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## Yields of the Field Experiments 1989

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### 89/R/B/5 Control of Volunteers - W. Barley

#### Rothamsted Research

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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	Tine
  
2. **PRROWCON**        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 tines. 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 crop.  
(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