

RESEARCH ARTICLE

***Euphorbia graminea* Jacq. (Euphorbiaceae) - A new distributional record for India**

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Abstract An invasive species *Euphorbia graminea* Jacq. (Euphorbiaceae) is reported here as an addition to the Flora of India. Detailed description, photo plate and relevant notes are provided.

Keywords: Addition, *Euphorbia graminea*, Euphorbiaceae, Flora of India, Invasive

Introduction

Euphorbiaceae is a highly diversified family consists of 300 genera and 8,000 species, mainly distributed in tropical and subtropical regions of the World (Webster and Bruch, 1967). The genus *Euphorbia* L. one of the largest flowering plant groups (Mabberley 2005), comprises ca. 2048 species (Sarojinidevi 2017). In India, the genus is represented by 85 species, out of 32 are endemic (Binojkumar and Balakrishnan 2010, 2012, Sarojinidevi and Raju 2014). So far, 27 species (Pullaiah 2015) and 21 species (Reddy and Reddy 2016) have been documented in the newly established state of Telangana.

Materials and methods

While assessing the Biodiversity of Telangana

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State, the first author collected an interesting *Euphorbia* species from Kartikavanam, Dulapally, Hyderabad district, Telangana state. The voucher specimens were studied critically and identified as *Euphorbia graminea* Jacq. This species is considered as invasive (Randall 2002) and has been found as a weedy species in Fiji (Smith 1991), The *Euphorbia graminea* Jacq., can be distinguished from other species of the genus *Euphorbia* by linear, opposite leaf-bract alternate, ovate- rounded leaf; seed strongly angled, surface deeply punctate with pits in regular longitudinal rows (Fig. 1). The identification is further confirmed by matching the specimens with electronic images of herbarium specimens at Kew Herbarium Catalogue. The species is hitherto unrecorded for India. As a result, it is reported as an addition to flora of India. For simple identification, a detailed description, note, and photographs are provided. Voucher specimens are deposited at Botanical Survey of India, Deccan Regional Centre (BSID), Hyderabad, Telangana.

Observations and results

Euphorbia graminea Jacq., Select. Stirp. Amer. Hist. 151. 1763. *Adenopetalum gramineum* (Jacq.) Klotzsch & Garcke, Abh. Königl. Akad. Wiss. Berlin 1859: 47. 1860. *Euphorbia graminea* var. *lancifolia* Millsp., Publ. Field Columb. Mus., Bot. Ser. 1: 372. 1898. *Euphorbia graminea* var. *virgata* Millsp., Publ. Field Columb. Mus., Bot. Ser. 1: 372. 1898. *Eumecanthus gramineus* (Jacq.) Millsp., Publ. Field Mus. Nat. Hist., Bot. Ser. 2: 413. 1916. *Agaloma graminea* (Jacq.) D.B. Ward, Phytologia 89: 226. 2007. (Figure 1).

Annual herb, up to 60 cm high, rarely perennial with slender, rarely tuberous, taproot. Stems erect, much branched from weak root stock, scandent, glabrous to sparsely pubescent, angled; nodes thickened; internodes 4-8 cm long, glabrous. Leaves stipulate, petiolate; stipules usually 0.2-0.4 mm long, minute, early deciduous; petiole 9-15 mm long, slightly pubescent. Leaves usually opposite, sometimes alternate above, ovate to lanceolate or ovate to oblong or oblong to orbicular, 3-4.4 x 0.8-

3.5 cm, rounded at the base, entire along margins, acute at apex, glabrous to puberulous; leaves variable, upper leaves sometimes lanceolate and lower leaves shallowly lobed. Cyathia zygomorphic, terminal, usually in dichasial cymes, pedunculate; peduncle 1.5-4 mm long, glabrous, primary peduncle often longer. Cyathia consisting of an involucre cup enclosing unisexual flowers with the central female floret, surrounded by male florets. Involucre campanulate or obconic, 1-2 x 0.8-1.6 mm. Sparsely strigillose; glands 2-4, greenish, elliptic to oblong, 0.1-0.3 x 0.2-0.4 mm; appendages creamy white, ovate and often hoodlike, entire. Female floret 5-7 mm long, glabrous, pedicelled; pedicels 2 mm long; style 3, free from base, 1 mm long. Capsule trigonous, ovate to orbicular, 2.5-3.2 x 3-3.5 mm, glabrous; seeds gray to brownish, ovoid, weakly angled, 1.2-1.5 x 1.3-1.5 mm, coarsely tuberculate with shallow pits, hairy.

