

EFFECTS OF PLANT GROWTH REGULATORS ON ROOTING OF GYMNEMA CUTTINGS

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ABSTRACT

The study on the effect of plant growth regulators on rooting of *Gymnema* cuttings was conducted in the Department of Horticulture, Faculty of Agriculture, Annamalai University. Softwood cuttings of *Gymnema* 10-15 long with 1 cm diameter were treated with IAA (600, 800, 1000 ppm) IBA (600, 800, 1000 ppm) and NAA (600, 800, 1,000 ppm). Treated cuttings were planted in polythene bags containing sterilized sand as rooting medium. The different traits taken for investigation were rooting percentage, Number of leaves per cutting, Length of shoots, days taken for rooting, days taken for sprouting and field survival percentage. The treatment T₅ (IBA 800 ppm) performed better recording highest rooting percentage (75.12), Days taken for rooting (29.15), Number of leaves/ cutting (14.54), shoot length (52.46 cm) and field survival percentage (91.19). This was followed by (T₇) NAA 600 ppm.

Key words : *Gymnema*, IAA, IBA and NAA, Rooting.

Gymnema sylvestre belongs to the family Asclepiadaceae locally called as "sirukurinchan" and it is widely distributed in western ghats of north Kanara in the peninsular India leaves when chewed are reported to destroy the taste for sweet (or) bitter substances because of their gymnemic acid content which has generated a steady demand in Japan and Europe for manufacture of drugs. The regular use of *Gymnema* over a period of three to four months reduces glycosuria (or) the appearance of carbohydrate in urine. The important active ingredient of the plant is an organic acid called "Gymnemic acid" with anti saccharine properties which was responsible for controlling sugar. The major bottle neck in *Gymnema* cultivate is low fruit state, short span of seed viability and rooting is also delayed due to exudation of latex, with this background, the present investigation was carried out to study the effect of different plant growth regulators on rooting of cuttings in *Gymnema*.

MATERIALS AND METHODS

The study was conducted on *Gymnema sylvestre* in the Department of Horticulture. Faculty of Agriculture, Annamalai University. Softwood cuttings of *Gymnema* 10-15 cm long with 1 cm diameter were prepared from the basal portion of the shoots. The basal 2 cm portion of cuttings were dipped for 15 seconds in respective solution of IAA (600, 800 and 1000ppm) IBA (600, 800, 1000

ppm) and NAA (600, 800, 1000ppm) cuttings treated in IAA, IBA and NAA solution. For control cuttings were treated in distilled water. Treated cuttings were planted in polythene bags containing sterilized sand as rooting medium. These polybags were watered daily and kept under partial shade of trees. Rooted cuttings were removed carefully after 60 days after planting and different rooting parameters were recorded survival percentage of rooted cuttings were removed carefully after 60 days after planting and different rooting parameters were recorded. Survival percentage of rooted cuttings were recorded 25-30 days of planting. Twenty cutting were taken as unit of treatment and each treatments was replicated thrice in RBD. The different traits taken for investigation were rooting percentage number of leaves per cutting, length of shoots, days taken for rooting, days taken for sprouting and field survival percentage.

RESULTS AND DISCUSSION

Rooting percentage:

From the present investigation it is evident that the extent of rooting in *Gymnema* cuttings was influenced significantly by different treatments. A significantly higher percentage of rooting (75.12) was obtained with IBA 800ppm as compared to other treatments whereas, minimum rooting percentage 36.06 was obtained in control.

Improvement in the rooting of cuttings with the aid of IBA may be due to enhanced hydrolysis of nutritional