

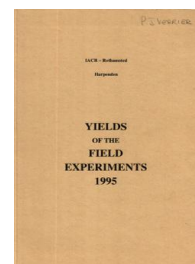
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95/W/WW/2 Prediction of Weed Competition - W. Wheat

Rothamsted Research

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95/W/WW/2

WINTER WHEAT

PREDICTION OF WEED COMPETITION

Object: To predict the yield response of winter wheat in competition with three contrasting weed species - Woburn, Lansome III.

Sponsors: P.J.W. Lutman, J.W. Cussans.

Design: 3 blocks of 3 x 6 plots. Treatments balanced for blocks in two directions

Plot dimensions: 3.0 x 8.0.

Treatments: All combinations of:-

1. WEED SP	Weed species:
SM	<i>Stellaria media</i> (chickweed)
AM	<i>Alopecurus myosuroides</i> (black-grass)
GA	<i>Galium aparine</i> (cleavers)
2. WEED DEN	Average weed densities, plants per m ² :
	SM AM GA
	0 0 0
	103 78 2
	201 122 3
	348 223 8
	606 389 20
	1091 921 31

NOTE: Target weed densities were: SM and AM: 0, 40, 80, 160, 320, 640 and GA: 0, 3, 6, 12, 24, and 48 respectively.

Experimental diary:

21-Sep-94 : B : Ploughed.
28-Sep-94 : B : Rotary harrowed.
29-Sep-94 : T : Weed seeds sown by hand.
30-Sep-94 : B : Mercia, dressed Rappor, drilled at 330 seeds per m².
14-Mar-95 : T : **WEED DEN** 0: Ally at 30 g with Cheetah Super at 2.5 l in 220 l.
 : T : **WEED SP** AM: Ally at 30 g in 220 l.
 : T : **WEED SP** GA: Stefes IPU at 4.2 l in 220 l.
15-Mar-95 : B : 34.5% N at 116 kg.
21-Apr-95 : B : 34.5% N at 464 kg.
02-May-95 : B : Halo at 2.0 l in 200 l.
02-Jun-95 : B : Cyclone at 1.0 l with Mallard 750 EC at 0.5 l in 300 l.
29-Jun-95 : B : Pirimicarb 50 DG at 280 g in 300 l.
04-Aug-95 : B : Hand harvested.

95/W/WW/2

NOTE: Weeds were counted in autumn and spring. Weeds and crop were sampled in winter and monthly from March to harvest for dry weight, green area and height, crop also had tillers and leaves per plant counted. Soil was sampled for nitrogen content in February. Flag leaf area and nutrient content were assessed in June. Black-grass seed produced was measured in June. Components of yield were assessed after harvest.

GRAIN TONNES/HECTARE

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

WEED DEN	0	2	4	8	16	32	Mean
WEED SP							
SM	5.31	3.42	2.66	2.49	3.34	3.13	3.39
AM	4.22	5.24	4.52	4.51	3.35	3.06	4.15
GA	5.07	4.39	4.89	4.72	5.15	4.41	4.77
Mean	4.87	4.35	4.02	3.91	3.95	3.53	4.11

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

WEED SP	WEED DEN	WEED SP WEED DEN
0.243	0.344	0.595

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	32	0.729	17.8

GRAIN MEAN DM% 85.2

PLOT AREA HARVESTED 0.00020