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76/R/LP/2 and 76/W/LP/2 Control of Pathogens - Lupins

Rothamsted Research

Rothamsted Research (1977) *76/R/LP/2 and 76/W/LP/2 Control of Pathogens - Lupins* ; Yields Of The Field Experiments 1976, pp 343 - 345 - DOI: <https://doi.org/10.23637/ERADOC-1-15>

76/R/LP/2 and 76/W/LP/2

LUPINS

CONTROL OF PATHOGENS

Object: To study the effects of a range of pesticides on yield and incidence of pathogens of grain lupins - Rothamsted (R) Long Hoos V6, Woburn (W) Far Field II.

Sponsors: J.C. Wilson, A.J. Cockbain.

Design: 3 blocks of 2 x 2 x 2 (duplicated in each block).

Whole plot dimensions: 2.41 x 6.10.

Treatments: All combinations of:-

1. ALDICARB Aldicarb to seedbed (kg):

| | |
|----|------|
| 0 | None |
| 10 | 10 |

2. FENITROT Fenitrothion foliar spray (kg):

| | |
|------|------|
| 0.00 | None |
| 0.75 | 0.75 |

3. PIRIMICA Pirimicarb foliar spray (kg):

| | |
|------|------|
| 0.00 | None |
| 0.14 | 0.14 |

NOTES: (1) An intended test of benomyl foliar spray was not applied.
(2) Sprays applied in 340 l.

Basal applications: Manures: (0:14:28) at 810 kg to (R) Long Hoos V6, 530 kg to (W) Far Field II. Chalk at 2.8 t to (R) Long Hoos V6 only.
Weedkiller: Trifluralin at 0.9 kg in 340 l. Irrigation: 50 mm to (R) Long Hoos V6 only.

Seed: Kievsky, sown at 220 kg.

Cultivations, etc.:-

(R) Long Hoos V6: Rotary cultivated: 10 Sept, 1975. Fertiliser applied: 8 Dec. Chalk applied: 11 Dec. Ploughed: 19 Dec. Spring-tine cultivated: 24 Mar, 1976. Weedkiller applied: 30 Mar. Aldicarb applied, spring-tine cultivated and seed sown: 31 Mar. Fenitrothion applied: 27 May. Pirimicarb applied: 15 June. 25 mm irrigation applied: 22 June. 25 mm irrigation applied: 6 July. Harvested by hand: 6 Sept. Previous crops: Fallow 1974 and 1975.

(W) Far Field II: Deep-tine cultivated: 19 Sept, 1975, 20 Sept, 24 Oct. Spring-tine cultivated: 27 Feb, 1976. Fertiliser applied, weedkiller applied, spring-tine cultivated twice, seed sown: 1 Apr, 1976. Fenitrothion applied: 28 May. Pirimicarb applied: 16 June. Harvested by hand: 17 Aug. Previous crops: Barley 1974 and 1975.

NOTE: Plant emergence, weevil damage, aphid infestation, diseases and pod numbers were assessed at both sites.

76/R/LP/2 LONG HOOS V 6 (R)

GRAIN TONNES/HECTARE

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

| | | | | |
|----------|------|------|------|------|
| FENITROT | 0.00 | 0.75 | MEAN | |
| ALDICARB | | | | |
| 0 | 0.90 | 0.88 | 0.89 | |
| 10 | 0.92 | 1.05 | 0.98 | |
| MEAN | 0.91 | 0.96 | 0.94 | |
| PIRIMICA | 0.00 | 0.14 | MEAN | |
| ALDICARB | | | | |
| 0 | 0.92 | 0.86 | 0.89 | |
| 10 | 1.01 | 0.96 | 0.98 | |
| MEAN | 0.96 | 0.91 | 0.94 | |
| PIRIMICA | 0.00 | 0.14 | MEAN | |
| FENITROT | | | | |
| 0.00 | 0.93 | 0.88 | 0.91 | |
| 0.75 | 0.99 | 0.94 | 0.96 | |
| MEAN | 0.96 | 0.91 | 0.94 | |
| FENITROT | 0.00 | | 0.75 | |
| PIRIMICA | 0.00 | 0.14 | 0.00 | 0.14 |
| ALDICARB | | | | |
| 0 | 0.95 | 0.85 | 0.89 | 0.87 |
| 10 | 0.92 | 0.91 | 1.09 | 1.01 |

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

| TABLE | ALDICARB | FENITROT | PIRIMICA | ALDICARB FENITROT |
|-------|----------|----------|----------|----------------------|
| SED | 0.048 | 0.048 | 0.048 | 0.067 |

| TABLE | ALDICARB PIRIMICA | FENITROT PIRIMICA | ALDICARB FENITROT PIRIMICA |
|-------|----------------------|----------------------|----------------------------------|
| SED | 0.067 | 0.067 | 0.095 |

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|------|
| BLOCK.WP | 38 | 0.165 | 17.6 |

GRAIN MEAN DM% 87.4

PLOT AREA HARVESTED 0.00108

76/W/LP/2 FAR FIELD II (W)

GRAIN TONNES/HECTARE

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

| | | | | |
|----------|------|------|------|------|
| FENITROT | 0.00 | 0.75 | MEAN | |
| ALDICARB | | | | |
| 0 | 1.70 | 1.70 | 1.70 | |
| 10 | 2.02 | 1.96 | 1.99 | |
| MEAN | 1.86 | 1.83 | 1.85 | |
| PIRIMICA | 0.00 | 0.14 | MEAN | |
| ALDICARB | | | | |
| 0 | 1.63 | 1.77 | 1.70 | |
| 10 | 1.98 | 2.01 | 1.99 | |
| MEAN | 1.80 | 1.89 | 1.85 | |
| PIRIMICA | 0.00 | 0.14 | MEAN | |
| FENITROT | | | | |
| 0.00 | 1.83 | 1.90 | 1.86 | |
| 0.75 | 1.77 | 1.88 | 1.83 | |
| MEAN | 1.80 | 1.89 | 1.85 | |
| FENITROT | 0.00 | | 0.75 | |
| PIRIMICA | 0.00 | 0.14 | 0.00 | 0.14 |
| ALDICARB | | | | |
| 0 | 1.60 | 1.80 | 1.65 | 1.74 |
| 10 | 2.05 | 1.99 | 1.90 | 2.03 |

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

| TABLE | ALDICARB | FENITROT | PIRIMICA | ALDICARB FENITROT |
|-------|----------|----------|----------|----------------------|
| SED | 0.059 | 0.059 | 0.059 | 0.083 |

| TABLE | ALDICARB PIRIMICA | FENITROT PIRIMICA | ALDICARB FENITROT PIRIMICA |
|-------|----------------------|----------------------|----------------------------------|
| SED | 0.083 | 0.083 | 0.117 |

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

| STRATUM | DF | SE | CV% |
|----------|----|-------|------|
| BLOCK.WP | 38 | 0.203 | 11.0 |

GRAIN MEAN DM% 90.2

PLOT AREA HARVESTED 0.00108