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# Pack 101, Item 10

Type: Script

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**Farmers work together to safely store *muskuwaari* sorghum in northern Cameroon**

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### Notes to broadcaster

*Muskuwaari* is a word in the Fulfulde language which refers to dry season sorghum which is transplanted at the end of the rainy season. Common varieties of *muskuwaari* include ***safraari*, *majeeri*, *burguuri* and *ajagamaari.***

*Muskuwaari* is grown over a wide area stretching from Nigeria to Sudan. In Nigeria, it is called *masakwa*, in Chad, *berbere*.

For more on growing *muskuwaari* and the benefits of *muskuwaari*, see item #\_\_\_ in this Resource Pack, including the Notes to broadcaster.

This script talks about how to store harvested *muskuwaari*. It talks more specifically about how to store *muskuwaari* and other grain crops in a hot dry climate in ways that keep the grains safe from insect pests, rodents and disease. It also talks more generally about pest control in the growing *muskuwaari* plant.

The script also gives details on the main ways of processing *muskuwaari* – into porridge and into sorghum flour.

You might choose to present this script as part of your regular farming program, 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 in the script.

You could also use this script as inspiration to research and develop a radio program on post-harvest handling of sorghum, on other dry season crops, or on other crops grown in harsh climates in your own area.

If you choose to use this script as inspiration for creating your own program, you could talk to farmers and other experts, and ask the following questions:

* How do farmers store their crops in this area?
* What steps should farmers take to ensure that their stored crops stay safe from insects, rodents and diseases while in storage?
* Are there challenges or barriers – financial, practical, etc. – to following these best practices? If so, have some farmers found ways to overcome these challenges and barries?
* How do farmers process sorghum in your area? What are the main processed foods?
* What steps do farmers need to take to ensure that processed foods stay safe?

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Apart from speaking directly to farmers and other key players in the local agriculture sector, you could use these questions as the basis for a phone-in or text-in program. Please ensure that you talk to both men and women about these issues. Women and men may have very different perspectives.

Estimated running time for this script is 15 minutes, including intro and outro.

**HOST:**  Dear listeners, today we will hear how local farmers in northern Cameroon are working together to successfully store a kind of sorghum which is transplanted during the dry season and called *muskuwaari*. We will meet *muskuwaari* farmers in Yonkolé, a village in the Far North of Cameroon.

 Thanks to the farmers’ group they established, these farmers operate a warehouse in Salack, the nearest town to Yonkolé. First of all, let’s meet with the manager of the warehouse in Salack.

 Good morning. Please, can you introduce yourself to our listeners?

**MVOUNGOU SAMUEL:** Good morning. My name is Myoungaï Samuel, and I am the manager of the *muskuwaari* warehouse in Salack.

SOUND OF AN OPENING DOOR. SOUND OF FOOTSTEPS

**HOST:** We are inside the warehouse and bags are piled on top of one another everywhere. Who are the owners of all these bags and what conditions do they need to meet to store their *muskuwaari* here?

**MVOUNGOU SAMUEL:** There are currently 525 bags of 100 kilograms each in this warehouse. They contain dry-season sorghum, which belongs to the members of the *muskuwaari* farmer group in Yonkolé. Following the harvest, each member can store his or her crops here for a fee of 500 CFA francs per bag per farming season. This money is used to buy storage insecticides and to maintain the warehouse, for example if there is a leak in the roof or if a padlock must be changed.

**HOST:** What criteria should one meet to become a warehouse manager?

**MVOUNGOU SAMUEL:** I was chosen to do this job because I am one of the few who knows how to read and write.

**HOST:**  What kind of insecticides do you use and why?

**MVOUNGOU SAMUEL:** We use a powder that we spread over the bags and in the corners of the room once every six months. This prevents weevils and mice from attacking the grain. We use one small bag of powder for four bags of grains.

**HOST:** What about you, Samuel? What are your duties in this warehouse?

**MVOUNGOU SAMUEL:** First, I must keep the warehouse clean. I sweep the aisles and the courtyard of the warehouse. I come twice a week to open the doors to let air in. I record the stocks that arrive and leave. When people bring their bags, I write down their names, the date and the number of bags they bring. I sign the book and the person countersigns. Then, I write the owners’ name on their bags before packing them away in the warehouse.

