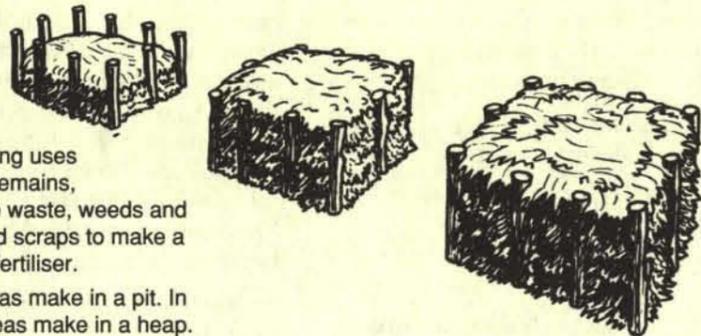


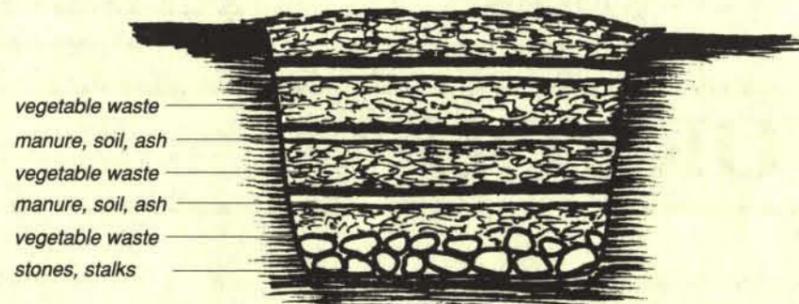
COMPOSTING



Composting uses old crop remains, vegetable waste, weeds and household scraps to make a valuable fertiliser.

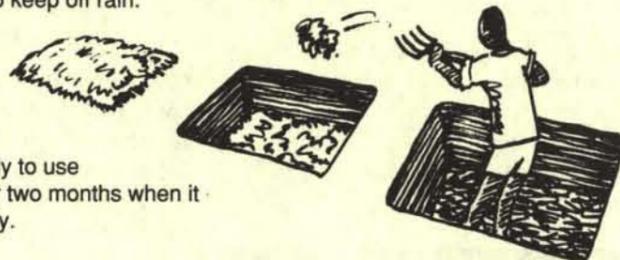
In dry areas make in a pit. In wetter areas make in a heap.

The compost is built up in layers. First, some large stones are placed at the base for drainage, then a first layer of loose stalks (eg of maize) is made to let air circulate. Layers of vegetable waste are then added with small layers of manure, soil and ash in between, if these are available.



The heap builds up until about one metre in depth. Keep damp – **not** wet. Add water if the heap becomes too dry. Cover with plastic sheeting, sacking or matting to keep off rain.

Turn the heap after a few weeks.



The compost is ready to use usually within one or two months when it is brown and crumbly.

Old stalks of maize, sorghum and cassava should not be added to compost heaps unless they are well chopped up. Leave these to rot down in large heaps – either in the field, at the edge of fields, or along the contours.



- Advantages**
- A rich plant fertiliser from material that would otherwise be wasted

- Disadvantages**
- A lot of work
 - Not appropriate for large areas of land
 - Rats or snakes may be a problem

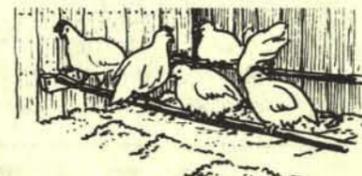
MAINTAINING SOIL FERTILITY

Compiled by Isabel Carter

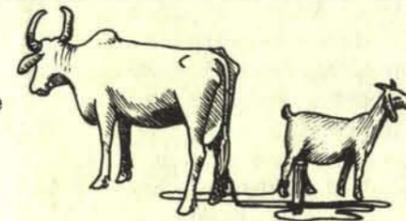
Soil used for growing crops must have plant nutrients and organic matter added in order to maintain the fertility and quality of the soil. Soil which is well cared for will continually produce good yields. If plant nutrients and organic matter are not added, soil will become exhausted after a few years, and yields will drop. Chemical fertilisers will add plant nutrients, but are expensive. The methods on this page are inexpensive and will add both plant nutrients and organic matter to the soil.

