

# Pack 111, Item 4

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**Farmers use traditional and chemical methods to manage insect pests of maize in western Tanzania**

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Notes to broadcaster

Maize is one of the main staple crops in Tanzania. Many farmers invest in maize farming, but recently many have faced a high risk of insect pest damage in the field. This has resulted in lower production of maize throughout the country.

Karagwe District is one of the parts of Tanzania that produces a lot of maize. The district is in the west of the country, and has recently been attacked by maize stalk borers. Another devastating insect pest that recently invaded the region is Fall armyworm, which has destroyed maize in the field, resulting in reduced harvests and hunger in 2016 and 2017.

In this script, farmers from the Kihanga, Nyakahanga, and Kayanga Wards of Karagwe District discuss these insect pests and the methods they use to fight them.

This script is based on actual interviews. You might choose to produce this script on your station, using voice actors to represent the speakers. If so, please make sure to tell your audience at the beginning of the program that the voices are those of actors, not the original people involved in the interviews.

You could also use this script as research material or as inspiration for creating your own programming on managing pests in maize or other crops. Talk to farmers, agricultural officers, and other experts. You might ask them:

* What are the major pests in this area?
* What practices and products are available to manage these pests?
* What are the strengths and challenges of these practices and products?

Apart from speaking directly to farmers and other experts, you could use these questions as the basis for a phone-in or text-in program.

The estimated running time for this item, with signature tune, intro, and extro, is 15 minutes.

**HOST:** Welcome to today’s episode of your farmer program. Today, we will be talking with farmers from Karagwe District in the Kagera Region of western Tanzania. We will talk with maize farmers about the insect pests that feed on maize and the measures they take to manage these insect pests.

 (PAUSE) It’s about 30 kilometres from Karagwe town to Katanda village in Kihanga Ward. When I arrive, I meet with a 58-year-old woman farmer. She welcomes us to her home.

I start by asking her how insect pests have impacted her farm.

**JANE JOSEPH:** These insect pests are the result of climate change. Drought and heat have caused them to multiply. We farm lots of maize, but they damage most of our maize, which leads to huge losses.

**HOST:** Is it true that lack of rain causes these insect pests to multiply?

**JANE JOSEPH:** In most cases when there is a lot of rain, it kills the insect pests in the field. The pest population drops. Wet conditions stop the insect pests from increasing.

**HOST:** Do you know the types of insect pests in your farm?

**JANE JOSEPH:** They are called Fall armyworms. They eat the stem of the maize leaves and dig inside the maize stems and hide.

**HOST:** So that other farmers can recognize Fall armyworm, here is a description of the pest. It has a dark head with a pale, upside-down, Y-shaped marking on the front. Each of the body segments has a pattern of four raised spots when seen from above. Finally, on the second-to-last body segment, there are four dark spots that form a square.

 (PAUSE) Next, I talked to a 53-year-old farmer named Mr. Protas Patrice, chairman of Katanda village, and Mr. Christopher Gabriel, a 74-year-old farmer. They explained why the pests are so numerous and how they fight them. I asked them why these insect pest problems were occurring.

 (PAUSE) Apart from drought, are there other causes for these problems?

**CHRISTOPHER GABRIEL:** I think insects—like any other species—live among us. They are always there.

**HOST:** What types of insect pests do you know about on your land?

**PROTAS PATRICE:** I know them by their names in the local language, Nyambo. They are called *mtobere* and *kamshokweine*. These are small insects that crawl and puncture the stems. They have caused so much damage in the village that about three hundred farmers have given up farming maize.

**HOST:** Where do these insect pests come from?

**PROTAS PATRICE:** They live in the soil, and due to prolonged drought and hotter temperatures, they rise from the soil to look for food.

**HOST:** What methods do you use to fight these insect pests?

**PROTAS PATRICE:** I have never used chemical pesticides because they are very expensive. I cannot spend 50,000 shillings ($22 US) to buy pesticides—and even that wouldn’t be enough to spray the whole farm.

**HOST:** (PAUSE) It is around four p.m. in the evening, and I am now in Nyarutuntu ward at Nyakahanga village. Mrs. Catherine Kaungya lives in Nyarutuntu street in Kihanga ward, and has been farming her whole life. She has one acre of land on which she grows maize, beans, bananas, and coffee. When I arrive, Mrs. Kaungya is attending to her field. I ask her about the insect pests that feed on maize.

**HOST:** Do you think these insect pests were present in the past or have they just recently started to exist?

**CATHERINE KAUNGYA:** There is no such thing as a new insect pest. These insect pests were there from the beginning. We just came to know of their existence recently and started to name them.

**HOST:** How did you fight these insect pests in the past?

**CATHERINE KAUNGYA:** I have 48 years in farming. Before, we used to uproot affected maize plants in the field and give them to elders. The elders collected all the affected maize in the village and threw it away. During this ceremony, we did not farm. The following day, we went to the field, believing the rest of the maize would be cured from the insect pests.

