

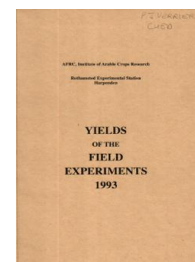
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Yields of the Field Experiments 1993

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Lupins

Rothamsted Research

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93/R/LP/1

WINTER LUPINS

LUPIN VARIETIES

Object: To assess crop structure, yield and maturity date of a number of lines of winter lupins - Long Hoos IV South.

Sponsors: G.F.J. Milford, H.J. Stevenson, J.E. Leach, J.M. Day, T. Scott.

Design: 3 blocks of 15 plots.

Whole plot dimensions: 2.0 x 3.0.

Treatments:

GENOTYPE	Genotypes:
L1	CH304/70
L2	CH304/71
L3	CH304/73
L4	XA 100
L5	RES 1
L6	LUS 5
L7	LUS 21
L8	LUS 24
L9	LUS 26
L10	LUS 54
L11	LUS 60
L12	LUS 64
L13	LUS 118
L14	LUS 131
L15	LUS 139

Experimental Diary:

- 06-Oct-92 : B : Ploughed.
09-Oct-92 : B : Rotary harrowed.
 : T : **GENOTYPE:** All genotypes, inoculated with rhizobium, hand sown at 42 seeds per square metre.
 : B : Yaltox at 35 kg, by hand.
13-Oct-92 : B : Opogard 500 FW at 2.8 l in 200 l.
22-Jun-93 : B : Power Dimethoate at 1.7 kg in 200 l.
02-Jul-93 : B : Mistral at 1.0 l in 200 l.
 : B : Sportak 45 at 1.1 l in 200 l.
01-Sep-92 : T : **GENOTYPE** L2, L3: Hand harvested.
07-Sep-92 : T : **GENOTYPE** L5, L8, L12 excluding one replicate of L12:
 Hand harvested.
29-Sep-92 : T : **GENOTYPE** L1, L6, L11, L13, L14: Hand harvested.
07-Oct-92 : T : **GENOTYPE** L15 plus one replicate of L10 and L12:
 Hand harvested.
26-Oct-92 : T : **GENOTYPE** L4, L7, L9, L10 excluding one replicate of L10:
 Hand harvested.

93/R/LP/1

Previous crops: S. barley 1991, fallow 1992.

- NOTES:** (1) Hand harvesting period was extended because of wet weather.
(2) Plant counts were made throughout the season and measurements of plant height, structure, time of flowering, flower colour and floret numbers taken. Pod, seed and branch numbers and seed dry weights were measured at harvest.
(3) Because of rodent damage the yield of one plot was lost with treatment **GENOTYPE** L15. An estimated value was used in the analysis.

GRAIN TONNES/HECTARE

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

GENOTYPE	
L1	6.28
L2	0.66
L3	1.71
L4	2.44
L5	0.45
L6	3.61
L7	2.88
L8	1.38
L9	2.89
L10	0.52
L11	2.33
L12	2.25
L13	2.48
L14	2.51
L15	0.73
Mean	2.21

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

GENOTYPE
0.623

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	27	0.763	34.5
MEAN DM%	*		
PLOT AREA HARVESTED	0.00049		

93/R/LP/2

WINTER LUPINS

SOWING DATE, POPULATION AND DISEASE

Object: To establish the effect of sowing date and plant density on plant structure, yield and harvest date and to investigate the occurrence and significance of root-infecting pathogens - Long Hoos III 2, 4, 5 and 6.

Sponsors: J.M. Day, G.F.J. Milford, J.E. Leach, J.F. Jenkyn, G.L. Bateman, H.J. Stevenson, T. Scott, D.P. Yeoman.

Design: 4 blocks of 4 plots split into 5 sub plots.

Whole plot dimensions: 2.88 x 6.0.

Treatments:

Whole plots

1. SOW DATE	Date of sowing:
EAR SEP	Early September
MID SEP	Mid September
EAR OCT	Early October
MID OCT	Mid October

Sub plots

2. POPULATN	Plant population at establishment (plants per square metre):
P1	13
P2	17
P3	21
P4	28

- NOTES:** (1) Sowing rates used to achieve the required plant populations were 28, 42, 56 and 70 seeds per square metre respectively.
(2) POPULATN P2 was duplicated to allow additional sampling.

Experimental Diary:

- 07-Sep-92 : B : Ploughed.
08-Sep-92 : B : Rolled.
 : T : SOW DATE EAR SEP: Rotary harrowed twice.
09-Sep-92 : T : SOW DATE EAR SEP: CH304/70, inoculated rhizobium, drilled.
10-Sep-92 : T : SOW DATE EAR SEP: Opogard 500 FW at 2.8 l in 220 l.
21-Sep-92 : T : SOW DATE MID SEP: Heavy spring-tine cultivated.
06-Oct-92 : T : SOW DATE MID SEP: Rotary harrowed, CH304/70, inoculated rhizobium, drilled.
08-Oct-92 : T : SOW DATE MID SEP: Opogard 500 FW at 2.8 l in 220 l.

93/R/LP/2

Experimental diary:

19-Oct-92 : T : SOW DATE EAR OCT: Rotary harrowed, CH304/70, inoculated rhizobium, drilled.
: T : SOW DATE EAR OCT: Opogard 500 FW at 2.8 l in 220 l.
04-Nov-92 : T : SOW DATE MID OCT: Heavy spring-tine cultivated.
05-Nov-92 : T : SOW DATE MID OCT: Rotary harrowed CH304/70 inoculated rhizobium, drilled.
22-Jun-93 : B : Power Dimethoate at 1.7 kg in 200 l.
02-Jul-93 : B : Sportak at 1.1 l in 200 l.
06-Sep-93 : B : Stefes Diquat at 3.0 l with Vassgro Spreader at 0.3 l in 260 l.
13-Sep-93 : T : SOW DATE EAR SEP: Hand harvested.
14-Sep-93 : T : SOW DATE MID SEP, EAR OCT, MID OCT: Hand harvested.

Previous crops: Long Hoos III 2 Lupins 1991, fallow 1992.
Long Hoos III 4 Lupins 1991, s.wheat 1992.
Long Hoos III 5 Fallow 1991, s. wheat 1992.

- NOTE:** (1) Plant counts were made throughout the season and measurements of plant height, structure, time of flowering and maximum floret numbers were recorded.
- (2) Owing to waterlogging during the winter one of the four blocks failed and was abandoned. Yields were, therefore, measured on only three blocks.
- (3) The yield of one plot was lost with treatment combination SOW DATE EAR SEP, POPULATN P2. An estimated value was used in the analysis.

93/R/LP/2

GRAIN TONNES/HECTARE

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

SOW DATE	EAR SEP	MID SEP	EAR OCT	MID OCT	Mean
POPULATN					
P1	1.26	0.58	0.28	0.74	0.71
P2	2.59	0.53	0.18	0.68	1.00
P3	2.15	0.97	0.42	0.98	1.13
P4	2.63	0.91	0.91	1.20	1.41
Mean	2.24	0.70	0.39	0.86	1.05

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

Table	POPULATN	SOW DATE	POPULATN	SOW DATE
s.e.d.	0.167		0.395	min.rep
	0.145	0.257	0.358	max-min
			0.316	max.rep
Except when comparing means with the same level(s) of				
			0.335	min.rep
			0.290	max-min

POPULATN
 max.rep P2
 max-min P2 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	6	0.315	30.1
BLOCK.WP.SP	35	0.410	39.1

MEAN DM% *

PLOT AREA HARVESTED 0.00102