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Yields of the Field Experiments 1994

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Linseed

Rothamsted Research

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94/R/LN/1

LINSEED

FUNGICIDE TIMING

Object: To study the effects of the timing and number of fungicide sprays on disease incidence and seed and oil yields of linseed - Delafield.

Sponsors: J.F.S. Harold, B.D.L. Fitt.

Design: 3 randomised blocks of 3 plots (duplicated).

Whole plot dimensions: 3.0 x 15.0.

Treatments:

FUNGICIDE	Timing and number of fungicide sprays:
-	None
E	Iprodione mid-flowering
F	Iprodione mid-flowering, repeated at late flowering, and benomyl at capsule formation

NOTE: In treatment F, iprodione at late flowering was omitted.

Experimental diary:

12-Nov-93 : B : FYM at 25 t.
02-Dec-93 : B : Ploughed.
20-Apr-94 : B : Spring-tine cultivated.
 : B : Rotary harrowed, Antares, dressed Prelude 20LF, drilled at 700 seeds per m².
21-Apr-94 : B : Rolled.
10-May-94 : B : 34.5% N at 220 kg.
12-May-94 : B : Ripcord at 250 ml in 200 l.
13-Jun-94 : B : Dow Shield at 0.5 l in 200 l.
12-Jul-94 : T : **FUNGICIDE** E, F: Rovral Flo at 2.0 l in 200 l.
05-Aug-94 : T : **FUNGICIDE** F: Benlate at 1.1 kg with Vassgro Spreader at 110 ml in 220 l.
13-Sep-94 : B : Combine harvested.

Previous crops: S. beans 1992, linseed 1993.

NOTE: Diseases were assessed at intervals throughout the season. Fungal spores were monitored continuously.

94/R/LN/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FUNGICIDE	
-	0.71
E	0.79
F	0.86
Mean	0.79

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

FUNGICIDE
0.102

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	13	0.177	22.4
GRAIN MEAN DM%	86.0		
PLOT AREA HARVESTED	0.00276		

94/R/LN/2

LINSEED

WEED COMPETITION IN LINSEED

Object: To investigate the effects of two weed species on each other and on the growth and yield of linseed - Geescroft.

Sponsors: R.C. Van Acker, P.J.W. Lutman.

Design: 2 randomised blocks of (5 x 5) + 5 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. **BARLEY** Number of barley plants established per m²:

B0	0
B1	16
B2	22
B3	59
B4	164

2. **CHKWEED** Number of chickweed plants established per m²:

C0	0
C1	73
C2	161
C3	345
C4	546

plus 5 extra treatments

3. **EXTRA** Number of barley or chickweed plants established per m²:

	Barley	Chickweed
-	-	-
EB1	80	-
EB2	237	-
EC1	-	430
EC2	-	712

NOTE: Target 'weed' densities, plants per m², were as follows:

BARLEY B0 0, B1 25, B2 50, B3 100, B4 300.

CHKWEED C0 0, C1 100, C2 200, C3 400, C4 800.

EXTRA - 0, EB1 200, EB2 400, EC1 600, EC2 1200.

Experimental diary:

03-Dec-93 : B : Ploughed.

25-Apr-94 : B : Rotary harrowed.

: T : **BARLEY** B1, B2, B3, B4, **EXTRA** EB1, EB2: Alexis, dressed Panocrine Plus, broadcast by machine.

94/R/LN/2

Experimental diary:

25-Apr-94 : T : **CHKWEED** C1, C2, C3, C4, **EXTRA** EC1, EC2: Chickweed seeds broadcast by hand.
 : B : Rotary harrowed, Antares, dressed Prelude 20LF, drilled at 700 seeds per m².
 12-May-94 : B : Ripcord at 250 ml in 200 l.
 18-May-94 : B : 34.5% N at 220 kg.
 13-Jun-94 : B : Dow Shield at 0.5 l in 200 l.
 06-Sep-94 : B : Hand harvested.

Previous crops: W. wheat 1992, w. wheat 1993.

