

# Pack 105, Item 6

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# Kenyan farmer switches from wheat to beans: Better yields with new bean varieties

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**Notes to broadcaster**

The common bean (*Phaseolus vulgaris* L.) is the most important food legume in the world. It was introduced to East Africa from its place of origin in Central and South America about 300 years ago. In much of East Africa, common bean is grown for both home consumption and cash income. East Africa accounts for more than half of common bean production in Africa. Both the urban poor and rural East Africans who depend on agriculture for their livelihoods eat common beans daily.

Common beans are a popular food in Kenyan households, and are now becoming common among farmers in the country. With the changing weather, Kenyan farmers are switching to drought-and pest resistant crops like beans. The new varieties in the market are popular with consumers and so farmers can earn a little more money when they sell them compared to the old varieties.

Growing and eating common beans has many benefits, including:

*Nutrition and food security:*Common beans contain a lot of protein, and are rich in vitamins. The young leaves and the bean are both edible.

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

*Livelihood:*There is a ready market for common beans in Kenya 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 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, fertilizers if required, and planting good seed at 30-40 kg/acre—common bean can yield over 800 kg/acre.

This script is based on actual interviews. 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.

Sig tune up then under

You could air this program, and follow it with an open discussion (with phone-in and text-in) about growing beans in your area.

Are farmers growing the traditional or new varieties of beans?

What differences are they seeing?

Are they experiencing any challenges growing beans?

Where can farmers get assistance in order to achieve the best yields from their bean crop?

The estimated running time for this item, with signature tune, intro and extro is 20 minutes.

**Host:**Hello and welcome to *Farmer to Farmer*. In our program today, we talk about a common crop in Africa—beans. We shall be hearing from Dr.Davis Karanja, coordinator of the green legume project at the Kenya Agricultural and Livestock Research Organization. Later on, we shall also hear from a farmer in Kenya’s Rift Valley who used to grow wheat and has now ventured into bean farming.

Signature tune up and out under

**Host:**Dr. Karanja,how popular is bean production in Kenya as compared to some time back?

**DaviS KARANJA:** Bean has become a nutritional, food security, and income-generating crop. The price of beans has remained good at above 50 dollars per 90-kg bag. This has made the crop attractive to farmers. At the same time, mostly due to climate change and continuous cropping, farmers are reporting reduced production per acre for most of their crops.

**Host:** What are the benefits of growing beans for the Kenyan farmer compared to other crops?

**Davis KARANJA:** Beans are edible and liked by consumers. The good selling price makes them appealing to farmers. In some areas where maize diseases are a problem, farmers are being encouraged to grow other crops, like beans. Beans have a very ready market both locally and for export. Kenya imports about 60% of the beans it needs.

**Host:**In your experience with farmers, who grows beans more often, men or women?

**Davis KARANJA:** Beans are traditionally a woman’s crop, and we try as much as possible to make sure that women get good yields and a good selling price for the beans they grow. The only challenge we have now is that beans are becoming more commercial. Most varieties are grown for export, and when money comes in, the men want to take over. So the challenge is to try to make the couple see it as a family venture where the woman also benefits from selling beans.

**Host:**As a researcher, how have you tried to help women overcome that challenge?

**Davis KARANJA:** We have been working with the government to hold training sessions to educate farmers and their spouses so that there is harmony in the family. We encourage the men to consider bean farming as a business for the family, so that both husband and wife can decide on production and marketing, and how to use the proceeds.

**Host:**What challenges do farmers face in growing beans?

**Davis KARANJA:** The main challenge has been the changing weather, with reduced and unreliable rainfall. This worsens disease and pest problems. Beans also require an early first weeding and lack of labour may be an issue, especially for small-scale farmers. Threshing is also a major issue as it is mainly manual, which is challenging for farmers who want to grow larger acreages. Some of the popular varieties that consumers like are also very prone to weevil attack during storage, and control measures are needed.

**Host:**So how can farmers deal with these challenges?

**Davis KARANJA:** There are now better bean varieties in the market. Compared to the old varieties, the new ones are high-yielding and drought-tolerant. They can be processed, for example for canning, and they are early-maturing. We also encourage farmers to try new ways of growing the beans.

**Host:**Which new ways are those?

**Davis KARANJA:** One new way is improving fertility through applying fertilizer in the period between germination and flowering. For some varieties, farmers can use manure immediately after the beans germinate. This will help increase yields. Farmers can also use participatory bean selection.

**Host:**How does participatory bean selection work?

**Davis KARANJA:** It involves engaging bean farmers in selecting bean varieties for further evaluation. The most common method is the ribbon method where farmers use ribbons to select their best and worst varieties in a breeding trial. Each farmer uses the ribbon as a ballot to vote on the beans. Men and women use different-coloured ribbons so that we capture both men’s and women’s preferences.

**Host:**Can you tell us about any success stories on growing beans?

**Davis KARANJA:** One of the bean varieties called KAT B1 is a yellow bean that is becoming very popular and accepted by many farmers and consumers in Kenya and across East Africa. The bean is early-maturing, so it avoids drought. When cooked, it is sweet, swells three times, does not cause gas, and makes good stew. Its price is usually higher than other beans. This bean is used to make pre-cooked products that do not require refrigeration before being sold to consumers. Traders export about 20 million kgs of this variety.

Signature tune up and out under

**Host:** You are listening to the *Farmer to Farmer* program and we are learning about bean farming in Kenya. We have just heard from Dr***.*** Davis Karanja, coordinator of the green legume project at the Kenya Agricultural and Livestock Research Organization. After a short break, we shall hear from a farmer who is growing beans on her farm. But first, let’s hear some music.

