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78/R/WS/4 Irrigation, Lodging, Ccc and Microflora - S. Wheat

Rothamsted Research

Rothamsted Research (1979) *78/R/WS/4 Irrigation, Lodging, Ccc and Microflora - S. Wheat* ; Yields Of The Field Experiments 1978, pp 377 - 378 - DOI: <https://doi.org/10.23637/ERADOC-1-30>

78/R/WS/4

SPRING WHEAT

IRRIGATION, LODGING, CCC AND MICROFLORA

Object: To study the effects of irrigation, artificial lodging and a growth regulator on grain microflora and yield - Long Hoos IV 4.

Sponsor: R.A. Hill.

Design: 4 randomised blocks of 2 plots split into 4.

Whole plot dimensions: 8.53 x 9.75.

Treatments: All combinations of:-

Whole plots

1. IRRIGATN Irrigation:

NONE	None
FULL	Full (108 mm)

Sub plots

2. LODGING Lodging:

NONE	None, supported by netting
LODGED	Lodged, under netting

3. GRWTHREG Growth regulator:

NONE	None
CHLORMEQ	Chlormequat (CCC) at 1.1 kg in 340 l on 19 June, 1978.

NOTES: (1) Lodging treatment was applied on 1 Aug, 1978.

(2) Irrigation was applied at 9 mm on each dry day between 11 Aug and harvest (11, 16, 17, 18, 21, 23, 24, 25 and 29 August and 5, 8 and 11 Sept).

Basal applications: Manures (0:14:28) at 720 kg. 'Nitro-chalk 25' at 500 kg combine drilled. Weedkillers: Mecoprop, bromoxynil and ioxynil ('Brittox' at 2.5 l in 340 l).

Seed: Timmo, sown at 180 kg.

Cultivations, etc.:- PK applied: 30 Sept, 1977. Ploughed: 6 Oct. Power harrowed: 31 Mar, 1978. Seed sown: 5 Apr. Weedkillers applied: 11 May. Combine harvested: 19 Sept.

NOTE: Grain microflora were assessed weekly after lodging and at harvest. 1000 grain weights were taken and grain assessed for mycotoxins, germination percentage and seedling vigour.

78/R/WS/4

GRAIN TONNES/HECTARE

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

LODGING	NONE	LODGED	MEAN	
IRRIGATN				
	NONE	2.47	3.81	
	FULL	1.69	3.24	
MEAN	4.97	2.08	3.53	
GRWTHREG	NONE	CHLORMEQ	MEAN	
IRRIGATN				
	NONE	3.81	3.81	
	FULL	3.43	3.24	
MEAN	3.43	3.62	3.53	
GRWTHREG	NONE	CHLORMEQ	MEAN	
LODGING				
	NONE	5.17	4.97	
	LODGED	2.07	2.08	
MEAN	3.43	3.62	3.53	
LODGING	NONE		LODGED	
GRWTHREG	NONE	CHLORMEQ	NONE	CHLORMEQ
IRRIGATN				
	NONE	5.29	2.60	2.34
	FULL	5.06	1.59	1.79

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

TABLE	LODGING	GRWTHREG	IRRIGATN*
			LODGING
SED	0.119	0.119	0.168
TABLE	IRRIGATN*	LODGING	IRRIGATN*
	GRWTHREG	GRWTHREG	LODGING
			GRWTHREG
SED	0.168	0.168	0.238

* WITHIN SAME LEVEL OF IRRIGATN ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	18	0.336	9.5

GRAIN MEAN DM% 84.4

SUB PLOT AREA HARVESTED 0.00087