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STUDY ON POTENTIALITY OF WAX APPLE *(SYZYGIUM SAMARANGENSE)* CUTTINGS INFLUENCED BY IBA CONCENTRATIONS

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ABSTRACT: The experiment was conducted during the year 2015-16 at Regional Horticultural Research Station, ASPEE College of Horticulture and Forestry, Navsari Agricultural University, Navsari, Gujarat. In this experiment multiplication of wax apple through asexual method were studied with an objective to assess the combined effects of type of cuttings and IBA concentrations on root and shoot attributes of wax apple (*Syzygium samarangense*). The experiment was analyzed through Completely Randomized Design with factorial concept (FCRD) with three repetitions. In this study three type of cutting *viz.* softwood (C_1) 12-15 cm length, semi-hardwood (C_2) 15-20 cm length and hardwood (C_3) 15-20 cm length of cuttings and five IBA (Indole Butyric Acid) concentrations *viz.,* IBA 1000 ppm (I_1), 2000 ppm (I_2), 3000 ppm (I_3), 4000 ppm (I_4) and 5000 ppm (I_5) were studied. The basal end of freshly harvested cuttings were treated with different concentrations of IBA in powder form and immediately planted in rooting media. Among all the treatment combinations, treatment hardwood cutting along with 5000 ppm of IBA (C_3I_5) found significantly better with respect to number of leaves (27.33), number of shoots (5.86), length of the shoot (11.66 cm), length of primary root (26.03 cm) and survival percentage (86.97%) while, days taken to sprouting (8.00 days) was found in semi-hardwood cuttings treated with IBA 5000 ppm (C_2I_5) at 90 days after transplanting of cuttings.

Key words: *IBA concentrations, root and shoot attributes, type of cutting, wax apple*

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In Myrtaceae family includes 130 genera among them syzygium is one of the important genera. The genera syzygium is a genus of flowering plant (colourful edible fruit) which comprises about 1200-1800 species (Jie and Lyn, 2015). Whereas *Syzygium cuminii* and *Syzygium malaccesis, etc.*, are very popular and also economically important. Among all the species of Syzygium, wax apple (*Syzygium samarangense* Blume.) is tropical minor fruit crop, originated in Malaysia (Peter et al., 2011). In India which is varies from colour (white, red and black), shape (oval and pear) and with respect to sensory quality (taste, flavor and aroma), now a days black colour jamun is available in the market but white and red colour are very rarely found because of unavailability of planting material. In India, it is generally grown as a kitchen garden/home garden tree due to its short stature, bearing of fruits two times in a year and characteristic taste. Childrens especially like to eat this fruit with fun. Wax apple trees are grown exclusively for their freshy fruits. The ripe fruit is mildly sweet and is eaten fresh. The fresh fruit of wax apple contains more than 90% water, protein 0.3g, carbohydrates 3.9g, fibre 1g, vitamin A 253IU, vitamin C 0.1mg and energy value 80 kJ/100g (Peter et al., 2011). Generally, it is propagated by seed but due to recalcitrant nature seed loss their viability within short time and multiplication through seed created wide genetic variability in fruit shape, size and colour. But to obtain uniform plants and to maintain true to type asexual methods of propagation is necessary. Multiplication through cuttings can be done throughout the year. Cutting is a easiest, rapid, simple and cheapest method than other asexual propagation methods. Rooting in cuttings is one of the important aspect for higher survival of cutting, IBA plays vital role by enhancing early callus formation and simultaneously rooting, however, concentration of IBA changes as per the sap flow condition and interaction of IBA and type of cutting. Success of cutting is also depend on environmental condition, for success of cutting relative humidity play vital role because scientist recommended that higher relative humidity enhance the root and shoot attribute by lower down the transpiration from the surface. So, under mist chamber relative humidity is successfully maintained that's why experiment was conducted in mist chamber. In mist chamber plant multiplication is easiest plants through cuttings round the year due to the favorable conditions