Feed the Future Country Fact Sheet

Online Version: https://www.feedthefuture.gov/article/new-molecular-technologies-improve-resilience-banana-production-africa

New Molecular Technologies Improve Resilience of Banana Production in Africa

Bananas are one of the most important staple crops in East and Central Africa and are mainly cultivated by smallholder farmers. Uganda is the world's largest per capita consumer of bananas and the world's second largest producer of bananas, producing 10.5 million tons annually. But production of this staple crop has declined substantially in the past decade, due in part to a number of diseases and pests that drastically reduce crop yields and threaten the livelihoods of smallholder farmers.

To improve food security in East and Central Africa, Feed the Future is investing in molecular technologies that can help farmers grow bananas with greater resistance to these threats.One example of this effort is Feed the Future's collaboration with partner research institutions to address Banana Bacterial Wilt (BBW), which is responsible for $500 million in annual crop losses across East and Central Africa. The disease is particularly devastating because it destroys the entire infected banana plant, not just the fruit, leading to significant economic losses for farmers.

With support from Feed the Future, scientists from the International Institute of Tropical Agriculture, in partnership with the Ugandan National Agricultural Research Organization and the African Agricultural Technology Foundation, are using advanced molecular tools to produce transgenic banana varieties that are more resistant to BBW. Transgenic crops contain genetic material from other types of organisms. In this case, field trials have shown that the addition of two sweet pepper genes may endow certain banana varieties with significant resistance to BBW. Researchers are now in the process of introducing these sweet pepper genes into locally preferred varieties of bananas and will then test these new transgenic plants for BBW resistance.

Similar trials are also taking place to develop banana resistance to other threats like fungal diseases and nematode pests. These new technology solutions have the potential to greatly improve food security and increase incomes for smallholder farmers in East and Central Africa who depend on bananas for their livelihoods.