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67/W/WEC/C/42 Nematode Resistant Barley - Barley - Pathogen Infested Site

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67/C/42.1

NEMATODE - RESISTANT BARLEY

(on site of 'Scorch' study)

(WEC)

Effect of using resistant and susceptible segregates of barley on land heavily infested with *Heterodera avenae* and the effect on yields - Woburn Butt Close 1967.

Design: Single replicate of 3 x 2 x 2 x 2 x 2 in blocks of 12 plots, with certain high order interactions confounded with block differences.

Area of each plot: 0.0032. Area harvested: 0.0021.

Treatments: All combinations of:-

1. Nitrogen: 0.4 (N1), 0.8 (N2), 1.2 cwt N (N3) as 'Nitro-Chalk' in the seedbed (N1, N2 and N3 being cumulative with N rates 1964 - 66)
2. Formalin 1964: None (O) Formalin (F64)
3. Formalin 1965: None (O) Formalin (F65)
4. Formalin 1966: None (O) Formalin (F66)
5. Varieties: Resistant segregate (R), susceptible segregate (S).

Basal applications: 20 cwt ground chalk 250 lb (0:20:20). Weedkillers: 4 lb amino-triazole plus 3.7 lb ammonium thiocyanate in 33 gals and ioxynil/mecoprop (Actril C at 5 pints in 50 gals).

Cultivations, etc.: Weedkiller applied: Sept 27, 1966. Ground chalk applied: Oct 31. Ploughed: Nov 2. PK compound applied by machine, 'Nitro-Chalk' applied by hand, seed drilled at 140 lb: Mar 15, 1967. Weedkiller (Actril C) applied: May 25. Combine harvested: Aug 23.

- NOTES (1) Crop samples for nematode counts and plant weights were taken in late May and early July.
- (2) Soil samples taken after harvest for nematode population counts.
- (3) For previous years' results see 'Results' 64/Da/3, 65/C/30 and 66/C/23.

Standard error per plot.

Grain: 5.19 or 24.5% (11 d.f.)

67/c/42.2

SUMMARY OF RESULTS

GRAIN

	R	S	Mean
Mean (± 1.06)	20.7	21.8	21.2
	(± 1.84)		(± 1.30)
N1	14.7	14.6	14.7
N2	21.1	22.1	21.6
N3	26.2	28.6	27.4
	(± 1.50)		(± 1.06)
O	20.2	21.7	21.0
F64	21.1	21.8	21.5
	(± 1.50)		(± 1.06)
C	19.6	22.3	20.9
F65	21.7	21.3	21.5
	(± 1.50)		(± 1.06)
O	21.5	22.6	22.0
F66	19.8	20.9	20.4

Mean D.M. %: 80.0