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# Pack 105, Item 7

Type: Script

January 2017

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# Managing diseases and pests in common beans

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### Notes to broadcaster

This script captures the experiences of farmers who grow beans in central Uganda.

Growing beans has many benefits, including:

*Nutrition and food security:*Common beans contain a lot of protein, micronutrients such as iron and zinc, and are rich in vitamins. The young leaves and the bean are both edible. The average Ugandan eats up to 19 kg of beans per year.

*Livestock:*Crop residues are a good livestock feed.

*Livelihood:*There is a ready market for common beans in Uganda and neighbouring countries.

*Benefits to the soil:*Common bean is a good source of nitrogen for the soil because of its ability to fix nitrogen from the air. Leaving the roots in the soil after harvest results in an extra 20-60 kg of nitrogen per hectare in the soil, which is available for the next crop. This is the equivalent of ¾-2 free bags of urea, and can give the next crop a very good boost. As a cover crop, common bean can help prevent soil erosion.

*Yield:* With good agricultural practices, including good soil preparation, using fertilizers if required, using good seeds, and planting seed at 30-40 kg/acre, common bean can yield over 800 kg/acre.

The main focus of this script is managing pests and diseases in beans, and it also covers farming practices which are specific to beans.

You could use this script as inspiration to research and write a script on proven ways to fight pests and diseases in beans or other crops in your area. Or 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.

If you choose to use this script as background material or as inspiration for creating your own program, you might consider the following questions:

* What are the most common pests and diseases of beans in your area? What can farmers do to manage them and reduce the damage they cause? Apart from using pesticides, what methods are available to manage pests and diseases?
* Are there any resistant bean varieties? If so, can farmers access them? What have been the results when farmers plant them? (Talk to both men and women farmers)

**HOST:** Greetings, listeners, and welcome to the program. My name is \_\_\_\_. Today we will be talking about managing pests and diseases in beans.

Apart from speaking directly to farmers and other key players in the local agriculture sector, you could also use these questions as the basis for a phone-in or text-in segment in your regular farmer program. You could also invite farmers and other stakeholders to the studio for a discussion panel. The panel could also take place on-location in a village.

Estimated running time for this script, with intro and extro is about 20 minutes.

There’s no doubt that beans are one of the biggest staple foods in Uganda. Some families eat beans for lunch and supper almost every day of the year. Season in and season out, beans are on every farmer’s list of crops to plant. I think it’s safe to say that there is hardly any food in this country that provides us with more protein. So it’s really important that we find ways to manage pests and diseases that attack beans.

I visited a few bean farmers in the new district of Kyotera, thirty kilometres from Masaka, to learn about managing pests and diseases. The first farmer I met was 24-year-old Katambala Aloysius from Nsege village, in Lwankoni sub-county.

Signature tune up and out

**SFX: BODABODA APPROACHES AND STOPS**

**HOST:** Hello, could you be Mr. Katambala?

**ALOYSIUS** **Katambala:** Yes, I am. And you must be the gentleman from the radio station?

**HOST:** Yes, I am.

**NOTE: THEY EXCHANGE CULTURAL GREETINGS**

**A.** **Katambala:** You are very welcome, sir.

**HOST:** I am happy to be here, and I am happy to find you home.

**A.** **Katambala:** The pleasure is mine. Who am I to host a journalist? (LAUGHS)

**HOST:** (LAUGHS)All right, I will get straight to it. I am here to learn a few things from you about growing beans, mostly about managing pests and diseases. So my first question is: what are the most common pests and diseases that attack beans in this area?

**A.** **Katambala:** Bean anthracnose is the most dangerous disease in beans.

**HOST:** Why do you say so?

**A.** **Katambala:** Because it’s unknown to many farmers. Most farmers see the symptoms of the disease and think that heavy rains are killing their beans.

**HOST:** Why do they think heavy rains cause the disease?

**A.** **Katambala:** Dampness. When the rains are too much, beans tend to grow a thick canopy. This encourages constant dampness because the sun’s heat fails to dry the moisture under the canopy for long periods of time.

**HOST:** But isn’t wetness good for crop growth?

**A.** **Katambala:** It is, but too much causes fungi to grow on the bean plants. Some of these fungi cause bean anthracnose.

**HOST:** Is it possible to have anthracnose in your garden and not know it?

**A.** **Katambala:** If you are careless, you might not see it until it’s too late. It hides in the darker, more shaded parts of the garden and wreaks havoc under the cover of the leaves.