Distribution Native to southern Mexico through northern South America (Webster and Bruch 1967)

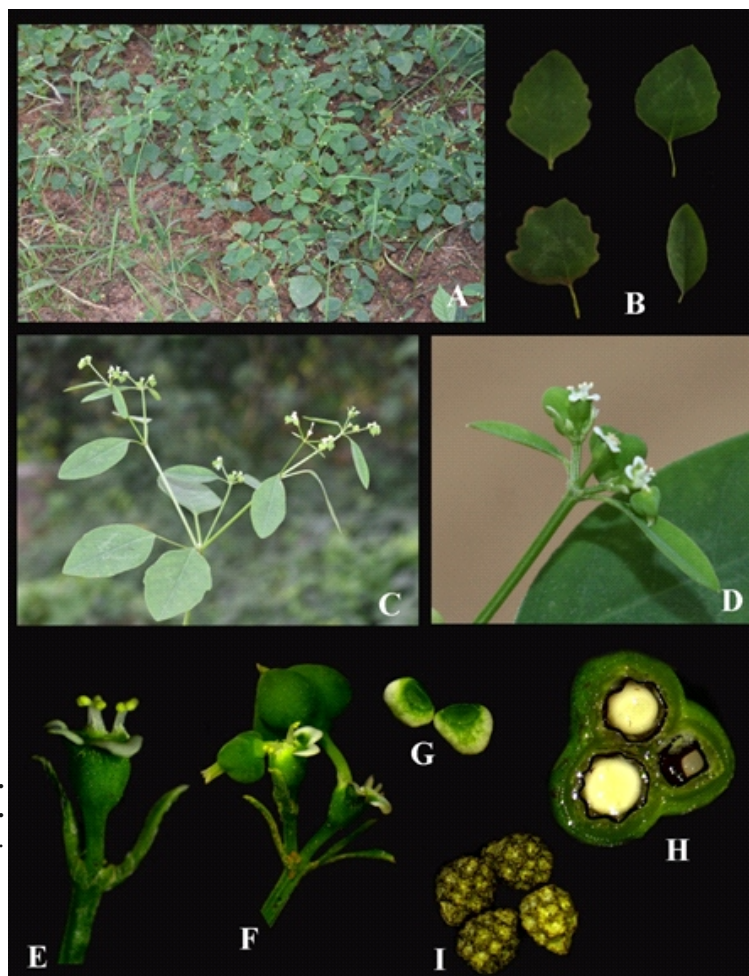


Figure 1: A. Habit; B. Variable leaves; C. Flowering twig; D. Cyathia E & F. Flowers; G. Involucre appendages; H. LS of Ovary; I. Seeds

and is also found in Cuba, Lesser Antilles (St. Lucia), Aruba, Bonaire, and Curaçao (Acevedo-Rodríguez and Strong 2012) recently naturalized in India (Telangana state).

Flowering and fruiting Throughout the year

Habitat and ecology A well-established patch were observed and that was grown on sandy soil along the road sides of Kartikavanam, locality in Telangana state (India). It grows in association with *Euphorbia hirta* L. *Euphorbia heterophylla* L., (Euphorbiaceae) and *Sphagneticola calendulacea* (L.) (Asteraceae).

Specimens examined: INDIA, Telangana state, Hyderabad district, Kartikavanam road, Dulapally village, 17°32'41.00"N, 78°27'44.00"E, 589 m, K. Chandramohan 0454 (BSID).

Notes According to patches or clumps distribution in the field, the plant can regenerate either by seeds or by vegetative growth. The species is well established and naturalized along the road sides.

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