 When they return to get their bags, I also write down the date and the number of bags they take. I make sure that nobody takes anyone else’s bags. At the end of the day, I close the warehouse and keep the keys. I also inform others when there are problems, such as a leak in the roof.

**HOST:** I see that this warehouse is built with cement, and is different from the houses of the village, which are built with earth and straw. Who built this warehouse, and where did the funds come from?

**MVOUNGOU SAMUEL:** The members of the *muskuwaari* farmers’ group provided about 40 per cent of the funding and the Catholic diocese of Maroua provided the rest to construct the warehouse, which was built ten years ago.

**HOST:** Are you paid for this job?

**MVOUNGOU SAMUEL:** I receive payment in kind. Voluntarily, and out of solidarity, the members of the group often decide to pay me in kind with some sorghum.

 Part of the 500 franc fee paid by members is used to buy insecticides, and the other part is kept for potential problems, such as a leaky roof or a padlock that needs to be changed. I was chosen to hold this position because I am one of the few people who know how to read and write.

SOMEONE IS KNOCKING AT THE DOOR. GREETINGS.

**HOST:**  Dear listeners, a lady just came in the warehouse. Good morning, madam. Can you introduce yourself?

**AGATHE KOULSOUMI:** Good morning. My name is Mrs. Agathe Koulsoumi, and I’m a member of the *muskuwaari* farmer group in Yonkolé. I have ten bags of *muskuwaari* here and I came to get one of them.

**HOST:** Mrs. Koulsoumi, what are you going to do with your bag of sorghum?

**AGATHE KOULSOUMI:** I will process about a quarter into flour for my family and sell the rest.

**HOST:** Can you explain to us how you process the sorghum?

**AGATHE KOULSOUMI:** To make flour that will be used to cook a dish we call “couscous,” we wash the grains, dry them and grind them in a mortar to dehull them. Then, we crush them in a grain mill before sifting to get a fine powder. We use this powder to make the couscous.

But if you want to make porridge for a baby, you must first soak the grains for two days before crushing them. This creates a paste, which you then use to make porridge.

You can also make a local beer called *bil bil*. In this case, the process is longer and more difficult. You must soak the grains in enough water to fully cover them for a few days and then grind them. After grinding them, you brew the grain in water to which you add other ingredients such as a small amount of alcohol and bark from specific trees. Later, you filter the mixture to collect the beer. All the processing work is done by hand, except when you use a mill to crush the grains.

**HOST:** The processing seems fairly difficult, especially doing everything by hand. Wouldn’t it be more efficient to process a larger quantity less frequently?

**AGATHE KOULSOUMI:**  The problem is that processed sorghum cannot be stored for very long. The flour used to make couscous can be kept for a maximum of one week. After a week, the flour doesn’t taste the same when you cook it, and weevils get into it.

 So, we process the grains just before we need to prepare our food. You cannot store the paste used to make porridge for very long either. After two days, the paste starts to ferment and the porridge tastes sour. You can store the paste for one month or more in a refrigerator, but we don’t have a fridge.

SOUND OF A MOTORBIKE, WHICH RUMBLES AND STOPS. FOOTSTEPS COMING TOWARDS THE WAREHOUSE. GREETINGS.

**HOST:** We are going to welcome another guest who just came into the warehouse. Good morning, sir. Can you introduce yourself?

**ISSA MBOUROU:**  Good morning. I am Mr. Issa Mbourou, a member of the *muskuwaari* farmer group in Yonkolé. I have 12 bags of sorghum here.

**HOST:**  Why did you decide to keep your crop in a community store instead of a barn at home?

**ISSA MBOUROU:**  We prefer to store our bags here because the place is well-adapted to storing grain. We built a cement floor, and the warehouse is big, well-ventilated and dry. It is very convenient and affordable for the members to have a warehouse manager take care of our stored grains.

**HOST:** What happens after the harvest until the grain is stored here? What steps are taken from the field to this warehouse?

