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Experiment 89BA29. Effect of seed origin and seed phosphorus on the growth of lupins.

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

Location

Badgingarra Research Station, Paddock 4A2, old block.

Treatments

Factorial combination of:

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

Sowing details

Lupin cv. Gungurru sieved to uniform size and sown without inoculation. No basal fertilizers were applied as the soil had previously been treated with high rates of superphosphate, micro-nutrients and potassium. Muriate of potash topdressed on 18/8/89 at 100 kg/ha.

Sown on 22/5/89.

Harvested on 24/11/89.

Table 9. Effect of seed phosphorus (P) concentration, source of seed, and fertilizer P level on plant counts at six weeks, shoot dry matter (DM) at 10 and 18 weeks, and on seed DM at maturity of lupin cv. Gungurru grown in 1989 at Badgingarra Research Station. Values are means of four replicates

Fertilizer P (kg super/ha)	Seed source	Seed P (%)	Plant counts/ m row	Shoot DM (kg/ha)		Seed DM (kg/ha)
				10 weeks	18 weeks	
0	88BA37	0.18	25	194	3370	515
		0.23	27	208	3990	645
	88BA43	0.21	29	266	4690	775
		0.29	29	335	4050	675
	88BA41	0.32	26	258	4860	585
		0.46	24	224	3972	560
300	88BA37	0.18	28	490	6510	945
		0.23	24	405	6540	1015
	88BA43	0.21	23	398	6560	1029
		0.29	30	412	6320	1045
	88BA41	0.32	28	398	6550	960
		0.46	29	389	5450	790
Soil P			NS	**	**	**
Seed source			NS	NS	NS	**
Seed P			NS	NS	NS	NS
Soil P x seed source			NS	NS	NS	NS
Soil P x seed P			NS	NS	NS	NS
Seed source x seed P			NS	NS	NS	*
Soil P x seed source x seed P			NS	NS	NS	NS

Comments

1. Omitting superphosphate depressed shoot DM during crop growth and seed DM at maturity.
2. Decreasing seed P concentrations increased, decreased or had no effect on seed DM depending on seed source and fertilizer P level. In seed from 88BA37, decreasing seed P concentration from 0.23 to 0.18% depressed seed DM. In the remaining seed which had higher P concentrations, increasing seed P concentrations had either no effect on seed DM or depressed it.
3. Crops grown from the seed of 88BA43 produced higher seed DM than that from the other sources of seed.