KENYA FORESTRY RESEARCH INSTITUTE

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AN INTERIM NOTE ON THE ESTABLISHMENT OF THE AFRICAN MOUNTAIN BAMBOO IN KENYA

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An Interim note on the Establishment of the African Mountain Bamboo in Kenya

Introduction

No serious cultivation of bamboo has been undertaken in Kenya in the past. There is a need to cultivate bamboo so as to diversify the supply base of our natural resources. Bamboos are versatile in their uses and a need to cultivate the crop has been realised. Only one bamboo species (***Arundinaria alpina*** K. Schum) is indigenous to Kenya and is found mainly at altitudes between 2400 and 3350 metres above mean sea level (Wimbush, 1945; Dale and Greenway 1961). Its natural distribution includes the Aberdares and Mau Ranges, Mountains Kenya and Elgon, and their lower vicinities.

Preliminary studies have shown that this local species can be cultivated within its natural range and even below its natural altitudinal distribution although its rate of growth is slightly depressed in the latter sites (Kigomo and Kamiri, 1987). Successful cultivation of ***Arundinaria*** and other bamboos in lower altitudes should help in providing utility materials essential for general domestic uses, handicraft activities and in the conservation of degraded land areas. Results from initial trials indicate that it is also possible to successfully introduce exotic bamboo species in Kenya (Kigomo, 1985; Kigomo and Kamiri, 1987).

Cultivation of bamboos has been going on for many years in the tropical world especially in the Asia-Pacific region. About 10-12 species are commonly cultivated in this region (Sharma, 1980). Cultivation of various bamboos in a particular area or region depends very much on the availability of planting material and success in their establishment. The latter factors greatly influence establishment, management and production costs. The most suitable propagation and establishment techniques must therefore be employed to ensure establishment of the crop and to cut down on cultivation costs.

Bamboo can be propagated vegetatively and by seeds. Observations have shown that while several vegetative material sources may be used in the establishment of a bamboo crop, only propagation by off-sets (short rooted rhizomes carrying attached short culms) give high field survival rates. The outline below provides an initial guide intended to facilitate the establishment of a bamboo crop artificially. Both sexual and vegetative establishment methods are considered. Pertinent problems associated with availability of planting material sources are also briefly pointed out.

I. Establishment by Seed

Possibilities of establishing a bamboo crop from seed are limited because production of seed is unpredictable and restricted. A bamboo culm flowers and produces seed only once and then dies. However, once a bamboo stand has flowered, seeds can be collected at the end of the flowering period and seedlings raised as outlined below;

1. Sow seeds in nursery or in polythene containers and water daily.

2. Prick out germinated seedlings from beds into soil boxes or other nursery beds when about 3 cm high.

3. After 8-12 months from date of pricking out, good-sized transplants can be obtained. It has however been observed with some species that two years old seedlings establish fairly well.

4. Plant out transplants on cultivated ground and where not possible, ensure that a metre or more cultivated portions or basins are available to avoid competition from weed.

5. Planting should be carried out during wet weather and just at the beginning of rain season at initial espacement of 3.0 x 3.0 m. Transplants are sensitive to exposure and should be planted out without delay after removal from the seedling beds.

6. Weeding should be carried out regularly to avoid seedling competition from weeds.

7. At the above initial espacement, culms are formed which join up to further form a continuous grove of bamboo in five or six years time.

8. Culm harvesting should not however be undertaken before 8 years from planting.

II. Establishment by Vegetative Material

This offers a better planting method though it is limited in space due to difficulties of collecting off-set materials which are bulky and also difficult to transport. Only small annual planting programmes may therefore be possible. At the onset of rains (usually in April) and just before the new shoots grow, off-sets can be obtained from the bamboo stands as outlined below:

1. Dig out 30-60 cm below ground for a rhizome of one year old culm (can be recognized by its dark even green colour and smooth downy stems).

2. Once a rhizome is exposed, cut back the aerial culm itself to 60 cm. in length and cut the rhizome off from the parent clump. Avoid injuring the junction of the culm and rhizome and underground dormant buds at the base of the culm.

3. Prepared planting ground (cultivated ground better) or clean cultivated, 1 metre or more basins, are needed for planting out the offset materials.

4. Plant the offsets in the prepared ground at intervals of 3.5 - 4.0 metre square as soon as possible (maximum delay should be overnight) and immediately before the beginning of the rain season. Place the rhizomes 10-20 cm below the ground and cover with soil. Vegetative offsets are expected to develop quicker than seedlings raised from seed.

5. Weeding should be carried out regularly or as necessary to avoid competition from weeds.

6. Culm harvesting should not be carried out before 6 years from time of planting out in the field.

Note: Important Precautions

(a) Offsets taken in the late rain season after the new growth has started usually fail. Hence, acquire your planting materials as early as possible but timely.

(b) The younger the rhizomes, the more the vigour in the buds.

(c) Larger diameter materials are better in establishment and survival.

(d) the larger the aerial culm, the better the survival.

(e) Avoid damaging the junction of the culm and rhizome and the dormant buds.

(f) Do not delay in planting offsets after digging them out. Early planted offsets root easily.

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