

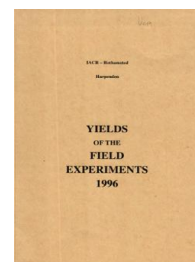
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96/R/WW/2 Water Stress and Weed Competition - W. Wheat

Rothamsted Research

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96/R/WW/2

WINTER WHEAT

WATER STRESS AND WEED COMPETITION

Object: To study the competitive effects of weeds in winter wheat, with and without irrigation - Delafield.

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

Design: 4 randomised blocks of 2 plots split into 4 sub-plots.

Whole plot dimensions: 8.0 x 30.0.

Sub-plot dimensions: 4.0 x 15.0.

Treatments:

Whole plots

1. IRRIGATN Irrigation:

I	Irrigated
0	None

Sub-plots

2. WEED Weed species sown:

-	None
SM	<i>Stellaria media</i> (chickweed)
AM	<i>Alopecurus myosuroides</i> (black-grass)
GA	<i>Galium aparine</i> (cleavers)

Experimental diary:

14-Sep-95 : B : Ploughed and furrow pressed.
02-Oct-95 : T : WEED SM, AM: Seed broadcast at 320 seeds per m².
 : T : WEED GA: Seed broadcast at 24 seeds per m².
 : B : Rotary harrowed, Mercia, dressed Sibutol, drilled at
 380 seeds per m².
16-Jan-96 : T : WEED AM: Ally at 30 g in 220 l.
 : T : WEED -: Panther at 2.0 l in 220 l.
08-Mar-96 : B : 34.5% N at 116 kg.
15-Apr-96 : B : 34.5% N at 463 kg.
14-May-96 : T : IRRIGATN I: Irrigated 25 mm.
05-Jun-96 : T : IRRIGATN I: Irrigated 30 mm.
18-Jun-96 : T : IRRIGATN I: Irrigated 25 mm.
26-Jun-96 : T : IRRIGATN I: Irrigated 25 mm.
04-Jul-96 : T : IRRIGATN I: Irrigated 25 mm.
15-Jul-96 : T : IRRIGATN I: Irrigated 25 mm.
15-Aug-96 : B : Hand harvested.

Previous crops: Linseed 1994, set-aside 1995.

96/R/WW/2

- NOTES: (1) Weed and crop populations were assessed at emergence and in November and February. Weed and crop biomass and green area were assessed on six occasions through the season. Seed production of black-grass and cleavers were measured. Components of yield were assessed at harvest.
- (2) Weeds failed to establish on two plots, with treatment combinations:-

IRRIGATN	I0	I1
WEED	SM	SM

Estimated values were used in the analysis.

GRAIN TONNES/HECTARE

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

WEED	-	SM	AM	GA	Mean
IRRIGATN					
I	7.06	5.13	6.87	3.75	5.70
0	7.20	4.94	6.24	6.07	6.11
Mean	7.13	5.03	6.55	4.91	5.91

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

WEED	IRRIGATN*
WEED	
0.494	0.698

* Within the same level of IRRIGATN only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	16	0.988	16.7

GRAIN MEAN DM% 89.8

SUB-PLOT AREA HARVESTED 0.00020