

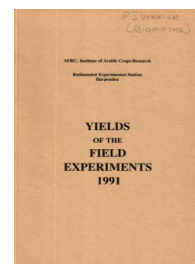
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# Yields of the Field Experiments 1991

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## 91/R/BW/1 Control of Volunteers - W. Barley

### Rothamsted Research

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91/R/BW/1

## WINTER BARLEY

### CONTROL OF VOLUNTEERS

**Object:** To compare methods of volunteer control in winter barley after w. wheat - Great Harpenden II.

**Sponsor:** D.G. Christian.

**Design:** 3 replicates of 8 x 3 criss-cross.

**Column plot dimensions:** 6.0 x 20.0.

**Treatments:** All combinations of:-

Column plots

- |             |                               |
|-------------|-------------------------------|
| 1. PRIMCULT | Primary cultivations:         |
| NONE        | None until just before sowing |
| DYNDRIVE    | 'Bomford Dynadrive'           |
| PLOUGH      | Plough                        |
| TINE        | Tine                          |

- |             |                       |
|-------------|-----------------------|
| 2. CULTDATE | Dates of cultivation: |
|-------------|-----------------------|

EARLY	13 Aug, 1990
LATER	3 Sept

Row plots

- |             |   |
|-------------|---|
| 3. PRSOWCON | Pre-sowing volunteer control using weedkillers: |
| GLYPHOS     | Glyphosate at 0.27 kg in 200 l on 8 Oct, 1990   |
| PARAQUAT    | Paraquat at 0.60 kg ion in 200 l on 8 Oct       |
| NONE        | None  |

**NOTES:** (1) 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.

(2) All plots were heavy spring-tine cultivated on 9 Oct, 1990 then rotary harrowed and the seed sown on 10 Oct.

**Basal applications:** Manure: 'Nitram' at 460 kg. Weedkillers: Isoproturon at 1.3 kg and pendimethalin at 1.3 kg in 200 l with the insecticide. Fungicides: Prochloraz at 0.40 kg with tridemorph at 0.26 kg in 200 l. Propiconazole at 0.12 kg in 200 l. Insecticide: Deltamethrin at 6.2 g.

**Seed:** Magie, sown at 150 kg.

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**Cultivations, etc.:-** Weedkillers with the insecticide applied: 15 Nov, 1990. N applied: 26 Mar, 1991. Prochloraz with tridemorph applied: 23 Apr. Propiconazole applied: 23 May. Combine harvested: 12 Aug. Previous crops: Potatoes 1989, w. wheat 1990.

**NOTES:** (1) Ears of volunteer plants were counted at anthesis of the sown crop.  
(2) Percentage contamination of harvested grain by volunteer grain was measured.

# **GRAIN TONNES/HECTARE**

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

<b>CULTDATE</b>	<b>EARLY</b>	<b>LATER</b>	<b>Mean</b>				
<b>PRIMCULT</b>							
NONE	6.52	6.71	6.61				
DYNDRIVE	6.83	7.15	6.99				
PLOUGH	6.81	6.90	6.86				
TINE	6.99	7.41	7.20				
Mean	6.79	7.04	6.92				
<b>PRSOWCON</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>Mean</b>			
<b>PRIMCULT</b>							
NONE	7.04	6.28	6.53	6.61			
DYNDRIVE	7.07	7.09	6.83	6.99			
PLOUGH	7.28	6.33	6.96	6.86			
TINE	7.25	7.19	7.17	7.20			
Mean	7.16	6.72	6.87	6.92			
<b>PRSOWCON</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>Mean</b>			
<b>CULTDATE</b>							
EARLY	7.05	6.67	6.65	6.79			
LATER	7.27	6.78	7.09	7.04			
Mean	7.16	6.72	6.87	6.92			
<b>CULTDATE</b>	<b>EARLY</b>	<b>LATER</b>					
<b>PRIMCULT PRSOWCON</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	
NONE	7.03	6.28	6.25	7.04	6.28	6.81	
DYNDRIVE	6.87	7.06	6.58	7.27	7.12	7.07	
PLOUGH	7.30	6.12	7.01	7.26	6.55	6.90	
TINE	6.99	7.22	6.77	7.50	7.17	7.56	

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GRAIN TONNES/HECTARE

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

	PRIMCULT	CULTDATE	PRSOWCON	PRIMCULT CULTDATE
	0.262	0.186	0.187	0.371
	PRIMCULT PRSOWCON	CULTDATE PRSOWCON	PRIMCULT CULTDATE PRSOWCON	
	0.387	0.280	0.541	
Except when comparing means with the same level(s) of				
PRIMCULT	0.343			
CULTDATE		0.250		
PRSOWCON	0.378	0.267	0.534	
PRIMCULT.CULTDATE			0.478	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	14	0.455	6.6
BLOCK.WP2	4	0.229	3.3
BLOCK.WP1.WP2	28	0.576	8.3

GRAIN MEAN DM% 84.4

SUB PLOT AREA HARVESTED 0.00094