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77/R/RN/8 Cultivation/WEEDKILLER - S. Wheat

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77/R/RN/8

CULTIVATION/WEEDKILLER

Object: To study the long-term effects of weedkillers and different methods of primary cultivation on a rotation of crops - Great Harpenden I.

Sponsors: R. Moffitt, G.V. Dyke, J.A. Currie.

The 17th year, spring wheat.

For previous years see 'Details' 1967 and 1973 and 74-76/R/RN/8.

Design: 2 randomised blocks of 12 plots split into 2.

Whole plot dimensions: 12.8 x 15.2.

Treatments: All combinations of:-

Whole plots

- | | |
|-----------------|-----------------------------------|
| 1. CULTIVTN | Primary cultivations annually: |
| PLOUGH | Ploughed: 20 Oct, 1976 |
| ROTAVATE | Rotary cultivated: 13 Oct |
| DEEPTINE | Deep-tine cultivated twice: 5 Oct |
| 2. WEEDCNTL(76) | Weed control to beans 1976: |
| MECHANCL | Mechanical |
| SIMAZINE | Simazine |

Sub plots

- | | |
|------------------|---|
| 3. WEEDKLLR(751) | Hormone weedkiller to previous cereals, last applied to barley 1975 (basal weedkiller 'Banlene Plus' at 4.9 l in 220 l in 1977): |
| NONE | None |
| DI+ME+MC | Dicamba + mecoprop + MCPA |
| 4. WEEDKLLR(752) | Paraquat weedkiller to previous cereal stubbles, last applied to barley stubble autumn 1975 (basal weedkiller, glyphosate at 1.7 kg in 220 l to bean stubble 1976): |
| NONE | |
| PARAQUAT | |

EXTRA plus three extra whole plot treatments:

- | | |
|----------|--|
| SPNGTINE | Heavy spring-tine cultivated twice: 6 Oct, 1976. Given simazine to beans 1976, with sub plot treatments 3 and 4 above. |
| (SH)PLGH | Shallow ploughed: 7 Oct, 1976. Given simazine to beans 1976 and paraquat to barley stubble autumn 1975, with sub plot treatment 3 above. |
| STANDARD | Standard cultivations as considered best for each crop. Ploughed 20 Oct, 1976. Given simazine to beans 1976, with sub plot treatments 3 and 4 above. |

77/R/RN/8

NOTE: It was intended to sow winter wheat but prolonged wet weather prevented this.

Basal applications: Manures: (10:24:24) at 250 kg, combine drilled. Insecticide: Pirimicarb at 0.14 kg in 270 l.

Seed: Sappo, sown at 190 kg.

Cultivations, etc.:— Glyphosate applied: 6 Sept, 1976. All plots heavy spring-tine cultivated twice: 25 Nov, 16 Dec. All plots rotary harrowed: 16 Dec. All plots spring-tine cultivated: 4 Apr, 1977. Seed sown: 5 Apr. 'Banlene Plus' applied: 26 May. Insecticide applied: 14 July. Combine harvested: 23 Sept.

EXTRA PLOTS ONLY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

EXTRA	SPNGTINE	(SH)PLGH	STANDARD
WEEDKLLR(751)			
NONE	4.32	4.77	4.32
D1+ME+ML	4.82	5.25	4.48
WEEDKLLR(752)			
NONE	4.62		4.39
PARAQUAT	4.53	5.01	4.41
MEAN	4.58	5.01	4.40

GRAIN MEAN DM% 76.3

SUB PLOT AREA HARVESTED 0.00434

77/R/RN/8

OMITTING EXTRA PLOTS

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

CULTIVTN	PLOUGH	ROTAVATE	DEEPTINE	MEAN
WEEDCNTL(76)				
MECHANCL	4.26	4.04	4.82	4.37
SIMAZINE	4.70	4.45	4.70	4.62
WEEDKLLR(751)				
NONE	4.62	4.33	4.71	4.55
D1+ME+ML	4.49	4.30	4.77	4.52
WEEDKLLR(752)				
NONE	4.56	4.31	4.78	4.55
PARAQUAT	4.55	4.33	4.70	4.53
MEAN	4.55	4.32	4.74	4.54

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	CULTIVTN	WEEDCNTL(76)	WEEDKLLR(751)	WEEDKLLR(752)
SED	0.178	0.154	0.038	0.038

TABLE	CULTIVTN WEEDCNTL(76)	CULTIVTN WEEDKLLR(751)	CULTIVTN WEEDKLLR(752)	
SED	0.309			MIN REP
	0.268	0.184	0.184	MAX-MIN
	0.218			MAX REP

EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:

CULTIVTN	0.066	0.066
WEEDCNTL(76)		
MIN REP MECHANCL		
MAX-MIN MECHANCL V SIMAZINE		
MAX REP SIMAZINE		

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	11	0.309	6.8
BLOCK.WP.SP	10	0.114	2.5

GRAIN MEAN DM% 76.4

SUB PLOT AREA HARVESTED 0.00434