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## Banana Tissue Culture: Benefits for East African Farmers

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### Abstract

Banana is the main food staple and a key component of food security in the Great Lakes region of eastern Africa. Banana is also an important cash crop in parts of Rwanda, Tanzania and Uganda. Where it is grown, it often makes the highest contribution to household income. A complex of biotic and abiotic factors imperil banana in the region. The banana weevil and a complex of nematodes are considered the most important pests on East African highland bananas. Pest and diseases of banana are mainly transmitted with infested banana suckers, traditionally the planting material of this vegetatively propagated crop.

Propagation of pest and disease-free banana planting material and the introduction of new pest and disease-resistant banana varieties is therefore of vital importance for the well-being of farmers in the region. Pest and disease-free banana can be micro-propagated in tissue culture. Tissue cultured banana are the preferred planting material in commercial plantations all over the world. Even in the absence of pests, tissue cultured banana also have higher yields and mature earlier than sucker-derived material.

Currently, tissue cultured banana planting material is not widely available to farmers in Rwanda, Tanzania, and Uganda due to insufficient dissemination channels in this region. This is attributed to a lack of understanding of the benefits of this technology. There is also a lack of agronomic data demonstrating the benefits of tissue cultured banana belonging to the unique group of East African highland banana (*Musa* AAA-EA). Data on performance of tissue culture plants for the plant and ratoon crop will be presented. Plant and ratoon crops of tissue cultured banana under different management regimes are compared to suckers derived planting material, including hot-water treated suckers. Additional benefits are expected through the absence of pest and diseases.

**Keywords:** Banana weevil, east African highland banana, nematode, tissue culture