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ROTHAMSTED RESEARCH

Yields of the Field Experiments 1993

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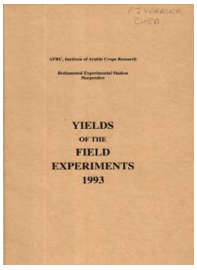

93/R/LP/2 Sowing Date, Population and Disease - W. Lupins

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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.

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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.

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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 **SOW DATE**			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

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