MAKING COMPOST

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INTRODUCTION

Compost is made from old plants and weeds. This plant material is allowed to rot and is then used to fertilize gardens. It is very easy to make. In this article, we will be talking about making compost in a heap. After the compost is made, it has to be carried to the garden and put into the ground.

There is another way of making compost. This is to make it in the ground where the plant will use it. This method is used when the garden being harvested is being replanted immediately. Sweet potato vines and annual weeds can be put straight back into the ground. For descriptions of this method, see the articles by A.S. Leng (in HARVEST, Volume 8, no. 2, pp. 83-84), by E. D'Souza and R.M. Bourke and by R.M. Bourke (in this issue of HARVEST).

This method is not suitable for use in dry areas or in the dry season. In these cases, the vines and weeds should be made into compost in pits. See the section on 'Dry season compost' on page 170.

Making compost in heaps is especially suited to institutions, which have large areas of lawns and gardens. Planting of crops may not be going on every time a crop is harvested or the lawns are cut. So instead of burning the crop remains and lawn clippings, they can be put on the compost heap and used later to fertilize the garden.

Composting is a technique that can be used for safely recycling crop remains that may be infected with a disease. The technique prevents the disease from being transmitted to the next crop. Composting can also be used to break down persistent weeds. These weeds cannot be used as mulch because they may regrow in the wet season. Composting also sterilizes lawn grass clippings by killing the grass seeds.

THE BENEFITS OF COMPOST

Compost is very good for all crops. It provides many of the nutrients a plant needs. It provides the major nutrients, such as nitrogen, phosphorus and potassium which are commonly available as artificial fertilizers.

Compost also provides micronutrients, which are needed in very small amounts. Plants do not grow well if they cannot get micronutrients.

Nutrients from compost are released into the soil slowly. It is better for growing plants to get nutrients this way, i.e. gradually over a long period, rather than all at once, as is the case when artificial fertilizers are used.

Another advantage of compost is that because the nutrients are released slowly, they are not

washed away so easily as those in artificial fertilizers.

As well as providing nutrients, compost improves the soil. In heavy clay soils, adding compost allows more air into the soil. This is good because roots need air to breathe. Compost also improves the water-holding capacity of soils. So in dry sandy soils and during the dry season, plants will stay green and grow better if compost is used.

WHEN TO USE COMPOST

Composting techniques are essential to maintain the fertility of the soil where only a limited amount of land is available, e.g. in institution gardens, and in small vegetable gardens which people have near their houses, both in villages and in urban areas. If compost is used, it is possible to crop the same piece of land over and over again, because nutrients are being put back into the soil.

Do not wait for yields to get very low before using compost. Start as soon as you notice a decline in yield.

WHAT HAPPENS WHEN COMPOST IS MADE

The aim of making compost is to get the waste plants to break down and so release their nutrients into the compost heap. At the same time, we need to destroy any pathogens (disease-causing organisms) and insect pests which may have been attacking the plants. The diseases and pests must be stopped from damaging the next crop.

To do all these things, we make the plant remains into a heap. This makes a good environment for the organisms which rot the composting material. With all these organisms working at rotting the plant material, the heap becomes quite hot. This heat kills any pathogens and insects which may be present.

MAKING A COMPOST HEAP

The compost house

To allow them to heat up and to rot well, compost heaps must be at least 1 m x 1 m x 1 m. However, they should not be more than 2 m x 2 m x 2 m, or they may overheat.

The heap must be protected from heavy rain which will wash the nutrients away and cool the heap down. So, the first thing to do is to build a 'house' in which to make the compost.

