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90/R/WW/2 Control of Volunteers - W. Wheat

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90/R/WW/2

WINTER WHEAT

CONTROL OF VOLUNTEERS

Object: To compare methods of volunteer control in winter wheat after w. and s. barley - Delafield, Fosters Corner.

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** Date of cultivations:

EARLY	25 July, 1989 (Delafield) 17 Aug (Fosters Corner)
LATER	15 Aug (Delafield) 7 Sept (Fosters Corner)

Row plots

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

GLYPHOS	Glyphosate at 0.27 kg in 200 l on 18 Oct, 1989 (Delafield), 1 Nov and 13 Nov (Fosters Corner)
PARAQUAT	Paraquat at 0.60 kg ion in 200 l on 18 Oct (Delafield), 1 Nov (Fosters Corner)
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 Plaisant w. barley was broadcast on the surface, by drill at 120 kg on one end of each plot. It was broadcast before any treatments were applied on 25 July, 1989 (Delafield) and 17 Aug (Fosters Corner).
 - (3) All plots were heavy spring-tine cultivated on 1 Nov, 1989 (Delafield), 14 Nov (Fosters Corner) then rotary harrowed and seed sown by drill 7 Nov (Delafield), 15 Nov (Fosters Corner). The seed was spring-tine cultivated in, (Delafield), and harrowed in, (Fosters Corner), after sowing.
 - (4) **PRIMCULT TINE** was heavy spring-tine cultivated twice.

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Basal applications: Manures: 'Nitram' at 120 kg and later at 460 kg.
 Weedkillers: Chlorotoluron at 3.5 kg in 200 l. Bromoxynil at 0.25 kg, ioxynil at 0.25 kg and mecoprop at 2.0 kg with the prochloraz in 200 l (Delafield). Bromoxynil at 0.28 kg, ioxynil at 0.28 kg and mecoprop at 2.2 kg with the prochloraz in 200 l (Fosters Corner). Fungicides: Prochloraz at 0.40 kg. Chlorothalonil at 0.50 kg with propiconazole at 0.12 kg in 200 l (Delafield). Fenpropimorph at 0.75 kg in 200 l.

Seed: Mercia, sown at 180 kg.

Cultivations, etc.:- Chlorotoluron applied: 21 Nov, 1989 (Fosters Corner), 23 Nov (Delafield). N applied: 9 Mar, 1990 and 12 Apr. Bromoxynil, ioxynil and mecoprop with prochloraz applied: 10 Apr (Delafield), 25 Apr (Fosters Corner). Chlorothalonil applied with the propiconazole (Fosters Corner): 31 May. Fenpropimorph applied: 29 June. Combine harvested: 10 Aug (Delafield), 13 Aug (Fosters Corner). Previous crops: W. oilseed rape 1988, w. barley 1989 (Delafield); sunflowers 1988, s. barley 1989 (Fosters Corner).

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.

90/R/WW/2 DELAFIELD W.WHEAT AFTER W.BARLEY

GRAIN TONNES/HECTARE

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

CULTDATE	EARLY	LATER	Mean	
PRIMCULT				
NONE	5.73	5.83	5.78	
DYNDRIVE	5.48	5.80	5.64	
PLOUGH	6.30	6.43	6.36	
TINE	5.84	5.89	5.86	
Mean	5.84	5.99	5.91	
PRSOWCON	GLYPHOS	PARAQUAT	NONE	Mean
PRIMCULT				
NONE	6.11	5.79	5.44	5.78
DYNDRIVE	5.85	5.94	5.14	5.64
PLOUGH	6.76	6.38	5.95	6.36
TINE	6.08	6.24	5.27	5.86
Mean	6.20	6.09	5.45	5.91
PRSOWCON	GLYPHOS	PARAQUAT	NONE	Mean
CULTDATE				
EARLY	6.10	5.92	5.50	5.84
LATER	6.30	6.25	5.40	5.99
Mean	6.20	6.09	5.45	5.91