**HOST:** What methods do you use to fight insect pests now?

**CATHERINE KAUNGYA:**  Most farmers use ashes and soil to fight them. I collect ashes and mix them with soil, and then I pour the mixture on the plant stem.

It helps, but it is difficult to make enough to apply to the whole farm. We apply the mixture to the affected plants and as a preventive measure to the healthy plants.

**HOST:** Next I talked to a farmer named Julie Zimulinda. I asked her if she had ever used other methods to fight insect pests, for example, insecticides.

**JULIE ZIMULINDA:** I have used a chemical pesticide. I buy it for 3,000 shillings (about $1.30 US), and I make a solution using the recommended amount of water. Then I spray the affected maize plants. The main challenge is lack of funds to buy enough pesticide to spray the whole farm

**HOST:** I asked a farmer named Avit Theophil if he thought that these insecticides were effective.

**AVIT THEOPHIL:** Yes. But you will see lots of farmers who have applied these insecticides and complain that they don’t kill the insects and that instead, the plant wilts and has rust in the stem and branches, and that they change colour to white or yellow.

**HOST:** Do you think farmers know the correct procedures for applying chemical pesticides?

**AVIT THEOPHIL:** There are farmers who know how to use them. They follow the recommended measures from the extension workers and the instructions written on the cover of the container. But still the insecticides are not very effective. Researchers need to find other types of pesticides that work.

**HOST:** I met with another farmer named Kokotuna Alfred.

Do you think replanting saved seed from the last season causes insect pests to multiply and attack the field?

**KOKUTONA ALFRED:** It is not true. We have been planting traditional seeds for many years, and they were not affected by insects.

**HOST:** Next, I talked with Cleophace Kanjagaile, the extension officer from Karagwe District. He says the increased number of insect pests that feed on maize is a result of higher temperatures.

I asked him how much damage the insect pests have caused.

**CLEOPHACE KANJAGAILE:** From 2016 to 2018, temperatures were extreme. Lots of insects laid eggs and had offspring, and they infested a large number of crops in the field, resulting in hunger.

**HOST:** What types of insect pests attack maize?

**CLEOPHACE KANJAGAILE:** There are maggots that puncture the stem. You can kill maggots by spraying an insecticide solution on the punctured stem. But there are other insect pests like caterpillars that eat through the maize stem and create a protective coat around the hole that prevents the insecticide from reaching the insect and killing it.

**HOST:** Are there insecticides that can kill these insects, especially caterpillars?

**CLEOPHACEKANJAGAILE:** Yes, there are insecticides in the shops. They sell for 14,000 to 16,000 shillings per litre (about $6-7 US). One litre is enough to spray two acres.

**HOST:** Are traditional pesticides effective?

**CLEOPHACE KANJAGAILE:** Lots of farmers use ashes and soil to fight insect pests, but this method is not effective. Farmers should use insecticides. They are a bit expensive, but they are effective and they help famers get a good harvest by preventing insect pests from infesting the crops.

**HOST:** Do farmers know how to apply pesticides?

**CLEOPHACE KANJAGAILE:** A few of them know how to use. There are radio programs that teach farmers how to use pesticides, and I highly advise farmers to listen to them to learn best practices for farming maize.

**HOST:** Dear listeners, it seems that many farmers prefer traditional methods of fighting insect pests in their field rather than using the chemical pesticides that many farmers in the area cannot afford. It should be noted that success in using insecticides to manage Fall armyworm of any other pest depends on four factors. First, the specific chemical used. Particular chemicals are effective for specific pests, and will not manage others. Second, the time of application. It is best to use pesticides to manage Fall armyworm early in the morning, or in the late afternoon or evening. Third, the concentration used. Always follow the directions on the container on what concentration to use. And finally, insecticides are more effective against some life stages of Fall armyworm than others. It is much easier to control smaller rather than larger, older caterpillars.

 Extension workers and other experts sometimes offer physical demonstrations of how to manage Fall armyworm or other pests. Try to attend these, and also look at leaflets, posters, and brochures which have visual representations of how to identify and manage Fall armyworm.

 Finally, keep in mind that managing Fall armyworm is always easier if farmers practice crop rotation, plant maize early in the season, and practice regular scouting.

 Thank you for listening and following our discussion with farmers about the insect pests that are feeding on maize and the measures they are taking to fight them.

## Acknowledgements

Contributed by: Dinna Maningo, freelance journalist, Trime district, Mara Region, Tanzania.

Reviewed by: Magdalena William, Plant/Seed Pathologist, Principal Agricultural Research Officer, Agriculture Research Institute Maruku

**Sources of information**

Interviews:

Cleophace Kanjagaile, DAICO (District Agriculture and Irrigation Co-operatives) officer, November 21, 2018

Avit Theofil, Kokutona Alfred, and Julie Zimulinda, farmers in Kayanga Ward in Karagwe district, November 21, 2018

Catherine Kaungya, farmer, Nyakahanga ward, November 20,2018

Christopher Gabriel, Katanda village, November 20, 2018

Protas Patrice, farmer and Katanda village chairman, November 20, 2018

Jane Joseph, farmer, Katanda village, November 20, 2018

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