

**Summary**

Ploughing and pressing was compared with ploughing only on a sandy loam soil in ideal moist soil conditions. After ploughing the weather was dry and the ridges left by the presses dried through. Because of this the seedbed clod size was largely determined by the clod/ridge pattern left at the time of ploughing and/or pressing.

Plant establishment and yield was closely related to seedbed clod size. All the press treatments increased yield significantly.

**Object**

To provide information on the selection and use of furrow presses when used on:-

- (a) Light soil conditions to eliminate or minimise subsequent cultivation and improve seedbed conditions.
- (b) Heavy land to consolidate the soil, preventing moisture loss and aiding cultivations following ploughing.

This trial was one of a series co-ordinated by ADAS Mechanisation Advisory Officers on several Experimental Farms.

**Treatments**

1. Ransomes reversible '109' 4 x 36 cm furrow plough.
2. Hill and Osborne single row press (8 rings each of 70 cm diameter and 69 kg weight).
3. Lemken Variopack Double row press. 110 WDP 160-70 (16 rings each of 70 cm, with a total weight of 842 kg)
4. Flexicoil Tandem 152 cm wide. P205RD spiral configuration press (total weight 765 kg).
5. Lemken as used for treatment 3 with crumbler attached.

The furrow presses used for treatments 2, 3, 4 and 5 were attached to the plough used for treatment 1. Ploughing was carried out using a Ford 7600 tractor on 13 September. Soil conditions on a shallow cultivated barley stubble were ideal, i.e. moist but not waterlogged, the land having drained satisfactorily after 57.2 mm of rain had fallen in the previous month. The soil type was a sandy loam (Ashley Series) and the plough depth was 25 cm.

\*NOT FOR PUBLICATION WITHOUT THE DIRECTOR'S CONSENT. This report deals primarily with only one year's work, so any conclusions given are only provisional.

On 4 October the site was sown without any further cultivation, with Brimstone winter wheat. All inputs of herbicide, nitrogen and fungicide were applied thereafter as standard farm practice.

**Results (second year)**

**Soil compression, seedbed clod size, plant establishment and yield**

	Soil level (lift above pre- plough compressed level cm)	Seedbed clod size score 0-10 7 October	Plants established m <sup>2</sup> 2 April	Grain yield at 85% D.M.
(ESE)				(+0.202)
Plough only	17.92	10	80.8	4.46
Plough + Hill & Osborne	15.65	3	148.1	6.14
Plough + Lemken	14.60	4	148.1	6.58
Plough + Flexicoil	14.00	0	197.7	6.78
Plough + Lemken + crumbler	14.45	1	185.4	6.99
S.E. per plot (12 d.f.) = $\pm 0.403$ t/ha or 6.5% of G.M.				

Seedbed clod score 0 = relatively clod free  
10 = numerous clods - diameter range 8 to 15 cm

1. From the time of ploughing until sowing the weather was dry, warm and often windy. This caused considerable surface drying and clods left by the plough and the ridges left by the presses dried through. Because of this, seedbed clod size after drilling was largely determined by the clod/ridge pattern left at the time of ploughing and/or pressing.
2. The results suggest that the Flexicoil press gave the most soil compression and that this resulted in a clod free seedbed. Plants per m<sup>2</sup> were also highest after this treatment.
3. When compared with the plough only, all the press treatments increased yield significantly.
4. In this very dry season the Flexicoil press and the Lemken + crumbler treatment left relatively clod free seedbeds. This improved both plant establishment and crop yield.

W.E.R. MADGE