

# Pack 103, Item 6

Type: Interview

March 2016

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**Sorghum: Good yields even when the rains fail**

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**Notes to broadcaster**

In Tanzania, as in much of East Africa, the changing climate means that rain is becoming unpredictable and scarce. So farmers need to consider which crops to grow, as some traditional staples are thirsty and do not perform well in drier conditions.

One cereal crop worth considering as an alternative to maize is sorghum, a hardy crop native to many of the drier parts of the world. One species, with the scientific name of *Sorghum bicolor*L., is native to Africa and has many varieties. Sorghum can be used for human and animal feeds, and to produce alcoholic beverages and biofuels.

This script is based on interviews with farmers in the Shinyanga Region of the Lake Zone of Tanzania. The interviews were conducted as a follow-up to a series of detailed radio programs on growing sorghum efficiently.

You could use this script as inspiration to research and write a script on a similar topic 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.

You could also use this script as research material or as inspiration for creating your own programs on sorghum or similar issues in your country. Talk to farmers and experts who are growing sorghum or are knowledgeable about the crop. You might ask them:

Is growing sorghum common in your area?

Is it becoming more common with climate change?

If it’s grown in your area, what challenges do farmers face?

Have farmers devised solutions to these challenges that they could share on your program?

What do extension agents and other experts say about these challenges and solutions?

Do farmers mostly raise sorghum for home consumption?

Do some sell it for food or for feed? Or to alcohol manufacturers or for other industrial purposes?

What are the commercial prospects for sorghum in your area?

Estimated running time for the script: 15-20 minutes, with intro and outro music

Fade up signature tune to start the show. fade out after 15 seconds under host’s voice.

**Host:** Hello and welcome to (name of farmer program) on (name of radio station.) Today, I am going to talk to an expert on sorghum, a crop suitable for drier areas. But first, I am going to visit a farmer who, last season, listened to a series of programs on effective ways to plant and grow sorghum. He and his farmers’ group put the ideas they heard on the radio into practice, and gathered a good harvest—despite the late failure of the rains.

**SFX:**sound of motorbike approaching and stopping

**Host:** All aboard? Let’s go!

**SFX:**Sound of motorbike revving up and leaving. PAUSE THEN fade in Sound of motorbike arriving. A couple of short toots on horn.

**Host:** We are on the outskirts of Shilabela village, about 30 kilometres north of Shinyanga town. It’s nearing the end of the dry season. The soil is dry and dusty, and there is little in the way of shade—many of the trees have shed their leaves to preserve water. The only features in the landscape are granite outcrops of varying sizes, some of which are being used by goats to escape the heat of the sun.

Today, I have come to meet Maja Nyunga. The 31-year-old farmer is a member of the *Igembensabo* listening group, which was formed last season to participate in a series of radio programs on growing sorghum. Hello, Maja!

**Maja Nyunga:** Hello. Thanks for coming out to visit me today.

**Host:** It’s nice to see you. Tell me, why do you grow sorghum? Have you always grown it?

**Maja Nyunga:** My parents grew sorghum, and I helped them on their farm before I got married. But the market for sorghum was poor and difficult to access. So, because sorghum is not as popular as maize, my wife’s family encouraged us to concentrate on cash crops like maize, cotton, and rice.

**Host:** But last season you started growing sorghum again, right?

**Maja Nyunga:** Yes, that’s right. You know, I have three children now, and I really need to find better crops to feed them well, and to earn enough money to clothe them and send them to school. Lately, our cash crops have suffered because the rains have been light, and often the rainy season is shorter than expected.

So I got together with some friends to listen to your program about how sorghum can be a good alternative to maize in years when the rains fail. We all decided to keep up with the series and follow the timely advice you broadcast.

**Host:** But you didn’t convert your whole farm to sorghum overnight, did you?

**Maja Nyunga:** (laughs) No! We set aside only a quarter of a hectare to see if the advice you gave actually worked—a demonstration plot, if you like.

