

## PROPAGATION OF *ANDROGRAPHIS LINEATA* NEES BY STEM CUTTINGS

S. BALU and C. ALGESABOOPATHI

Department of Botany, A.V.V.M. Sri Pushpam College (Autonomous), Poondi – 613 503, Thanjavur, Tamil Nadu, India.

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**ABSTRACT:** *Andrographis lineata* Nees., an important tribal medicinal plant of the Shevaroy Hill was noted to be restricted in its distribution due to biotic pressure. The species was successfully propagated by stem cuttings in its habitat. The percentage establishment of stem cuttings was 67.

### INTRODUCTION

*Andrographis lineata* Nees. (Acanthaceae) is a wild and hitherto uninvestigated medicinal plant of the Shevaroy Hills of Salem District, Tamil Nadu ( $11^{\circ}45'$  N and  $78^{\circ} 11'$  to  $78^{\circ} 20'$ E) upto 1450 M and is a perennial herb (Fig.1). The species perennates by means of its root-stock and propagates by means of seeds also. The tribals (Malayalis) of Shevaroy Hills use this plant for snake bite, dog bite, constipation, skin diseases and also a veterinary medicine (Alagesaboopathi, 1993). It has also been reported to be possessing antipyretic and anti-inflammatory properties (Balu et. al., 1993; Balu and Alagesaboopathi, 1993). The species now exists in small patches amongst bushes. The seedlings and aprouting tender shoots are browsed by cattle in winter and the root-stocks are burnt forest fires in summer. Hence, its nature propagation in under disturbance. The present work has been undertaken to study the possibility of mass-multiplying and conserving the species in its habitat.

### MATERIAL AND METHODS

The experiment was conducted during 1991-92. Stem cuttings of 13-18.5 cm lengths with 1-3 nodes were prepared from the primary branches of adult plants and planted in earthen pots containing the soil collected from natural habitat of the species. No chemical treatment was given to the cuttings and no fertilizer was applied and no pesticide was sprayed. These pots were placed in the wet house and watered regularly. Water logging was avoided in all the stages. Rooting responses were recorded after 115 days of plantation during November 1992.

### RESULTS AND DISCUSSION

The morphometric performances of 115 days hill-cultured cutting are presented Table-1. The percentage establishment of successful cuttings of *A. lineata* is 67. No difference was noticed in the total lengths and internodal lengths of the cuttings after the period of culture. But most of the cuttings

produced vegetative shoots profusely. Number of vegetative shoots per cuttings range between 2 and 4. Lengths of vegetative shoots vary between 0.9 and 2.9 cm. Roots were produced from the underground nodal region and also from cut ends. Number of roots from the cuttings range between 3 and 11. Maximum root length ranges between 3.4 and 6.9 cm (Fig.2).

No chemical treatment was given to the cuttings to initiate shoots and roots. Fertilizers and pesticides were also avoided. The cuttings established successfully in their native soil. Hence, the species can be easily mass-multiplied and conserved in its natural habitat by stem cuttings during favourable season.

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**TABLE -1**  
**MORPHOMETERIC OF THE CUTTING OF *Andrographis lineate***  
**(115 days of Shervaroy Hill Culture)**

No.	Characters	Number of Individuals										Statistical Analysis		
		1	2	3	4	5	6	7	8	9	10	Mean	S.D	S.E
1	Total Length of the cutting (cm) (Initial and Final)	16.5	17.5	15	18.5	13.2	15	14.2	15	14.7	13	15.26	1.7652	±0.5582
2	No. of Nodes	3	3	3	2	3	3	2	2	3	2	2.6	0.5163	±0.1633
3	Internodal Lengths (cm) (Initial and Final)	2, 11.5	7,6.5	2,3,8	10,2	3,2, 6,4	2,7, 3,9	4,9	5,1	3,1,4,6	4,1	6.57	2.8204	±0.8286
4	No. of Vegetative Shoots	4	3	3	4	4	4	2	4	4	4	3.8	0.6992	±0.2211
5	Length of Vegetative shoots (from the base) (cm)	1.7, 1.2	1.6,1,9	2,1,2,8	1,9,2,2	1,7,2,9	1,8,1,2	1,6,1,1	2,3,2,7	2,1,1,9	1,7, 1,2	2.27	0.4547	±0.1438
6	No. of Roots from the cutting	3	10	5	6	4	8	8	9	6	11	6.8	2.8181	±0.8273
7	Maximum Length of the Root (cm)	4.2	6.9	4.7	5.1	4.7	5.2	3.4	6.2	5.2	6.1	5.17	1.0242	±0.3238

± Indicate the standard error from mean values  
S.D – Standard deviation ; S.E. – Standard Error



**Fig. 1** *Andrographis lineata* perennial herb

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**Fig. 2** Root-setting by cutting

## REFERENCES

1. Alagesaboopathi, C., Studies on the biology of some medicinally potential species of *Andrographis* Wall. of Shevaroy Hills of Tamil Nadu, Ph.D. Thesis, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India (1993).
2. Balu, S., Alagesaboopathi, C. and Elago, V., Antipyretic activities of some species of *Andrographis* Wall. *Ancient Science of Life*. 12: 399 – 402 (1993).
3. Balu, S and Alagesaboopathi, C., Anti-inflammatory activities of some species of *Andrographis* Wall. *Ancient Science of Life*. 13 : 180 – 184 (1993).