 4 populations, and growing in rocky soils in dry deciduous forest, at an altitude of about 150 m, in association with *Rothea serrata* (L.) Steane & Mabb., *Holarrhena pubescens* Wall. ex G. Don, *Cleistanthus collinus* (Roxb.) Benth. ex Hook. f. and *Cayratia trifolia* (L.) Domin.

**Phenology:** July to September

**Conservation status:** *Vincetoxicum hookerianum* var. *suneelae* has restricted distribution with about 20 individuals

in the Bejjuru reserve forest and in a single location with occurrences in 3 km<sup>2</sup>. Adjacent areas have been searched but the species was not found there. The species is under threat due to over grazing, seasonal/anthropogenic and forest fires. Further explorations in the adjacent hill tracts are necessary to ascertain its status. However, presently it can be categorized as Data Deficient (DD) (IUCN, 2019).

**Additional specimens examined:** INDIA. Telangana: Komurambheem Asifabad district, 31 August 2017, 19°16'31.64"N, 79°52'20.96"E, 150m elev, D. Veeranjanyulu 048 (CAL!)

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