**Host:** And what happened?

**Maja Nyunga:** Ok, so we prepared the field before planting, and we dug in animal manure to act as a seedbed fertilizer.

**Host:** Is that what are you doing in your field today?

**Maja Nyunga:** Yes, we are expecting the rains to arrive in the next few weeks. So today I have started to cultivate this field. We’ll be ready to plant as soon as enough rain has fallen. After last year’s success, we are going to plant about two hectares of sorghum. But first, we have to dig as much manure into the soil as possible.

**Host:** Why are you using manure and not chemical fertilizer?

**Maja Nyunga:** As you know, chemical fertilizers are expensive, and they are often difficult to find in villages and in some towns. But manure is easy to come by—our animals just leave it lying around! (Laughs)

But we also learnt from the radio that manure is better for soil nutrients and conserving moisture than chemical fertilizers, because the nutrients in manure remain available in the soil for several seasons. Also, the organic matter in manure improves the structure of the soil. This helps keep the soil moist for longer, and holds nutrients in the soil rather than allowing them to wash away when the rains are heavy.

**Host:** How much seed do you plant?

**Maja Nyunga:** We planted about one kilogram of seed in the quarter-hectare plot last season. So this year we’ll need to plant about eight kilograms on the two hectares we’ll be planting with sorghum.

**Host:** There are two varieties of sorghum available locally. Did you plant the red-grained or the white-grained variety?

**Maja Nyunga:** Well, we wanted to plant white sorghum last season. It’s easy to grow, and makes a tasty porridge. It’s also sought after by breweries in Mwanza, Dar es Saalam, and Arusha, so there’s a potential market if we can grow enough of it. But we couldn’t get the seeds, so we ended up planting red sorghum. Some people actually prefer to eat red sorghum, so there is still a market for it.

**Host:** And what happened?

**Maja Nyunga:** Exactly what we were told to expect. We planted the seeds in rows, about two or three seeds in a hole, about 15 to 30 centimetres apart, and we left about 75 to 80 centimetres between rows. The sorghum plants germinated and grew well, and we were able to weed after about 20 days.

**Host:** Is it easier to weed sorghum when it’s planted in rows?

**Maja Nyunga:** Oh, yes. In the past, I always broadcast my sorghum straight onto the field. But last year I noticed that the seeds planted in rows germinated much better, and that I actually used fewer seeds when planting. So weeding was easier. I knew where the rows were, so pulling the weeds was much faster and more efficient.

**Host:** So it was worth the extra effort of planting in rows?

**Maja Nyunga:** Definitely.

**Host:** How did the rest of the growing season go?

**Maja Nyunga:** We weeded the plot again after another three weeks, and then left the sorghum to grow.

**Host:** Did you add any more fertilizer to the plot?

**Maja Nyunga:** No. We would have, perhaps, if we were growing white sorghum because you can sell white sorghum at a higher price in the market. But as I said before, fertilizer is not as readily available in villages as in most towns, and transporting it is expensive.

**Host:** Did you notice anything else about how the crop grew?

**Maja Nyunga:** Well, I found that removing the weeds from between the rows meant that the sorghum plants thrived. Because there was less competition for nutrients, the plants grew strong and vigorous, and they had much more space to capture sunlight. They were so well-established that, when the rains stopped earlier than we expected, we were still able to harvest a good quantity of grain.

**Host:** The rains failed?

**Maja Nyunga:** Yes. We got a good amount of rain in the first two months, but then the clouds started to thin and less rain fell. Eventually, the rain stopped about a month earlier than we hoped. But the strong, early establishment of the crop and the increased fertility of the soil meant that we got a good harvest—four 90-kilogram bags of grain from the quarter-hectare plot.

**Host:** How does that compare to a normal harvest?

**Maja Nyunga:** I normally expect to harvest about two bags from the same area, so the yield was double. I have been told that our yields exceed the average yields in this area, even with the short rains! I can certainly say that we were happy with the results!

