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Research Paper

Propagation of an endangered species, *Celastrus paniculata* by hardwood cuttings

YASHASWINI SHARMA, **C.K. VENUGOPAL**, R. VASUDEVA, A.V. MANJUNATH **AND** K.H. YASHWANT KUMAR

See end of the article for authors' affiliations

Correspondence to :

C.K. VEUGOPAL
Department of Horticulture
College of Agriculture,
University of Agricultural
Sciences, DHARWAD
(KARNATAKA)

ABSTRACT

The experiment was conducted at Medicinal and Aromatic Plants Unit, Department of Horticulture, University of Agricultural Sciences, Dharwad during Jan-May 2009 to study the effect of different growth regulators on rooting of an endangered medicinal plant species, *Celastrus paniculata* cuttings. The various root parameters were recorded significantly higher in the cuttings treated with growth regulators as compared to control. The higher rooting percentage (72.6) was recorded in the cuttings treated with IBA 2000 ppm against control (54). The field establishment percentage was also maximum (92.5) in the same treatment followed by the cuttings treated with Quic Root for one minute. Quic Root treatment for one minute was found to be the second best with respect to all root and shoot parameters next to IBA 2000 ppm.

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Key words : Endangered species, *Celastrus paniculata*, Propagation, Stem cuttings, Indole butyric acid

Celastrus paniculata Willd. is commonly known as *Jyotishma*ti, belongs to the family Celastraceae. Other synonyms of this species are *Paraavat-padi, kangunika, Vegaa, Malkanguni etc*. It is distributed throughout India along sub-Himalayan tracts, up to 2000m and in South Indian Hills (Singh *et al*., 2007). In south India, it occurs in forests of Andhra Pradesh, Tamil Nadu and Western ghats of Karnataka. It is a large straggling shrub or a woody climber with drooping branches. The leaves are simple variable in size and shape, sub-orbicular or obovate, up to 10 cm long, abruptly pointed, crenate at margins. The flowers are yellowish green, unisexual borne on elongated terminal drooping panicles. It blooms in the month of April and continues up to July. The seeds, which grow inside the capsules, vary between 3-6 per capsule, enclosed in a red aril (Sharma, 2003). The seed or seed oil is mainly used for medicinal purpose. Seed oil is used as a powerful stimulant for neuromuscular system and as a brain tonic to promote intelligence and to sharpen memory. The plant exhibits varying degrees of therapeutic value some of which are useful in the treatment of cognitive dysfunction, epilepsy, insomnia, rheumatism, gout and dyspepsia (Sivarajan and Indira, 1994).

IUCN, Switzerland categorized *Celastrus paniculata* under red listed medicinal plant. The Foundation for Revitalization of Local Health Traditions (FRLHT), Bangalore, India while assessing the threat status of medicinal plants, classified *C. paniculata* as RET species especially, critically endangered species (www.frlht-india.org). As the seeds are economic parts in the species, bulk harvesting of seeds hinders the natural regeneration. The priority areas of research in this species need to include conservation and propagation for reintroduction into their natural habitats. Present investigation aims at fulfilling the above needs including large scale multiplication besides conservation of these species.

MATERIALS AND METHODS

The experiment was carried out during the year 2009 between the months of January-May. The experimental site was located at Medicinal and Aromatic Plants Unit, Saidapur farm, Department of Horticulture, University of Agricultural Sciences, Dharwad which located in the transitional tract of Karnataka at 15°29' Northern latitude, 74°58' Eastern longitude with an altitude of 729 m above mean sea level.

The cuttings were procured from the forest area of coastal region (Gokarn, Uttara Kannada district,