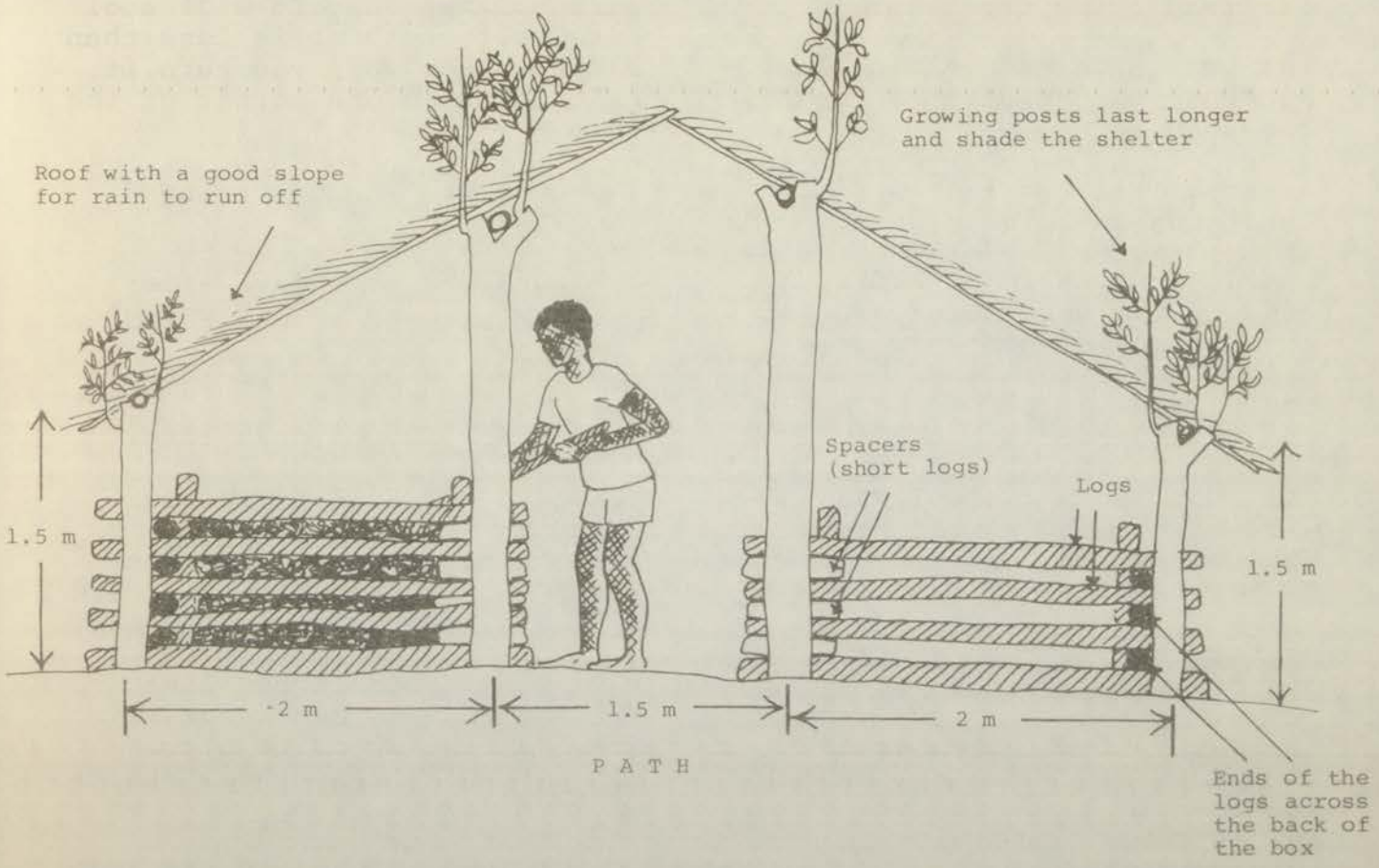
The house is built as shown in the diagram. Each house consists of two compost boxes with a steep roof covering them. Between the two boxes is an area for working. The roof can be made of coconut fronds. The most important thing is that it has a steep enough slope for rain to run off.

Growing trees can be used to make the upright posts of the compost house. This will save labour when rebuilding it. The trees will also shade the house, and prevent the compost from drying out too quickly.

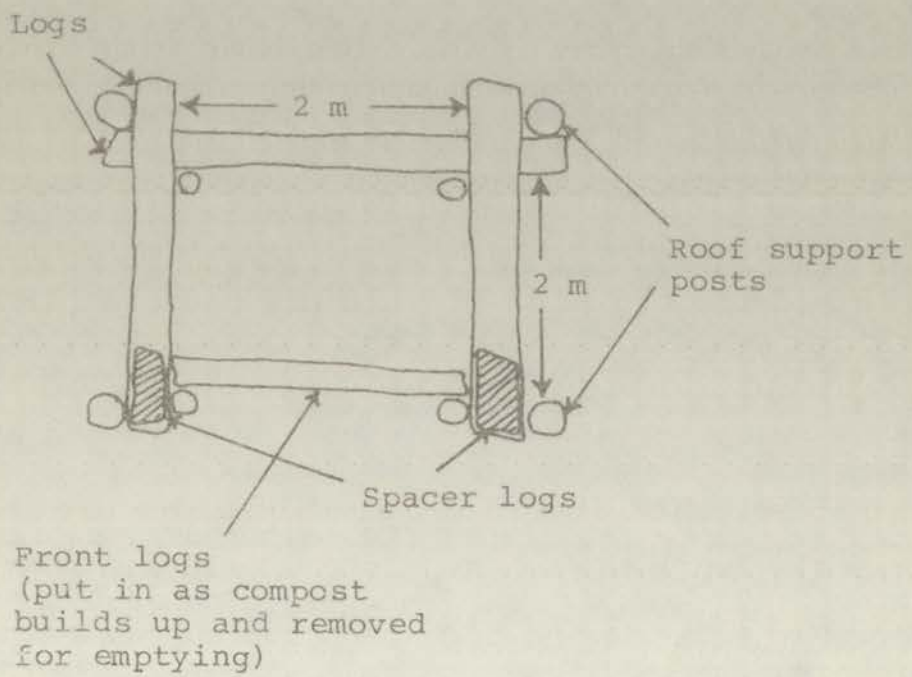
Make enough houses to hold all the grass cuttings, weeds and other plant remains produced in one month in the garden. In large institution gardens, you should build several houses scattered around the grounds, to save carrying waste material very far.

