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Yields of the Field Experiments 1987

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87/R/LP/4 Desiccants and Fungicides - Lupins

Rothamsted Research

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87/R/LP/4

LUPINS

DESICCANTS AND FUNGICIDES

Object: To study the effects of times of applying desiccants and fungicides on senescence, grain quality and yield of lupins (Lupinus albus) - Long Hoos III 1.

Sponsors: H.L. Jones, J. Lacey.

Design: 2 randomised blocks of 30 plots.

Whole plot dimensions: 2.4 x 5.0.

Treatments: All combinations of:-

1. DESICCNT	Desiccants:
DIQUAT	Diquat at 0.15 kg ion
MET+FEN	Metoxuron at 2.0 kg plus fentin hydroxide at 0.20 kg
GLYPHOS	Glyphosate at 1.08 kg
NACL	Sodium chloride at 6.25 kg
2. FUNGCIDE	Fungicide:
NONE	None
PROPICON	Propiconazole at 0.125 kg
3. APP TIME	Times of applying desiccants and fungicide:
EARLY	Fungicide on 25 Sept 1987, desiccants 12 Oct
MIDDLE	Fungicide on 25 Sept, desiccants 19 Oct
LATE	Fungicide on 25 Sept, desiccants 28 Oct

plus five extra treatments not given desiccants:

FUNGIC X	Fungicides applied on 12 Oct:
NONE	None (duplicated)
IPRODION	Iprodione at 1.0 kg
PROPICON	Propiconazole at 0.125 kg
PROP+DIQ	Propiconazole at 0.125 kg + diquat at 0.60 kg ion
VINCLOZ	Vinclozalin at 0.375 kg

NOTES: (1) APP TIME for desiccants was chosen for the three stages EARLY-all leaves below pods fallen, MIDDLE-pods fully developed, LATE-no leaves remaining on plant.
(2) All spray treatments were applied in 220 l.
(3) The crop was netted from early Apr to early June.

Basal applications: Weedkillers: Glyphosate at 1.44 kg in 220 l. Monolinuron at 0.46 kg with paraquat at 0.33 kg ion in 220 l. Metamitron at 2.8 kg in 220 l. Insecticides: Cypermethrin at 0.025 kg in 220 l. Pirimicarb at 0.14 kg in 220 l applied with the fungicide. Fungicide: Benomyl at 0.55 kg.

Seed: Vladimir, dressed with thiram, inoculated with Rhizobium, sown at 240 kg.

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Cultivations, etc.:- Glyphosate applied: 1 Oct, 1986. Ploughed: 17-29 Oct. Seed sown, harrowed, rolled: 31 Mar, 1987. Monolinuron and paraquat applied: 2 Apr. Cypermethrin applied: 8 May. Metamitron applied: 18 June. Benomyl and pirimicarb applied: 13 July. Combine harvested: 17 Nov. Previous crops: S. beans 1985, fallow 1986.

NOTE: Plant populations were measured and disease assessments made during the season. After desiccation, changes in dry matter were measured and fungal development on the pods assessed. Components of yield were measured. Seed microflora, germinability and discolouration of the seed coat were also assessed.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FUNGCIDE	NONE	PROPICON	Mean
DESICCNT			
DIQUAT	1.63	1.89	1.76
MET+FEN	1.79	1.46	1.62
GLYPHOS	1.59	1.71	1.65
NACL	1.81	1.80	1.80
Mean	1.71	1.71	1.71

APP TIME	EARLY	MIDDLE	LATE	Mean
DESICCNT				
DIQUAT	1.59	1.92	1.77	1.76
MET+FEN	1.34	1.81	1.73	1.62
GLYPHOS	1.93	1.68	1.35	1.65
NACL	1.86	2.01	1.55	1.80
Mean	1.68	1.85	1.60	1.71

APP TIME	EARLY	MIDDLE	LATE	Mean
FUNGCIDE				
NONE	1.73	1.90	1.49	1.71
PROPICON	1.63	1.80	1.71	1.71
Mean	1.68	1.85	1.60	1.71

	APP TIME	EARLY	MIDDLE	LATE
DESICCNT	FUNGCIDE			
DIQUAT	NONE	1.60	1.78	1.52
	PROPICON	1.57	2.07	2.03
MET+FEN	NONE	1.61	2.08	1.69
	PROPICON	1.07	1.53	1.76
GLYPHOS	NONE	1.91	1.59	1.28
	PROPICON	1.94	1.77	1.43
NACL	NONE	1.79	2.17	1.47
	PROPICON	1.93	1.84	1.62

FUNGIC X	NONE	IPRODION	PROPICON	PROP+DIQ	VINCLOZ	Mean
	1.78	1.54	1.71	1.41	1.84	1.68

Grand mean 1.70

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

Table	DESICCNT	FUNGCIDE	APP TIME	DESICCNT FUNGCIDE
s.e.d.	0.162	0.114	0.140	0.228

Table	DESICCNT APP TIME	FUNGCIDE APP TIME	DESICCNT FUNGCIDE APP TIME	FUNGIC X
s.e.d.	0.280	0.198	0.396	0.396

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	0.396	23.2

GRAIN MEAN DM% 63.3

PLOT AREA HARVESTED 0.00072

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