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96/R/LP/10 Genotype, Row Spacing and Seed Rate - Lupins

Rothamsted Research

Rothamsted Research (1997) *96/R/LP/10 Genotype, Row Spacing and Seed Rate - Lupins* ; Yields Of The Field Experiments 1996, pp 152 - 154 - DOI: <https://doi.org/10.23637/ERADOC-1-51>

96/R/LP/10

LUPINS

GENOTYPE, ROW SPACING AND SEED RATE

Object: To test seed rate and row spacing on the structure and performance of existing determinate and new dwarf-determinate genotypes - Appletree.

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

Design: 3 randomised blocks of 4 x 2 x 2 plots.

Whole plot dimensions: 3.0 x 9.0.

Treatments: All combinations of :-

1. GENOTYPE

70	CH304/70
73	CH304/73
DA	Dwarf A
DB	Dwarf B

2. ROW SPAC Row spacing, cm:

12
36

3. SEED RAT Seed rate, seeds per m²:

40
80

Experimental diary:

26-Jul-95 : B : Straw removed.
04-Aug-95 : B : Ploughed and furrow pressed.
11-Sep-95 : T : ROW SPAC 36: Rotary harrowed, genotypes drilled.
12-Sep-95 : T : ROW SPAC 12: Genotypes broadcast by hand, rotary harrowed.
14-Sep-95 : B : Stomp 400 SC at 5.0 l in 200 l.
18-Oct-95 : B : Laser at 0.75 l with Atlas Adjuvant Oil at 1.6 l in 200 l.
29-Mar-96 : B : Atlas Simazine at 2.3 l in 200 l.
10-Jul-96 : B : Mistral at 1.0 l in 260 l.
18-Jul-96 : B : Benlate Fungicide at 1.1 kg with Pirimicarb 50 DG at 280 g and Vassgro Spreader at 78 ml in 260 l.
03-Sep-96 : B : Reglone at 3.0 l in 390 l.
10-Sep-96 : T : GENOTYPE DA, DB: Combine harvested.
11-Sep-96 : T : GENOTYPE 70, 73: Combine harvested.

Previous crops: W. rape 1994, w. barley 1995.

NOTE: Plant density was assessed October to April. Light interception was measured weekly April to harvest. Components of yield were assessed at harvest.

96/R/LP/10

GRAIN TONNES/HECTARE

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

ROW SPAC	12	36	Mean
GENOTYPE			
70	1.46	0.92	1.19
73	1.57	0.70	1.13
DA	3.17	3.07	3.12
DB	2.46	2.31	2.39
Mean	2.16	1.75	1.96

SEED RAT	40	80	Mean
GENOTYPE			
70	1.22	1.17	1.19
73	1.24	1.03	1.13
DA	2.93	3.31	3.12
DB	2.57	2.20	2.39
Mean	1.99	1.93	1.96

SEED RAT	40	80	Mean
ROW SPAC			
12	2.18	2.15	2.16
36	1.80	1.70	1.75
Mean	1.99	1.93	1.96

ROW SPAC	12	36		
GENOTYPE SEED RAT	40	80	40	80
70	1.45	1.47	0.99	0.86
73	1.60	1.53	0.88	0.52
DA	3.02	3.31	2.85	3.30
DB	2.66	2.27	2.49	2.14

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

GENOTYPE	ROW SPAC	SEED RAT	GENOTYPE
			ROW SPAC
0.140	0.099	0.099	0.198
GENOTYPE	ROW SPAC	GENOTYPE	
SEED RAT	SEED RAT	ROW SPAC	
		SEED RAT	
0.198	0.140	0.281	

96/R/LP/10

GRAIN TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	28	0.344	17.5

GRAIN MEAN DM% 83.3

PLOT AREA HARVESTED	ROW SPAC 12	0.00207
	ROW SPAC 36	0.00227