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SHORT COMMUNICATION

# A Note on the Collection and Conservation of Hedgehog Cucumber (*Cucumis dipsaceus* Ehrenb. ex Spach) Germplasm from Coimbatore, Tamil Nadu, India

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Hedgehog cucumber (*Cucumis dipsaceus* Ehrenb. ex Spach) (family Cucurbitaceae) is a native of Saudi Arabia which was introduced to India and is now reported to be occurring as a ruderal in some parts of peninsular India. The authors in a recent survey of Coimbatore in Tamil Nadu came across two populations of this species. Its germplasm was collected along with the passport data and conserved in the long term storage of the National Gene Bank at New Delhi. Herbarium specimens were also collected at source and deposited in the National Herbarium of Cultivated Plants at ICAR-NBPGR, New Delhi.

**Key Words: Conservation, *Cucumis dipsaceus*, Germplasm collection, Hedgehog cucumber**

The genus *Cucumis* L. (family Cucurbitaceae) includes 32 species (Kirkbride, 1993). Yadav *et al.* (2014) in a recent study have reported 14 species from India, out of which the germplasm of all those species except *Cucumis dipsaceus* Ehrenb. ex Spach have been conserved in the National Genebank at the ICAR-National Bureau of Plant Genetic Resources, New Delhi. Hedgehog cucumber is a native of Saudi Arabia which was introduced to India and is now reported to be occurring as a ruderal in some parts of peninsular India, especially in Tamil Nadu and Karnataka (Sarvalingam *et al.,* 2010; Sutar *et al.,* 2013). Geethakumary *et al.* (2015) reported the extended distribution of the species further southwards to Attappadi in Palakkad District of Kerala. It is easily distinguished from other members of the genus by its densely aculeate fruit. It is naturally distributed in West Indies, Africa, North and South America and Saudi Arabia. The authors in a recent survey of Coimbatore in Tamil Nadu came across two populations of this species, one from a wasteland at Vedappatti and the other from Karupanayaganpalayam, found climbing in a roadside fence. Sufficient quantity of mature fruits was collected from the second site (10.966$^{o}$ N and 77.283$^{o}$ E) along with the passport data and the seeds were extracted and conserved as IC619125 in both the long-term storage of the National Gene Bank, New Delhi and at the Medium-Term Storage of the ICAR-NBPGR Regional Station, Thrissur, Kerala. Herbarium specimens were also collected at source and deposited in the National Herbarium of Cultivated Plants (HS22566) at ICAR-NBPGR, New Delhi as well as at the ICAR-NBPGR Regional Station, Thrissur.

## Ecology

*Habit and habitat:* Annual climber in deciduous woodland, wooden grassland and bush land, also in cultivated places; at elevations upto 2,000 m.

*Phenology:* Flowering and fruiting from April to June in Karnatic plains.

## Morphology

*Stem:* Procumbent or climbing; sulcate; on the ridges hispid and in the grooves hispidulous; not deciduous; hairs 0.8-1.5 mm long; nodes not geniculate; internodes 2-6 cm long.

*Leaves:* Petioles 1.5-5 cm long; sulcate; not aculeate; weakly hispidulous to hispid. Leaf blades entire or trilobate; with the margin regularly serrate to entire; ovate to broadly ovate in outline; cordate at the base; with a basal sinus; broadly acute to obtuse at the apex.

*Tendrils:* Present; solitary; simple; 1.5-6 cm long; basally hispidulous and apically glabrate.

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**Fig. 1. a. Plant growing under natural habitat; b. Fruits of hedgehog cucumber; c. Fruit in section; d. Seeds**

*Inflorescence:* Unisexual.

*Male inflorescence:* Solitary flower or fasciculate; 1-5 flowered; sessile.

*Male flowers:* Pedicel terete; 5-20 mm long; hispidulous; without bracteoles. Calyx lobes narrowly oblong to linear; narrowly acute at the apex; 1.6-4 x 0.1-0.3 mm; sparsely hispidulous. Corolla infundibular; sparsely hispidulous outside; glabrous inside. Stamens separating from the hypanthium 2-2.8 mm from the base of the hypanthium.

*Female inflorescence:* A solitary flower, axillary.

*Female flowers:* Pedicel sulcate; 5-15 mm long; hispid and hispidulous; cylindrical. Calyx lobes linear; narrowly acute at the apex; sparsely hispidulous. Corolla sparsely hispidulous outside; glabrous inside. Style 1.5 mm long; 0.6 mm in diameter; subtended by a circular disc. Stigma 2.5 mm long; 2.8 mm in diameter; lobate; with five finger like projections on the margin.

*Fruits:* Maturing above ground and readily visible. Pedicel sulcate; 1-3 cm long; hispid; with non breakaway hairs; cylindrical. Fruit monocoloured; pale yellow; ellipsoid to globose; 3-6.5 cm long; 2.5-4 cm in diameter; single fruit weight range from 20-29.3 g (mean 26.5 g), densely aculeate; glabrous; blunt at the apex.

*Seeds:* Elliptic; 4-5 × 2 mm; 1 mm thick; wingless.

## Economic Importance

Tender leaves and young shoots are chopped, cooked, added coconut milk or groundnut paste and served with a staple in Tanzania. Also, tender leaves are dried in

the sun and then pounded into powder, soaked in hot water, boiled and stirred. The vegetable is then eaten with a staple. Leaves and fruits are used for fodder (Ruffo *et al*., 2002). Leaves and roots are pounded and used as a poultice to treat wounds. The juice from fruit is used as an antidote for poisoning, but it has to be supplemented by drinking fresh milk. The authors have not come across with any report of its use in the sites of collection.

Evidence from chromosome pairing and pollen fertility of hybrids shows that *Cucumis dipsaceus* is closest to *C. prophetarum* and *C. zeyheri* (Singh and Yadava, 1984). However, it is quite different from *C. prophetarum*. *C. prophetarum* has longitudinally striped fruits (dark green) with sparse recurved aculei whereas *C. dipsaceus* has light green unstriped fruits with abundant aculeation forming an outer layer of the fruit. It is easily distinguished from other members of the genus by its densely aculeate, uncurved-doom shaped stalk and blossom ends of fruits, robust growth.

Mature fruits have prolonged shelf life and are of ornamental value. A ripe fruit produce 360 to 498 seeds (mean 472.5) and a well grown plant produces 23 to 48 fruits indicating its potential to become a weed in the absence of natural enemies. However, being an exotic, its spread needs to be closely monitored, lest it becomes an obnoxious weed in cultivated fields.

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