Developing Countries Farm Radio Network

Pack 14, Item 8

Type: Script

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**Cross-ridging holds precious rainwater on the land** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Information on this subject area was requested by DCFRN participants in Bolivia, Chile, Ghana, Guatemala, India, Lesotho, Nigeria, Peru, Philippines, Tanzania, and Zambia.

Presenter: Glenn Powell

**Special notes**

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

2. This technique is also known as tie ridging or tied ridging (Zimbabwe), box ridging (Malawi), and basin tillage or furrow dam building (U.S.A.).

**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 we have information for farmers where rainfall is scarce or irregular. Here's Glenn Powell.

**POWELL:** Do your crops sometimes suffer from lack of water?

If so, and if your land is level, or nearly level, what I'm going to tell you now may make a big difference in the yields you get.

As you know, most plants get the water and plant food they need through their roots—from moisture in the soil. You also know that if the soil gets too dry, the plants won't grow well—they may wither and may even die.

But sometimes when it rains, so much water falls in such a short time that it can't all sink into the ground right away—even if the soil down below the surface is dry and the plants need that water. Instead, water starts to flow away over the top of the ground, always flowing toward the lowest areas it can find.

Instead of soaking into the ground where your crops can use it, a lot of rainwater is lost for those crops. How can you prevent this?

Well, in some parts of Africa, dryland farmers use a special method to help hold that precious rainwater on their land—to hold it in place so it can soak into the ground and help their crops grow. Here's what these farmers do:

First of all, they grow their row crops—like maize (corn) and sorghum or their root and tuber crops—in rows on top of ridges. When it rains, water collects in the furrows between the ridges. If the land is sloping, even just slightly sloping, the ridges and furrows go across the slope, not up and down. This prevents waterfrom flowing down to lower ground.

Now to make sure the water stays in place in the furrows and doesn't flow away, these African farmers make little dams or cross-ridges across each furrow at regular intervals—say every 2 or 3 metres (5 or 10 feet) along each furrow. The little cross-ridges block the furrows off into sections, so that water can't flow along the furrow bottoms.

In effect, then, you've made a series of basins in each furrow that will collect water every time it rains. The ridges and cross-ridges keep the water right there where it falls. The water then sinks slowly into the soil where the roots of your plants can use it. The result is that your crops grow better and they give higher yields.

If you try this method yourself, here are some things to keep in mind.

First, about the planting ridges that your crops will be growing on: If your land is not quite level, you must remember to make your ridges and furrows across any slope in the land, not up and down. This helps stop water from flowing away, down to lower ground.

After you've made your planting ridges, your next step is to make the little cross-ridges that stop water from moving along in the furrows. Just use a hoe or some other implement to make them every couple of metres (every 5 or 10 feet) as you go along the furrows. You can do this at planting time, or even earlier. You'll then be keeping all the water you can for your crop, whenever it rains.

One very important thing to know is this: The cross-ridges that you make between the furrows must never be as high as the main ridges that the crops are growing on.

The tops of the cross-ridges should always be at least several centimetres (a few inches) lower than the main planting ridges. For instance, if the planting ridges are 30 centimetres (12 inches) high, the cross-ridges might be about 20 centimetres (8 inches) high.

That's a safeguard in case of unusually heavy rains. It prevents water from getting so deep that it could wash over the main planting ridges on which your crop is growing.

By the way, you may find that your ridges and cross-ridges will stay in place for more than one season. This way, you'll have less work to do before planting the next crop.

In areas where there isn't much rainfall or where it's irregular, this method can be a very useful way to improve crop yields, at least on land that's flat or nearly flat.

Serving Agriculture, the Basic Industry, this is Glenn Powell.

**Notes**

1. Before using this item, you could perhaps use information provided in:

Soil moisture – necessary for crops – DCFRN Package 2, Item 2.

2. Also, associated with this item, you could use information from:

Mulching Crops Grown on Ridges – DCFRN Package 7, Item 1/D.

3. In this item, we refer to growing crops on the contour (contour lines). Information on a simple way of making contours on sloping ground is presented in:

Saving Hillside Topsoil (Parts 1 and 2) – DCFRN Package 5, Items 7 et 8.

**Sources of information**

1. Poster and information sent by DCFRN participant James Biscoe, Post Production Industry Advisory Unit (PFIAU), Harare, Zimbabwe.

2. DCFRN participant Catherine G. Wituka, KWDP (Kenya Woodfuel Development Programme) Kakamega, Kenya.