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

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90/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 third year, w. barley, w. oats, w. triticale, w. wheat, s. barley.

For previous years see 88-89/R/CS/323

Design: 3 randomised blocks of 26 plots.

Whole plot dimensions: 3.0 x 10.0.

CROPSEQ Crop sequences (1988, 1989 and 1990 respectively):

SB WB SB	S. barley, w. barley, s. barley
WW WW SB	W. wheat, w. wheat, s. barley
WB WB WB	W. barley, w. barley, w. barley (duplicated)
WB WO WB	W. barley, w. oats, w. barley
WO WB WB	W. oats, w. barley, w. barley
WT WT WB	W. triticale, w. triticale, w. barley
WW WW WB	W. wheat, w. wheat, w. barley
WB WB WO	W. barley, w. barley, w. oats
WT WT WO	W. triticale, w. triticale, w. oats
WW WW WO	W. wheat, w. wheat, w. oats
WB WB WT	W. barley, w. barley, w. triticale
WT WB WT	W. triticale, w. barley, w. triticale
WT WO WT	W. triticale, w. oats, w. triticale
WO WT WT	W. oats, w. triticale, w. triticale
WT WT WT	W. triticale, w. triticale, w. triticale (duplicated)
WW WW WT	W. wheat, w. wheat, w. triticale
WB WB WW	W. barley, w. barley, w. wheat
WW WB WW	W. wheat, w. barley, w. wheat
WW WO WW	W. wheat, w. oats, w. wheat
WO WW WW	W. oats, w. wheat, w. wheat
WT WT WW	W. triticale, w. triticale, w. wheat
WW WT WW	W. wheat, w. triticale, w. wheat
WW WW WW	W. wheat, w. wheat, w. wheat (duplicated)

Standard applications: Manures: (0:18:36) at 300 kg. N at 30 kg to all cereals followed by N at 120 kg (s. barley), 170 kg (w. wheat), 150 kg (w. barley), 120 kg (w. triticale and w. oats), all as 'Nitram'. Weedkillers: Glyphosate at 0.27 kg in 200 l. Methabenzthiazuron at 1.6 kg in 200 l. Fluroxypyr at 0.20 kg with metsulfuron-methyl at 6.0 g in 200 l. Fungicides: Fenpropimorph at 0.75 kg in 200 l. Prochloraz at 0.40 kg in 200 l (to w. wheat only). Propiconazole at 0.12 kg with carbendazim at 0.25 kg and maneb at 1.6 kg in 200 l (to w. wheat and s. barley only).

SEED: W. barley: Magie, sown at 150 kg.
W. oats: Image, sown at 190 kg.
W. triticale: Lasko, sown at 180 kg.
W. wheat: Mercia, sown at 180 kg.
S. barley: Klaxon, sown at 160 kg.

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Cultivations, etc.:- PK applied: 30 Aug, 1989. Heavy spring-tine cultivated: 1 Sept. Glyphosate applied: 14 Sept. Ploughed: 21 Sept. Rotary harrowed twice: 14 Oct. Rotary harrowed, w. cereals sown: 16 Oct. Methabenzthiazuron applied: 19 Oct. First N applied: 2 Mar, 1990. Second N (to s. barley only), rotary harrowed twice, seed sown (s. barley only): 7 Mar. Second N (to w. cereals) applied: 18 Apr. Fluroxypyr with metsulfuron-methyl applied: 27 Apr. Fenpropimorph applied: 1 May. Prochloraz (to w. wheat only) applied: 8 May. Propiconazole, carbendazim and maneb (to w. wheat and s. barley only) applied: 14 June. Combine harvested: 24 July (w. barley), 26 July (s. barley, w. oats and w. triticale) and 7 Aug (w. wheat).

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

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

GRAIN TONNES/HECTARE

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

CROPSEQ			
SB	WB	SB	5.54
WW	WW	SB	5.73
WB	WB	WB	7.09
WB	WO	WB	7.85
WO	WB	WB	7.81
WT	WT	WB	7.19
WW	WW	WB	6.69
WB	WB	WO	7.32
WT	WT	WO	7.02
WW	WW	WO	6.96
WB	WB	WT	7.39
WT	WB	WT	7.34
WT	WO	WT	7.72
WO	WT	WT	7.49
WT	WT	WT	7.02
WW	WW	WT	6.65
WB	WB	WW	9.05
WW	WB	WW	8.67
WW	WO	WW	9.09
WO	WW	WW	8.90
WT	WT	WW	7.29
WW	WT	WW	6.89
WW	WW	WW	6.91
Mean			7.33

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GRAIN TONNES/HECTARE

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

CROPSEQ

0.393 min.rep

0.340 max-min

0.278 max.rep

CROPSEQ

max.rep WB WB WB v WT WT WT or WW WW WW

min.rep any of the remainder

max-min WB WB WB or WT WT WT or WW WW WW v any of the remainder

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

Stratum	d.f.	s.e.	cv%
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BLOCK.WP	53	0.481	6.6
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GRAIN MEAN DM% 88.8

PLOT AREA HARVESTED 0.00228