**HOST:** So when you look under the thick canopy of leaves, what do you see that tells you that your garden has been attacked?

**A.** **Katambala:** Anthracnose attacks the pods. You will see black spots on the pods and they will be full of water. Many farmers think that the heavy rains have filled the pods. But don’t blame the rain; it’s a disease and you can fight it.

**HOST:** How can farmers fight this disease?

**A.** **Katambala:** The best way is to spray the garden immediately after podding, especially when the rains are heavy or if weeding was late. Not weeding on time can also increase the chances for this disease to appear.

**HOST:** I guess this is because lots of weeds increase the dampness in the garden?

**A.** **Katambala:** Absolutely.

**HOST:** So does spraying immediately after podding prevent the disease from appearing in the first place?

**A.** **Katambala:** Yes.

**HOST:** And when is the right time to weed?

**A.** **Katambala:** Two weeks after planting. Or three weeks, if the weeds are not too much.

**HOST:** You talked about spraying right after podding to prevent anthracnose. How about a farmer whose garden is already showing symptoms? What does that farmer do?

**A.** **Katambala:** You can still use the “medicine” after seeing the symptoms. Depending on the seriousness of the problem, you can spray once or twice, with seven days between applications.

**HOST:** Does this help?

**A.** **Katambala:** At least you can get some harvest from your crop. It stops the disease from attacking all the pods.

**HOST:** But how does one deal with the problem of the canopy? It seems to be a major factor here.

**A.** **Katambala:** The best way to deal with too much canopy is to prevent it by spacing correctly during planting.

**HOST:** And that is?

**A.** **Katambala:** Fifteen centimetres between planting holes and 50 centimetres from row to row. This leaves enough space for the sun to reach under the leaves and keep dampness away.

**HOST:** What do you use to make these measurements?

**A. KATAMBALA:** We have been taught that from the elbow to the tip of the longest finger makes about fifty centimetres, and that from the tip of the thumb to the tip of the middle finger is about 15 centimetres.

**HOST:** Thank you, sir. Are there other diseases that you regularly fight?

**A.** **Katambala:** Sometimes bean blight attacks. When this happens, the plants break and look like they were singed by fire. But this disease is not a big problem.

**HOST:** How about pests? Do you have pest problems here?

**A.** **Katambala:** The most dangerous are bean aphids. These are tiny, black insects that can appear at any stage of growth. They perch under the leaves and start to wrinkle them up.

**HOST:** Are bean aphids more likely to appear during drought—or during the rainy season?

**A.** **Katambala:** During drought, mostly. The good thing about these insects is that they are easy to eliminate completely. When I spray once right after weeding, once before flowering, and once during podding, I completely get rid of them.

**HOST:** Thanks for your time, Mr. Katambala. You have been so helpful.

(TO AUDIENCE) I left Nsege and took a bodaboda to Kayanja village, 20 kilometres away. Here I met Nabajja Jema, a 52-year-old lady. She grows beans every season in many shambas to feed her children and grandchildren. When the season is very good, she sells some. We found her taking goats out to tie them in the bush.

**SFX 1: BODABODA APPROACHES MIC**

**SFX 2: GOATS BLEATING**

**HOST:** (MOVING TOWARDS MIC)Should we come another time, Madam Jema? You seem to be very busy.

**Nabajja JEMA:** (AWAY FROM MIC, PROJECTING) No, it’s okay. Mark will take them for me. (CALLS) Mark, take these goats and tie them in the bush.

**NOTE: CULTURAL GREETING**

**Nabajja JEMA:** Please sit down here on the veranda.

**HOST:** Thank you, madam.As you know from our phone call, I am from the radio station. I want to know what has worked for you in your fight against diseases and pests in beans. Do you have those problems here?

**­­­­­­­­Nabajja JEMA:** Oh yes. We have those problems here.

**HOST:** Madam Jema, how long have you been growing beans?

**Nabajja JEMA:** (LAUGHS) All my life. My grandmother grew beans, my mother grew beans, and I started working in the garden with her as soon as I could hold a hoe and not fall down.

**BOTH:** LAUGH

**Nabajja JEMA:** And of course my daughters grow beans too. (SERIOUS, INCREDULOUS) If you don’t grow beans, what sauce do you have in your home?

**HOST:** What do think is the most important step to getting a good bean harvest?

**Nabajja JEMA:** There are many important steps in growing beans, like choosing the right seed, right spacing, and planting on time. But to me, weeding on time is probably the most important.

