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Yields of the Field Experiments 1989



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89/R/B/5

WINTER BARLEY

CONTROL OF VOLUNTEERS

Object: To compare methods of volunteer control in winter barley - Black Horse I S.

Sponsors: R. Moffitt, D.G. Christian.

Design: 3 replicates of 6 x 3 criss-cross.

Column plot dimensions: 6.0 x 23.0.

Treatments: All combinations of:-

1. PRIMCULT Primary cultivations:

NONE None until just before sowing

DYNDRIVE 'Bomford Dynadrive'

Disc DISC PLOUGH Plough

ROTAVATE Rotary cultivate

Tine

2. PRSOWCON Pre-sowing volunteer control:

GLYPHOS Glyphosate at 0.27 kg in 200 l on 17 Oct, 1988 PARAQUAT Paraquat at 0.60 kg ion in 200 l on 17 Oct

ROT HARR Rotary harrow on 18 Oct

NOTES: (1) Primary cultivation treatments were carried out on 13 Sept, 1988.

- (2) All plots were disced twice and seed sown on 18 Oct.
- (3) The 'Bomford Dynadrive' has a frame similar to a rotary cultivator but it has two rotating shafts containing flat, slightly twisted, spade-shaped times. The front shaft drives the rear, it is fitted with twice the number of blades and rotates at about one third the speed of the rear shaft.

Basal applications: Manure: 'Nitram' at 420 kg. Weedkillers: Chlortoluron at 3.5 kg in 200 l. Metsulfuron-methyl at 6.0 g in 400 l. Fungicide: Propiconazole at 0.12 kg in 200 l.

Seed: Igri, sown at 150 kg.

Cultivations, etc.: - Chlortoluron applied: 22 Oct, 1988. N applied: 12 Apr, 1989. Metsulfuron-methyl applied: 3 May. Fungicide applied: 17 May. Combine harvested: 14 July. Previous crops: W. wheat 1987 and 1988.

NOTES: (1) Volunteer plants were assessed in October after sowing and before crop emergence.

- (2) Ears of volunteer plants were counted at anthesis of the sown
- (3) Percentage contamination of harvested grain by volunteer grain was measured.

89/R/B/5

GRAIN TONNES/HECTARE

***** Tables of means *****

| PRSOWCON | GLYPHOS | PARAQUAT | ROT HARR | Mean |
|----------|---------|----------|----------|------|
| PRIMCULT | | | | |
| NONE | 6.05 | 6.17 | 5.81 | 6.01 |
| DYNDRIVE | 5.73 | 5.99 | 5.98 | 5.90 |
| DISC | 6.18 | 5.94 | 6.05 | 6.06 |
| PLOUGH | 5.63 | 6.00 | 6.02 | 5.89 |
| ROTAVATE | 6.24 | 5.71 | 5.51 | 5.82 |
| TINE | 6.16 | 5.84 | 5.91 | 5.97 |
| Mean | 6.00 | 5.94 | 5.88 | 5.94 |
| | | | | |

*** Standard errors of differences of means ***

| | PRIMCULT | PRSOWCON | PRIMCULT PRSOWCON | |
|-------------|-----------------|---------------|----------------------|----|
| | 0.223 | 0.151 | 0.335 | |
| Except when | comparing means | with the same | level(s) | of |
| PRIMCULT | | | 0.298 | |
| PRSOWCON | | | 0.321 | |

***** Stratum standard errors and coefficients of variation *****

| Stratum | d.f. | s.e. | CV% |
|---------------|------|-------|-----|
| BLOCK.WP1 | 4 | 0.185 | 3.1 |
| BLOCK.WP2 | 10 | 0.274 | 4.6 |
| BLOCK.WP1.WP2 | 20 | 0.345 | 5.8 |

GRAIN MEAN DM% 85.7

SUB PLOT AREA HARVESTED 0.00161