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Yields of the Field Experiments 1990

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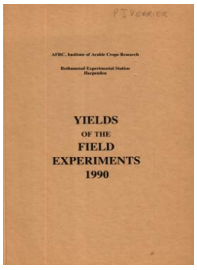

90/R/B/1 Control of Volunteers - W. Barley

Rothamsted Research

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90/R/B/1

WINTER BARLEY

CONTROL OF VOLUNTEERS

Object: To compare methods of volunteer control in winter barley after w. wheat - Whittlocks.

Sponsors: R. Moffitt, 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	17 Aug, 1989
LATER	7 Sept

Row plots

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

GLYPHOS	Glyphosate at 0.27 kg in 200 l on 18 Oct, 1989
PARAQUAT	Paraquat at 0.60 kg ion in 200 l on 18 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) A 1 m strip of Squarehead's Master, w. wheat, was broadcast on the surface at one end of each plot, at 100 kg, on 17 Aug, 1989 before any primary cultivations.

(3) All plots were heavy spring-tine cultivated on 1 Nov, 1989, then rotary harrowed, the seed was sown and spring-tine cultivated in on 14 Nov.

Basal applications: Manure: 'Nitram' at 120 kg and later at 350 kg. Weedkiller: Chlorotoluron at 3.5 kg in 200 l.

Seed: Magie, sown at 160 kg.

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Cultivations, etc.:- Weedkiller applied: 21 Nov, 1989. First N applied: 9 Mar, 1990. Second N applied: 17 Apr. Combine harvested: 24 July. Previous crops: W. oilseed rape 1988, w. wheat 1989.

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 *****

CULTDATE	EARLY	LATER	Mean
PRIMCULT			
NONE	4.43	4.44	4.44
DYNDRIVE	4.42	4.56	4.49
PLOUGH	4.70	4.53	4.61
TINE	4.65	4.71	4.68
Mean	4.55	4.56	4.56

PRSOWCON	GLYPHOS	PARAQUAT	NONE	Mean
PRIMCULT				
NONE	4.61	4.37	4.33	4.44
DYNDRIVE	4.49	4.64	4.34	4.49
PLOUGH	4.64	4.51	4.69	4.61
TINE	4.65	4.77	4.62	4.68
Mean	4.60	4.57	4.49	4.56

PRSOWCON	GLYPHOS	PARAQUAT	NONE	Mean
CULTDATE				
EARLY	4.55	4.64	4.46	4.55
LATER	4.64	4.51	4.53	4.56
Mean	4.60	4.57	4.49	4.56

	PRSOWCON	GLYPHOS	PARAQUAT	NONE
PRIMCULT	**CULTDATE**			
NONE	EARLY	4.49	4.44	4.38
	LATER	4.74	4.30	4.28
DYNDRIVE	EARLY	4.37	4.62	4.28
	LATER	4.60	4.66	4.41
PLOUGH	EARLY	4.62	4.76	4.71
	LATER	4.66	4.26	4.67
TINE	EARLY	4.73	4.75	4.47
	LATER	4.57	4.79	4.77

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GRAIN TONNES/HECTARE

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

PRIMCULT	CULTDATE	PRSOWCON	PRIMCULT CULTDATE
0.155	0.110	0.074	0.219

PRIMCULT PRSOWCON	CULTDATE PRSOWCON	PRIMCULT CULTDATE PRSOWCON
0.187	0.136	0.259

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

PRIMCULT	0.123		
CULTDATE		0.093	
PRSOWCON	0.180	0.127	0.255
PRIMCULT.CULTDATE			0.167

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	4	0.091	2.0
BLOCK.WP2	14	0.268	5.9
BLOCK.WP1.WP2	28	0.196	4.3

GRAIN MEAN DM% 89.6

PLOT AREA HARVESTED 0.00080

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