Developing Countries Farm Radio Network

Pack 14, Item 4

Type: Script

Date

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**Smoke controls insects in stored maize (corn)**

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Information on this subject area was requested by DCFRN participants in Argentina, Bolivia, Brazil, Cameroon, Colombia, Dominica, Dominican Republic, Fiji, Ghana, Guyana, Honduras, India, Lesotho, Malawi, Mali, Mexico, Nigeria, Pakistan, Paraguay, Peru, Philippines, Republic of China (Taiwan), Sri Lanka, Tanzania, Thailand, Trinidad, and Uganda.

Presenter: George Atkins

Interviewee: Wilfrid Ntiamoah, Accra, Ghana

**Special notes**

1. Before using the information in this item, please read the notes at the end concerning related DCFRN items.

In this item we use the word "ear" of maize (corn) to refer to the part of the maize plant consisting of the cob (inner core), the grains on the cob, and the outside covering or husk(sheath). Please use whatever words your farmers are familiar with.

**Suggested introduction**

We at this radio station are part of a worldwide information network that gathers farming information from developing countries all over the world. It's the Developing Countries Farm Radio Network, sponsored by Massey Ferguson and the University of Guelph, and financially supported by the Canadian International Development Agency and by many interested Canadians.

Through this Network, we bring you information on ways to increase food supplies for your family, or to sell—ways that other farmers have used successfully. Today our subject is insects and stored maize (corn). Here's George Atkins.

**ATKINS:** Do you have trouble with grubs (larvae) and insectseating your stored maize (corn)? If you do, keep listening and you'll hear what some farmers in Togo and in Ghana do to solve this problem. Perhaps this information will be useful to you.

Now I'm talking about storing a good lot of ears of maize—not just a few that you may keep for seed and that you can hang up in your kitchen. I'm talking about larger quantities that you grow, to feed to your family and maybe also to sell.

To begin with, I should say that using the method I'm going to tell you about, you'll have the best results if the husks of the ears you store cover all the grains on the cob. That is, the ear is completely covered by the husk.

In Togo, as soon as the maize has ripened and begins to dry, the ears are picked. Ears that are not infested with insects are then stored on a platform 2 metres (2 yards) (6 feet) above the ground.

The platform is built of bamboo on top of four to six sturdy bamboo posts. The ears are carefully placed side by side in layers on the platform.

Now after these Togo farmers have carefully built up the pile of ears on the platform to about 1/2 a metre (1-1/2 feet) high, each succeeding layer is made a little smaller. This way, the pile tapers up to a point by the time it's about a metre and a half (5 feet) high on top of the platform.

Now after the maize cobs are all in place, the Togo farmers make a thatch on the pile of maize and they neatly tie it together at the top. Finally, they cover it with a round, clay pot placed upside down on the very top. The ears of maize are now properly stored and can stay there for many months.

"But," you may say, "what keeps the grubs and insects out of the maize?" Well, that's very simple. The Togo farmers do it with smoke. They build a fire under the platform from time to time and the smoke reduces losses from grubs and insects. In Mozambique,farmers burn leafy branches under the platform to make smoky fires for this purpose. The reason for storing the maize on a high platform like this is so that it won't be burned by the fire underneath.

Now if you think you might try out this storage system, there are a couple of other points I should mention about this platform. If you have problems with rats, it would be a good idea to put rat guards on each of the legs under the platform and to take other precautions against rats too. Also, you may want to treat the bamboo posts in some way to prevent the ends that are in theground from rotting. And one more thing. In order to save on firewood, perhaps you could arrange to have your cooking fire under your maize storage platform, thus using heat and smoke from that fire to protect your maize.

Now I mentioned earlier that I'd also tell you about storing maize in Ghana. Farmers there store it on raised platforms too, but the system's a little different. Wilfrid Ntiamoah told me about how they do it—first how big the platforms are.

**NTIAMOAH:** About 4 by 3 feet (about a metre square).

**ATKINS:** Four by 3 feet (a metre square). And now what is thisplatform made of?

**NTIAMOAH:** You can use bamboo sticks, and branches (leaves) frompalm trees and you get rope from the bush. You fasten the palm branches (leaves) to the bamboo sticks and you can use some heavy bamboo sticks for the four legs. The platform is 1-1/2 metres (5 feet) above the ground but the legs must extend much higher than the platform so that you can make a roof on top. The roof can be made of thatch or big, wide, broad leaves to prevent rain from falling on the corn (maize).

**ATKINS:** And what you must do is have the floor of this platform made in such a way that air can pass through it?

**NTIAMOAH:** Yes, that's very important.

**ATKINS:** OK. So then you pile your maize (corn) cobs on top ofthat. How high would you pile them up?

**NTIAMOAH:** Well about 3 to 4 feet (a metre or so) high.

**ATKINS:** And you build this pile carefully?

**NTIAMOAH:** Yes, you arrange it putting one cob on top of another. And as you go higher and higher, you pile them in the shape of a cone so they bind each other into the pile and so that it cannot fall apart.

**ATKINS:** OK. So now you have your cone-shaped pile 3 or 4 feet(a metre or so) high of maize cobs on top of the platform. You have a thatched or some type of roof built above all this and it's supported by the tall bamboo legs that hold the platform you built into the structure, say 1-1/2 metres (5 feet) up above the ground.

All right, now how do you keep insects (weevils and other pests) from getting into the grain?

**NTIAMOAH:** You make a fire under the platform so that smoke coming from the fire will prevent weevils from getting into the corn (maize)—and at the same time the fire helps to dry the corn (maize).

**ATKINS:** How often would you have to have this fire underneath the platform?

**NTIAMOAH:** Two or three times a week.

**ATKINS:** Would many farmers in your area use this system?

**NTIAMOAH:** Well, almost all the old farmers are using this systemand it works very well.

**ATKINS:** Thank you very much, Wilfrid Ntiamoah of Osu, here in Ghana. Serving Agriculture, the Basic Industry, this is George Atkins.

**Notes**

1. In this item, reference is made to the use of rat guards and other precautions against rats, and also to treatment of bamboo posts to prevent the ends that are in the ground from rotting. Much more information on these topics is presented in other DCFRN items. You are urged to repeat that information in association with this item.

Rats – DCFRN Package 2, Item 2.

Rat prevention – DCFRN Package 3, Item 3.

Wood preservation costing little or no money – DCFRN Package 13, Item 9.

2. Other methods of drying and storing maize (corn) are described in other DCFRN items that could be used at the same time as this. They are:

Storing seed maize (corn) for your garden – DCFRN Package 14, Item 6.

Scientists are Improving the Traditional Maize Crib - DCFRN Package 1, Item 6.

3. Farmers using the method described in this item should be encouraged to plant trees to replace the firewood they burn. Therefore, we recommend that you present, along with this item, the information contained in:

Why plant trees? - Package 9, Item 1D

4, Other items you can use along with this item include:

Storing grain – DCFRN Package 4, Item 2.

Some farmers control insects without cost – DCFRN Package 1, Item 1.

Insects Die in Airtight Grain Storage – DCFRN Package 6, Item 8.

Protection from weevils using vegetable oil – DCFRN Package 14, Item 7.

**Sources of information**

1. DCFRN participant Wilfrid Ntiamoah, Ghana.

2. Storage of agricultural products. Agrodok 31 (1982, 79 pages) by Jelle Hayma, published by Agromisa, Wageningen, the Netherlands. https://cgspace.cgiar.org/bitstream/handle/10568/73104/1656\_PDF.pdf?sequence=1&isAllowed=y