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

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86/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 7.

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. DESICCANT | Desiccants: |
| DIQUAT 1 | Diquat at 0.15 kg ion |
| DIQUAT 2 | Diquat at 0.60 kg ion |
| GLYPHOS | Glyphosate at 1.08 kg |
| NACL | Sodium chloride at 6.25 kg |
| 2. FUNGICIDE | Fungicide: |
| NONE | None |
| PROPICON | Propiconazole at 0.125 kg |
| 3. APP TIME | Times of applying desiccants and fungicide: |
| EARLY | Fungicide on 12 Sept 1986, desiccants 22 Sept |
| MIDDLE | Fungicide on 22 Sept, desiccants 2 Oct |
| LATE | Fungicide on 2 Oct, desiccants 15 Oct |

plus five extra treatments not given desiccants:

- | | |
|----------|-----------------------------------------------|
| FUNGIC X | Fungicides applied on 22 Sept |
| NONE | None (duplicated) |
| CAR+MAN | Carbendazim at 0.224 kg plus maneb at 1.43 kg |
| IPRODION | Iprodione at 1.0 kg |
| PROPICON | Propiconazole at 0.125 kg |
| 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 at 220 l.

Basal applications: Weedkillers: Glyphosate at 0.72 kg in 210 l.
Monolinuron at 0.77 kg with paraquat at 0.55 kg ion in 220 l.
Metamitron at 2.8 kg in 220 l. Fungicide: Benomyl at 0.56 kg in 220 l. Insecticide: Pirimicarb at 0.14 kg in 220 l.

Seed: Vladimir, dressed with thiram, inoculated with Rhizobium, sown at 250 kg.

86/R/LP/4

Cultivations, etc.:- Glyphosate applied: 25 Sept, 1985. Ploughed: 18 Nov. Spring-tine cultivated, seed sown: 30 Apr, 1986. Monolinuron and paraquat applied: 1 May. Metamitron applied: 17 June. Fungicide applied: 10 July. Insecticide applied: 18 July. Combine harvested: 9 Dec. Previous crops: S. beans 1984, mixed cereals 1985.

NOTE: Plant populations were measured and disease and lodging 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	2.70	3.18	2.94			
DIQUAT 2	2.85	2.71	2.78			
GLYPHOS	2.83	3.11	2.97			
NACL	2.62	3.01	2.81			
MEAN	2.75	3.00	2.88			
APP TIME	EARLY	MIDDLE	LATE	MEAN		
DESICCNT						
DIQUAT 1	2.72	2.80	3.30	2.94		
DIQUAT 2	2.76	2.78	2.80	2.78		
GLYPHOS	3.15	3.13	2.63	2.97		
NACL	2.75	2.62	3.08	2.81		
MEAN	2.84	2.83	2.95	2.88		
APP TIME	EARLY	MIDDLE	LATE	MEAN		
FUNGCIDE						
NONE	2.76	2.73	2.77	2.75		
PROPICON	2.93	2.94	3.14	3.00		
MEAN	2.84	2.83	2.95	2.88		
FUNGCIDE	NONE	PROPICON				
APP TIME	EARLY	MIDDLE	LATE	EARLY	MIDDLE	LATE
DESICCNT						
DIQUAT 1	2.38	2.57	3.14	3.06	3.02	3.46
DIQUAT 2	2.65	3.02	2.89	2.87	2.53	2.72
GLYPHOS	3.23	2.93	2.34	3.07	3.34	2.93
NACL	2.79	2.38	2.69	2.71	2.86	3.46
FUNGC X	NONE	CAR+MAN	IPRODION	PROPICON	VINCLOZ	MEAN
	2.85	3.14	3.56	3.24	3.51	3.19
GRAND MEAN	2.94					

86/R/LP/4

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	DESICCNT	FUNGCIDE	APP TIME	DESICCNT FUNGCIDE
SED	0.222	0.157	0.193	0.315
TABLE	DESICCNT APP TIME	FUNGCIDE APP TIME	DESICCNT FUNGCIDE APP TIME	FUNGC X
SED	0.385	0.272	0.545	0.545

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	30	0.545	18.5

GRAIN MEAN DM% 68.6

PLOT AREA HARVESTED 0.00072