

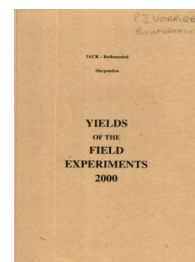
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00/R/WW/6 Herbicide Resistant Black-grass - W. Wheat

Rothamsted Research

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00/R/WW/6

WINTER WHEAT

HERBICIDE RESISTANT BLACK-GRASS

Object: To evaluate the efficacy of different herbicide treatments on a herbicide-resistant black-grass population - Claycroft.

Sponsors: S.R. Moss.

Design: 4 randomised blocks of 15 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments:

HERBICIDE	Herbicide type, rate of active ingredient and timing (black-grass growth stage):
A	Isoproturon at 2.5 kg post emergence
B	Tri-allate at 2.25 kg pre-emergence and trifluralin at 0.96 kg with isoproturon at 1.5 kg post emergence
C	Tri-allate at 2.25 kg pre-emergence and pendimethalin at 1.32 kg with isoproturon at 1.5 kg post emergence
D	Trifluralin at 0.96 kg pre-emergence and flupyr-sulfuron-methyl at 0.01 kg with pendimethalin at 1.32 kg post emergence
E	Tri-allate at 2.25 kg pre-emergence and flupyr-sulfuron-methyl at 0.01 kg with pendimethalin at 1.32 kg post emergence
F	Tri-allate at 2.25 kg pre-emergence and flupyr-sulfuron-methyl at 0.01 kg with trifluralin at 0.96 kg post emergence
G	Tri-allate at 2.25 kg pre-emergence and clodinafop-propargyl at 0.03 kg with trifluralin at 0.96 kg and adjuvant at two leaf stage
H	Tri-allate at 2.25 kg pre-emergence and clodinafop-propargyl at 0.03 kg with trifluralin at 0.96 kg, flupyr-sulfuron at 0.01 kg and adjuvant at two leaf stage
J	Fenoxaprop-P-ethyl at 0.069 kg at two leaf stage
K	Compound K at two leaf stage
L	Compound L pre-emergence
M	Compound M pre-emergence
N	Compound N at two leaf stage with adjuvant
O	None (duplicated)

NOTE: Herbicides K, L, M and N are under commercial development, composition undisclosed.

Experimental diary:

29-Aug-99 : B : : Ploughing started.
30-Aug-99 : B : : Ploughing completed.
31-Aug-99 : B : : Rotary harrowed.
03-Sep-99 : B : : Rolled.
14-Sep-99 : B : : Disced.
16-Sep-99 : B : : Combination drilled, Consort, tr. Sibutol at 350 seeds/m² with the Nordsten drill.
21-Sep-99 : T : D : Alpha Trifluralin 48 EC at 2.0 l in 220 l.
 : T : L : Compound L at 4.0 l in 220 l.
 : T : M : Compound M at 1.0 kg in 220 l.

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Experimental diary:

22-Sep-99 : B : : Genesis at 5.0 kg.
: T : B,C,E,F,G,H : Avadex Excel 15G at 15.0 kg.
15-Oct-99 : B : : Cyperkill 10 at 250 ml in 200 l.
26-Oct-99 : T : A : Isoguard at 5.0 l in 220 l.
: T : B : tm)Isoguard at 3.0 l in 220 l.
: T : B : tm)Alpha Trifluralin 48 EC at 2.0 l in 220 l.
: T : C : tm)Isoguard at 3.0 l in 220 l.
: T : C : tm)Stomp 400 SC at 3.3 l in 220 l.
: T : D,E : tm)Lexus 50 DF at 20 g in 220 l.
: T : D,E : tm)Stomp 400 SC at 3.3 l in 220 l.
: T : F : tm)Lexus 50 DF at 20 g in 220 l.
: T : F : tm)Alpha Trifluralin 48 EC at 2.0 l in 220 l.
15-Nov-99 : T : G : tm)Hawk at 2.5 l in 220 l.
: T : G : tm)Actipron at 1.1 l in 220 l.
: T : H : tm)Hawk at 2.5 l in 220 l.
: T : H : tm)Actipron at 1.1 l in 220 l.
: T : H : tm)Lexus 50 DF at 20 g in 220 l.
: T : J : Cheetah Super at 1.25 l in 220 l.
: T : K : tm)Compound K in 220 l.
: T : N : tm)Compound N in 220 l.
: T : N : tm)Agral at 0.22 l in 220 l.
31-Mar-00 : B : : Avenge 2 at 3.3 l in 200 l.
18-Apr-00 : B : : 34.5% N at 580 kg.
29-Apr-00 : B : : Landmark at 0.5 l in 200 l.
12-May-00 : B : : tm)Ally at 30 g in 200 l.
: B : : tm)Starane 2 at 0.5 l in 200 l.
20-May-00 : B : : Landmark at 1.0 l in 100 l.
15-Aug-00 : B : : Combine harvested.

Previous crops: W. wheat 1998 and 1999.

NOTE: Black-grass populations were assessed in March and heads counted in June.

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GRAIN TONNES/HECTARE

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

HERBCIDE	
A	4.93
B	7.47
C	7.50
D	7.26
E	7.92
F	7.20
G	7.53
H	7.41
J	4.87
K	7.66
L	6.63
M	3.73
N	5.41
O	3.72

Mean 6.20

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

HERBCIDE	
0.566	min.rep
0.490	max-min

HERBCIDE
max-min 0 v any of the remainder
min.rep Any of the remainder

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	43	0.800	12.9
GRAIN MEAN DM% 85.8			
PLOT AREA HARVESTED 0.00230			