MANURE

Pen or tie up animals at night. Collect the manure regularly and store in a heap.



Provide chickens with simple perches so that the manure will collect in one place, making it easier to gather.



Store manure in heaps. Protect from rain and sun either by a simple shelter or by plastic or sacking. Without protection many of the plant nutrients will gradually be lost. Store for one to three months before using on the soil.



- Advantages**
- An excellent fertiliser if available

- Disadvantages**
- Adequate quantities rarely available for large areas of land
 - Fresh manure may damage growing crops

GREEN MANURING



Some recommended species:

- *Stylosanthes gracilis*
- *Phaseolus acutifolius*
- *Indigofera hirsuta*
- *Centrosema pubescens*
- *Mucuna pruriens*

Green manuring means planting a crop **not** to harvest – but to improve the soil. Seed is sown close together and after 4-6 weeks of growth the young plants are ploughed in. Green manuring can add a lot of organic matter to the soil, and if the crop is a legume, nitrogen will also be added.

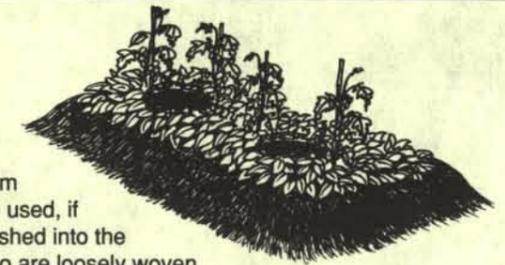
Alley cropping is another useful method of green manuring (see *Footsteps No.5*, p4).



- Advantages**
- Excellent for badly eroded or exhausted soil
 - Useful for large areas
 - Protects from soil erosion after main crop is harvested
 - Little labour involved

- Disadvantages**
- Cost of seed is high (except with alley cropping)
 - In very dry areas, moisture will be taken from the soil and the main crop will not grow so well

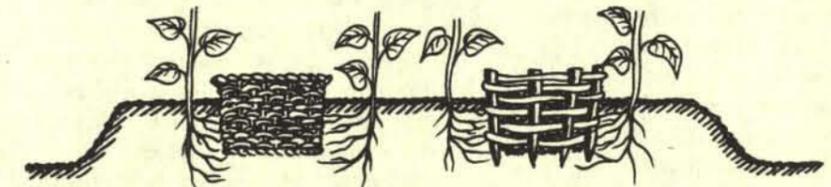
BASKET COMPOSTING



Holes are dug in the soil 1 metre apart, 30 cm in diameter and 30 cm deep. Old, broken baskets can be used, if available. Small stakes can be pushed into the soil, and old crop stalks or bamboo are loosely woven in between the stakes to make baskets.

The baskets are then filled with weeds, crop waste, manure as available. All watering is done through the baskets to wash the plant nutrients into the soil. Crops are planted all around the baskets and their roots will grow towards the baskets.

When the crop is harvested the contents of the baskets are dug into the soil.



Advantages

- Not much work involved after baskets are made
- Plant nutrients are immediately available
- Useful for small areas

Disadvantages

- Not appropriate for large areas of land

MANURE TEA

This method provides a valuable liquid fertiliser in only 2 weeks.

Fill a sack (not plastic) with fresh manure and tie it up. Place in a large drum and fill with water. Leave to stand for about 2 weeks. Use this liquid to water vegetables, diluting with at least half water.

After use, the manure in the sack can be added to soil or compost.

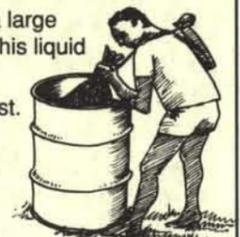
Start again with fresh manure and water. Because of the risk of disease, pig manure should not be used for this method.

Advantages

- Useful for small quantities of manure
- Quickly available

Disadvantages

- Useful only for small areas



MULCHING

The soil around growing plants is covered with a layer of organic matter (e.g. rice husks, straw, grasses).

Advantages

- Keeps the soil moist
- Adds organic matter to the soil
- Prevents soil erosion
- Reduces weeding
- Keeps soil cool

Disadvantages

- Termites may be a problem (keep mulch away from stem)
- Useful usually only for small areas

