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Numerical Results of the Field Experiments 1968

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68/C/36 Cereal Cyst-nematode - S. Wheat, Barley

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68/c/36.1

CEREAL CYST - NEMATODE

(WCG)

The effect of cereal cyst-nematode (*Heterodera avenae*) on the yield of spring wheat and barley - Woburn Butt Close 1968 the 3rd year.

Design (each crop): 3 blocks of 5 plots split into 3. Blocks arranged in pairs, one of each crop.

Area of each sub plot: 0.0030. Area harvested: 0.0020.

Treatments: All combinations of:-

Whole plots*: 1. Oats 1966: Under oats till harvest (O) (previously C, D, E, 3 plots per block). Oats rotary cultivated 26 May, 1966 and then bare fallowed (A). Oats rotary cultivated 26 May, 1966, bare fallowed, injected with DD at 400 lb 19 Dec, 1966 (B).

Sub plots: 2. Nitrogen to wheat 1968 cumulative on 1967: 0.6 (N1), 1.2 (N2), 1.8 (N3) cwt N as 'Nitro-Chalk'.
3. Nitrogen to barley 1968 cumulative on 1967: 0.4 (N1), 0.8 (N2), 1.2 (N3) cwt N as 'Nitro-Chalk'.

* NOTE: Because of a severe invasion of grain aphid (*Sitobion avenae*) a test 0.4 lb dimethoate in 30 gals (S) was made on spring wheat. Two of the 3 (O) plots, in each block, and the A and B plots, were sprayed.

Basal applications: Wheat and barley: Weedkiller: Aminotriazole at 4 lb plus ammonium thiocyanate at 3.7 lb in 33 gals. Magnesian limestone at 22.5 cwt. 280 lb (0:20:20) combine drilled. Weedkiller: Ioxynil/mecoprop (Atril C at 5 pts in 25 gals).

Cultivations, etc.:-

Aminotriazole plus ammonium thiocyanate applied, subsoiled: 21 Sept, 1967. Magnesian limestone applied: 18 Oct. Ploughed: 11 Nov. Seed combine drilled, wheat at 170 lb, barley at 140 lb: 5 Mar, 1968. 'Nitro-Chalk' applied: 13 Mar. Atril C applied: 26 Apr. Insecticide applied to wheat only: 15 July. Combine harvested: 22 Aug. Varieties: Wheat - Kolibri, barley - Maris Badger.

NOTES: (1) For the previous year's results see 'Results' 67/C/41.
(2) Soil samples were taken for nematode counts in June.

Standard errors per plot. Grain:

Spring wheat: Whole plot: 2.82 or 8.4% (8 d.f.)
Sub plot: 5.11 or 15.3% (20 d.f.)
Barley: Whole plot: 2.59 or 7.9% (8 d.f.)
Sub plot: 4.17 or 12.7% (20 d.f.)

68/c/36.2

SUMMARY OF RESULTS

SPRING WHEAT

GRAIN

	OS	O	AS	BS	Mean
	(1) & (2)	(3) & (4)			(± 1.32)
N1	22.3	22.3	26.7	28.2	24.4
N2	35.1	29.7	36.9	40.4	35.4
N3	41.0	37.4	41.7	41.2	40.5
Mean (± 1.63)	32.8 (± 1.15)	29.8	35.1	36.6	33.4

Mean D.M. %: 76.0

- (1) (± 2.06) (3) (± 2.91) For use in horizontal and diagonal comparisons only
 (2) (± 2.09) (4) (± 2.95) For use in vertical and interaction comparisons only

68/c/36.3

BARLEY				
GRAIN				
	O	A	B	Mean
	(1) & (2)	(3) & (4)		(±1.08)
N1	25.8	26.6	32.3	27.2
N2	34.0	36.8	34.8	34.7
N3	36.7	37.7	34.0	36.4
Mean (±1.49)	32.2 (±0.86)	33.7	33.7	32.8

Mean D.M. %: 83.2

- (1) (±1.42) (3) (±2.47) For use in horizontal and diagonal comparisons only
 (2) (±1.39) (4) (±2.41) For use in vertical and interaction comparisons only

TABLE 1

GRAIN

Year	1	2	3	4
(1914-15)	(1915-16)	(1916-17)	(1917-18)	(1918-19)
27.2	26.8	26.6	25.8	25.2
24.1	24.8	24.5	24.0	23.5
22.4	22.9	22.7	22.1	21.6
20.8	21.1	20.9	20.3	19.8

Source: U.S. Bureau of Census, *Statistical Abstract of the United States*, 1920, p. 100.

(1) 1914-15 (2) 1915-16 (3) 1916-17 (4) 1917-18 (5) 1918-19

(6) 1919-20 (7) 1920-21 (8) 1921-22 (9) 1922-23 (10) 1923-24