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RAPID MULTIPLICATION OF WEDELIA CHINENSIS (OSBECK) MERR – A VALUABLE MEDICINAL HERB

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ABTRACT: *Stem-cuttings of Wedelia chinensis (Osbeck.) Merr. Were treated with different concentrations of IBA and GA. The results indicate that 100 ppm IBA treatment greatly enhances root production and quick establishment of the stem-cuttings.*

INTRODUCTION

Medicinal plants in general have a very short history of cultivation. Most of the medicinal plants still exist in wild or semi-wild state. The methods of reproduction of medicinal plants differ from species to species. Mass multiplication of medicinal plants can be achieved, provided the life cycles of them are known. Low-cost technologies for the mass-multiplication of medicinal plants need to be standardized. The present study aims at the rapid multiplication and thereby increasing the productivity of an important. Indian medicinal plant, *Wedelia chinesis* (Osbeck.) Merr.

Wedelia chinesis (Osbeck.) Merr. is popularly called *Pitabhringi* (Sanskrit), *Pila-Bhangra* (Hindi) and *Manjai Karisalankanni* (Tamil) (Kirtikar and Basu, 1991). It is supposed to be a substitute for *Eclipta alba* (Balu, 1988). For medicinal purpose it is collected mostly from the wild. It is also noted to be cultivated in some places. The method of propagation of this herb has not yet been studied and standardized. The present study aims at multiplying this herb through hormone treatment.

MATERIAL AND METHODS

Wedelia chinesis (Osbeck.) Merr. was collected from its natural habitat along the bank of river Cauvery in Thanjavur and identified with the help of Flora of the Presidency of Madras (Gamble, 1921).

Stem-cuttings with two nodes were prepared from mature branches of the plant. These cuttings were planted in 10 PVC pots (12 cm x 6 cm) containing garden soil with one node well below the soil and the other exposed to the atmosphere. This was considered as the control experiment.

The basal node of the two-noded stem-cuttings were dipped in 25 ppm, 50 ppm and 100 ppm concentrations of IBA (Indole Butyric Acid) and GA (Gibberellic Acid) for five minutes following the methods of Hartmann (1972). Ten cuttings were maintaining in PVC posts for each concentrations of IBA and GA.

The experiment was conducted during December 1994 inside a propagation house made of polythene sacs and bamboo. The pots were watered regularly twice-a-day. The stem-cuttings were observed for 60 days for the following 10 morphometric characters.

Total length of the cuttings (cm)

Number of nodes

Length of the internode (cm)

Number of branches

Length of branches (cm)

Maximum lengths of leaves (cm)

Maximum breadth of leaves (cm)

Number of roots

Maximum root length (cm)

Biomass (Fresh) (gm)

Biomass (Dry) (gm)

RESULTS AND DISCUSSION

The results showed that soaking of the basal nodes of the stem-cuttings for 5 minutes in 100 ppm IBA solution was found to be more effective in producing the roots and shoots (Table I). IBA has been noted to be a successful root growth promotor for *W. chinesis*. The higher rooting percentage at 100 ppm IBA concentration may be attributed to the higher availability of carbohydrates, hormones and other root growth promoting factors accumulated at the basal nodal region of the stem-cuttings.

It is concluded that the most suitable low-cost rapid multiplication techniques for *W.chinesis* would be soaking the badal nodes of the stem cuttings in 100 ppm IBA solution for five minutes and planting them in polythene bags in a low-cost propagation house.

TABLE – 1

MORPHOMETRICS OF THE STEM-CUTTINGS OF *WEDELIA CHINENSIS* (Osbeck.) Merr. AFTER HORMONE TREATMENT (TWO MONTHS CULTURE)

CHARACTER	CONTROL	IBA TREATMENT			GA TREATMENT		
		25 ppm	50 ppm	100 ppm	25 ppm	50 ppm	100 ppm
Total Length of the cuttings (cm)	2.52 ±0.16	4.22±0.19	4.23±0.19	8.84±0.23	1.85±0.15	5.69±0.20	4.26±0.19
Number of nodes	2±0.15	2±0.15	2±0.15	2±0.15	2±0.15	2±0.15	2±0.15
Length of internodes (cm)	0.83±0.12	2.85±0.17	2.23±0.16	6.41±0.21	1.05±0.13	3.05±0.17	2.16±0.16
Number of branches	2±0.15	3±0.17	2±0.15	3±0.17	1±0.13	1±0.13	2±0.15
Length of branches (cm)	6.41±0.21	4.38±0.19	1.24±0.14	13.35±0.25	4.05±0.18	4.97±0.19	9.39±0.23
Maximum lengths of leaves (cm)	2.89±0.17	2.97±0.17	0.71±0.12	3.97±0.18	2.30±0.16	4.33±0.19	2.41±0.16
Maximum breadths of leaves (cm)	1.50±0.14	1.53±0.14	0.37±0.10	1.74±0.15	1.08±0.13	2.14±0.16	1.30±0.14
Maximum Number of roots	7±0.21	5±0.20	3±0.17	9±0.23	8±0.22	5±0.20	9±0.23
Maximum root length (cm)	6.07±0.20	9.79±0.23	2.79±0.17	8.27±0.22	6.41±0.21	3.73±0.18	4.76±0.19
Biomass (Fresh) (mg)	2.457±0.16	1.869±0.15	0.6568±0.12	5.013±0.20	2.284±0.16	3.343±0.18	2.266±0.16
Biomass (Dry) (mg)	0.2457±0.09	0.1868±0.08	0.0656±0.06	0.5012±0.11	0.2226±0.09	0.3342±0.10	0.2265±0.09

± Indicates the standard error from mean values.

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