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## Yields of the Field Experiments 1995

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### 95/R/WW/1 Prediction of Weed Competition - W. Wheat

#### Rothamsted Research

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95/R/WW/1

WINTER WHEAT

PREDICTION OF WEED COMPETITION

**Object:** To predict the yield response of winter wheat to competition from three contrasting weed species - Stackyard.

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

**Design:** 3 randomised blocks of 3 x 6 plots.

**Whole plot dimensions:** 3.0 x 8.0.

**Treatments:** All combinations of:-

1. <b>WEED SP</b>	Weed species:		
SM	<i>Stellaria media</i> (chickweed)		
AM	<i>Alopecurus myosuroides</i> (black-grass)		
GA	<i>Galium aparine</i> (cleavers)		
2. <b>WEED DEN</b>	Weed density, plants per m <sup>2</sup> :		
	SM	AM	GA
0	0	0	0
2	65	130	9
4	80	233	8
8	151	264	22
16	245	434	29
32	301	607	47

**NOTE:** Target weed densities, plants per m<sup>2</sup>: SM, AM: 0, 40, 80, 160, 320 and 640, GA: 0, 3, 6, 12, 24 and 48.

**Experimental diary:**

- 02-Sep-94 : B : PK as (0:20:32) at 1317 kg.  
07-Sep-94 : B : Ploughed and furrow pressed.  
30-Sep-94 : B : Rotary harrowed.  
          : T : Weed seeds sown by hand.  
          : B : Rotary harrowed, Mercia, dressed Rappor, drilled  
                  at 275 seeds per m<sup>2</sup>.  
21-Nov-94 : B : Draza at 5.5 kg.  
13-Jan-95 : T : **WEED SP** SM, GA (except **WEED DEN** 0): Cheetah R at 2.5 l  
                  in 220 l.  
          : T : **WEED DEN** 0: Stefes IPU at 3.0 l with Stomp 400 at 3.3 l  
                  in 220 l.  
          : T : **WEED SP** AM (except **WEED DEN** 0): Oxytril CM at 1.5 l with  
                  Starane 2 at 0.75 l in 220 l.  
14-Mar-95 : B : 34.5% N at 118 kg.  
21-Mar-95 : T : **WEED SP** GA (except **WEED DEN** 0): Isoproturon 500 at 3.0 l  
                  in 220 l.  
          : T : **WEED DEN** 0: Ally at 30 g with Cheetah R at 2.5 l and  
                  Starane 2 at 0.75 l in 220 l.  
19-Apr-95 : B : 34.5% N at 463 kg.

95/R/WW/1

**Experimental diary:**

05-May-95 : B : Calixin at 0.35 l with Halo at 2.0 l in 200 l.  
 20-Jun-95 : B : Silvacur at 1.0 l in 200 l.  
 04-Aug-95 : B : Hand harvested.

Previous crops: S. rape 1993, w. oats 1994.

**NOTE:** Weeds were counted in autumn and spring. Weeds and crop were sampled monthly 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
<b>WEED SP</b>							
SM	7.92	5.97	6.62	5.63	4.59	5.32	6.01
AM	8.37	3.48	2.90	3.20	2.49	2.65	3.85
GA	8.34	7.17	6.95	7.21	5.87	4.96	6.75
Mean	8.21	5.54	5.49	5.35	4.31	4.31	5.53

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

WEED SP	WEED DEN	WEED SP WEED DEN
0.221	0.313	0.543

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	34	0.664	12.0

GRAIN MEAN DM% 91.2

PLOT AREA HARVESTED 0.00020