

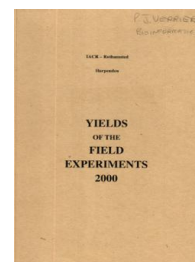
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00/R/RAW/2 Cleavers in Winter Rape - W. Oilseed Rape

Rothamsted Research

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00/R/RAW/2

WINTER OILSEED RAPE

CLEAVERS IN WINTER RAPE

Object: To compare early autumn, late autumn and winter applications of herbicide on the control and competitiveness of cleavers (*Galium aparine*)-Great Harpenden I.

Sponsor: P.J.W. Lutman.

Design: 3 randomised blocks of 3 x 4 + 2.

Whole plot dimensions: 4.0 x 16.0.

Treatments: All combinations of:-

1. **CL DENS** Cleaver density (target) plants per m²:

D1	8
D2	16
D3	32

2. **APP TIME** Herbicide timing:

HO	None
HE	Early autumn
HL	Late autumn
HW	Winter

Plus 2 extra plots

3. **EXTRA** No cleavers nor herbicides:

Experimental diary:

08-Aug-99 : B : : Ploughing and furrow pressing started.
12-Aug-99 : B : : Ploughing and furrow pressing completed.
01-Sep-99 : B : : Rotary harrowed.
: T : D1,D2,D3 : Cleavers broadcast at 8, 16 or 32 seeds/m² respectively.
: B : : Combination drilled, Apex, tr. Lindex-Plus FS Seed Treatment, at 120 seeds/m² with the Accord drill. Rolled.
03-Sep-99 : B : : Alpha Trifluralin 48 EC at 2.0 l in 200 l.
07-Sep-99 : B : : Irrigated 15 mm.
14-Sep-99 : B : : PBI Slug Pellets at 8.0 kg.
13-Oct-99 : B : : tm)Punch C at 0.4 l in 200 l.
: B : : tm)Hallmark at 100 ml in 200 l.
19-Oct-99 : B : : 34.5% N at 87 kg.
29-Oct-99 : T :HE : Galtak 50 SC at 1.5 l in 220 l.
02-Dec-99 : B : : Punch C at 0.4 l in 200 l.
20-Jan-00 : T :HE,HL : Galtak 50 SC at 1.5 l in 220 l.
09-Feb-00 : B : : Sulphan (30% N, 7.6% S) at 166 kg.
05-Mar-00 : T :HL,HW : Galtak 50 SC at 1.5 l in 220 l.

OO/R/RAW/2

Experimental diary:

16-Mar-00 : B : : tm)Laser at 1.0 l in 200 l.
 : B : : tm)Cropoil at 2.0 l in 200 l.
 17-Mar-00 : B : : Sulphan (30.0% N, 7.6% S) at 433 kg.
 09-May-00 : B : : tm)Bavistin DF at 1.0 kg in 100 l.
 : B : : tm)Hallmark with Zeon Technology at 75 ml in 100 l.
 12-Jul-00 : B : : Azural at 4.0 l in 200 l.
 23-Jul-00 : B : : Combine harvested.

Previous crops: W. rape and turnip rape 1998, w. wheat 1999.

NOTE: Establishment counts of crop and weeds were made in October. Cleavers were recounted in November. Late-November samples were taken for biomass and leaves were counted. Biomass was measured in March and again in May and July with plant height and populations measured. After harvest grain was cleaned to remove weed seeds.

GRAIN TONNES/HECTARE (FROM COMBINE HARVESTER)

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

APP TIME	HO	HE	HL	HW	Mean
CL DENS					
D1	3.89	3.68	4.01	3.83	3.85
D2	3.63	3.61	3.69	3.75	3.67
D3	3.64	3.48	3.70	3.88	3.68
Mean	3.72	3.59	3.80	3.82	3.73

EXTRA - 3.92

GRAND MEAN 3.76

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

CL DENS	APP TIME	CL DENS
		APP TIME
0.081	0.093	0.161

SED for comparing **EXTRA -** with any item in **CL DENS, APP TIME** table is 0.140

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.197	5.2

GRAIN MEAN DM% 84.9

00/R/RAW/2

GRAIN TONNES/HECTARE (AFTER REMOVING WEED SEEDS)

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

APP TIME CL DENS	HO	HE	HL	HW	Mean
D1	3.73	3.65	3.94	3.79	3.78
D2	3.24	3.58	3.65	3.72	3.55
D3	3.24	3.46	3.66	3.83	3.55
Mean	3.41	3.56	3.75	3.78	3.63

EXTRA - 3.88

GRAND MEAN 3.66

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

CL DENS	APP TIME	CL DENS APP TIME
0.089	0.103	0.178

SED for comparing EXTRA - with any item in CL DENS, APP TIME table is 0.154

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.218	6.0

PLOT AREA HARVESTED 0.00310 (for 1 block) or 0.00283 (for 2 blocks)