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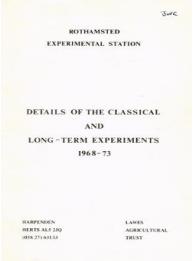
Details of the Classical and Long-term Experiments 1968-73


ROTHAMSTED
EXPERIMENTAL STATION

DETAILS OF THE CLASSICAL
AND
LONG-TERM EXPERIMENTS
1968-73

Full Table of Content

W/RN/15 Rotation and Fumigation - Barley, Potatoes, Sugar Beet

Rothamsted Research

Rothamsted Research (1977) *W/RN/15 Rotation and Fumigation - Barley, Potatoes, Sugar Beet ;* Details Of The Classical And Long-Term Experiments 1968-73, pp 65 - 66 **- DOI: https://doi.org/10.23637/ERADOC-1-193**

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ROTATION AND FUMIGATION

WOBURN BUTT CLOSE

(W/RN/15)

This experiment, started in 1969, is designed to study different ways of using nematicides in a three-course rotation and to determine the effects on crop yield and incidence of pathogenic nematodes.

Design

3 series each of 2 blocks of 3 plots split into 7. One phase of a 3-course rotation, potatoes, barley and sugar beet is present in each series.

Treatments

Each crop tests all combinations of:–

Whole plots: N fertiliser (kg N)

Potatoes and Sugar beet	Barley
75	38
150	75
225	113

Sub-plots: Fumigants

(a) None

(b) Dichloropropane/dichloropropene ('D-D' at 448 kg): before potatoes
before sugar beet
before barley
before all crops

Plus 2 reserve sub-plots: one no fumigant:
one allocated in 1970 to dazomet at 224 kg before all crops after no treatment in 1969.

NOTE: 'D-D' has been injected into ploughed or cultivated soil in autumn or early winter. Dazomet has been applied and rotary cultivated in before the 'D-D' injection except in December 1971 when it was worked in the following day. In 1971 and 1972 all sub-plots were rotary cultivated, in 1970 and 1973 only dazomet-treated sub-plots were cultivated following application.

Standard manuring

Barley:	310 kg (0-20-20)
Potatoes:	1050 kg (0-14-28)
Sugar beet:	1050 kg (0-14-28)
1971:	13 kg B_2O_3 as 'Solubor'
1972 & '73:	7 kg B_2O_3 as 'Solubor'

Liming

1971-73: 2.5 t magnesian limestone in autumn before sugar beet.

Varieties

Barley:	1969	Zephyr
	1970-73	Julia (dressed with ethirimol 1972 and 73)

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Potatoes:	1969	King Edward
	1970-73	Pentland Crown
Sugar beet	1969-73	Klein E

Weedkillers

Barley:	1969-72	Ioxynil with mecoprop
Potatoes:	1969-73	Linuron: alone 1971 and 1973 and with paraquat in 1969, 70 and 72.
Sugar beet:	1969-70 and 1972-73	Phenmedipham; and paraquat in 1972

Other chemicals applied

Fungicides	Potatoes	1969-73	Mancozeb
Insecticides	Potatoes and Sugar beet	1969-73	Demeton-s-methyl

Plot area harvested

Barley	0.00052
Potatoes	0.00052 – 0.00104
Sugar beet	0.00057 – 0.00156

Soil series Cottenham series

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