90/R/WW/2 DELAFIELD W.WHEAT AFTER W.BARLEY

GRAIN TONNES/HECTARE

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

PRIMCULT	PRSOWCON CULTDATE	GLYPHOS	PARAQUAT	NONE
NONE	EARLY	6.18	5.57	5.44
	LATER	6.05	6.00	5.44
DYNDRIVE	EARLY	5.75	5.70	4.99
	LATER	5.94	6.17	5.29
PLOUGH	EARLY	6.61	6.22	6.08
	LATER	6.92	6.54	5.81
TINE	EARLY	5.85	6.18	5.48
	LATER	6.30	6.31	5.06

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

	PRIMCULT	CULTDATE	PRSOWCON	PRIMCULT CULTDATE
	0.167	0.118	0.296	0.236
	PRIMCULT PRSOWCON	CULTDATE PRSOWCON	PRIMCULT CULTDATE PRSOWCON	
	0.369	0.325	0.445	
Except when comparing means with the same level(s) of				
PRIMCULT	0.354			
CULTDATE		0.317		
PRSOWCON	0.248	0.175	0.350	
PRIMCULT.CULTDATE			0.419	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	4	0.363	6.1
BLOCK.WP2	14	0.288	4.9
BLOCK.WP1.WP2	28	0.388	6.6

GRAIN MEAN DM% 89.5

PLOT AREA HARVESTED 0.00075

90/R/WW/2 FOSTERS CORNER W.WHEAT AFTER S.BARLEY

GRAIN TONNES/HECTARE

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

CULTDATE	EARLY	LATER	Mean
PRIMCULT			
NONE	5.61	5.75	5.68
DYNDRIVE	5.43	5.83	5.63
PLOUGH	5.69	5.78	5.73
TINE	5.56	5.65	5.60
Mean	5.57	5.75	5.66

PRROWCON	GLYPHOS	PARAQUAT	NONE	Mean
PRIMCULT				
NONE	5.74	5.43	5.87	5.68
DYNDRIVE	5.59	5.52	5.77	5.63
PLOUGH	5.73	5.59	5.88	5.73
TINE	5.55	5.48	5.78	5.60
Mean	5.65	5.51	5.83	5.66

PRROWCON	GLYPHOS	PARAQUAT	NONE	Mean
CULTDATE				
EARLY	5.55	5.40	5.77	5.57
LATER	5.75	5.61	5.89	5.75
Mean	5.65	5.51	5.83	5.66

PRIMCULT	PRROWCON	GLYPHOS	PARAQUAT	NONE
CULTDATE				
NONE	EARLY	5.72	5.36	5.76
	LATER	5.76	5.50	5.98
DYNDRIVE	EARLY	5.43	5.32	5.55
	LATER	5.76	5.73	5.99
PLOUGH	EARLY	5.60	5.47	5.99
	LATER	5.86	5.71	5.78
TINE	EARLY	5.46	5.46	5.75
	LATER	5.64	5.50	5.80

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

	PRIMCULT	CULTDATE	PRROWCON	PRIMCULT CULTDATE
	0.083	0.059	0.236	0.118
	PRIMCULT PRROWCON	CULTDATE PRROWCON	PRIMCULT CULTDATE PRROWCON	
	0.265	0.246	0.300	
Except when comparing means with the same level(s) of				
PRIMCULT	0.264			
CULTDATE		0.246		
PRROWCON	0.140	0.099	0.197	
PRIMCULT . CULTDATE			0.298	

90/R/WW/2 FOSTERS CORNER W.WHEAT AFTER S.BARLEY

GRAIN TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP1	4	0.289	5.1
BLOCK.WP2	14	0.144	2.5
BLOCK.WP1.WP2	28	0.238	4.2

GRAIN MEAN DM% 89.1

PLOT AREA HARVESTED 0.00080