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Fried Green Tomatoes Grow Greener in Uganda

by Friedaricka Steed

Before the IPM CRSP project, these Ugandan tomato farmers were spending approximately \$546 on pesticides each season. Today, they spend about \$146 per season—a 73 percent reduction in expenses.



Ugandan tomatoes grown without benefit of the IPM methods of staking (like in the field above) and trellising are more susceptible to late blight.

Ever wonder how green your fried green tomatoes really are? With help from the Integrated Pest Management Collaborative Research Support Program (IPM CRSP), Ugandan tomato growers know how to make them greener.

Working alongside local scientists from Makerere University in Kampala, the IPM CRSP showed Ugandan tomato growers how to use environmentally- friendly pest management techniques. As a result, they decreased pesticide use by a whopping 75 percent.

Rachel Carson, the pioneering environmentalist, would definitely be proud. However, to Ugandans, reducing pesticides does not only benefit the environment. It also boosts the local economy, provides consumers with quality vegetables, and improves the livelihoods for farmers and their families by increasing income. In a developing country like Uganda, that means a lot.

Helping individual farmers learn better ways to manage pests in agricultural production is a primary goal of the IPM CRSP, a program funded by USAID that supports integrated pest management research, education, and partnerships among U.S. and developing country institutions. Integrated Pest Management (IPM) is an approach to managing pests such as insects and fungi that integrates economic, social, and environmental factors throughout the decision-making process. It is a method in which pesticides are used only as a last resort.

Mark Erbaugh, one of the IPM CRSP's principal investigators from Ohio State University, and a team of scientists went to Uganda to conduct a participatory appraisal, during which they determined that pesticide use in Ugandan agriculture is more commonly linked to tomatoes than with any other crop in the country. They also determined that tomatoes were the number one high-value cash crop in Uganda grown for both local and regional consumption. Therefore, in order to reduce pesticide use in Uganda, the IPM CRSP needed to work with tomato growers.

They started by talking to small farm owners outside Uganda's capital city, Kampala. Several pests were identified as problems to tomato growers; however, none were so problematic as onion thrips and late blight. Onion thrips (*Thrips tabaci*) is a common insect pest of tomatoes that feeds on the undersides of leaves, and late blight (*Phytophthora infestans*), is the same fungus known to have caused the Irish Potato Famine in 1845.

There are two growing seasons in Uganda's sub-tropical climate—a rainy season and a dry season. If water is available to tomato growers during

Mark Erbaugh, IPM CRSP researcher, teaches Ugandans the IPM method of staking.



the dry season, tomatoes can be grown all year round. Under these conditions, thrips and late blight disease are difficult to control, and farmers believe that they must use multiple applications of pesticides or they will lose their entire crop. Scientists determined that on average, Ugandan tomato growers were randomly applying pesticides up to twice a week (15–25 times per season) before the IPM CRSP project began.

Pesticides are expensive, can be dangerous to humans and the environment, and, when used incorrectly, can cause pesticide resistance to develop in the target pests. These factors strongly support a natural reduction in pesticide use. Yet Ugandan tomato growers, like many of us, would prefer to stick with what they know. In this case, it means using frequent pesticide applications. Ugandan farmers needed to be convinced that there were better, safer, and cheaper methods than applying pesticides.

Using the participatory approach, the IPM CRSP encouraged local farmers to take part in IPM program development. Research projects were conducted in farmer fields where the farmers could see for themselves how effective the new methods and modern technology were. Through this approach, farmers earned respect and a sense of ownership of the program, consequently increasing chances for successful implementation.

After two years of field research, scientists developed an IPM program that includes simple mechanical control methods and tactics, both cheap and easy to apply. Farmers were advised to use yellow sticky traps to monitor the thrips population so they would know when to apply pesticides based on predetermined population numbers. For control of late blight, farmers were given resistant varieties of tomato plants and shown how to use trellises and stakes to keep tomato leaves and fruits off of the ground to reduce moisture—late blight’s best friend.

Using these new tactics, pesticide applications could safely be reduced to, on average, less than once a week.

The difference has been amazing. Before the IPM CRSP project, most tomato farmers were spending approximately \$546 on pesticides each season. Today, they spend about \$146 per season—a 73 percent reduction in expenses. In addition, they have a higher yield, now enjoying an income of up to 200 percent per year more than before the IPM CRSP program. Many Ugandan tomato growers can now afford to feed their own families a better diet thanks to greener tomatoes.

So, the next time you go to make fried green tomatoes, think about where they came from. It is possible that they are greener than they look.

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