**Host:** Wow! Did you have any problems with the sorghum?

**Maja Nyunga:** Apart from the supply of seeds and fertilizers, we did have one major problem with the crop.

**Host:** What was that?

**Maja Nyunga:** Birds. The crop grew so well when everything else was struggling that it became a target for all the hungry birds in the area!

**Host:** What did you do to solve the problem?

**Maja Nyunga:** We tried to frighten them away by hanging cassette tape and CDs on posts around the plot. These catch the sunlight as they move in the wind, which startles the birds and scares them away.

**Host:** Did it work?

**Maja Nyunga:** To begin with, yes. But they got used to it and, as they became hungrier, they came back.

**Host:** What did you do then?

**Maja Nyunga:** We had no choice but to protect the field ourselves. Because there were several of us, we could take turns standing in the field and firing stones at the birds with slingshots. It was time-consuming, and hot in the sun—you can see that the trees offer little shade when it’s dry. But the result was worth it.

This season, we’ll have to come up with another tactic, because we are going to expand the area so much. We might have to hire people to help us frighten the birds away.

**Host:** Well, good luck with that. So the information you heard on the radio program really helped you?

**Maja Nyunga:** Yes. Sorghum is definitely a good crop to grow when a farmer is uncertain how much rain will fall.

**Host:** What do you mean?

**Maja Nyunga:** If it rains, we get a good harvest of all our crops. If the rains fail, we will still be able to harvest enough sorghum to eat—and sell!

**Host:** Did you learn anything else useful?

**Maja Nyunga:** Yes. We used to burn residues of previous crops in the fields before planting the next crop. But we learned that digging the residues into the seedbed increases organic matter in the soil, which has the same long-term benefits as adding manure. Now, I only burn the residues if I am going to replant the same crop—this reduces the chance of weeds, pests, and diseases damaging the following crop.

**Host:** So you are planning to grow more sorghum this year. How do you think you’ll benefit?

**Maja Nyunga:** Well, as a farmers’ group, we have already found enough white sorghum seeds to plant. It grows the same way as the red sorghum we did so well with last year, so we know what to expect.

We are also trying to negotiate a contract with a brewery so that we can guarantee a market for our grain. Ideally, we’ll encourage more farmers to join the group in the coming years, because the breweries like to buy in bulk. If we can secure a contract, we’ll be able to invest in top-dressing fertilizers so we can maximize production and make as large a profit as possible.

**Host:** That is certainly a long-term plan!

**Maja Nyunga:** Yes, our eyes have been opened to the possibilities of this cereal. We think that sorghum could be an even better cash crop than cotton. But we need to find and secure a good, reliable market to make sure this happens.

**Host:** Well, thanks for your time. I’ll let you get back to your work before the sun gets too hot. Good luck for the coming season.

**Maja Nyunga:** Thank you, too, for broadcasting the sorghum programs. It really made us think, and I’m sure that we’ll grow our business from here.

**Host:** You’re welcome! Goodbye! (Louder) Driver, let’s go!

**SFX:** Sound of motorbike revving up and leaving, THEN FADING OUT

 FADE UP MUSIC FOR FIVE SECONDS. MUSIC FADES OUT UNDER HOST’S VOICE.

**HOST:** Well, it was fascinating to see how Mr. Nyunga and his colleagues put the advice we broadcast into practice. Now I am joined in the studio by Jeremia Inegeja, an expert in sorghum production. Thanks for joining us.

**EXPERT:** You’re welcome.

**HOST:** What strikes you most about what Mr. Nyunga and his group are doing?

**EXPERT:** Well, I am impressed that they have seen the enormous potential of the crop. Sorghum can play an essential role in ensuring food security for families and the wider community. But these farmers have realized that there is also an enormous commercial opportunity if they can get into the industrial market.

**HOST:** What should farmers like Mr. Nyunga be aware of?

**EXPERT:** Sorghum is a drought-tolerant crop because its root and leaf system is better at extracting soil moisture than other cereals, and better at minimizing the loss of water from the plant when the temperature is high.