**ISSA MBOUROU:** As soon as the *muskuwaari* is ready to be harvested, we cut the seed heads and place them on a rush mat to dry for one or two weeks. Then we beat the seed heads with sticks. When you beat *muskuwaari* seed heads, you separate the grains. This is much faster than separating the grains one by one from the seed head. After beating the seed heads, you need to sort the grains, dividing the good grains from the bad, and the large grains from the small. The grains are then collected and put into bags for storage.

**HOST:** We will now speak to a specialist to get her view. Mrs. Carine Mala is a teacher and scientist at Maroua University. Good morning, Mrs. Carina Mala.

**CARINE MALA:** Good morning to you and your listeners.

**HOST:** *Muskuwaari* farmers in Yonkolé say that they use chemicals, including insecticides, to protect their grains against rodents. What do you think about this?

**CARINE MALA:** In general, using chemicals always has an impact on soils, people, and on animals, sometimes a lesser and sometimes a greater impact. It is true that after a certain period chemicals become less poisonous to humans, whether they are used in the field or against rodents which are the main storage pest. In the field, it is recommended to use crop rotation and biological insecticides against the main pest – stem borers – instead of chemicals.

**HOST:** If you do not use chemical insecticides in the field, how can you manage stem borers?

**CARINE MALA:** There are several methods: crop rotation, destroying the stems which have been attacked by borers and which still house the borers, and using biological insecticides are effective ways to avoid using chemicals. *Muskuwaari* is very sensitive to borers.

 In fact, farmers should start protecting the *muskuwaari* crop when plants are still in the nursery because the eggs laid in the nursery will continue to develop after transplanting and have major impacts on crop yield. Pod borers cause poor grain filling and a lack of seedheads.

 After transplanting, the eggs hatch out into caterpillars which pierce the stalks. They take refuge, feed and grow inside the stems, up to their maturity when grains have become hard. Then the adults emerge to parasitize the rainfed sorghum and *muskuwaari*.

 If treatment is effective in the nursery, farmers can treat each stalk again at the transplanting stage, at the beginning of blossoming, and at the heading stage to make sure that no pests affect the yield.

**HOST:** Farmers say they also have difficulties storing *muskuwaari* after it is processed.

**CARINE MALA:** Yes. Like other crops, *muskuwaari* stores better in its natural state than when processed into products like flour. For good grain storage, it is essential that the plant reach maturity and to ensure that grains have low levels of mould when they are ready to be stored. Otherwise, *muskuwaari* will be attacked more quickly in storage. If the grain is well-dried, farmers can store the grain in jute bags in a dry and well-ventilated place. Weevils like humidity. This is why we always tell farmers that their storage place must be dry, and the grain must be well-ripened and well-dried.

We recommend that farmers follow strict hygiene measures. For example, the storage site should be regularly swept and cleaned, and the doors should be opened to ventilate the site, and to avoid mould, weevils and rodents such as rats and mice.

In this hot, dry climate where weather conditions provide everyone with solar drying, I think it is more practical to let grain mature in the field and to let the crop dry well before storing it – and to process small quantities for the needs of the family.

**HOST:**  Dear listeners, today we learned how farmers in the Far North region of Cameroon have worked together to find a successful way to store their crops. The group stores the grain in a community warehouse. The members of the *muskuwaari* farmers’ group contributed funds to build a storage building and pay the manager of the barn in kind.

Storing grains as a group saves individual farmers the time of conducting regular monitoring of storage sites and practicing good hygiene. It is well worth the little money that it costs farmers to entrust the storage tasks which protect stored *muskuwaari* from the main storage pests of rodents to a warehouse manager.

## Acknowledgments

Contributed by: Anne Mireille Nzouankeu, freelance journalist, Yaoundé, Cameroon

Reviewed by: Carine Mala, Assistant Professor, University of Maroua, Cameroon

**Information sources:**

Interviews:

Mvoungou Samuel: sorghum farmer, October 17, 2014

Agathe Koulsoumi: sorghum farmer, October 17, 2014

Issa Mbourou: sorghum farmer, October 17, 2014

Carine Mala: teacher and scientist at the Faculty of Science of Maroua University, October 16, 2014

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