ROTHAMSTED RESEARCH

Yields of the Field Experiments 1988

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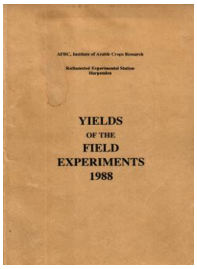

Lupins

Rothamsted Research

Rothamsted Research (1989) *Lupins ;* Yields Of The Field Experiments 1988, pp 204 - 210 **- DOI: https://doi.org/10.23637/ERADOC-1-43**

88/R/LP/1

WINTER LUPINS

VARIETIES, SOWING DATES AND SEED DRESSINGS

Object: To compare three varieties of lupin (Lupinus albus) sown at two sowing dates with and without a seed dressing - Long Hoos V 6.

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

Design: 2 randomised blocks of 12 plots.

Whole plot dimensions: 1.8 x 9.0.

Treatments: All combinations of:-

Whole plots

1. **VARIETY**	Varieties:	
	LUCKY	Lucky
	VLADIMIR	Vladimir
2. **SOW DATE**	Dates of sowing:	
	26 OCT	26 October, 1987
	3 DEC	3 December
3. **SEEDRESS**	Seed dressing:	
	NONE	None
	FO+CA+TH	Fosetyl-aluminium, captan and thiabendazole

plus three extra treatments

C8 EXTRA	All variety C8:
C8FSE	Sown 26 Oct seed dressed with fosetyl-aluminium, captan and thiabendazole (duplicated)
C8FSL	Sown 3 Dec seed dressed with fosetyl-aluminium, captan and thiabendazole
C8SL	Sown 3 Dec, no seed dressing

Basal applications: Manures: (0:18:36) at 1040 kg. Chalk at 2.9 t. Weedkillers: Paraquat at 0.80 kg ion in 220 l. Monolinuron at 0.46 kg and paraquat at 0.33 kg ion in 220 l. Fungicides: Benomyl at 0.50 kg in 220 l applied with the deltamethrin. Chlorothalonil at 1.0 kg with benomyl at 0.50 kg in 220 l applied with the pirimicarb. Insecticides: Deltamethrin at 0.075 kg. Pirimicarb at 0.14 kg.

Seed: Sown at 200 kg.

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Cultivations, etc: PK applied: 30 Sept, 1987. Chalk applied: 2 Oct. Paraquat applied: 5 Oct. Monolinuron and paraquat applied after each sowing: 30 Oct, 8 Dec respectively. Benomyl and deltamethrin applied: 25 May, 1988. Chlorothalonil, benomyl and pirimicarb applied: 18 July. Combine harvested VLADIMIR: 14 Oct. Hand harvested LUCKY: 19 Oct. Stationary threshed LUCKY: 27 Oct. Hand harvested C8: 9 and 12 Dec. Stationary threshed C8: 12 and 13 Dec. Previous crops: Lupins 1986, fallow 1987.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

SEEDRESS	NONE	FO+CA+TH	Mean
VARIETY			
LUCKY	0.89	0.73	0.81
VLADIMIR	0.05	0.03	0.04
Mean	0.47	0.38	0.42

SOW DATE	26 OCT	3 DEC	Mean
VARIETY			
LUCKY	1.16	0.46	0.81
VLADIMIR	0.06	0.02	0.04
Mean	0.61	0.24	0.42

SOW DATE	26 OCT	3 DEC	Mean
SEEDRESS			
NONE	0.67	0.27	0.47
FO+CA+TH	0.55	0.21	0.38
Mean	0.61	0.24	0.42

	SOW DATE	26 OCT	3 DEC
VARIETY	**SEEDRESS**		
LUCKY	NONE	1.27	0.51
	FO+CA+TH	1.05	0.41
VLADIMIR	NONE	0.07	0.03
	FO+CA+TH	0.06	0.00

C8 EXTRA	C8FSE	C8FSL	C8SL	Mean
	2.12	1.98	2.18	2.10

GRAND MEAN 0.98

MEAN DM% 60.0

PLOT AREA HARVESTED **C8 EXTRA** 0.00065

PLOT AREA HARVESTED OTHER VARIETIES 0.00162

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88/R/LP/3

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 5.

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 applied 10 days before desiccant (29 Sept, 1988, 10 Oct, 20 Oct):

NONE	None
PROPICON	Propiconazole at 0.125 kg

3. **APP TIME** Times of applying desiccants:

EARLY	When leaf fall complete (10 Oct)
MIDDLE	10 days after EARLY (20 Oct)
LATE	18 days after EARLY (28 Oct)

plus an extra treatment given no desiccants or fungicides:

EXTRA

NONE	None (septuplicated)

NOTES: (1) All spray treatments were applied in 220 l.
(2) Additional planned treatments with fungicides alone were omitted.

Basal applications: Manure: Chalk at 2.9 t. Weedkillers: Terbutryne at 0.98 kg and terbuthylazine at 0.42 kg in 220 l. Metamitron at 1.4 kg in 220 l applied with the benomyl and pirimicarb. Fungicides: Benomyl at 0.56 kg when applied with the metamitron and the first pirimicarb and at 1.0 kg applied with chlorothalonil at 1.0 kg in 220 l applied with the second pirimicarb. Insecticide: Pirimicarb at 0.14 kg applied on two occasions.

