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75/ W/M/L - Wheat, Barley & Oats Sowing Dates & Cereal Cyst Nematode - Grass

Rothamsted Research

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75/W/M/1

MIXED CROPS

WINTER AND SPRING WHEAT, BARLEY AND OATS
SOWING DATES AND CEREAL CYST-NEMATODE

Object: To study the effects of sowing date and a nematicide on the incidence of cereal cyst-nematode (*Heterodera avenae*) and the yield of three cereals in a soil known to contain a fungal parasite of the nematode - Woburn, Butt Close.

Sponsor: B.R. Kerry.

Design: 4 randomised blocks of 12 plots.

Whole plot dimensions: 2.13 x 6.70.

Treatments: All combinations of:-

Whole plots: 1. Crop:	CROP
Wheat	WHEAT
Barley	BARLEY
Oats	OATS
2. Sowing date:	SOW DATE
Autumn	AUTUMN
Spring	SPRING
3. Nematicide:	NEMACIDE
None	NONE
Oxamyl at 8.8 kg	OXAMYL

Standard applications:

Autumn-sown cereals: Manures: (10:24:24) at 250 kg combine drilled.

Winter wheat: N at 110 kg as 'Nitro-Chalk'. Winter barley and
oats: N at 90 kg as 'Nitro-Chalk'.

Spring-sown cereals: Manures: (20:14:14) at 380 kg combine drilled.
N at 50 kg as 'Nitro-Chalk'.

All cereals: Weedkillers: Ioxynil at 0.63 kg plus mecoprop at 1.9 kg
in 340 l.

Seed: Wheat: Maris Ranger, sown at 200 kg.

Barley: Maris Otter, sown at 170 kg.

Oats: Maris Quest, sown at 190 kg.

7E/W/M/1

Cultivations, etc.:-

Autumn-sown cereals: Treatments applied and these plots only rotary cultivated: 12 Nov, 1974. Spring-tine cultivated, seed sown: 27 Nov. Weedkiller applied: 22 May, 1975. N applied: 29 May. Harvested by hand: 1 Aug.

Spring-sown cereals: Spring-tine cultivated: 27 Nov, 1974. Treatments applied and these plots only rotary cultivated: 4 Mar, 1975. Spring-tine cultivated with crumbler, seed sown: 20 Mar. Weedkiller applied: 22 May. N applied: 20 June. Hand harvested: 5 Aug.

All cereals: Ploughed: 31 Oct, 1974. Spring-tine cultivated: 7 Nov. Previous crops: Spring wheat 1973, spring oats 1974.

- NOTES: (1) Soil samples were taken before sowing in autumn and spring and after harvest for egg counts of *Heterodera avenae*.
(2) Larval invasion counts were made in April, May and June.
(3) Counts of white females were made in June, July and August and disease assessments made.
(4) Root and stem samples were taken during the growing season for assessments of dry matter.
(5) All crops were severely damaged by birds before harvest and yields were not taken.