

BOOSTING COFFEE PRODUCTIVITY IN KENYA AND MALAWI

Locations Kenya, Malawi

Dates 01/03/2014 - 01/03/2018

Summary

Although coffee is a high-value commodity and a major contributor to the economies of Kenya and Malawi, many smallholder producers remain poor because of low productivity. CABI scientists will help improve this situation by working with research institutions and assisting them to adopt modern tissue culture-based technologies to rapidly produce lots of seedlings.

The problem

Although coffee is a high-value commodity and a major contributor to the economies of Kenya and Malawi, many smallholder producers remain poor because of low productivity. A major reason for this is losses due to pests and diseases such as coffee berry disease and coffee leaf rust. Production costs are high as farmers need to factor in protecting their crops, and they need access to cost-saving innovations such as improved and resistant varieties.

In an attempt to boost productivity and incomes, researchers in Kenya and Malawi have developed coffee varieties resistant to the two major diseases – coffee berry disease and coffee leaf rust. These have been proven to be effective, and in Kenya, they have been shown to cut production costs by up to

60%.

The challenge now is to make the improved varieties readily available to smallholder farmers in both countries. Demand for affordable seedlings is high, but the current capacity of research institutions to supply them is limited. This is because conventional seed production is cumbersome, expensive and, in the case of coffee, produces relatively small amounts of seed. This is a major constraint to mass producing planting materials.

What we are doing

CABI scientists are helping to improve this situation by working with research institutions and assisting them to adopt modern tissue culture-based technologies to rapidly produce lots of seedlings. We are doing this by upgrading and modernizing facilities in both countries, and training scientists and technicians through exchange visits and internships.

The project team is establishing ‘weaning nurseries’ to give farmers access to the tissue culture planting material: nursery staff at co-operatives are being trained in the management of these nurseries, and a training-of-trainers course is encouraging dissemination and ensures that quality standards are met throughout the production process.

In addition, the research-based advisory services in both countries being strengthened.

Laboratories for fertilizer and pesticide analysis are being upgraded and staff trained to carry out soil and leaf sampling and analysis. Resulting data can be used to make recommendations on applying chemical inputs. This helps to maximize productivity.

A combination of new planting materials along with improved fertilizer use and better pest control measures is being promoted. These recommendations and methods are already well developed for smallholder coffee systems in Kenya, so the project will transfer these technologies to Malawi.

The team is also strengthening pesticide evaluation and recommendations for Malawi by developing procedures and policies, and rolling out pesticide advisory services.

Information relating to Integrated Pest Management practices and pesticide recommendations are being disseminated through training sessions and trade and agricultural shows.

By increasing yields and reducing the cost of production, this work ultimately aims to increase household incomes for coffee farmers in Kenya and Malawi.

Results so far

Tissue culture laboratories in both Kenya and Malawi have been renovated and modern equipment has been installed or commissioned. The CABI team have trained Malawian technical staff in tissue culture procedures and the testing of agrochemicals. Scientists and technicians from Malawi have also undergone tissue culture technical training and we have produced standard operating procedures for managing a commercial tissue culture laboratory. Tissue cultured seedling production in Malawi is ongoing.

Three cooperative nurseries for weaning tissue cultured seedlings have been set up in Kenya, and a Training of Trainers course for managers of the nurseries has been conducted here. We are providing ongoing on-site support for this. A cost benefit analysis for the tissue cultured nurseries in Kenya, indicates that they are commercially viable and sustainable due to their acceptance by farmers and coffee production.

	Malawian soil scientists have received technical training in Kenya. Training has included coffee nutrition, soil sampling and analysis for major nutrients. Scientists were also trained to translate analysis data into farmer orientated advisory/ technical materials. In addition, members of three producer cooperatives have received training on soil and leaf sampling techniques.
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