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

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71/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.

The third year, barley.

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

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

Whole plot dimensions: 4.27 x 39.3. Sub plot area harvested: 0.00258.

Treatments:

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: None (O), trefoil (T).

Sub plots:

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

Basal applications: 314 kg (0:20:20) combine drilled. Weedkiller: Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l).

Cultivations, etc.: Ploughed: 1 Oct, 1970. Seed combine drilled at 157 kg: 12 Mar, 1971. N applied: 24 Mar. Weedkiller applied: 4 May. Combine harvested: 17 Aug. Variety: Julia.

NOTE: Estimates were made of take-all (*Ophiobolus graminis*).

Standard errors per plot. Grain, tonnes/hectare.

Whole plot: 0.169 or 3.4% (14 d.f.)
Sub plot: 0.550 or 11.2% (47 d.f.)

71/R/CS/44

SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

		N: KG/HA 1969				N: KG/HA 1970 & 71					
		50	100	O	T	O	50	100	150	Mean	
		(± 0.069)		(± 0.069)		(1) and (2)				(± 0.049)	
B		5.01	4.87	4.87	5.01	3.49	4.93	5.83	5.51	4.94	
O		4.85	4.96	4.91	4.89	3.59	5.16	5.50	5.36	4.90	
		N: KG/HA 1969		(± 0.069)		(1) and (2)				(± 0.049)	
		50		4.84	5.01	3.54	5.14	5.67	5.35	4.93	
		100		4.94	4.89	3.53	4.95	5.66	5.51	4.91	
						(1) and (2)				(± 0.049)	
						O	3.46	4.86	5.73	5.51	4.89
				T			3.61	5.22	5.60	5.36	4.95
Mean (± 0.112)							3.54	5.04	5.67	5.43	4.92
						(3) and (4)					
						BE	3.11	5.27	5.70	5.40	4.87
						CL	3.82	3.51	5.73	5.45	5.10

(1) (± 0.146) (3) (± 0.206) For use in vertical and diagonal comparisons only
 (2) (± 0.159) (4) (± 0.224) For use in horizontal and interaction comparisons only

General mean: 4.94

Mean D.M. % all plots: 84.4