Farmers should ensure that their seedbeds are well-manured before the crop is planted. It is recommended that ammonium nitrate be applied as a micro-dose top-dressing; this can help maximize yields.

**HOST:** Ok. What else can farmers do to improve their yields?

**EXPERT:** Farmer should plant sorghum in recommended spacing to ensure a good number of equally-distributed plants. This will help them provide good field management. Effective and timely weeding will greatly improve yields at harvest time. There is one major weed that needs to be particularly controlled.

**HOST:** What is that?

**EXPERT:** Striga. It’s a parasitic weed often referred to as “witch weed,” which can cause major losses in sorghum. Some years ago, large parts of Tanzania, particularly the central part of the country, were infested with striga. But now researchers have released two new striga-tolerant sorghum varieties which farmers should use before starting large-scale production.

Farmers can control striga with other methods, such as uprooting the plant before it flowers, rotating crops, and using push-pull techniques, such as intercropping your sorghum with the leguminous *Desmodium* plant. This plant repels certain pests, suppresses striga, and increases soil fertility. Farmers can also use herbicides before the striga plant flowers. But they really do need to be aware of this problem weed.

**HOST:** That is important to know. Are there other pest and disease threats?

**EXPERT:** Not really, beyond the winged menace of our feathered friends. Mr. Nyunga rightly mentioned that he noticed the damage caused by birds, but farmers can reduce damage by growing larger plot sizes—there will still be losses, but they will be proportionally lower.

**HOST:** So physically guarding the field is the best way to reduce what the birds eat?

**EXPERT:** At the moment, yes. The farmer that invents a better method might end up very rich!

**HOST:** Well, that’s certainly food for thought. But I’m afraid we have run out of time. Thank you very much for coming into the studio today!

**EXPERT:** You’re welcome, and thank you for having me.

**HOST:** So, listeners, I hope that our visit to Mr. Nyunga and our expert’s advice has planted a seed in your mind.

Let me quickly summarize what we have learned from this program. Firstly, using animal manure on a well-prepared seedbed improves soil structure and sometimes reduces the need for chemical fertilizers. It will also benefit crops planted in future seasons.

 Secondly, planting sorghum in rows means that farmers will be able to weed their crops more efficiently, thereby saving themselves time and effort. Proper weeding means that the crop will benefit from reduced competition for nutrients, which results in higher yields.

 Thirdly, choosing a striga-tolerant variety of sorghum will bring higher yields, and using striga control measures will reduce the population of striga seeds in the soil in future years.

 And, finally, growing the crop in larger areas will reduce losses caused by hungry birds, and may make it easier to find a market for your harvest.

 That’s all for this edition of (insert program name here). Don’t forget to tune in next time—goodbye!

 FADE UP THEME MUSIC FOR FIVE SECONDS, HOLD, THEN FADE OUT

**Acknowledgements**

Contributed by: Paddy Roberts, B.Sc. Agriculture, Arusha, Tanzania.

Reviewed by: Seperatus Paschal Kamuntu, specialist in cereal breeding, Lake Zone Agricultural Research and Development Institute, Ministry of Agriculture, Livestock and Fisheries, Ukiriguru, Mwanza, Tanzania.

**Sources of information**

Interviews:

The interview on which this script is based took place in Shilabela, Shinyanga District, Tanzania, on October 15, 2015, with Maja Nyunga (farmer) and Veronica Natalis (presenter on Radio Faraga, which broadcasts from Shinyanga town to the northern districts of Tanzania).

Other information used in this script was gathered in interviews with 30 female and male farmers and an agricultural extension agent in the villages of Mwajiginya, Nagezi, Shilabela, and Mwamala, Shinyanga district, Tanzania, October 13-16, 2015.

Further information:

Food and Agriculture Organization of the United Nations, 1995. *Sorghum and millets in human nutrition*, FAO Food and Nutrition Series, No. 27. [http://www.fao.org/docrep/t0818e/T0818E00.htm#](http://www.fao.org/docrep/t0818e/T0818E00.htm)

*This script was written with the support of the Irish government through Irish Aid.*

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