



Research Paper

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Effect of growth regulators on vegetative propagation of *Vitex negundo* L.

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ABSTRACT : An experiment was conducted in Department of Horticulture, GKVK, Bengaluru during the year 2010 to study the effect of growth regulators on vegetative propagation of *Vitex negundo*. Among the growth regulators treatment 3000 ppm IBA recorded early sprouting (12.42 days), maximum sprouting (89.44 %), more number of sprouts (2.12) per rooted cutting, longest sprout (16.71 cm), fresh (2.64 g) and dry weights (0.63 g) of sprouts per rooted cutting, early root initiation (33.42 days), highest rooting percentage (82.22 %), more number of roots per cutting (15.59), length of longest root (15.31 cm), fresh (1.02 g) and dry weights (0.30 g) of roots per cutting and cent per cent survival in secondary nursery. Hence, IBA at 3000 ppm was found to be best for vegetative propagation of *Vitex negundo*.

KEY WORDS : *Vitex negundo*, Vegetative propagation, IBA, Rooting, NAA, Keradix

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V*itex negundo* L. (Family: Verbenaceae) is a large aromatic shrub/small tree found throughout the greater part of India at altitude of 1500 m in outer Himalayas. It is also found in Afghanistan, Myanmar, China, Malaysia, Pakistan, Philippines and Sri Lanka. In India it is a common shrub of Garhwal Himalayas. The shrub finds application in indigenous system of medicine and it is reported to possess insecticidal, antibacterial activities and it is also used in treatment of leprosy, piles and several ailments (Anonymous, 1976). Recent interest of medicinal research workers in *V. negundo* has led to isolation of 66 bioactive compounds indicating its tremendous importance. The chief constituents of essential oil in its leaves of Indian origin are viridiflorol (19.55%), β -caryophyllene (16.59%), sabinene (12.07%) and 4-terpineol (9.65%) (Singh *et al.*, 1999). Whereas in flowering twigs are viridiflorol (26.52%), β -caryophyllene (13.2%), 4-terpineol (4.46%) and linalool (2.04%) (Singh *et al.*, 1999).

Clonal propagation of specific chemotypes through conventional or biotechnological means can play an important role in the genetic improvement of *Vitex negundo* for higher chemical yield. The shrub is readily propagated through stem cuttings during rainy season and has a tendency to produce root suckers, which have special significance in afforestation of degraded forest sites. There are only a few reports available

on vegetative propagation of *Vitex negundo* (Husen and Mishra, 2001). The present investigation was undertaken to develop an efficient method for mass vegetative propagation and to study the effect of phytohormones on rooting behaviour of *Vitex negundo*.

RESEARCH METHODS

The present study was carried out at Department of Horticulture, University of Agricultural Sciences, Bengaluru during August 2010. The experiment was laid out in Completely Randomized Design with four replications. One-year-old fully mature shoots of Chinese chaste tree grown in the herbal garden (Gandhi Krishi Vignana Kendra, Bengaluru) were selected for making stem cuttings required for the experiment. A slant cut was given at the basal end, whereas, a transverse cut was given at the top of each cutting. Basal ends of the cuttings so prepared were dipped in 0.2 per cent bavistin (Carbendazim 50 WP). The basal portions of the cuttings (about 2.5-3 cm) were dipped in growth regulator solution of IBA, NAA at 2 different concentrations (2000 and 3000 ppm and their combinations along with keradix and control) for ten seconds and air dried. Then, the treated cuttings were planted in seed pans containing rooting media (sand, soil and FYM-1:6:2). For keradix treatment, the basal end of the cuttings (2.5-