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89/R/CS/323 Cereal Sequences and Take-all - W. Wheat, W. Barley, W. Triticale, W. Oats

Rothamsted Research

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89/R/CS/323

CEREAL SEQUENCES AND TAKE-ALL

Object: To study the effects on take-all (*Gaeumannomyces graminis*) and yield of including triticale in cereal sequences - West Barnfield II.

Sponsors: R.J. Gutteridge, D. Hornby, R.D. Prew.

The second year, w. barley, w. oats, w. triticale, w. wheat.

For previous year see 88/R/CS/323

Design: 3 randomised blocks of 26 plots.

Whole plot dimensions: 3.0 x 10.0.

CROPSEQ	Crop sequence (1988, 1989 respectively):
WB WB	W. barley, w. barley (5 plots per block)
WO WB	W. oats, w. barley
WT WB	W. triticale, w. barley
WW WB	W. wheat, w. barley
SB WB	S. barley, w. barley
WB WO	W. barley, w. oats
WT WO	W. triticale, w. oats
WW WO	W. wheat, w. oats
WO WT	W. oats, w. triticale
WT WT	W. triticale, w. triticale (5 plots per block)
WW WT	W. wheat, w. triticale
WO WW	W. oats, w. wheat
WW WW	W. wheat, w. wheat (6 plots per block)

Standard applications: Manures: (0:17:34) at 300 kg. N at 30 kg to all cereals followed by N at 170 kg (w. wheat), 150 kg (w. barley) and 120 kg (w. oats and w. triticale), all as 'Nitram'. Weedkillers: Glyphosate at 0.27 kg in 200 l. Methabenzthiazuron at 1.6 kg in 200 l. Metsulfuron-methyl at 6.0 g with fluroxypyr at 0.20 kg in 200 l. Fungicide: Tridemorph at 0.52 kg in 200 l.

SEED: W. barley: Magie, sown at 150 kg.
W. oats: Image, sown at 190 kg.
W. triticale: Cumulus, sown at 180 kg.
W. wheat: Mercia, sown at 180 kg.

Cultivations, etc.:- Rotary cultivated: 5 Sept, 1988. Glyphosate applied: 1 Oct. PK applied: 11 Oct. Heavy spring-tine cultivated: 17 Oct. Rotary harrowed, seed sown: 24 Oct. Methabenzthiazuron applied: 29 Oct. First N applied: 23 Feb, 1989. Second N applied: 14 Apr. Metsulfuron-methyl with fluroxypyr applied: 26 Apr. Fungicide applied: 19 May. Combine harvested: 21 July (w. barley), 25 July (w. oats), 4 Aug (w. wheat) and 7 Aug (w. triticale).

NOTE: Plant samples were taken in April, June and July to assess take-all, eyespot and sharp eyespot. Soil cores were taken after harvest to assess take-all infectivity.

89/R/CS/323

W. WHEAT, W. BARLEY, W. TRITICALE, W. OATS

GRAIN TONNES/HECTARE

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

CROPSEQ

WB WB	7.65
WO WB	8.16
WT WB	7.70
WW WB	8.10
SB WB	8.03
WB WO	8.02
WT WO	7.54
WW WO	7.54
WO WT	7.44
WT WT	7.52
WW WT	8.00
WO WW	8.41
WW WW	8.22

Mean	7.85
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*** Standard errors of differences of means ***

CROPSEQ

0.276	min.rep
0.211	max-min

CROPSEQ

max-min	WB WB v any of the remainder
min.rep	any of the remainder

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	63	0.338	4.3
GRAIN MEAN DM%	89.0		
PLOT AREA HARVESTED	0.00274		