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98/R/LP/7 Genotype, Row Spacing and Seed Rate - Lupins

Rothamsted Research

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98/R/LP/7

LUPINS

GENOTYPE, ROW SPACING AND SEED RATE

Object: To test seed rates and row spacings on the structure and yield of standard and new dwarf-determinate genotypes of lupins - Osier.

Sponsors: I.F. Shield, J.E. Leach.

Design: 3 blocks of (4 x 2 x 2) + 2 extra plots.

Whole plot dimensions: 8.0 x 9.0.

Treatments: All combinations of:-

1. GENOTYPE

LY	Lucyane dressed Germipro
LB	Ludet dressed Germipro
12	DTN 12 undressed
20	DTN 20 undressed

2. ROW SPAC

R1	12.5
R2	37.5

3. SEED RAT

S1	40
S2	80

Plus extra

EXTRA

X1	Ludet at 50 cm and 40 seeds per m ²
X2	DTN 20 at 50 cm and 40 seeds per m ²

Experimental diary:

12-Aug-97 : B : Ploughed and furrow pressed.
15-Sep-97 : B : Rolled. Rotary harrowed.
16-Sep-97 : T : Genotypes drilled as treatment.
18-Sep-97 : B : Rolled. Stomp 400 SC at 5.0 l with Spannit at 1.1 l in 200 l.
27-Oct-97 : B : Checkmate at 1.75 l with Atlas Adjuvant Oil at 2.0 l in 200 l.
26-Nov-97 : B : Gesatop 500 SC at 2.5 l in 200 l.
18-Feb-98 : B : Folicur at 0.5 l in 200 l.
24-Feb-98 : B : Rovral Flo at 1.0 l in 200 l.
16-Mar-98 : B : Skirmish at 1.0 l in 200 l.
02-Apr-98 : B : Danadim Dimethoate 40 at 850 ml in 200 l.
20-May-98 : B : Folicur at 0.5 l in 200 l. Aphox at 280 g in 200 l.

98/R/LP/7

Experimental diary:

12-Jun-98 : B : Alto 240 EC at 0.33 l with Bravo 500 at 1.5 l in 200 l.
 17-Sep-98 : T : **GENOTYPE** LY, LB: Combine harvested.
 23-Sep-98 : T : **GENOTYPE** 12, 20: Combine harvested.

Previous crops: Set-aside and industrial rape 1996, w. wheat and w. barley 1997.

NOTE: Plant populations were counted after establishment and in April. Light interception was measured, plants were sampled to measure dry matter accumulation. Lodging was assessed before harvest and at harvest components of yield were measured.

GRAIN TONNES/HECTARE

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

ROW SPAC	R1	R2	Mean
GENOTYPE			
LY	1.91	2.22	2.07
LD	3.04	2.72	2.88
12	1.56	1.53	1.54
20	2.08	2.42	2.25
Mean	2.15	2.22	2.19

SEED RAT	S1	S2	Mean
GENOTYPE			
LY	1.99	2.14	2.07
LD	2.81	2.96	2.88
12	1.59	1.50	1.54
20	2.44	2.05	2.25
Mean	2.21	2.17	2.19

SEED RAT	S1	S2	Mean
ROW SPAC			
R1	2.23	2.06	2.15
R2	2.18	2.27	2.22
Mean	2.21	2.17	2.19

ROW SPAC	R1	R2	R1	R2
SEED RAT	S1	S2	S1	S2
GENOTYPE				
LY	1.84	1.99	2.14	2.30
LD	3.10	2.98	2.52	2.93
12	1.57	1.56	1.60	1.45
20	2.43	1.72	2.45	2.39

EXTRA	X1	X2	Mean
	1.93	0.66	1.30

Grand mean 2.09

98/R/LP/7

GRAIN TONNES/HECTARE

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

GENOTYPE	ROW SPAC	SEED RAT	GENOTYPE
			ROW SPAC
0.173	0.122	0.122	0.244

GENOTYPE	ROW SPAC	GENOTYPE
SEED RAT	SEED RAT	ROW SPAC
		SEED RAT
		& EXTRA
0.224	0.173	0.345

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	34	0.423	20.3

GRAIN MEAN DM% 75.1

PLOT AREA HARVESTED	ROW SPAC R1	0.00207
PLOT AREA HARVESTED	ROW SPAC R2	0.00202
PLOT AREA HARVESTED	EXTRA PLOTS	0.00225