**HOST:** Why do you think so?

**Nabajja JEMA:** Because weeds are the biggest cause of losses in beans. They eat the food that the beans need to grow well, and they cause diseases to the beans.

**HOST:** So when is the right time to weed?

**Nabajja JEMA:** Two weeks after planting during the rains, but sometimes I can even take a whole month if there is no rain. The right time to kill the weeds is when they are still shorter than the crop.

**HOST:** Do you ever have problems with diseases?

**Nabajja JEMA:** I do have disease problems. Some diseases come even when you have weeded.

**HOST:** What disease is most common in your beans?

**Nabajja JEMA:** Bean rot, which we call *kiwotokwa* here. The diseased plants look wilted like someone poured hot water on them. The roots rot and the plant dies.

**HOST:** How do you manage this disease?

**Nabajja JEMA:** *Kiwotokwa* doesn’t affect the whole crop. Usually it’s one plant here, one there. So if I uproot the affected plants, I am ensuring that the disease doesn’t spread.

**HOST:** Do you have pests too?

**Nabajja JEMA:** Yeah. We have bean aphids.

**HOST:** What causes bean aphids to attack?

**Nabajja JEMA:** I strongly believe that late planting is the biggest cause of bean aphid infestations.

**HOST:** How do you control bean aphids?

**Nabajja JEMA:** By spraying insecticide. I spray twice seven days apart, and the problem is solved completely.

**HOST:** Thank you so much, Madam Jema.

I left the villages and headed to the small town of Kalisiso, 10 kilometres away, to talk to an expert who works with farmers in the villages I visited. I met with Miss Hindu Nakawoza, who works with Community Enterprises Development Organisation, also called CEDO.

**SFX:** KNOCK ON THE DOOR

**HINDU NAKAWOZA:** Come in. Come in.

**HOST**: Thank you. (PAUSE AS HE SITS) Like we talked on the phone, I have a few questions about pests and diseases in beans. But first, please introduce yourself.

**HINDU NAKAWOZA:** My name is Nakawoza Hindu, and I work here at CEDO.

CEDO is a community development organization that tries to help farmers get the best from their sweat by ensuring they have the best seed for planting—the best seed in terms of high-yielding and high disease resistance.

**HOST:** Why is some seed high-yielding and disease-resistant while another is not?

**HINDU NAKAWOZA:** The more you plant one variety of any crop every season, the less and less yield it is bound to give you, and the more it will be susceptible to pests and diseases. That’s why scientists with the National Crops Resources Research Institute—also called NaCRRI—in Namulonge are always coming up with new varieties that are resistant to current conditions in terms of soil fertility, weather conditions, and pests and diseases.

**HOST:** So you buy good seed from NaCRRI and sell it to farmers?

**HINDU NAKAWOZA:** The process is longer than that, but yeah, that’s what we do.

**HOST:** How different is good seed from ordinary seed?

**HINDU NAKAWOZA:** Good seed that has just been released by researchers at Namulonge will yield 15-20 kilos per kilogram, while older seed will yield only 5-7 kilos per kilogram. The new seed will also withstand harsh conditions better than the older seed.

**HOST:** Miss Hindu, one farmer told me that it’s harder to manage the destructive effects of diseases than it is to manage the effects of pests in beans. Is this true?

**HINDU NAKAWOZA:** That farmer was right. Diseases are harder to see with the naked eye until it’s a little too late. Hence, they are harder to fight. Pests are generally easier to manage.

**HOST:** So what’s the best advice on fighting disease?

**HINDU NAKAWOZA:** A good place to start is to plant good seed. Planting seed that you have been planting season in season out is counter-productive. It has been attacked over and over again so it no longer has strong guards against pests and diseases.

**HOST:** Many farmers complain about bean anthracnose as one of the major diseases.What brings about this disease?

**HINDU NAKAWOZA:** The microorganisms that cause disease are always present in the environment. It’s when you plant poor seed that those microorganisms will cause damage. Bean anthracnose is one of the major bean diseases, and it appears mostly during heavy rains.

**HOST:** What are the symptoms of anthracnose?

**HINDU NAKAWOZA:** It attacks during the podding stage. The affected pods have black, sunken spots on the outside and are filled with water.

**HOST:** How can one prevent it? And if it has already come, how does one fight it?

**HINDU NAKAWOZA:** Like I said before, planting clean seed is the best way of preventing bean anthracnose. But if you already have this disease in your garden, spraying with systemic fungicides is the option. In light rain, once is enough, but in heavy rains you should spray twice.

