



POTENTIAL CHALLENGES FACING MACROPROPAGATION TECHNIQUE IN BANANA



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INTRODUCTION

Bananas (*Musa spp*) are an important crop for food security, income for small holders and fodder among other uses. However, banana production is greatly constrained by lack of availability of affordable clean planting material. Macropropagation technique has been proposed as a method that can allow production of healthy seedlings. Macropropagation is a cost effective technology that can produce large quantities of high quality seedlings. This would lead to more farmers taking up banana production due to the affordable seedlings from the technique.

MACROPROPAGATION TECHNOLOGY

The technology involves using the banana corm to give rise to many plantlets (Fig 1). The corm is obtained from maiden suckers and banana plants that have been harvested. Healthy and robust suckers with no symptoms of disease are selected. The roots are removed by paring using a sharp knife. The sheaths making up the pseudostem are removed serially, (one after another) and an incision (X) is made at the growth points. The corms are washed and put in disinfectant for sometime. They are finally rooted in sterilized sawdust and are covered completely. The propagators are made of strong clear polythene sheets for the sides and black polythene sheets for the roof to give 50% light. The rooting medium is sterile sawdust. The propagators are watered frequently to maintain humidity.



Figure 1: The macropropagation technique.

CHALLENGES AND PROPOSED SOLUTIONS

These include unavailability of corms for use. Farmers do not want to use the maiden corms wait for Macropropagation because they perceive this as a loss. Many farmers would prefer to for the plants to fruit and get money from selling. This can be solved by use of the harvested banana plants. This will result to farmers benefiting from the fruits and the seedlings. Weevil infestation of corms in some areas has led to discarding of many corms (Fig A). Corms that are not heavily infested with weevils can be cured for several days after the sheaths have been removed to ensure the eggs, larvae and adult forms have been killed. The corms can also be dipped in boiling water for a few seconds to kill any adult, larvae and eggs. They can also be treated with chemicals that control weevils. Labour has been a challenge in some areas. Some menial tasks such as soil and sawdust sterilization, removal of sheaths from the corms using oil drums take longer (Fig B). Sterilization can be modified to have the containers used larger so they can hold more soil to avoid repetition and save on fuel. The skill required in serial removal of the pseudostem sheaths from the corms is a challenge. Improper removal leads to rotting of the corms in the humidity chamber. Proper training to farmers and practise will refine the skill. The Macropropagation nurseries are built with locally available materials. However, these are prone to damage by termites and heavy rains. The materials can be treated with preservatives during construction (Fig C). Also they can be reinforced to strengthen them to withstand harsh weather.



Fig A: Pared corm showing weevil damage, Fig B: Soil sterilization using a drum: Fig C: Poles for making macropropagation chamber treated with a preservative.

CONCLUSION

Macropropagation has potential to fill the gap of scarcity of quality seedlings for farmers to expand existing plantations or plant new ones. The technology is not expensive and subsequently, the seedlings are affordable. Implementation of Macropropagation technology for banana seedling production will contribute to high yields, reduced chance of disease spread and maximum profit for the farmers.