

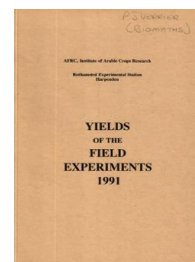
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## Yields of the Field Experiments 1991

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

#### Rothamsted Research

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91/R/WW/2

**WINTER WHEAT**

**CONTROL OF VOLUNTEERS**

**Object:** To compare methods of volunteer control in winter wheat after w. and s. barley - Great Knott I, Long Hoos I/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** Date of cultivations:  

EARLY	25 July, 1990 (Great Knott I) 15 Aug (Long Hoos I/II)
LATER	15 Aug (Great Knott I) 5 Sept (Long Hoos I/II)

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) **PRIMCULT TINE** was heavy spring-tine cultivated twice.
- (3) All plots were heavy spring-tine cultivated on 9 Oct, 1990 then rotary harrowed and the seed sown on 10 Oct.

**Basal applications:** Manures: (0:16:36) at 980 kg (Great Knott I only). 'Nitram' at 120 kg and later at 580 kg. Weedkillers: Isoproturon at 1.3 kg and pendimethalin at 1.3 kg in 200 l. Glyphosate (Long Hoos I/II only) at 1.4 kg in 200 l. Fungicides: Fenpropimorph at 0.38 kg in 200 l and on a second occasion with chlorothalonil at 0.49 kg and flutriafol at 78 g in 200 l.

**Seed:** Mercia, sown at 170 kg.

91/R/WW/2

**Cultivations, etc.:-** PK applied (Great Knott I only): 20 Aug, 1990.

Isoproturon and pendimethalin applied: 14 Nov (Great Knott I), 23 Nov (Long Hoos I/II). First N applied: 13 Mar, 1991. Second N applied: 3 Apr (Great Knott I), 8 Apr (Long Hoos I/II). Fenpropimorph alone applied: 27 Apr. Fenpropimorph with chlorothalonil and flutriafol applied: 20 June. Glyphosate applied (Long Hoos I/II only): 12 Aug. Combine harvested: 20 Aug (Great Knott I), 25 Aug (Long Hoos I/II). Previous crops: W. barley 1989 and 1990 (Great Knott I), sunflowers 1989, s. barley 1990 (Long Hoos I/II)

- 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.

**91/R/WW/2 GREAT KNOTT I W. WHEAT AFTER W. BARLEY**

**GRAIN TONNES/HECTARE**

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

<b>CULTDATE</b>	<b>EARLY</b>	<b>LATER</b>	<b>Mean</b>			
<b>PRIMCULT</b>						
NONE	6.43	7.39	6.91			
DYNDRIVE	6.89	6.72	6.81			
PLOUGH	7.46	7.45	7.46			
TINE	7.10	7.09	7.10			
Mean	6.97	7.16	7.07			
<b>PRROWCON</b>						
<b>PRIMCULT</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>Mean</b>		
NONE	7.14	6.88	6.70	6.91		
DYNDRIVE	7.09	6.75	6.59	6.81		
PLOUGH	7.49	7.42	7.46	7.46		
TINE	7.17	7.25	6.87	7.10		
Mean	7.22	7.08	6.91	7.07		
<b>PRROWCON</b>						
<b>CULTDATE</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>Mean</b>		
EARLY	7.11	6.98	6.82	6.97		
LATER	7.33	7.18	6.99	7.16		
Mean	7.22	7.08	6.91	7.07		
<b>PRIMCULT</b>						
<b>CULTDATE</b>	<b>EARLY</b>	<b>PARAQUAT</b>		<b>LATER</b>		
NONE	6.61	6.54	NONE	GLYPHOS	PARAQUAT	NONE
DYNDRIVE	7.13	6.75	6.80	7.04	6.75	6.38
PLOUGH	7.51	7.28	7.60	7.46	7.56	7.33
TINE	7.19	7.34	6.78	7.15	7.17	6.96

91/R/WW/2 GREAT KNOTT I W. WHEAT AFTER W. BARLEY

GRAIN TONNES/HECTARE

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

	PRIMCULT	CULTDATE	PRSOWCON	PRIMCULT CULTDATE
	0.269	0.190	0.238	0.381
	PRIMCULT PRSOWCON	CULTDATE PRSOWCON	PRIMCULT CULTDATE PRSOWCON	
	0.375	0.309	0.482	

Except when comparing means with the same level(s) of

PRIMCULT	0.279			
CULTDATE		0.252		
PRSOWCON	0.302	0.214	0.427	
PRIMCULT.CULTDATE			0.325	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	14	0.466	6.6
BLOCK.WP2	4	0.292	4.1
BLOCK.WP1.WP2	28	0.290	4.1

GRAIN MEAN DM% 87.5

SUB PLOT AREA HARVESTED 0.00094

91/R/WW/2 LONG HOOS I/II W. WHEAT AFTER S. BARLEY

GRAIN TONNES/HECTARE

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

CULTDATE	EARLY	LATER	Mean	
PRIMCULT				
NONE	9.10	9.22	9.16	
DYNDRIVE	9.12	9.43	9.28	
PLOUGH	9.25	9.03	9.14	
TINE	9.26	9.26	9.26	
Mean	9.18	9.24	9.21	
PRSOWCON	GLYPHOS	PARAQUAT	NONE	Mean
PRIMCULT				
NONE	9.09	9.02	9.38	9.16
DYNDRIVE	9.27	9.00	9.56	9.28
PLOUGH	9.32	8.88	9.22	9.14
TINE	9.21	9.15	9.43	9.26
Mean	9.22	9.01	9.40	9.21

91/R/WW/2 LONG HOOS I/II W. WHEAT AFTER S. BARLEY

GRAIN TONNES/HECTARE

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

PRISOWCON	GLYPHOS	PARAQUAT	NONE	Mean
<b>CULTDATE</b>				
EARLY	9.28	8.93	9.34	9.18
LATER	9.16	9.09	9.46	9.24
Mean	9.22	9.01	9.40	9.21

	CULTDATE	EARLY		LATER			
<b>PRIMCULT</b>	<b>PRISOWCON</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>	<b>GLYPHOS</b>	<b>PARAQUAT</b>	<b>NONE</b>
NONE		9.13	9.03	9.15	9.05	9.01	9.61
DYNDRIVE		9.16	8.80	9.41	9.38	9.20	9.70
PLOUGH		9.69	8.86	9.20	8.95	8.91	9.25
TINE		9.14	9.05	9.59	9.28	9.25	9.27

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

	<b>PRIMCULT</b>	<b>CULTDATE</b>	<b>PRISOWCON</b>	<b>PRIMCULT</b>
				<b>CULTDATE</b>
	0.171	0.121	0.119	0.241
	<b>PRIMCULT</b>	<b>CULTDATE</b>	<b>PRIMCULT</b>	
	<b>PRISOWCON</b>	<b>PRISOWCON</b>	<b>CULTDATE</b>	<b>PRISOWCON</b>
	0.232	0.176	0.316	

Except when comparing means with the same level(s) of

<b>PRIMCULT</b>	0.181		
<b>CULTDATE</b>		0.143	
<b>PRISOWCON</b>	0.214	0.151	0.303
<b>PRIMCULT.CULTDATE</b>			0.241

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	14	0.296	3.2
BLOCK.WP2	4	0.146	1.6
BLOCK.WP1.WP2	28	0.274	3.0

GRAIN MEAN DM% 84.0

SUB PLOT AREA HARVESTED 0.00090