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Yields of the Field Experiments 1986



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Rothamsted Research

Rothamsted Research (1987) 86/R/RN/8 Cultivation/WEEDKILLER - W. Barley; Yields Of The Field Experiments 1986, pp 72 - 73 - DOI: https://doi.org/10.23637/ERADOC-1-36

86/R/RN/8

CULTIVATION/WEEDKILLER

Object: To study the long-term effects of different methods of primary cultivation on a sequence of crops; weedkillers were also tested until 1981 - Great Harpenden I.

Sponsor: R. Moffitt.

The 26th year, w. barley.

For previous years see 'Details' 1967 and 1973 and 74-85/R/RN/8.

Design: 2 randomised blocks of 12 plots.

Whole plot dimensions: 12.8 x 12.2.

Treatments: All combinations of:-

Whole plots

 CLT CHOP Primary cultivations annually; straw chopped since 1985:

PLOUGH Ploughed: 14 Oct, 1985. Rotary harrowed: 16 Oct ROTA DIG Cultivated by rotary digger: 14 Oct DEEPTINE Deep-tine cultivated, 3 times: 18 Sept

2. SUBSOIL(82) Subsoiling in September 1982:

NONE None

CNVNTIAL Conventional vertical tine

PARAPLOW 'Paraplow'

XTR BURN plus three extra plots with straw burnt since 1985 direct drilled until 1984, heavy spring-tine cultivated twice, on 17 September, 1985, in addition to basal cultivating, differing in

subsoiling in September 1982:

NONE None

CNVNTIAL Conventional vertical tine

PARAPLOW 'Paraplow'

NOTES: (1) Straw was chopped on 13 Aug, 1985 and was burnt on XTR BURN on 2 Sept. All plots were sprayed with paraquat at 0.60 kg ion in 200 l on 10 Oct, spring-tine cultivated and disced on 17 Oct and drilled on 18 Oct.

(2) The conventional vertical tine subsoiler had tines 76 cm apart and worked at a depth of about 50 cm.

(3) The 'Paraplow' had rigid times set at a 45 degree angle. The tip of each time was in line with the attachment of an adjacent time. The times were 51 cm apart and worked at a depth of about 38 cm.

86/R/RN/8

Basal applications: Manures: 'Nitram' at 130 kg and later at 340 kg. Weedkillers: Clopyralid at 0.07 kg, bromoxynil octanoate at 0.34 kg, mecoprop at 2.5 kg and isoproturon at 2.1 kg in 200 l.

Seed: Igri, sown at 160 kg.

Cultivations, etc.:- First N applied: 13 Mar, 1986. Second N applied: 11 Apr. Weedkillers applied: 29 Apr. Combine harvested: 1 Aug.

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

| SUBSOIL(82) CLT CHOP | NONE | CNVNTIAL | PARAPLOW | MEAN |
|-------------------------|---------|------------|-----------------|--------------|
| PLOUGH | 6.51 | 6.10 | 6.10 | 6.24 |
| ROTA DIG | 6.42 | 6.09 | 6.46 | 6.32 |
| DEEPTINE | 6.75 | 6.37 | 6.73 | 6.62 |
| MEAN | 6.56 | 6.18 | 6.43 | 6.39 |
| XTR BURN | NONE CI | NVNTIAL PA | ARAPLOW 6.63 | MEAN 6.73 |

GRAND MEAN 6.48

**** STANDARD ERRORS OF DIFFERENCES OF MEANS ****

| TABLE | CLT CHOP | SUBSOIL(82) | XTR BURN | CLT CHOP SUBSOIL(82) |
|-------|----------|-------------|----------|-------------------------|
| SED | 0.157 | 0.157 | 0.271 | 0.271 |

**** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION ****

| STRATUM | DF | SE | CV% |
|-----------|----|-------|-----|
| BLOCK .WP | 11 | 0.271 | 4.2 |

GRAIN MEAN DM% 83.5

PLOT AREA HARVESTED 0.00282