Tools

To make compost-making easier, you will need a fork to turn the heap. Also it is best to buy a good wire rake to collect lawn clippings.



A 'house' in which to make compost. With a good roof over the path, you can turn your compost even if it is raining



Plan of a compost box

Starting a compost heap

Once you have made the compost houses, you can start making the heap.

First of all, collect weeds and clippings as quickly as possible, preferably at the end of the day they were pulled up or cut, or the next morning. Put them in one compost box of a pair. Leave the other box empty. Do not allow the material to dry out in the sun. If the material is too dry it will not rot as quickly and will have to be wetted again. This makes more work as wetting is not as easy as it sounds.

Making compost from grass clippings and weeds

At institutions, lawn grass clippings and weeds are usually produced in large amounts and are very easy and quick to make into compost.

The heap of grass clippings and weeds can be built up over a few days until it is at least 1 metre deep. Once the heap is big enough, the weeds and clippings rot very fast, but become compacted and airless. Without air the heap will not rot properly. To let air in, the heap must be turned regularly.

When turning, the outside material which has dried out should be put at the bottom of the new heap. This is why compost houses are built in pairs. When turning a heap, you simply transfer the compost from one box to the other.

If the heap feels dry when turning, water it to keep it feeling damp, but not wet.

Once the heap starts to decompose, the top will sink. This does not matter, but if the heap gets too shallow, it will cool down. If the heap is less than 1 metre deep when you turn it, pile it up in one corner of the box.

The heap will need turning 4 times:

1st turn - 3 or 4 days after heap is big enough

2nd turn - 2 or 3 days later

3rd turn - 2 or 3 days later

4th turn - 2 or 3 days later

The compost can be used after this, but it is better to leave it for another couple of weeks.

