

## Benefits and potential use of arbuscular mycorrhizal fungi in banana and plantain systems in Africa

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Crop plant association with arbuscular mycorrhizal fungi (AMF) often prove beneficial to crop productivity through a number of mechanisms, such as improved access to nutrients and water, pest and disease suppression. Banana and plantain are both mycorrhizal plants, with a number of studies demonstrating the strong stimulatory affect of AMF on plant growth in pots. Application of AMF to newly deflasked tissue culture plants or in nurseries therefore, may improve plant growth and possibly provide healthier plants for sale to farmers. Studies have also shown that plants are also better able to suppress nematodes in pots. However, how this association benefits banana and plantain growth, and consequently yield, under field conditions has yet to be properly determined. Studies are currently underway to determine the mycorrhizal associations of banana and plantain cultivars with AMF in East and Central Africa. Greenhouse studies complement field studies for comparison at the different levels. In West Africa, studies have been conducted to assess the AMF associations and yield impact following inoculation. Data is accumulating, and showing variable composition and abundance of AMF species, with up to a total of 20 AMF species associated with banana plantations in East Africa. Spore abundance, inoculum reservoir that determines colonization, was largely influenced by management practices. However, the data generated to date, is increasingly indicating the importance of the management of banana systems, clearly indicating that banana and plantain are highly dependent on AMF. Some species also appear to be more superior in their effects on banana growth, nutrient uptake and the control of root damage by nematodes. Studies are in progress to screen AMF species and establish trials along different integrated soil fertility management practices. This paper reports on the available data surrounding the potential impact of AMF on banana and plantain in Africa.

## Turning unproductive waterways into banana fields

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Likamba village is in northern Tanzania, Arumeru district, Arusha region. Likamba stands on the leeward side of mount Meru and therefore receives little rains. It is endowed with hills and valleys and is residence to pastoralist tribe of Waarusha/Wamaasai. The little rains that fall on the hills concentrate into valleys to form flood waters and before this project, these valleys lay wasted with no beneficial use. Bananas were introduced in Likamba amidst protests from the villagers that bananas cannot perform on the dry area. They were introduced in the waterways which were otherwise unutilized due to the big volumes of water flowing through during the rainy seasons. Seedlings were offered to a few farmers who were willing to try out and were ready to labor for success. The seedlings were planted in holes with a 90 cm x 90 cm x 90 cm dimension. The top soil was mixed with plenty of manure (10-12 twenty kg tins) and was used