**HOST:** What’s the commonest bean pest?

**HINDU NAKAWOZA:** Bean aphids are a big problem.

**HOST:** How can bean aphids be managed?

**HINDU NAKAWOZA:** Adding manure or fertilizer to the soil strengthens the plants so that aphids cause less damage. But when aphids attack, a farmer should spray insecticide after the first flowering, and spray again after 14 days.

And before I forget, weeding on time also reduces the risk of this pest.

**HOST:** When is the right time to weed?

**HINDU NAKAWOZA:** When the young bean plants have five leaves.

**HOST:** And what if the weeds are still very minimal at that point?

**HINDU NAKAWOZA:** Weeding has two purposes. One is to remove the weeds so that they don’t compete with the crop for food. The other is to heap soil around the stem of the crop so that the young plants become firm and healthy. So even if there are only a few weeds at the five-leaf stage, farmers need to go into the garden with a hoe and give more soil to the young beans.

**HOST:** You said that bean aphids come when one has not weeded on time. Doesn’t not weeding on time also cause disease?

**HINDU NAKAWOZA:** Weeds don’t *cause* diseases, but they make it harder for the crop to fight off disease. This is because the weeds eat most of the soil nutrients that the crop should be eating. This makes the crop weak and stunted, and less available to fight disease.

**HOST:** Are there diseases that come from weeding late?

**HINDU NAKAWOZA:** There is a disease called bean rot, which farmers in this region call *kiwotokwa*. It tends to attack more when one has not weeded on time. But mostly, it’s caused by too much moisture in the soil.

**HOST:** What are the symptoms of this disease?

**HINDU NAKAWOZA:** The beans become yellow. However, not every yellow bean has bean rot. Sometimes it’s just a complete lack of nutrients in the soil. If you want to confirm that your garden has bean rot, pull up one affected plant. If the roots are rotten, then you have bean rot.

**HOST:** What is the cure for bean rot?

**HINDU NAKAWOZA:** Just pull out all the affected plants and earth up the rest. Giving more soil helps the plants grow more roots to supplement the weak and dying ones.

**HOST:** Thank you, Madam Hindu.

We talked to another expert about the weeding issue. Paul Aseete is with the National Crops Resources Research Institute, or NaCRRI. Mr. Aseete, how many times should farmers weed?

**PAUL ASEETE:** We encourage farmers to weed when necessary and ensure that the bean plants are kept weed-free at all times. "Weed-free" means that the weed density should be very low so that weeds cannot compete with beans. Farmers do not necessarily have to remove all weeds from the garden but should make sure that there are few weeds.

We encourage them to uproot weeds even after pods have formed or the crop is getting mature. Farmers can neglect beans at this stage and this can cause increased losses because of rotten, malformed, or discoloured seeds.

**HOST:** Thank you, Mr. Aseete.

SIGNATURE TUNE UP AND UNDER HOST, THEN UP FOR 10 SECONDS AND FADE

OUT

**HOST:** Dear listeners, we talked to bean farmers, Nabajja Jema and Katambala Aloysius about how they manage pests and diseases.

We also talked to Hindu Nakawoza who works with CEDO in Kalisiso town. Among other things, CEDO ensures that farmers plant good seed. Finally, we talked with Paul Aseete of NaCRRI.

In this program, we learned that planting clean seed is one of the most important steps a bean farmer can take to prevent pests and diseases and to get the best yield from his or her sweat. It’s also very important to weed and spray pesticides at the right time, and to use correct spacing.

Finally, we learned that it’s important to talk to experts about best practices—and about whatever is going on with your beans because, clearly, there are solutions for whatever challenge you might be going through.

Dear listeners, my name is \_\_\_\_\_\_\_\_, saying goodbye for now. Catch me again next week, same time, same station, for the agricultural program. Goodbye.

## Acknowledgements

Contributed by: Tony Mushoborozi, SCRYPTA PRO UGANDA LTD.

Reviewed by: Mr. Paul Aseete, National Crops Resources Research Institute (NaCRRI), National Agricultural Research Organisation (NARO), December 1, 2016.

**Information sources**

Interviews with:

Mrs. Nabajja Jema, September 2, 2016

Mr. Katambala Aloysius, September 2, 2016

Miss Nakawoza Hindu, October 12, 2016

Mr. Paul Aseete, December 1, 2016.

*This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada, www.idrc.ca, and with financial support from the Government of Canada, provided through Global Affairs Canada,* [*www.international.gc.ca*](http://www.international.gc.ca)

 