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72/W/CS/52 Fumigants, Temik and N - S. Wheat

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72/W/CS/52

FUMIGANTS, TEMIK AND N

Object: To study cumulative and residual effects of dazomet, formalin and aldicarb, at a range of nitrogen levels, on nematodes and yield of spring wheat - Woburn Butt Close.

Sponsor: T.D. Williams.

The second year, spring wheat.

For previous year see 71/W/CS/52(t).

Design: 4 blocks of 12 plots, split into 2.

Whole plot dimensions: 2.13 x 9.14. Area harvested: 0.00059.

Treatments: All combinations of:-

Whole plots:

1. Fumigants: None (D), dazomet 380 kg (D), formalin (38% formaldehyde) 2990 l (F), aldicarb ('Temik') 9 kg (T).
2. Nitrogen cumulatively on 1971: 63, 126, 189 kg N 'Nitro-Chalk'.

Sub plots:

3. Years of application of fumigants: 1971 only, none 1972 (R). 1971 and 1972 cumulatively (C).

Basal applications: 390 kg (0:20:20) combine drilled. Weedkillers: Paraquat at 0.56 kg ion in 280 l. Ioxynil at 0.53 kg and mecoprop at 1.6 kg in 280 l.

Seed: Kleiber sown at 190 kg.

Cultivations, etc.: Paraquat applied: 10 Sept, 1971. Ploughed: 21 Sept. Dazomet applied, all plots rotary cultivated: 29 Sept. Formalin applied: 16 Nov. Ploughed: 14 Feb, 1972. Aldicarb applied, seed combine drilled: 15 Mar. N applied: 17 Mar. Ioxynil and mecoprop applied: 3 May. Combine harvested: 1 Sept.

- NOTE: 1. Plant samples were taken in May for counts of root invasion by nematodes and fresh top weights.
2. Crop samples were taken in June for N percentages and roots were examined for soil pathogens.
 3. Leaf samples were taken in June for copper analyses.

Standard errors per plot. Grain, tonnes/hectare:

Whole plot: 0.338 or 20.3% (33 d.f.)

Sub plot: 0.376 or 22.6% (39 d.f.)

72/W/CS/52

APPLICATION	R					C	
FUMIGANT	O	D	F	T	D	F	T
N: KG/HA	GRAIN: TONNES/HECTARE						
63	1.58	1.84	1.74	2.32	1.94	2.03	3.49
126	1.34	1.28	1.27	1.79	1.51	1.27	3.12
189	1.27	1.03	1.31	1.42	1.46	1.27	1.51

STANDARD ERRORS OF DIFFERENCES

N	
FUMIGANT APPLICATION	
O	0.208
Excluding O	0.294
O v any of remainder	0.254

Unless same level of
N and FUMIGANT

Excluding O	0.242
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N: KG/HA	STRAW: TONNES/HECTARE						
63	2.75	2.46	2.62	3.06	2.47	2.83	3.41
126	2.31	2.54	2.08	2.72	2.53	2.24	3.63
189	2.28	2.13	2.13	2.28	2.10	2.26	2.47

72/W/CS/52

TABLES OF MEANS

GRAIN: TONNES/HECTARE

	FUMIGANT				APPLICATION		Mean
	O	D	F	T	R	C	
N: KG/HA							
63	1.58	1.89	1.88	2.91	1.97	2.49	2.06
126	1.34	1.39	1.27	2.46	1.45	1.97	1.61
189	1.27	1.25	1.29	1.46	1.25	1.41	1.32
	FUMIGANT						
				O			1.40
				D	1.38	1.64	1.51
				F	1.44	1.52	1.48
				T	1.84	2.71	2.27
Mean					1.56	1.95	1.67

Note The N x APPLICATION table is meaned over D, F and T only

STANDARD ERRORS OF DIFFERENCES

	N	FUMIGANT	APPLICATION
	0.117	0.135	0.098
	N	N	FUMIGANT
	FUMIGANT	APPLICATION	APPLICATION
Unless same level of N	0.267	0.190	0.170
FUMIGANT		0.170	0.140

Mean D.M. %: 82.7

