SHORT NOTE

Yield of *Morus alba* cuttings under different stool-bed regimes at Chalnakhel nursery

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Morus alba can be propagated from hardwood stem cutting (Napier, 1988: Jakson, 1994). The technique is widely used in nurseries in Nepal. However, there is little information available as to how a nursery-based stool-bed should be managed for efficient production of cuttings. Stool bank at Chalnakhel nursery (1370 m) had three blocks of *Mours alba* that have been managed according to different systems since the insertion of rooted cuttings in 1985 and 1986. In plot 85/18, cuttings were inserted in second week of February 1987 which were of one year coppice with three years root stock. In plot 85/6A, cuttings were of one year coppice growth with two year root-stock. In plot 85/6B, cuttings were of two year seeding material on a two year root stock.

This experiment compares the production of rootable hard wood stem cuttings from the three blocks. Conclusions may suggest the future direction for research.

Materials and methods

All cuttings (with three buds in most cases) were prepared as in practice (Napier, 1988) and inserted at a spacing of 5 cm x 5 cm in one bare-rot nursery bed consisting of three parts soil and one part sand in three blocks, corresponding to the three management plots.

The number of stem cuttings of plots 85/18, 85/6A and 85/6B were 461, 239 and 289 respectively which were inserted on 11.2.1988 and 14.2.1988 (plot 85/6B). Number of stools used were 28, 20 and 30 and shoots 65, 40 and 35 respectively. Cuttings were assessed on 13.7.88 and the rooted ones were catagorised as :

Excellent	Abundant fibres with vigorous tap root
Good	Abundant fibres with weak tap root
Fair	Few root hairs with no tap root
Poor	Root initiation only

Results and discussion

Two of the most important factors affecting the productivity of a stool bed for rooted cuttings were the number of rooted cuttings per shoot and the number of shoots per stool. Management options, such as reducing coppice re-growth to one or two shoots per stool, will affect these factors.

Table 1: Number of rooted cutting and rooting percent by categories

Plot 85/18:				
Category	Excellent	Good	Fair	Poor
Frequency	46	51	30	25
Rooting Percentage	27.9	30.9	23.0	18.2
Total number of rooted cuttings = 165				
Plot 85/6A:				
Frequency	25	14	18	45
Rooting Percentage	27.2	15.2	8.7	48.9
Total number of rooted cuttings = 92				
Plot 85/6B:				
Frequency	5	6	0	1
Rooting Percentage	41.7	50.9	0	8.4
Total number of rooted cuttings = 12				

A comparison of the rooting percentage and rooted cuttings per shoot for plots 85/6A and 85/6B suggests that cuttings from one year coppice material roots much more successfully than those taken from a two year rootstock (Table 2).

The high rooting percentage of plot 85/6A may be attributed to the greater age of the rootstock (rooted cuttings inserted early March 1985 as opposed to late July/August, 1985), as the material taken for cuttings was one year coppice shoots in both cases. It appears that reducing the re-growth to one or two shoots per stool does not increase the yield of rooted cuttings per shoot, but it does significantly reduce the number of shoots per stool.

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Table 2 : Number and percent of rooted cuttings per shoot and stool

Plots	No of cutting rooted	Rooting percentage	Rooted cuttings/ shoots	Rooted cuttings/stool
85/18	165	36	2.5	5.9
85/6A	22	22	1.3	1.7
85/6B	12	4	0.3	0.4

The overall rooting percentage was fairly low (36%) even for the most effective treatment. This may be due to late insertion of cuttings.

This observation suggests that hard wood stem cuttings of *M. alba* root more successfully if taken from one year coppice rather than two year material growing on an older rootstock. The number of rooted cuttings per stool are maximised by retaining all the coppice re-growth. However, it will be necessary to conduct a replicated experiment with separate blocks being managed according to different systems for verification.

Further Research

1. Separate stool bed management blocks should be set up for *M. alba.* This experiment could then be replicated, and different management options introduced.
2. Time of insertion in relation to rooting frequency.
3. Rooting frequency of cuttings from different portions of the stem of various diameters.

Reference

Jakson, J. K. 1994. **Manual of Afforestation in Nepal.** Volume 2, Second edition. Forest Research and Survey Centre, Babarmahal, Kathmandu.

Napier, I. 1988. Vegetative propagation of fodder trees. Preliminary research results and practical recommendation. *Banko Jankari* 2(1), 21-30.