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86/R/LP/5 Growth Regulators - Lupins

Rothamsted Research

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86/R/LP/5

LUPINS

GROWTH REGULATORS

Object: To study the effects of rates and times of applying two growth regulators on the growth and yield of lupins (*Lupinus albus*) - Long Hoos V 6.

Sponsors: J. McEwen, D.P. Yeoman.

Design: 4 randomised blocks of 15 plots.

Whole plot dimensions: 2.4 x 5.0.

Treatments: All combinations of:-

1. GROW REG Growth regulators:

2-CHLORO MEP+2-CH	2-chloroethylphosphonic acid (2CPA) Mepiquat chloride plus 2CPA
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2. GR RATE Rates of application of growth regulators (g):

	2CPA	Mepiquat chloride
1	120	236
2	240	472
4	480	944

3. GR TIME Times of application of growth regulators:

TERMINAL	When first pods formed on terminal inflorescences on 7 July, 1986
SECNDARY	When first pods formed on secondary inflorescences on 18 July

plus one extra treatment:

EXTRA

NONE No growth regulator (triplicated)

NOTE: Treatment sprays were applied in 220 l.

Basal applications: Weedkillers: Glyphosate at 0.72 kg in 210 l.
Monolinuron at 0.77 kg with paraquat at 0.56 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. Desiccant:
Diquat at 0.60 kg ion with a wetting agent ('Spreadite' at 0.56 l)
in 220 l.

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

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Cultivations, etc.:- Glyphosate applied: 25 Sept, 1985. Harrowed: 15 Oct. Ploughed: 29 Nov. Spring-tine cultivated, seed sown: 30 Apr, 1986. Monolinuron and paraquat applied: 1 May. Metamitron applied: 13 June. Fungicide applied: 10 July. Insecticide applied: 18 July. Desiccant with wetter applied: 20 Nov. Combine harvested: 28 Nov. Previous crops: S. beans 1984, s. barley 1985.

NOTE: Plant counts were made at establishment. Components of yield and plant heights were measured at maturity.

GRAIN (90% DRY MATTER) TONNES/HECTARE

***** TABLES OF MEANS *****

GR RATE	1	2	4	MEAN		
GRO REG						
2 CHLORO	3.31	3.02	3.05	3.13		
MEP+2-CH	2.94	3.05	3.06	3.02		
MEAN	3.13	3.04	3.06	3.07		
GR TIME	TERMINAL	SECNDARY	MEAN			
GRO REG						
2 CHLORO	3.11	3.15	3.13			
MEP+2-CH	2.98	3.05	3.02			
MEAN	3.04	3.10	3.07			
GR TIME	TERMINAL	SECNDARY	MEAN			
GR RATE						
1	3.16	3.09	3.13			
2	2.97	3.10	3.04			
4	2.99	3.12	3.06			
MEAN	3.04	3.10	3.07			
GR RATE	1		2		4	
GR TIME	TERMINAL	SECNDARY	TERMINAL	SECNDARY	TERMINAL	SECNDARY
GRO REG						
2 CHLORO	3.43	3.20	2.92	3.13	2.97	3.14
MEP+2-CH	2.88	2.99	3.03	3.07	3.02	3.10
EXTRA NONE	3.28					
GRAND MEAN	3.11					

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

TABLE	GRO REG	GR RATE	GR TIME	GRO REG GR RATE
SED	0.130	0.159	0.130	0.225

TABLE	GRO REG GR TIME	GR RATE GR TIME	GRO REG GR RATE GR TIME
SED	0.184	0.225	0.318

SED FOR COMPARING NONE WITH ANY ITEM IN
GR RATE.GR TIME.GRO REG TABLE IS 0.260

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

STRATUM	DF	SE	CV%
BLOCK.WP	44	0.450	14.4

GRAIN MEAN DM% 54.0

PLOT AREA HARVESTED 0.00072