

CHAPTER 4. CROP HUSBANDRY

4.1 CROP SOWING

4.1.2 SOWING AND APPLICATION OF FERTILIZER

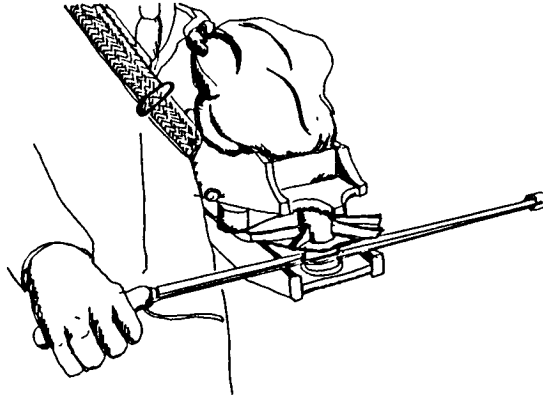
FERTILIZER APPLICATION

ing suggested in the previous **Module 4.1.1** will have included a decision as to how to apply fertilizer and what quantity will be required for the crop being sown. It is normal for a first application be made in the seedbed before or at the time of planting.

Three distinct systems of application are used. They depend upon the type of fertilizer and the particular crop to be grown:

BROADCAST METHOD

A carefully measured dose of fertilizer is usually broadcast by hand. Simple hand operated spinning disc broadcasters can also be used (**Fig.1**). The fertilizer should then be mixed into the soil with a harrow.



*Fig. 1 A "fiddle" type spinning disc broadcaster suitable for both seed and granular fertilizer.
Source: IT Publications, 1985 (Alvan Blanch Development Co.)*

APPLICATION IN BANDS

This method is often used for row crops, the fertilizer being applied after the rows have been marked out but before sowing.

It may also be applied before ridging, the action of this implement being to concentrate the fertilizer in bands along the ridges.

Some seed drills are designed to apply fertilizer at the same time as sowing. This also results in an application in bands.

APPLICATION AT PLANTING STATIONS

More widely spaced crops may benefit from the fertilizer being applied at the individual stands. It is placed below the seed and if possible, lightly covered with soil before the seed is dropped in. This is achieved by careful use of the planting stick if toxic "burning" of the plant is to be avoided.

CHOOSING THE ROW WIDTH FOR PLANTING

There will normally be a recommended row width for the crop to be sown in a particular area. This may, however, be slightly varied according to soil type and also if a corresponding adjustment is made to the spacing between plants along the row.

For instance, if row spacing is increased, decrease the spacing between plants so as to maintain the same overall crop density.

It is more convenient for the farmer to plant various crops with as few row widths as possible. This will reduce the total number of adjustments needed to the width of the cultivator, when weeding is later carried out.

Weeding with a pair of animals normally requires a yoke measuring approximately two times the row width. This is a further reason for restricting the number of different row widths planted on the farm.

Finally, the minimum working width of the animal drawn cultivator should be studied. These frequently cannot work in row widths less than about 45 cm without causing excessive damage to the plants.

Although precise recommendations cannot be made, it is normally better when using animal power for weeding, to plant the different crops using row widths chosen from between 30 cm (this is difficult to weed with draught animals), 45, 60, 75 or 90 cm.

MATCHING THE YOKES TO ROW SPACING

Three yoke lengths are normally needed for the preparation of the seedbed and the subsequent inter-row weeding. These can match the row widths suggested above in the following manner:

the 90 cm yoke: this is the standard plough yoke and will allow weeding at a 45 cm row spacing. It can also be used to plant in rows of 30, 75 or 90 cm.

the 135 cm yoke: this longer yoke is normally used for pulling carts. It enables weeding between rows planted at both 60 and 75 cm. It is also suitable for ridging at these row spacings. Crops may be conveniently planted at a 45 cm spacing with this yoke.

the 180 cm yoke: the extra-long 180 cm yoke straddles 90 cm or 1 metre row widths for weeding (Fig.2). Row widths of 60 cm may be planted with this yoke



Fig. 2 Using the 180 cm length yoke for ridging millet planted in 1 meter rows.

Photo: Manuel Lecca

PLANTING METHODS

Planting is normally done manually, whereas the use of a seed drill or planter offers a more

The need for carefully controlled spacing between rows depends upon the eventual method of weeding to be adopted.

In the event that weeding will be carried out in a single pass with animals, the rows should be carefully aligned using a piece of string or a row marker tool. This is time consuming and will require assistants but is preferred in some regions.

If the "double pass" method of weeding is to be used, the cultivator will be carefully steered down each side of the row and a very precise row width is not necessary (see **Module 4.3.1**). Rows spacings are first measured and later judged by eye as the operation proceeds.

"Point rows" are those lines of plants which end within the field. Whichever weeding method is to be adopted, endeavour to reduce the number of point rows to a minimum. This is because the plants risk being damaged when the animals and the cultivator are manoeuvred into the next position for continuing the later weeding operation.