

CHAPTER 4. CROP HUSBANDRY

4.1 CROP SOWING

4.1.3. USING THE SUPER "ECO" SEEDER

INTRODUCTION

The Super "Eco" seeder is used widely in Senegal and some other countries of Africa (Fig.1). By appropriate selection of the distributor plates, seeds of groundnut, sorghum, millet, maize and rice may be sown, as well as some other crops. It may be drawn either by a single animal, or a pair.



Fig. 1 A Super "Eco" seeder being calibrated in Madagascar. Photo: J.E. Ashburner

SETTING THE DEPTH OF PLANTING AND THE COVERING HOES

- Stand the seeder on a flat surface and lightly clamp the opening shoe and knife (if this is needed) into place
- Remove the covering hoes and place the two clamps under the wheels to calibrate the planting depth. For a depth of 2.5 cm, position the clamps horizontally and for a depth of 4 cm position them vertically (Fig.2).
- Lower the knife until it just touches the ground and clamp it firmly into place; then clamp the opening shoe so that it also just touches the ground.

NOTE: *This Module has been prepared using the text from Mathews, M.P.D. and Pullen, D.W.M. Cultivation and Ox-drawn implements. Technical Bulletin No.1. Prepared by the Overseas Division, NIAE, UK for the Department of Agriculture, The Gambia, March 1976. 41p.*

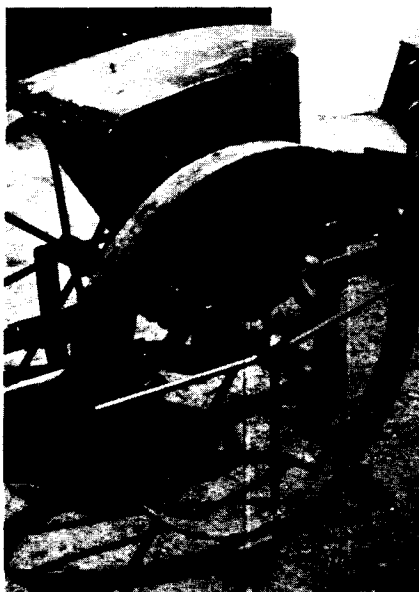


Fig. 2 Setting the planting depth for 2.5 cm (left) and for 4 cm (right), by placing the hoe clamps under the wheels.

Photos: J.E. Ashburner

- Remove the clamps from under the wheels and fit the covering hoes, one against the cross bar and the other against the handle (**Fig.3**)
- Adjust the height of the front hoe whilst the point of the blade rests on the back of the hand and with the hoe held back against its stop. Clamp it tightly.
- Adjust and clamp the rear hoe in the same way, but resting on the fingers. This is to make both hoes at equal depth in work.

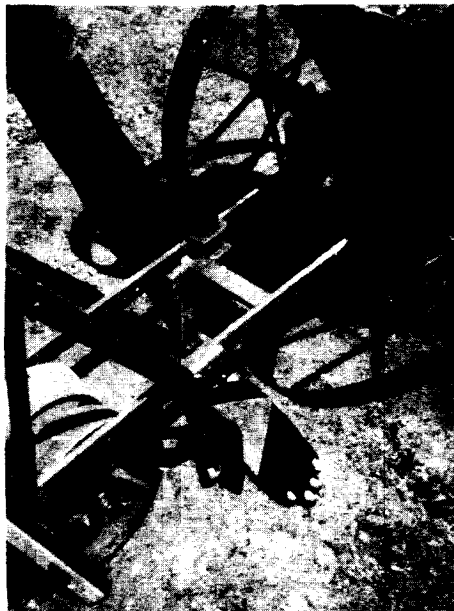
FITTING THE SEED PLATE, COVER PLATE AND THE EJECTOR

Locate the chosen distributor plate so that the recessed side fits over the drive shaft. Fit the spring and screw on the nut, but not too tight, as this will cause wear to the drive mechanism.

Set the rubber injector: lift the free end so that the small finger can just pass beneath it and fit the cover plate with the wing nut.

Fig.3 Clamp the covering hoes firmly, one against the cross bar and the other against the handles.

Photo: J.E. Ashburner



CHOOSING THE SEED PLATE

Five different seed plates are normally available. Choose one according to the following table:

CROP	SEED PLATE TYPE	COMMENT
Groundnuts	30 toothed plate	For direct seeding, set depth for 40 mm. For cultivated soil omit the opening knife if fitted separately, and the front covering hoe to prevent blockages
Sorghum	8 hole plate	Set the depth for 25 mm. Omit the front covering hoe and the opening knife where fitted
Maize	16 hole plate	As for sorghum
Upland rice	32 hole plate	As for sorghum
Millet	8 hole plate	As for sorghum

ATTACHMENT TO THE ANIMALS

The chain should be attached to the hake so that the seeder runs level without the operator having to press or lift the handles:

- a higher point of attachment assists penetration and tends to lift the rear of the seeder
- a lower attachment tends to lift the front of the seeder

ADJUSTMENT OF THE ROW MARKER

The length of the row marker (L) should be adjusted so that:

$$L = R - W/2$$

where the desired row width is (R) and the width between the wheels of the seeder is (W). The wheel nearest the previous row should then follow the trace left by the marker as shown in Fig.4.

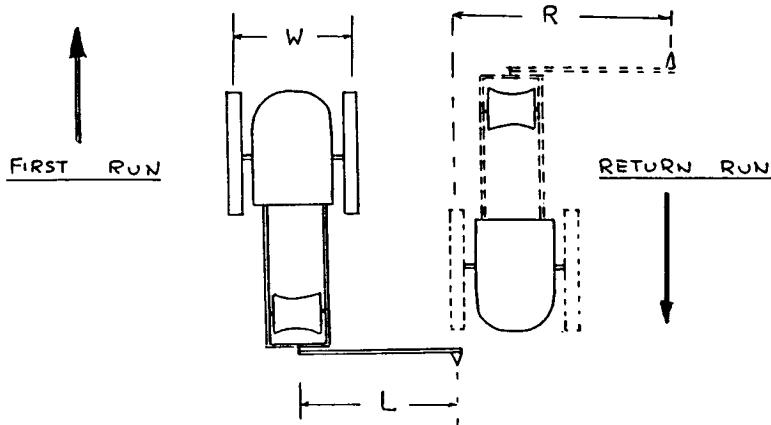


Fig. 4 Adjust the length of the row marker (L) to be equal to the row width (R) less half the width between the wheels (W)

For row spacings less than about 45 cm, the marker cannot be used. Instead, adjust the wheel spacing to equal the row width. Now on the return run, the inside wheel should pass along the wheel mark just made and the row spacing is correctly maintained.

CARE AND MAINTENANCE OF THE SUPER "ECO" SEEDER

- empty the hopper every evening and thoroughly clean the plate, the hopper and the delivery shoot;
- clean the entire implement and wipe oil over the soil engaging parts if it is not to be used for a few days;
- at the end of the season, pack the drive axle with grease. Check the condition of the sheet metal of the hopper, the seed plates and all nuts and bolts. Replace worn or damaged parts.