

## Potential challenges facing macropropagation technique in banana

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### ABSTRACT

*Objective:* Bananas (*Musa spp*) are an important crop for food security, income for small holders and fodder among other uses. Banana production is greatly constrained by lack of affordable clean planting material. Macropropagation technique has been proposed as a more cost effective method for producing healthy seedlings. This paper reports on some factors that could pose challenges to adoption of this technology in Kenya.

*Methodology and results:* As part of a wider study to evaluate the feasibility of introducing macropropagation to banana growers in central and Eastern Kenya, observations were made on farmer perceptions and other factors encountered during implementation. Farmers appreciate that macropropagation is an inexpensive technology that can produce large quantities of good quality seedlings. However, one factor that could limit its adoption in the target areas is unavailability of corms for propagation. It was noted that farmers are not willing to remove the maiden corms for macropropagation because they perceive



this as a loss of the bunch that would have been harvested. Currently many farmers in the target region are not in dire need of planting materials as the plantations that have been managed well are in a good state with little need for replanting. Limited availability of land also implies demand for seedlings to expand plantations is low. The labor required for the macropropagation procedure is an additional challenge in some areas. Some tasks such as soil and sawdust sterilization, chamber construction and maintenance, corm handling, among others, require considerable amounts of labor. In some areas competition of the available labor with other higher wage activities is a hindrance to successful uptake of this technology. For example men prefer to participate in loading trucks with banana bunches or operating motorcycle taxis, rather than the relatively less paying menial tasks in nurseries.

Although macropropagation is a low skill technology, improper removal and manipulation leads to rotting of the corms after placement in the propagation medium. Weevil infestation of corms in some areas is also an additional constraint as infested corms have to be discarded, even though the cost of obtaining them has been incurred.

One of the low cost aspects of the macropropagation technology is due to the fact that the nurseries are constructed using locally available materials. However, these materials are prone to rapid damage by termites and the roof can easily collapse during heavy rains or strong winds. Extra measures are therefore required to treat or protect the wood from destruction by termites and to better secure the polythene sheet roofs so as to minimize the need for regular repairs.

*Application of findings:* These challenges need to be looked into and feasible solutions provided. For example, 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. They can also be treated with chemicals that control weevils. The materials used to build the chambers can be treated with preservatives. To avoid disillusionment, the technology should be better explained to stakeholders so that they appreciate its benefits vis-a-vis other propagation methods, even though it has its limitations.

**Key words:** *Banana, Macropropagation, challenges*