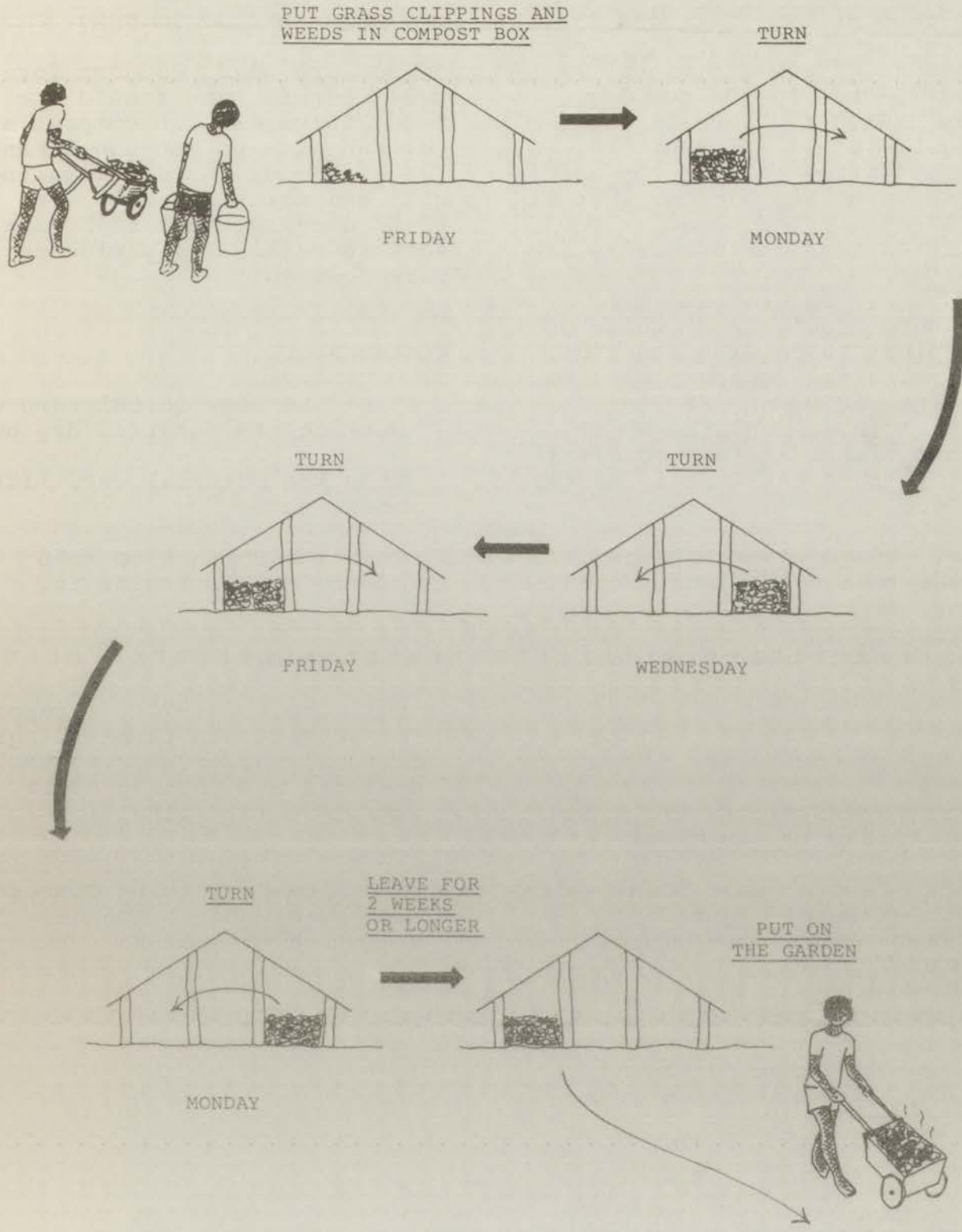
A turning schedule for lawn grass clippings and weeds is shown on the opposite page. The work plan shown here starts on a Friday.

So, if you are using weeds and lawn grass clippings to make your compost, it will be ready in 3-4 weeks. You can tell when the compost is ready, because the plant material will have broken down. It will look like good brown forest soil with the very rotted remains of bits of stems and leaf just identifiable.

Using old, fibrous plant waste

You can use other old, fibrous and dry material, like leaf sweepings, peanut tops, sweet potato vines and so on. It is better if these are mixed with young 'soft' weeds and grass cuttings.

Collect leaf sweepings, etc. into a pile and keep them under cover. You should not leave them out in the sun where they will dry out. Then with every load of grass clippings and weeds mix in a little of the coarse rubbish, and transfer to



A time schedule for turning compost made from lawn grass clippings and fresh weeds. This work plan starts on a Friday.

the compost box. If food is being harvested each day, you could add the waste vines, leaves, etc. to the compost heap. When the heap is big enough, turn it so that the last addition and the top and sides go to the bottom. Wet it if necessary and tread it down a little if a lot of stalks are present.

If there are no fresh weeds or clippings to go with the fibrous material, compost will be slow to rot down. If it is 'ropey' (e.g. contains sweet potato vines) it is also difficult to turn until it is partly rotted.

Sweet potato vines take about 2 months to rot to useable conditions, if the heap is kept damp, and turned after about five weeks when it starts to cool down.

DRY SEASON COMPOST

For dry areas, there are a few extra things to remember:

- Shade the compost house well; for example, plant fruit trees round your compost house.
- Keep heaps out of the wind.
- Keep the heaps moist and turn them less often than recommended above.
- If the compost seems to be drying out too much in the boxes, dig pits about knee deep and keep the compost in these. Pits dug into slopes are best, as they can drain. Do not use the pits in the wet season.

HOW MUCH COMPOST TO USE?

If you are using compost for sweet potato, you should use about twice as much compost as you can pick up between 2 hands for each mound. Put it on the soil and make the mound over it. At Keravat, we have found that this increases the yields on very poor soil.

REMEMBER....

- Make the heap quickly and do not let the material dry out.
- Keep the material wet, like moist soil.
- Turn the compost to keep plenty of air inside it.

FURTHER READING

Franklin, D.P. (1971). Compost for subsistence farmers, agricultural nurseries, vegetable projects and potting media. *Harvest* 1 (4): 149-151

Leng, A.S. (1982). Maintaining fertility by putting compost into sweet potato mounds. *Harvest* 8 (2): 82-83