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65/W/WBO/C/31 Fumigants - Spring Wheat

Rothamsted Research

Rothamsted Research (1966) *65/W/WBO/C/31 Fumigants - Spring Wheat* ; Yields Of The Field Experiments 1965, pp 231 - 232 - DOI: <https://doi.org/10.23637/ERADOC-1-159>

65/C/31.1

COMPARISON OF FUMIGANTS

(WBO)

Nitrogen, fumigants and water - Woburn Butt Close, spring wheat
1965.

Design: 4 randomised blocks of 16 plots.

Area of each plot: 0.0021. Area harvested: 0.0019.

Treatments: All combinations of:-

1. Fumigants: None. (O)
None, plots rotary cultivated. (CR)
Methyl bromide applied under gas tight
sheet at 436 lb. (MB)
Dichloropropane/dichloropropene at 800 lb,
injected at 12 in. spacing. (DD)
Chloropicrin at 400 lb injected at 12 in.
spacing. (Chp)
Dazomet at 400 lb rotary cultivated in. (Daz)
Formalin as drench at 200 gals formaldehyde
in 40% solution. (For)
Mercuric chloride at 5 lb Hg rotary cultivated
in. (Mer)
2. Nitrogen: 0.6 (N1), 1.8 (N3) cwt N as 'Nitro-Chalk' half in
seedbed, half in May.

It was intended to apply to sub plots:

3. Irrigation: None (WO), water according to irrigation need (WW).
but no irrigation was in fact applied as there was plenty of rain.

Basal applications: 2 cwt (0:20:20) combine drilled. Weedkiller:
Mecoprop/2,4-D (Methoxone Extra at 6 pints in 40 gals).

Cultivations, etc.: Ploughed: Nov 24, 1964. Fumigants applied:
Nov 30. Appropriate plots rotary cultivated: Dec 4. Seed drilled at
180 lb: Mar 29, 1965. First dressing of 'Nitro-Chalk' applied:
Mar 30, second: May 7. Sprayed: May 11. Harvested by hand: Aug 31.
Variety: Opal. Previous crops: Winter wheat 1963, barley 1964.

NOTE: Soil samples were taken to estimate initial population of cereal
cyst-nematode (*Heterodera avenae*), plant samples for weighing of tops
and roots and for estimation of nematode invasion of roots, and for
nematodes in roots late in the season. Soil samples were taken to
estimate nematode population at end of season.

Standard error per plot.

Grain: 3.80 or 14.2% (45 d.f.)

65/C/31.2

SUMMARY OF RESULTS

GRAIN

	O	OR	MB	DD	Chp	Daz	For	Mer	Mean
	(±1.90)								(±0.67)
N1	21.8	19.3	24.9	33.0	32.3	29.1	30.7	19.6	26.4
N3	22.9	22.1	31.5	28.1	31.0	24.4	29.7	25.9	27.0
Mean (±1.34)	22.4	20.7	28.2	30.6	31.7	26.8	30.2	22.8	26.7

Mean D.M. %: 83.9