

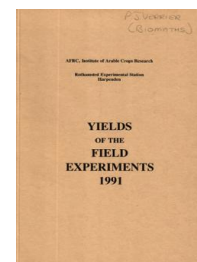
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91/R/CS/323 Cereal Sequence and Take-all - W. Wheat, W. Barley, S. Barley, W. Triticale, W. Oats

Rothamsted Research

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91/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 fourth year, w. barley, w. oats, w. triticale, w. wheat, s. barley.

For previous years see 88-90/R/CS/323

Design: 3 randomised blocks of 26 plots.

Whole plot dimensions: 3.0 x 10.0.

CROPSEQ Crop sequences (1988, 1989, 1990 and 1991 respectively):

W W S S	W. wheat, w. wheat, s. barley, s. barley
B B B B	W. barley, w. barley, w. barley, w. barley
O B B B	W. oats, w. barley, w. barley, w. barley
B O B B	W. barley, w. oats, w. barley, w. barley
B B O B	W. barley, w. barley, w. oats, w. barley
S B S B	S. barley, w. barley, s. barley, w. barley
T T B B	W. triticale, w. triticale, w. barley, w. barley
T B T B	W. triticale, w. barley, w. triticale, w. barley
W B W B	W. wheat, w. barley, w. wheat, w. barley
W W B B	W. wheat, w. wheat, w. barley, w. barley
B B B O	W. barley, w. barley, w. barley, w. oats
T T T O	W. triticale, w. triticale, w. triticale, w. oats
W W W O	W. wheat, w. wheat, w. wheat, w. oats
T T T T	W. triticale, w. triticale, w. triticale, w. triticale
B B T T	W. barley, w. barley, w. triticale, w. triticale
O T T T	W. oats, w. triticale, w. triticale, w. triticale
T O T T	W. triticale, w. oats, w. triticale, w. triticale
T T O T	W. triticale, w. triticale, w. oats, w. triticale
W W T T	W. wheat, w. wheat, w. triticale, w. triticale
W T W T	W. wheat, w. triticale, w. wheat, w. triticale
W W W W	W. wheat, w. wheat, w. wheat w. wheat
B B W W	W. barley, w. barley, w. wheat, w. wheat
O W W W	W. oats, w. wheat, w. wheat, w. wheat
W O W W	W. wheat, w. oats, w. wheat, w. wheat
W W O W	W. wheat, w. wheat, w. oats, w. wheat
T T W W	W. triticale, w. triticale, w. wheat, w. wheat

Standard applications:

W. cereals: Manures: (0:16:36) at 300 kg. N at 30 kg to all w. cereals followed by N at 150 kg (w. barley), 170 kg (w. wheat), and 120 kg (w. oats and w. triticale), all as 'Nitram'.
Weedkillers: Isoxaben at 76 g and methabenzthiazuron at 1.6 kg in 200 l. Fluroxypyr at 0.15 kg in 200 l. Fungicides: Carbendazim at 0.15 kg and prochloraz at 0.40 kg with tridemorph at 0.26 kg in 200 l.

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Standard applications:

S. barley: Manures: (0:16:36) at 300 kg. N at 120 kg as 'Nitram'.
Weedkiller: Metsulfuron-methyl at 6.0 g with fenpropimorph in
200 l. Fungicides: Carbendazim at 0.15 kg and prochloraz at
0.40 kg with tridemorph at 0.26 kg in 200 l. Fenpropimorph at
0.75 kg.

Seed: W. barley: Magie, sown at 130 kg.
W. oats: Image, sown at 130 kg.
W. triticale: Lasko, sown at 140 kg.
W. wheat: Mercia, sown at 170 kg.
S. barley: Klaxon, sown at 120 kg.

Cultivations, etc.:-

W. cereals: Ploughed, furrow pressed: 4 Sept, 1990. PK applied:
14 Sept. Rotary harrowed twice: 17 Sept. Rotary harrowed, seed
sown: 19 Sept. Isoxaben and methabenzthiazuron applied: 20 Sept.
First N applied: 4 Mar, 1991. Fluroxypyr applied: 12 Apr. Second
N applied: 15 Apr. Fungicides applied: 23 Apr. Combine
harvested: 12 Aug (w. barley), 20 Aug (w. wheat), 27 Aug (w. oats
and w. triticale).

S. barley: Ploughed, furrow pressed: 4 Sept, 1990. PK applied:
14 Sept. Rotary harrowed twice: 17 Sept. N applied: 14 Mar, 1991.
Rotary harrowed twice, seed sown: 15 Mar. Carbendazim, prochloraz
and tridemorph applied: 23 Apr. Weedkiller with fenpropimorph
applied: 11 June. Combine harvested: 15 Aug.

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.

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GRAIN TONNES/HECTARE

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

CROPSEQ	
W W S S	5.40
B B B B	5.89
O B B B	7.22
B O B B	7.14
B B O B	7.36
S B S B	7.16
T T B B	6.63
T B T B	5.79
W B W B	6.54
W W B B	5.71
B B B O	5.98
T T T O	6.35
W W W O	5.08
T T T T	4.19
B B T T	4.51
O T T T	4.38
T O T T	3.93
T T O T	5.54
W W T T	4.21
W T W T	4.42
W W W W	5.65
B B W W	6.34
O W W W	7.38
W O W W	7.05
W W O W	7.05
T T W W	5.04
Mean	5.84

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

CROPSEQ
0.389

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	50	0.476	8.2
GRAIN MEAN DM%	84.9		
PLOT AREA HARVESTED	0.00226		