*Music up and out under*

**Host:** Loise Chelagat is a woman who farms in Bomet county in Kenya’s Rift Valley. She has been growing maize and wheat for the longest time on her farm, but recently switched to beans. I caught up with her during her visit to Nairobi, and asked her why she is growing beans.

**Loise CHELAGAT:** My in-laws have been wheat farmers for many, many years, and we decided to also try beans because wheat was not doing well with the changes in climate.

**Host:**What changes have you observed?

**Loise CHELAGAT:** The rain doesn’t come as it should, and when it does, it doesn’t rain for long. So our crops have not been doing well, and don’t fetch good money in the market. Wheat diseases were also on the increase and pesticides are not cheap. I have four school-going children who have needs, so I needed to find a solution.

**Host:**How did you start growing beans?

**Loise CHELAGAT:** A farmers’ organization trained us, and then asked us to try growing beans during the rainy season. My husband and I decided to try. That was seven years ago, and we have never looked back. We grow the beans and harvest them in six to seven weeks—and the market is so big! Beans are always in demand locally and for those who want to export.

**HOST:** How have you overcome the challenges of growing beans from planting to harvest?

**Loise CHELAGAT:** I prepare my land for planting early so that my field is free of weeds just before the rains begin. The good thing about the KAT B1 yellow bean is that it does not need so much rain—it will grow even if the rainy season is shorter.

I get certified seeds from the agricultural office. After planting, I use manure when the plants germinate and again when they start flowering. This prevents bean diseases and pests. We have also been advised to use nitrogen bacteriaknown as rhizobial inoculant, which we buy from the agricultural extension office. And I sometimes mix the seeds with soil that I previously used to grow beans.

**HOST:** How does the rhizobial inoculant help?

**Loise CHELAGAT:** We used to get low yields, but we learnt that you can get better yields if your seeds are mixed with rhizobial inoculant. The inoculant increases the amount of nitrogen in the soil, and nitrogen is important as the beans start germinating. Weeding is also important. Unlike the other crops we grow, I have noticed that with beans you have to keep weeding, especially between germination and flowering.

**HOST:** How can you ensure that weeding, harvest, and threshing are all done at the right time, especially if you have a large piece of land?

**Loise CHELAGAT:** It is difficult, and I have discovered that I cannot manage this alone. In my area, it is mostly women who grow beans, so we help each other. At planting, weeding, harvesting, and threshing times, we take turns going to the farms of the few women who grow beans to help. If our children are on holiday, they also help. That way, we can afford to hire a few farmhands during the busy times. And since we are many people on the farm, it prevents hired farmhands from stealing or destroying the crop or harvest. It is a matter of teamwork for us, and I think it is easier for women to agree to work in groups.

**HOST:** What about storage pests—how do you deal with them?

**Loise CHELAGAT:** I harvest my beans when the pods turn brown and hard, and rattle in the pod when you shake them. It’s best to harvest in the hot season before the rains come. My store is mainly made of iron sheets. When your store has a grass or wooden roof, pests like rats and weevils are common.

The store is raised off the ground and has some open spaces on the sides to allow for circulation of air and to help drying. I clean the store well before storage since weevils from beans stored in the previous season can hide in cracks in the store. In this way, I can keep my beans even up to one year.

An airtight metal silo has been introduced in our area which keeps off rats and weevils as long as the beans are completely dry. Maybe next season I will try that one.

**Host:**And do you still grow wheat?

**Loise CHELAGAT:** Yes, but not as the only crop, and not in a large area. We have 12 acres of land. Four acres is for wheat, and we grow beans, maize, vegetables, and millet on the other eight. We grow beans on three acres, and we can cover the expenses we incur growing beans and make some profit in a short time.

**Host:**How many bean seeds do you plant to ensure a good harvest?

**Loise CHELAGAT:** If we plant one kilo of bean seeds, we harvest about 30 kilograms of beans in about six weeks. And since we are using improved varieties, pests and diseases do not attack them. The beans are doing very well for me. People come and buy from us for export, and I also sell my beans in the local market.

**Host:**What do you do with the money?

**Loise CHELAGAT:** My husband works for the county government, but the money he makes is not enough to take care of the family. So I help him with paying the bills. It is these beans that pay school fees for my children and buy uniforms and other daily necessities for them.

**Host:** So you and your husband do not disagree when you get money from selling beans?

**Loise CHELAGAT:** (LAUGHING) No, he respects me, so the money from the beans and other crops takes care of small needs in the home. We still grow wheat because his family believes we must have some land dedicated to wheat. He is in charge of the wheat sales.

**Host:**Do you grow old bean varieties too?

**Loise CHELAGAT:** Yes, because I have some clients who prefer the old varieties, especially the older generation. The new variety takes 30 days to flower, then another 35 days before harvesting. The old variety takes 90 days to flower, and another 30 days to be ready for harvest.

**Host:** Do you cook the beans for your family?

**Loise CHELAGAT:** Oh yes! (LAUGHING) My youngest son loves beans at almost every meal. I cook both old and new, but the children love the new variety because they say it doesn’t cause gas. For me, it is easier to cook the new variety and it saves me the trouble of getting firewood. I can just boil them on the charcoal stove and they are ready in a short time.

## Acknowledgements

Contributed by: Winnie Onyimbo, Trans World Radio Kenya

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

**Sources of information**

Interviews with:

Loise Chelagat, bean farmer in Bomet County, Kenya.

Dr. Davis Karanja, coordinator of the green legume project at the Kenya Agricultural and Livestock Research Organization.

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