

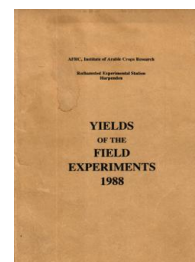
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88/R/WS/1 Methods of Inoculating Take-all - S. Wheat

Rothamsted Research

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88/R/WS/1

SPRING WHEAT

METHODS OF INOCULATING TAKE-ALL

Object: To compare a range of inoculation methods for establishing differences in take-all severity with even distribution of infection - Hoosfield.

Sponsors: G.L. Bateman, D. Hornby, P.B. Barraclough.

Design: 3 randomised blocks of 9 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments: Combinations of:-

1. CULTINOC	Cultivation sequence and method of inoculation:
MULTNIL	Multiple cultivation, no inoculum
MULTBPL	Multiple cultivation, inoculum broadcast before ploughing on 29 Mar, 1988
MULTDR4	Multiple cultivation, inoculum applied by fertilizer drill at 10 cm on 18 Apr
MULTDR2	Multiple cultivation, inoculum applied by fertilizer drill at 5 cm on 18 Apr
MULTCDR	Multiple cultivation, inoculum combine drilled with seed on 19 Apr
SIMPNIL	Simplified cultivation, no inoculum
SIMPRG6	Simplified cultivation, inoculum broadcast before rotagrubbing to 15 cm on 18 Apr
SIMPRV4	Simplified cultivation, inoculum broadcast before rotavating to 10 cm on 18 Apr
SIMPRV2	Simplified cultivation, inoculum broadcast before rotavating to 5 cm on 18 Apr

- NOTES:** (1) Inoculum were colonised on autoclaved oat seed.
(2) The Multiple cultivation sequence was: plough, fertilizer drill to 10 cm, fertilizer drill to 5 cm, rotary harrow to 5 cm, drill at 4 cm.
(3) The Simplified cultivation sequence was: plough, rotagrub or rotavate as above, drill at 4 cm.
(4) All plots were flat rolled and rotary harrowed to 5 cm (twice) on 14 Apr, 1988 and rotary harrowed to 10 cm on 18 Apr.

Basal applications: Manures: 'Nitram' at 480 kg. Weedkillers: Clopyralid at 0.05 kg and bromoxynil at 0.24 kg with fluroxypyr at 0.20 kg in 200 l. Fungicides: Propiconazole at 0.12 kg and tridemorph at 0.25 kg in 200 l.

Seed: Alexandria, sown at 240 kg.

Cultivations, etc.:- Ploughed: 29 Mar, 1988. Seed sown: 19 Apr. N applied: 28 Apr. Weedkillers applied: 14 June. Fungicides applied: 8 July. Combine harvested: 16 Sept. Previous crops: S. barley 1986, sunflowers 1987.

88/R/WS/1

NOTE: Take-all was assessed at fortnightly intervals from the end of May until mid-August. Soil cores were taken in May to check the distribution of the inoculum in the soil.

GRAIN TONNES/HECTARE

***** Tables of means *****

CULTINOC	
MULTNIL	6.78
MULTBPL	6.26
MULTDR4	4.73
MULTDR2	4.46
MULTCDR	3.87
SIMPNIL	6.77
SIMPRG6	3.98
SIMPRV4	4.31
SIMPRV2	3.80
Mean	5.00

*** Standard errors of differences of means ***

CULTINOC
0.377

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	16	0.462	9.2

GRAIN MEAN DM% 79.9

PLOT AREA HARVESTED 0.00255