Seed: Vladimir, sown at 210 kg.

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Cultivations, etc.:- Chalk applied: 1 Oct, 1987. Ploughed: 11 Dec. Spring-tine cultivated twice, seed sown, rolled: 11 Mar, 1988. Terbutryne and terbuthylazine applied: 17 Mar. Metamitron, benomyl and pirimicarb applied: 20 June. Chlorothalonil, benomyl and pirimicarb applied: 15 July. Combine harvested: 4 Nov. Previous crops: Cabbages 1986, fallow 1987.

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FUNGCIDE	NONE	PROPICON	Mean
DESICCNT			
DIQUAT	1.80	1.72	1.76
MET+FEN	1.85	1.92	1.88
GLYPHOS	1.80	1.80	1.80
NACL	1.87	1.99	1.93
Mean	1.83	1.86	1.84

APP TIME	EARLY	MIDDLE	LATE	Mean
DESICCNT				
DIQUAT	2.04	1.89	1.36	1.76
MET+FEN	1.97	1.94	1.74	1.88
GLYPHOS	1.70	1.74	1.95	1.80
NACL	1.70	2.07	2.03	1.93
Mean	1.85	1.91	1.77	1.84

APP TIME	EARLY	MIDDLE	LATE	Mean
FUNGCIDE				
NONE	1.89	1.78	1.82	1.83
PROPICON	1.82	2.04	1.71	1.86
Mean	1.85	1.91	1.77	1.84

	APP TIME	EARLY	MIDDLE	LATE
DESICCNT	**FUNGCIDE**			
DIQUAT	NONE	2.03	1.79	1.58
	PROPICON	2.05	1.98	1.13
MET+FEN	NONE	1.72	1.82	2.02
	PROPICON	2.23	2.06	1.47
GLYPHOS	NONE	1.92	1.53	1.94
	PROPICON	1.48	1.96	1.96
NACL	NONE	1.88	1.99	1.75
	PROPICON	1.52	2.14	2.30

EXTRA NONE	1.77
Grand mean	1.83

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GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

DESICCNT	FUNGCIDE	APP TIME	DESICCNT FUNGCIDE
0.188	0.133	0.163	0.266

DESICCNT APP TIME	FUNGCIDE APP TIME	DESICCNT FUNGCIDE APP TIME
0.326	0.231	0.461

SED for comparing NONE with any item in
DESICCNT.FUNGCIDE.APP TIME table is 0.352

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	34	0.461	25.2

GRAIN MEAN DM% 78.2

PLOT AREA HARVESTED 0.00072

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88/R/PE/1

PEAS

EFFECTS OF PEA SEED-BORNE MOSAIC VIRUS

Object: To study the transmission, symptoms and effects on yield of pea seed-borne mosaic virus in two varieties of peas with and without insecticide - Long Hoos IV 6.

Sponsors: A.J. Cockbain, D. Wang.

Design: 4 randomised blocks of 2 whole plots split into 3.

Whole plot dimensions: 9.2 x 5.0.

Treatments: All combinations of:-

Whole plots

1. **INSCTCDE** Insecticide:

NONE	None
PH+CY+PI	Phorate at 1.7 kg to the seedbed on 26 Apr, 1988. Cypermethrin at 0.025 kg with pirimicarb at 0.14 kg in 220 l on 1 and 20 June, 5 July

Sub plots

2. **VAR INF** Varieties and infection:

PROGR H	Progreta, healthy stock
WAVER H	Waverex, healthy stock
WAVER I	Waverex, seed infected with 4% pea seed-borne mosaic virus

NOTE: Plots were netted against birds from early June to harvest.

Basal applications: Manure: Chalk at 2.9 t. Weedkillers: Terbutryne at 0.98 kg and terbuthylazine at 0.42 kg in 220 l. Fungicides: Benomyl at 0.50 kg with chlorothalonil at 1.0 kg in 220 l on four occasions. Desiccant: Diquat at 0.60 kg ion in 220 l.

Seed: All sown at 600,000 seeds per hectare:
Progreta at 200 kg.
Waverex (healthy) at 66 kg.
Waverex (infected) at 54 kg.

Cultivations, etc.:- Chalk applied: 2 Oct, 1987. Ploughed: 14 Dec. Rotary harrowed, seed sown: 26 Apr, 1988. Weedkillers applied: 27 Apr. Fungicides applied: 30 June, 2, 11, 23 Aug. Desiccant applied: 5 Sept. Combine harvested: 9 Sept. Previous crops: Maize 1986, fallow 1987.

NOTE: Aphid numbers were assessed during the growing season. Virus incidence was assessed in the plants during the season and in the seed from all plots after harvest.

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GRAIN TONNES/HECTARE

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

VAR INF INSCTCDE	PROGR H	WAVER H	WAVER I	Mean
NONE	2.81	2.49	1.22	2.17
PH+CY+PI	3.65	2.87	2.30	2.94
Mean	3.23	2.68	1.76	2.56

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

VAR INF	INSCTCDE* VAR INF
0.158	0.223

* Within the same level of **INSCTCDE** only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	12	0.316	12.4

GRAIN MEAN DM% 77.8

SUB PLOT AREA HARVESTED 0.00072

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