NOTE: Leaf area indices of the barley, chickweed and linseed were measured on two occasions during the growing season. Percentage ground cover was assessed by visual and photographic methods on two occasions early in the growing season. Weed seed yield, as well as crop components of yield, were measured before harvest.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

BARLEY	B0	B1	B2	B3	B4	Mean
CHKWEED						
C0	0.84	0.76	0.76	0.60	0.32	0.66
C1	0.90	0.71	0.73	0.54	0.31	0.64
C2	0.80	0.61	0.60	0.61	0.32	0.59
C3	0.76	0.67	0.62	0.53	0.36	0.59
C4	0.75	0.63	0.61	0.35	0.26	0.52
Mean	0.81	0.68	0.66	0.53	0.31	0.60
EXTRA						
-	0.96					
EB1	0.49					
EB2	0.34					
EB3	0.77					
EB4	0.82					
Mean	0.68					

GRAND MEAN 0.61

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

BARLEY	CHKWEED	BARLEY CHKWEED
0.055	0.055	0.124

94/R/LP/2

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	29	0.124	20.2

GRAIN MEAN DM% *

PLOT AREA HARVESTED 0.00010

94/R/LN/6

LINSEED

WEED TYPES IN LINSEED

Object: To study the effects of three contrasting weed species on the growth and yield of linseed - Geescroft.

Sponsor: P.J.W. Lutman.

Design: 3 randomised blocks of (3 x 5) + 2 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments: All combinations of:-

1. SPECIES

CO	Cultivated oats (<i>Avena sativa</i> cv. Dula)
FH	Fat hen (<i>Chenopodium album</i>)
CW	Chickweed (<i>Stellaria media</i>)

2. RATE Number of plants established per m²:

	CO	FH	CW
0	0	0	0
1	9	6	57
2	25	31	87
3	91	24	232
4	150	55	261

plus two extra plots

3. EXTRA Number of wild oats (*Avena fatua*) plants established per m²:

W1	15
W2	54

NOTES: (1) Target 'weed' densities, seeds per m²:

RATE CO 0 0, CO 1 20, CO 2 60, CO 3 180, CO 4 360
FH 0 0, FH 1 100, FH 2 400, FH 3 800, FH 4 1600
CW 0 0, CW 1 100, CW 2 200, CW 3 400, CW 4 800
EXTRA W1 60, W2 180

(2) Cultivated oats were dressed with Rappor Plus.

Experimental diary:

03-Dec-93 : B : Ploughed.

26-Apr-94 : B : Rotary harrowed.

: T : **SPECIES** FH, CW: Seed broadcast by hand.

: T : **SPECIES** CO, **EXTRA** W1, W2: Seed broadcast by machine.

: B : Rotary harrowed, Antares, dressed Prelude 20LF, drilled at 700 seeds per m².

94/R/LN/6

Experimental diary:

12-May-94 : B : Ripcord at 250 ml in 200 l.
 18-May-94 : B : 34.5% N at 220 kg.
 13-Jun-94 : B : Dow Shield at 0.5 l in 200 l.
 17-Jun-94 : T : SPECIES CO 0, CO 1, CO 2, CO 3, CO 4, FH 0, EXTRA W1,
 W2: Ally at 30 g in 220 l.
 02-Sep-94 : B : Hand harvested.

Previous crops: W. wheat 1992, s. wheat 1993.

NOTE: (1) Weed densities were measured in May. Growth of crop and 'weeds' were measured in June and July.
 (2) Because of a severe thistle infestation the yields of two plots were lost, those with the treatment combination:
 SPECIES CO, RATE 0 and EXTRA W1.
 Estimated values were used in the analysis.

GRAIN (AT 90% DM) TONNES/HECTARE

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

RATE	0	1	2	3	4	Mean
SPECIES						
CO	0.98	0.71	0.58	0.32	0.20	0.56
FH	0.80	1.07	0.84	0.88	0.69	0.86
CW	0.99	0.92	0.80	0.74	0.79	0.85
Mean	0.93	0.90	0.74	0.65	0.56	0.76
EXTRA						
W1	0.70					
W2	0.51					
Mean	0.58					

GRAND MEAN 0.74

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

SPECIES	RATE	SPECIES RATE & EXTRA
0.056	0.073	0.120

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.154	20.9
MEAN DM% *			
PLOT AREA HARVESTED	0.00010		