

# CHAPTER 3. SEEDBED PREPARATION

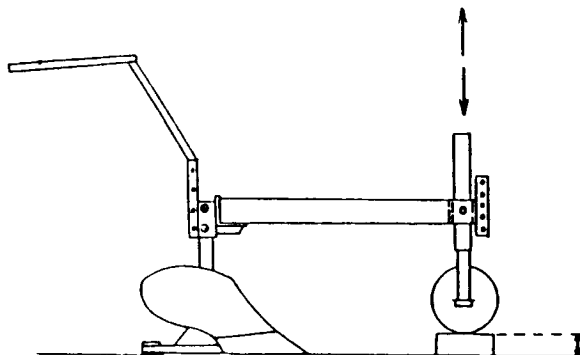
## 3.2 PLOUGHING EQUIPMENT

### 3.2.2. USING THE MOULDBOARD PLOUGH

#### FIELD ADJUSTMENT OF THE CHAIN PULLED PLOUGH

When ploughing with a pair of animals, use the standard yoke of 90 cm between centres. A longer yoke will make it difficult to maintain the correct width of cut. Adjust the chain length to be short, but making sure that the animals don't catch their hooves on the plough. The implement should trail about one metre behind the animals.

Adjust the height of the support wheel to the desired working depth and put the plough to work a short distance. If the handles can be adjusted, choose the position most comfortable for the operator.



*Fig. 1 Place the plough on flat ground and adjust the wheel height to the desired working depth.*

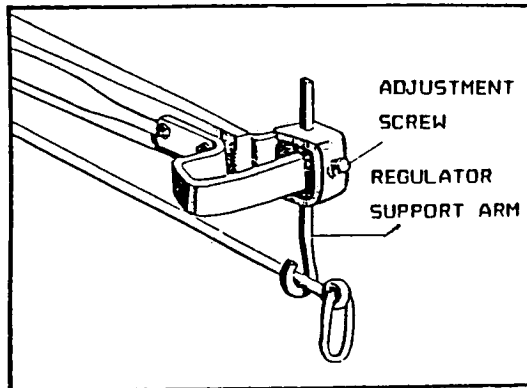
*Source: Mignolet et al, 1987*

Now observe the setting of the plough in work:

- If the desired working depth has not been reached, raise the point of attachment on the regulator (**Fig.2**);

**NOTE:** the regulator illustrated for the plough in **Fig.3** is different to that in **Fig.2**, however the principle of raising the point of attachment to increase depth, remains the same.

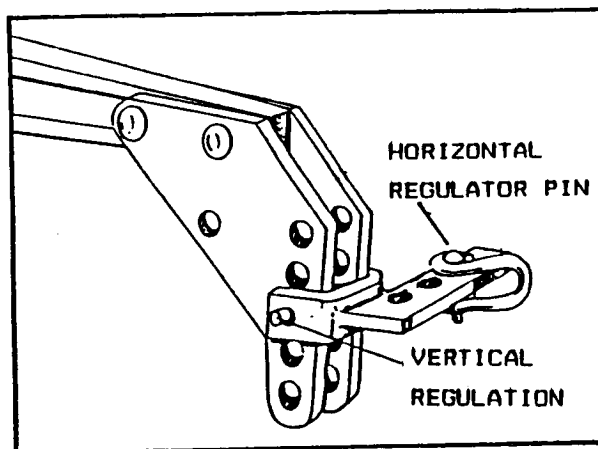
- If the support wheel is obviously heavily loaded and digging in, lower the attachment point on the regulator until the wheel runs very lightly along the ground, leaving no rut.



*Fig. 2 Raise the regulator support arm with the adjusting screw to increase working depth.*  
 Source: after AETC, 1986

Once the second furrow is being opened, check the furrow width. Move the point of attachment on the regulator (Fig.3):

- towards the furrow wall to reduce the working width;
- away from the furrow wall to increase the working width



*Fig.3 The regulator assembly is different on this plough. The horizontal attachment point shown will give minimum furrow width (as is also the case illustrated in Fig.2 above). Maximum furrow width could be obtained here by inverting completely the horizontal regulator by removing the pin and turning it over.*  
 Source: after AETC, 1986

**FIELD ADJUSTMENT OF THE POLE OR BEAM PLOUGH**

The pole or beam plough may be fitted with a mouldboard body as illustrated in Fig.4. Alternatively the implement may consist of a traditional type of ard plough as shown in Fig.5.



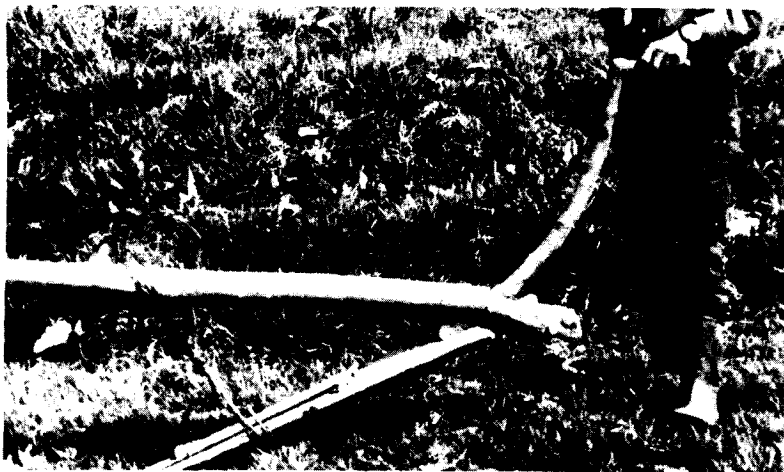
*Fig. 4 The Kanol plough with a quick fitting mouldboard body and showing the screw adjustment for depth control.*

*Photo: J.E. Ashburner*

The beam is made from a stout pole cut to a length of between 3.0 and 3.8 metres long, depending upon the size of the animals. It should be long enough to ensure that the animals cannot catch their feet on the implement but not so long that turning at the end of the field becomes a problem. The plough point should be about 1 metre behind the animal's legs.

Depth adjustment is achieved by altering the angle at which the tool penetrates the ground. This is achieved by the screw adjuster on the Kanol plough (Fig.4). The traditional ard (Fig.5) will have an arrangement with ropes to vary the approach angle, or perhaps a system with wooden wedges acting on the tool support arm.

The width of work is controlled by the operator, inclining the plough to either side to increase or decrease the width whilst making sure the furrow remains straight.



*Fig. 5 A traditional ard plough as used in the Andes of Ecuador. Photo: J.E. Ashburner*

#### **MAINTENANCE OF THE PLOUGH**

Regular maintenance of the plough will improve its performance and reduce time lost preparing for work or during field adjustments.

#### **AT THE END OF THE DAY**

- Scrape off soil in the field;
- Tighten all nuts and bolts and make sure those used for plough adjustment can still be loosened if necessary;
- Check all the wearing parts and replace them if necessary;
- If the plough will not be used over the next few days, wash and oil the plough, particularly the mouldboard;

#### **BUT NEVER OIL THE WHEEL AXLE!**

(the wheel axle normally has a bush which wears away in preference to the more expensive axle bolt - oil or grease attracts dust and would accelerate this wear rate)

- Store the plough away from the livestock and draught animals to prevent their injury.

#### **AT THE END OF THE SEASON**

Thoroughly clean and check all the parts on the plough for wear or damage. Repair the wearing parts and replace all damaged nuts and bolts. Paint the plough if possible and make sure it is wiped with oil for protection against rust. Store it in a dry place. Make sure of a stock of spare shares, bolts, etc. ready for the next season.