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72/R/CS/44 Break Crops and Wheat - Barley

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72/R/CS/44

BREAK CROPS AND WHEAT

Object: To study the effects of different break crops on yields and soil-borne pathogens of a following sequence of cereals - Long Hoos III.

Sponsors: G.V. Dyke, R.D. Prew.

The fourth year, barley.

For previous years see 69/R/CS/44(t), 70/R/CS/44(t) and 71/R/CS/44(t).

Design: 3 randomised blocks of 12 plots, split into 4.

Whole plot dimensions: 4.27 x 39.3. Area harvested: 0.00260.

Treatments (residual effects):-

Whole plots: Crops and nitrogen 1969:- Spring beans (2 plots per block) (BE), clover (2 plots per block) (CL) and all combinations of:-

1. Crops: Barley (B), oats (O).
2. Nitrogen: 50 (R1), 100 (R2) kg as 'Nitro-Chalk' in the seedbed.
3. Undersowing 1969: None (O), trefoil (T).

Sub plots:

4. Nitrogen 1970 and 1971 (cumulative): None, 50, 100, 150 kg as 'Nitro-Chalk'.

Basal applications: 440 kg (20:15:15) combine drilled.

Weedkillers: Paraquat at 0.56 kg ion in 220 l. Ioxynil, bromoxynil, 2,4-DP and MCPA ('Tetroxone' at 5.6 l in 220 l).

Seed: Julia (dressed with ethirimol) sown at 160 kg.

Cultivations, etc.: Paraquat applied: 9 Sept, 1971. Ploughed: 25 Nov. Seed combine drilled: 21 Mar, 1972. N applied: 17 Apr. 'Tetroxone' applied: 8 May. Combine harvested: 23 Aug.

NOTE: The weights of grain recorded for two of the blocks were erratic apparently because of a fault in the balance used. Grain from the third block was weighed on a different balance and these results only were used in the tables of means.

72/R/CS/44

TABLES OF MEANS

GRAIN: TONNES/HECTARE

CROP	N: KG/HA 1969		UNDERSOWING 1969		N: KG/HA 1970 & 71				Mean
	50	100	0	T	0	50	100	150	
B	5.60	5.65	5.45	5.80	5.11	5.51	5.63	6.25	5.63
O	5.58	5.58	5.56	5.60	5.10	5.15	5.79	6.28	5.58
	N: KG/HA 1969								
	50		5.43	5.75	5.01	5.23	5.88	6.25	5.59
	100		5.58	5.65	5.20	5.44	5.55	6.28	5.62
			UNDERSOWING 1969						
			0		5.11	5.19	5.48	6.24	5.50
			T		5.10	5.47	5.95	6.30	5.70
Mean					5.10	5.33	5.71	6.27	5.60

CROP

BE	4.91	5.30	5.81	5.93	5.49
CL	5.65	5.65	5.72	6.11	5.78

Grand mean: 5.61

Mean D.M. % all plots: 87.1