

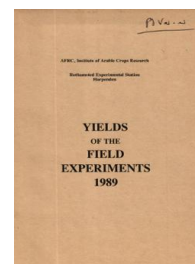
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## Yields of the Field Experiments 1989

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### 89/R/WW/2 Control of Volunteers - W. Wheat

#### Rothamsted Research

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89/R/WW/2

**WINTER WHEAT**

**CONTROL OF VOLUNTEERS**

**Object:** To compare methods of volunteer control in winter wheat after w. and s. barley - Scout N, Great Field I.

**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. **PRSOWCON**        Pre-sowing volunteer control:  

GLYPHOS	Glyphosate at 0.27 kg in 200 l on 1 Oct, 1988 (Scout N), 17 Oct (Great Field I)
PARAQUAT	Paraquat at 0.60 kg ion in 200 l on above dates
ROT HARR	Rotary harrowed on 3 Oct (Scout N), 28 Oct (Great Field I)

- NOTES:**
- (1) Primary cultivation treatments were carried out on 19 Aug, 1988 (Scout N) and 5 Sept (Great Field I). **PRIMCULT DISC** and **PRIMCULT TINE** were cultivated twice in Scout N.
  - (2) All plots were disced twice on 3 Oct (Scout N) and 27 Oct (Great Field I) and seed sown on 4 Oct and 28 Oct respectively.
  - (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.
  - (4) A 1 m strip of Plaisant w. barley was broadcast on the surface, by drill at 100 kg on one end of each plot on Great Field I only. It was broadcast before any treatments were applied on 2 Sept, 1988.

**Basal applications:**

Scout N: Manure: 'Nitram' at 600 kg. Weedkillers: Chlortoluron at 3.5 kg in 200 l. Mecoprop at 2.2 kg, bromoxynil at 0.28 kg and ioxynil at 0.28 kg with the prochloraz and carbendazim in 200 l. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg. Fenpropimorph at 0.56 kg in 200 l. Molluscicide: Methiocarb at 0.22 kg.

89/R/WW/2

**Basal applications:**

Great Field I: Manure: 'Nitram' at 580 kg. Weedkillers:  
Chlortoluron at 3.5 kg in 200 l. Mecoprop at 2.2 kg, bromoxynil  
at 0.28 kg and ioxynil at 0.28 kg in 200 l.

**Seed:** Mercia, sown at 180 kg.

**Cultivations, etc.:-**

Scout N: Chlortoluron applied: 21 Oct, 1988. Methiocarb applied:  
30 Jan, 1989. N applied: 10 Apr. Remaining weedkillers with  
prochloraz and carbendazim applied: 2 May. Fenpropimorph applied:  
28 June. Combine harvested: 4 Aug. Previous crops: W. barley  
1987 and 1988.

Great Field I: Chlortoluron applied: 16 Nov, 1988. N applied:  
19 Apr, 1989. Remaining weedkillers applied: 4 May. Combine  
harvested: 4 Aug. Previous crops: W. wheat 1987, s. barley 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/WW/2 SCOUT N AFTER W. BARLEY

GRAIN TONNES/HECTARE

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

PRROWCON PRIMCULT	GLYPHOS	PARAQUAT	ROT HARR	Mean
NONE	4.17	4.75	4.12	4.35
DYNDRIVE	3.95	4.75	3.60	4.10
DISC	3.75	4.39	3.89	4.01
PLOUGH	4.75	4.64	4.17	4.52
ROTAVATE	4.26	5.21	4.19	4.55
TINE	3.57	4.17	3.34	3.70
Mean	4.07	4.65	3.89	4.20

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

	PRIMCULT	PRROWCON	PRIMCULT PRROWCON
	0.252	0.265	0.432
Except when comparing means with the same level(s) of			
PRIMCULT			0.398
PRROWCON			0.366

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	10	0.309	7.4
BLOCK.WP2	4	0.324	7.7
BLOCK.WP1.WP2	20	0.398	9.5

GRAIN MEAN DM% 86.7

SUB PLOT AREA HARVESTED 0.00161

89/R/WW/2 GREAT FIELD I AFTER S. BARLEY

GRAIN TONNES/HECTARE

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

PRSOWCON	GLYPHOS	PARAQUAT	ROT HARR	Mean
PRIMCULT				
NONE	5.42	5.15	5.64	5.40
DYNDRIVE	5.16	4.78	5.34	5.09
DISC	6.12	5.57	5.91	5.87
PLOUGH	5.36	5.11	5.21	5.22
ROTAVATE	5.38	5.34	5.51	5.41
TINE	5.76	5.47	5.73	5.65
Mean	5.53	5.24	5.56	5.44

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

	PRIMCULT	PRSOWCON	PRIMCULT PRSOWCON
	0.281	0.229	0.402
Except when comparing means with the same level(s) of			
PRIMCULT			0.319
PRSOWCON			0.344

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	10	0.345	6.3
BLOCK.WP2	4	0.281	5.2
BLOCK.WP1.WP2	20	0.297	5.5

GRAIN MEAN DM% 87.3

SUB PLOT AREA HARVESTED 0.00161