PROPAGATION OF BARIALA (*BAMBUSA VULGARIS* SCHARD.) AND MULI BANSH (*MELOCANNA BACCIFERA* TRIN.) BY LAYERING

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ABSTRACT

Ground-layering and air-layering trials were carried out on bariala (*Bambusa vulgaris*) and muli bansh (*Melocanna baccifera*) during April and May, 1982. All the treated branches of B. *vulgaris* produced successful propagules in the air-layering experiment. The ground-layering of twelve culms (2 years old) of the same species also produced 23 rooted and rhizomed propagules. Initiation of rooting and rhizome appeared only in the branches of mid-culm zone in both of the layering experiments. *M. baccifera* did not respond to any of the layering methods.

Growth and development of each of the propagules of *B. vulgaris* planted in the field are being recorded to determine the time required for attaining the marchantable culm size.

সারসংক্ষেপ

১৯৮২ সালের এপ্রিল ও মে মাসে ভূমিস্থ ও বায়বীয় পদ্ধতিতে বারিয়ালা (*Bambusa vulagaris*) ও মূলী (*Melocanna baccifera*) বাঁশের বংশ বিস্তারের পরীক্ষা চালানো হয়। বায়বীয় লেয়ারিং পদ্ধতিতে বারিয়ালা বাঁশের সবগুলো শাখাই সফল প্রপাগিউল উৎপাদনে সক্ষম হয়। ভূমিস্থ লেয়ারিং পদ্ধতিতে দু'বছর বয়সের ১২টি উক্ত প্রজাতির কাণ্ড ২৩টি মূল ও রাইজম সম্বলিত প্রপাগিউল উৎপাদন করে। উভয় প্রকারের লেয়ারিং পদ্ধতিতেই কাণ্ডের মধ্যবর্তী এলাকার শাখাসমূহে মূল ও রাইজম সৃষ্টি হয়। মূলী বাঁশ কোনপ্রকার লেয়ারিং পদ্ধতিতেই সাড়া দেয় নি।

বারিয়ালা বাঁশের প্রতিটি প্রপাগিউল মাঠে লাগানোর পর উহার বৃদ্ধি ও উন্নতির উপাত্ত লিপিবদ্ধ করা হচ্ছে। যাতে কাণ্ড আহরণযোগ্য হওয়ার সময় নির্ণয় করা যায়।

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INTRODUCTION

Bamboo is of immense importance to the rural people of Bangladesh. It is used for house construction, thatching, roofing, fencing and making of mats, basket, container, tool handle, cooking-pot, walking-stick, raft, fishing rod, etc. Bamboo is an important raw-material for manufacturing pulp, paper and rayon.

Bamboo is generally propagated by conventional methods of rhizome and offset planting. Beside vegetative propagation, it can be regenerated from seeds. But seed source is scarce because seed-years are very limited. Most of the bamboos flower once in their life and die soon thereafter (Hasan 1973). Vegetative propagation of bamboo through branch-cutting has advantage over offset and rhizome planting. But branch-cutting needs knowledge and skill for development of the propagating material (Hasan 1977 ; Banik 1980 ; Serajuddoula 1983).

It was observed that layering of metenga (*B. tulda*) produced roots after a few days in some culm-nodes and developed new shoots from the rooted culm-nodes within 1–2 months (Anon. 1938).

The advantage of layering over offset and rhizome planting of bamboo is obvious as it is easy to propagate around bamboo-groves in the rural area. Thus, this study was designed to develop the technology of layering of bamboo by the rural people.

MATERIALS AND METHODS

Layering of *B. vulgaris* and *M. baccifera* were carried out by two methods, ground-layering and air-layering.

Ground-layering

Three clumps of each of *B. vulgaris* and *M. baceifera* were selected in April, 1982. Four culms of two years old from each of the clumps were chosen. The diameter, length and number of nodes were recorded. The culms were ruptured below the breast-height, gradually bent on the ground and then buried horizontally into the soil. The tip of the culm was fixed to the soil with a wooden peg. The lateral branches of the nodes were kept above the soil.

Air-layering

Air-layering were also carried out on *B. vulgaris* and *M. baccifera*. Rooting medium was prepared by mixing two parts of cowdung, one part of mustard-oil cake and one part of soil. The rooting medium was wrapped around three nodes in each culm of both the species in April using thin jute mat.

RESULTS AND DISCUSSIONS

After two months of ground layering, the layered culms produced roots in most of the buried nodes except the upper zones of *B. vulgaris*. In ground-layering, percentages of success was low due to slow development of rhizome in rooted nodes. After the rainy season most of the roots of rooted nodes were dead.

In both the layering methods *B. vulgaris* produced rooted and rhizomed propagules. Air-layering showed better results. Cabanday (1957) also found better success in air-layering of *B. blumeana* than in ground-layering.

He got 70% success in air layering by using admixture of garden soil and leaf mould. But in ground - layering Cabanday (1957) got only 28% success in the same species.

M. baccifera did not produce any root and rhizome in any of layering methods. Khan (1966) also carried out more or less similar type of experiment with *B. vulgaris* and *Oxytenanthera abyssinica*. He found better success in *B. vulgaris*.

Within three clumps of *B. vulgaris*, two clumps produced rooted and rhizomed propagules but the third clump did not. This clump was disturbed by human being and cattle.

CONCLUSIONS

It is suggested that the propagation of *B. vulgaris* through layering method is possible and advantageous for small scale cultivation in village groves.

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Table 1. Success of ground-layering and air-layering of *B. vulgaris* and *M. baccifera*

	B. vulgaris		*M. baccifera*	
	Ground layering	Air layering	Ground layering	Air layering
Number of culmp	3	3	3	3
Number of culm layered	12	3	12	3
Total number of nodes : present	648	137	312	64
treated	516	12	260	12
Total number of nodes rooted and rhizomed	23	12	0	0
Total number of clump developed	23	12	0	0
Percent of success	4.0	100.0	0	0

The growth and development of propagules from ground-layered clumps were better than those of air-layered ones in the field when number of emerging culm, culm-diameter and culm-length were considered.

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