Developing Countries Farm Radio Network

Pack 12, Item 8

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**Growing crops on mounds in low wet land**

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Information on this topic was requested by DCFRN participants in Argentina, Bhutan, Bolivia, Brazil, Cameroon, Caroline Islands, Chile, Colombia, Costa Rica, Dominican Republic, Guatemala, Guyana, Honduras, India, Jamaica, Nigeria, Palau, Panama, Papua New Guinea,Paraguay, Peru, Philippines, Tanzania, Venezuela, and Uganda.

Presenter: George Atkins

Interviewee: Dr. S. K. Hahn, Director, Root and Tuber Research, International Institute of Tropical Agriculture, Ibadan, Nigeria

**Special note**

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

**Suggested introduction**

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

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.

We've talked before on this program about raising taro or cocoyam in mud plots. Today, let's think about a special way to grow other crops in addition to taro or cocoyam on wet land.

Here's George Atkins.

**ATKINS:** Did you know that some of the best soil is in low wet areas? That soil in these low wet lands usually has lots and lots of good plant food in it?

Well, in many places where there are low wet lands like this, farmers could be growing crops on them, but they don't—only wild grass or weeds grow on them. There are some farmers, however, who do make verygood use of land like this—not just for growing wet land crops like taro or cocoyams, but even for vegetables that don't normally grow in wet land.

"But" you may say, "how can a farmer do that when the ground is wet all the time?"

Well, the farmers I'm talking about pile up the soil in mounds on these wet lands and then they grow crops all over the outside of the mounds.

Let's think for a moment about what these mounds are like, built of soil dug up from the ground all around them. Think of several of them built on low wet land; each mound is about 1-1/2 metres (5 feet) high.

Of course, the soil in the mound near the bottom will be wet all the time, just like the soil underneath. Then the soil part way up the side of the mound won't be quite as wet as the soil at the bottom; and of course soil all over the top of the mound will be a lot drier than the soil at the bottom.

And now can you see how it is that the farmers I'm talking about are able to grow vegetables in these low-lying wet lands? They grow them up on the sides and all over the top of the mounds where the soil is not nearly as wet.

Remember, though, that because the mound is built on top of soil that's always wet, some of that wetness or moisture will always be coming up inside the mound to provide moisture to roots of plants that grow on the top; and this happens all through the year—even in the dry season.

Remember also that the mound is made of especially good soil with lots of good plant food nutrients in it. That means that plants that grow on the mound will be good healthy plants.

At Ibadan in Nigeria, Dr. S. K. Hahn told me about crops that farmers in his area grow on these mounds.

**HAHN:** Cocoyams (or taro) are very well adapted to low wet conditions. So cocoyams (or taro) can be planted at the bottom area of the mound. Yams are planted at the middle, and other vegetables which are adapted to somewhat dry conditions can be planted on top.

**ATKINS:** Now let's think about building these mounds.

To begin with, when you go into this low wet land, a lot of wild grasses or weeds are growing there. The first thing to do is cut down all this green growing material in the area where you will build a mound. You'll be putting all this material into the bottom of your mound, so as you cut it, make a low flat pile of it, about 1-1/2 metres (5 feet) across. You'll later be piling soil on top of that.

Now when I was in Nigeria at the International Institute of Tropical Agriculture, several men were working in a low wet area, building mounds like this, and as Dr. Hahn and I stood there watching them, he told me this.

**HAHN:** They bring the weeds together from the surrounding area, and then they become buried under the soil in the mound. So this way we are also able to control the weeds.

**ATKINS:** And also they provide organic matter—

**HAHN:** Yes, organic matter for the soil in the mound.

**ATKINS:** If there were livestock in this area, would farmers put manure in there as well?

**HAHN:** That would be very good. Also, they do have lots of compost material; and household waste (garbage) is used as well.

**ATKINS:** Before you build the mound, how much of this organic matter might you have—a pile, perhaps 1/2 metre (1-1/2 feet) high?

**HAHN:** Oh, about 1 foot (1/3 metre).

**ATKINS:** Okay. Now after you have that flat pile of organic matter that you've cut from the surface all around, with perhaps some manure or other organic material—tell me about the soil you gather up to put on the mound.

**HAHN:** The soil used is topsoil.

**ATKINS:** So you're gathering the topsoil from all around and making the mound out of that.

**HAHN:** Yes, this mounding system is practiced by farmers not only in the western part of Africa where there is a lot of good soil but in many parts. Where topsoil is very shallow, they just gather topsoil over a wider area to make the mounds.

**ATKINS:** All right, we see this mound being made beside us and this man is shovelling up the topsoil from close at hand to put into the mound. About what is the size of these mounds?

**HAHN:** About 2 metres (6 feet) wide at the bottom and about 1-1/2 metres (5 feet) high.

**ATKINS:** Now, as soon as it has been completed, what's the next step?

**HAHN:** They start planting immediately. As you see there, the man is planting yams for the off-season (dry season) crop.

**ATKINS:** As soon as the mounds are built, then the yams are planted. So yams on that mound are being planted in the middle part (half way up the outside all around the mound).

**HAHN:** Yes, in the middle part because at that level you get the best yield. Lower down, it would be too wet, higher up on the mound, it would be too dry for yams. The lower part will be planted with taro or cocoyams which are adapted to waterlogging (growing where it's wet).

**ATKINS:** And then, right at the very top?

**HAHN:** You plant vegetables which will require lots of light (and less moisture than the other crops).

**ATKINS:** So we have this mound and these crops growing on it and this in the first season. Now, what happens after this— next season?

**HAHN:** They harvest the crops and then they make other mounds.

You can see the weeds growing. They incorporate them and any other organic matter when they demolish the old mounds and construct new mounds with soil from the old ones.

**ATKINS:** That's a lot of work, of course, so perhaps you could crop a mound for two seasons in a row. But next season, at least, cut down any weeds that would shade your plants growing on the mound and put them in a flat pile close to the old mound. Then, the next time, cut all the weeds from the surrounding area, put them on top of the oldweeds and on top of them pile all the soil from the old mound.

Dr. Hahn says farmers continue doing this season after season.

**HAHN:** Particularly in the Abakaliki area of Nigeria, they havepracticed this continuously for many years.

**ATKINS:** And they have been doing it for a long time?

**HAHN:** Yes, they have. They see the advantages of the system and I am sure they will continue to do so.

**ATKINS:** Thank you very much, Dr. S. K. Hahn, the Director of root and tuber research, here at the International Institute of Tropical Agriculture (IITA) at Ibadan in Nigeria.

Serving Agriculture, the Basic Industry, this is George Atkins.

**Notes**

1. In this item, reference is made to two basic questions that have been dealt with in other DCFRN items. They are:

a) What are plant food nutrients and how are plants able to grow by absorbing them through their roots? - DCFRN Package 2, Item 3 Soil Moisture - Necessary for Crops

b) What is organic matter, where does it come from and why is it important? - DCFRN Package 2, Item 4 Making Your Own Compost

2. The DCFRN item listed below contains information that is related to this item. You might wish to use some of that information in connection with this item.

Growing Tasty Taro in Mud Plots - DCFRN Package 11, Item 12