ROTHAMSTED RESEARCH

Yields of the Field Experiments 1986

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86/W/LP/2 Varieties, Sowing Dates and Plant Health - Lupins

Rothamsted Research

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86/W/LP/2

LUPINS

VARIETIES, SOWING DATES AND PLANT HEALTH

Object: To study the effects of sowing dates and pest and pathogen control on the growth and yield of two varieties of lupins (Lupinus albus). The effects of a growth regulator are also studied on one of the varieties - Butt Close I.

Sponsors: J. McEwen, D.P. Yeoman, A.W. Ferguson, J.F. Jenkyn.

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions: 2.4 x 6.0.

Treatments: All combinations of the following, all variety Kalina, sown 17 March, 1986:-

1. K E GR E		Early growth regulator:
	NONE	None
	2 CHLORO	2-chloroethylphosphonic acid at 0.24 kg on 1 July
2. K E GR L		Late growth regulator:
	NONE	None
	2 CHLORO	2-chloroethylphosphonic acid at 0.24 kg on 9 July
3. PATHCON(1)		Pest and pathogen control:
	NONE	None
	FULL	Insecticides: Deltamethrin at 0.0075 kg in 220 l: 16 May, 1986, 5 June, pirimicarb at 0.14 kg on three occasions, on the second and third with a wetting agent ('Citowett' at 0.13 l and at 0.014 l respectively) in 220 l: 16 July, 22 July, 8 Aug. Fungicide: Benomyl at 0.56 kg in 220 l: 18 June.

plus all combinations of:-

1. VARIETY		Varieties:
	KALINA	Kalina
	VLADIMIR	Vladimir
2. SOW DATE		Dates of sowing:
	1 MAY	1 May, 1986
	22 MAY	22 May

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3. PATHCON(2) Pest and pathogen control:

NONE	None
FULL	Insecticides: Deltamethrin at 0.0075 kg in 220 l: 16 May, 1986, 5 June, pirimicarb at 0.14 kg on three occasions, on the second with a wetting agent ('Citowett' at 0.13 l and at 0.014 l respectively) in 220 l: 16 July, 22 July, 8 Aug. Fungicide: Benomyl at 0.56 kg in 220 l: 10 July.

NOTES: (1) The tests of 2-chloroethylphosphonic acid were made on plots intended for two sowing dates comparing the two varieties. The earlier sowing date was prevented by bad weather, the comparison of varieties on these dates by the late arrival of Vladimir.
(2) A companion experiment sown at Rothamsted was destroyed by pigeons.

Basal applications: Weedkillers: Monolinuron at 0.77 kg with paraquat at 0.55 kg ion in 220 l; metamitron at 2.8 kg in 220 l. Desiccant: Diquat at 0.60 kg ion in 220 l.

Seed: Varieties sown at 250 kg.

Cultivations, etc.:- Ploughed: 23 Dec, 1985. Monolinuron with paraquat applied to K E GR E and L: 26 Mar, 1986, to SOW DATE 1 MAY: 1 May. Metamitron applied to K E GR E and L and SOW DATE 1 MAY: 5 June, to SOW DATE 22 MAY: 27 June. Desiccant applied to K E GR E and L: 26 Sept, SOW DATE 1 MAY: 24 Oct. Combine harvested: K E GR E and L: 9 Oct, SOW DATE 1 MAY: 12 Nov, SOW DATE 22 MAY: 12 Dec. Previous crops: Potatoes 1984, w. oats 1985.

NOTES: (1) Establishment counts were made at the four-leaf stage.
(2) Detailed observations were made during the season on pests and diseases.
(3) Dates of flowering and maturity were recorded and components of yield were measured.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

K E GR L	NONE	2 CHLORO	MEAN
K E GR E			
NONE	1.28	1.07	1.17
2 CHLORO	1.23	0.87	1.05
MEAN	1.26	0.97	1.11

PATHCON(1)	NONE	FULL	MEAN
K E GR E			
NONE	1.23	1.12	1.17
2 CHLORO	0.85	1.25	1.05
MEAN	1.04	1.19	1.11

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

PATHCON(1) K E GR L	NONE	FULL	MEAN
NONE	1.10	1.41	1.26
2 CHLORO	0.98	0.96	0.97
MEAN	1.04	1.19	1.11

K E GR E	PATHCON(1) K E GR L	NONE	FULL
NONE	NONE	1.45	1.12
	2 CHLORO	1.01	1.13
2 CHLORO	NONE	0.75	1.71
	2 CHLORO	0.95	0.79

SOW DATE VARIETY	1 MAY	29 MAY	MEAN
KALINA	2.21	1.53	1.87
VLADIMIR	2.05	0.99	1.52
MEAN	2.13	1.26	1.69

PATHCON(2) VARIETY	NONE	FULL	MEAN
KALINA	1.90	1.83	1.87
VLADIMIR	1.43	1.61	1.52
MEAN	1.67	1.72	1.69

PATHCON(2) SOW DATE	NONE	FULL	MEAN
1 MAY	2.01	2.24	2.13
29 MAY	1.32	1.20	1.26
MEAN	1.67	1.72	1.69

VARIETY	PATHCON(2) SOW DATE	NONE	FULL
KALINA	1 MAY	2.15	2.26
	29 MAY	1.66	1.40
VLADIMIR	1 MAY	1.88	2.22
	29 MAY	0.99	0.99

GRAND MEAN 1.40

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

TABLE	K E GR E	K E GR L	PATHCON(1)	VARIETY
SED	0.174	0.174	0.174	0.174

TABLE	SOW DATE	PATHCON(2)	K E GR E K E GR L	K E GR E PATHCON(1)
SED	0.174	0.174	0.247	0.247

TABLE	K E GR L PATHCON(1)	VARIETY SOW DATE	VARIETY PATHCON(2)	SOW DATE PATHCON(2)
SED	0.247	0.247	0.247	0.247

TABLE	K E GR E K E GR L PATHCON(1)	VARIETY SOW DATE PATHCON(2)
SED	0.349	0.349

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

STRATUM	DF	SE	CV%
BLOCK.WP	30	0.427	30.5

GRAIN MEAN DM% 51.2

PLOT AREA HARVESTED 0.00086

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