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Experiment 89EC31. Effects of seed phosphorus concentrations and the source of the seed on growth of lupins.

M. Riley, M.D.A. Bolland and K. Adcock.

Location

East Chapman Research Station.

Treatments

Factorial combination of:

1. Fertilizer P (2) - 0, 300 kg superphosphate/ha drilled with seed.
2. Seed source and P concentrations (6) -
88BA37 - 0.18, 0.23% P
88BA41 - 0.21, 0.29% P
88BA43 - 0.32, 0.46% P
3. Replicates - 4.

Note: Treatments are identical to experiment 89BA29.

Sowing details

Lupins cv. Gungurru seed sieved to uniform size and sown at 100 kg/ha. Basal fertilizers were topdressed at the following rates:

gypsum, 100 kg/ha; CuSO_4 , 3 kg/ha; ZnO , 1 kg/ha; Na_2MoO_4 , 0.2 kg/ha.

Sown on 19/5/90.

Harvested on 30/11/89.

Table 10. Effect of seed phosphorus (P) concentration, source of seed, and fertilizer P level on plant counts at six weeks, shoot dry matter (DM) at 11 and 20 weeks, and on seed DM at maturity of lupin cv. Gungurru grown in 1989 at East Chapman Research Station. Values are means of four replicates

Fertilizer P (kg super/ha)	Seed source	Seed P (%)	Plant counts/ m ²	Shoot DM (kg/ha)		Seed DM (kg/ha)
				11 weeks	20 weeks	
0	88BA37	0.18	39	450	3020	406
		0.23	36	462	3030	506
	88BA41	0.21	35	468	3000	547
		0.29	41	582	3200	562
	88BA43	0.32	37	478	3050	504
		0.46	37	478	2830	463
300	88BA37	0.18	35	520	3280	452
		0.23	37	622	3400	528
	88BA41	0.21	35	583	3050	531
		0.29	40	547	3470	547
	88BA43	0.32	38	598	3555	547
		0.46	36	525	3160	567
Fertilizer P			NS	**	**	NS
Seed source			NS	NS	NS	**
Seed P			NS	NS	NS	NS
Fertilizer P x seed source			NS	NS	NS	NS
Fertilizer P x seed P			NS	NS	NS	NS
Seed source x seed P			**	NS	NS	*
Fertilizer P x seed source x seed P			NS	*	NS	NS

Comments

1. Omitting superphosphate depressed shoot DM during crop growth but the effects did not persist to seed maturity.
2. Seed DM was depressed using seed from 88BA37 which also had the lowest seed P concentrations.