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00/R/LP/6 Seed Rates and Sowing Dates - Lupins

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00/R/LP/6

LUPINS

SEED RATES AND SOWING DATES

Object: To define the optimum crop structure for DETN 20, a model genotype of the dwarf determinate plant type - Highfield IV/Road Piece East.

Sponsors: I.F. Shield, H.J. Stevenson, J.E. Leach, T. Scott.

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

Plot dimensions: 9.0 x 9.0.

Treatments: All combinations of:-

1. **SOW DATE** Sowing date:

E 01-Sep-99
L 22-Sep-99

2. **SEED RATE** Seeds per m²:

R1 20
R2 40
R3 60
R4 80

EXTRA All sown at 40 seeds/m²:

EIR Early sown, irrigated
ESH Early sown, shaded
LIR Late sown, irrigated
LSH Late sown, shaded

Experimental diary:

13-Aug-99 : B : : Ploughing started.
14-Aug-99 : B : : Ploughing completed.
31-Aug-99 : B : : Rolled.
: T : E,EIR,ESH : Spannit at 1.5 l in 200 l. Rotary harrowed.
01-Sep-99 : T : E,EIR,ESH : Combination drilled, DTN 20, tr. Germipro, with the Accord drill. Rolled.
06-Sep-99 : T : E,EIR,ESH : Stomp 400 SC at 5.0 l in 200 l.
15-Sep-99 : B : : Draza at 5.0 kg.
22-Sep-99 : T : L,LIR,LSH : Dursban 4 at 1.5 l in 200 l.
: T : L,LIR,LSH : Combination drilled, DTN 20, tr. Germipro, with the Accord drill.
14-Oct-99 : B : : Cyperkill 10 at 250 ml in 200 l.
12-Nov-99 : B : : tm)Alpha Simazine 50 SC at 2.3 l in 200 l.
: B : : tm)Carbetamex at 3.0 kg in 200 l.
: T : L,LIR,LSH : Stomp 400 SC at 5.0 l in 220 l.
28-Apr-00 : B : : tm)Bravo 500 at 1.5 l in 200 l.
: B : : tm)Folicur at 0.5 l in 200 l.
09-May-00 : T : ESH : Shading applied.
10-May-00 : T : LSH : Shading applied.
19-Jun-00 : T : EIR,LIR : Irrigated 12 mm.
29-Jun-00 : T : EIR,LIR : Irrigated 12 mm.
04-Jul-00 : B : : tm)Folicur at 0.5 l in 200 l.

00/R/LP/6

Experimental diary:

04-Jul-00 : B : : tm)Aphox at 280 g in 200 l.
 : B : : tm)Enhance Low Foam at 50 ml in 200 l.
 22-Aug-00 : T : ESH,LSH : Shading removed.
 27-Sep-00 : B : : Combine harvested.

Previous crops: W. barley and w. wheat 1998, 1999.

- NOTES:** (1) Five plots were lost, one with treatment combination **SOW DATE** L and **SEED RATE** R1 because soil had been imported to fill a dell and one of each of the 4 **EXTRA** treatments were not applied. Estimated values were used in the analysis.
- (2) Radiation interception was measured weekly through the growing season. Supplementary red light was applied to parts of three plots during flowering and pod filling. Leaf and pod photosynthesis was measured. Radiation spectral measurements also measured occasionally. Dry matter and partitioning was measured every three weeks. Pods were counted weekly from flowering to harvest. Pod and seeds were weighed weekly during maturation. Components of yield were assessed at harvest.

GRAIN TONNES/HECTARE

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

SEED RATE	R1	R2	R3	R4	Mean
SOW DATE					
E	3.75	3.31	3.14	3.30	3.37
L	3.70	3.77	4.00	3.95	3.85
Mean	3.72	3.54	3.57	3.62	3.61
EXTRA	EIR	ESH	LIR	LSH	Mean
	3.17	2.05	4.18	1.99	2.85

Grand mean 3.36

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

SOW DATE	SEED RATE	SOW DATE SEED RATE & EXTRA
0.140	0.199	0.281

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	28	0.397	11.8
GRAIN MEAN DM%	47.1		
PLOT AREA HARVESTED	0.00207 (mean)		