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## Yields of the Field Experiments 1998

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### 98/R/LP/3 Pod Development and Yield - Lupins

#### Rothamsted Research

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98/R/LP/3

LUPINS

POD DEVELOPMENT AND YIELD

**Object:** To monitor the role of nitrogen in pod abortion, development and yield. To determine the relationship between leaves and pods in supplying carbohydrate to the seed - Fosters West.

**Sponsors:** J.E. Leach, I.F. Shield.

**Design:** 2 randomised blocks of 2 plots split into 5.

**Whole plot dimensions:** 6.0 x 9.0.

**Treatments:**

Whole plots

- |                    |             |
|--------------------|-------------|
| 1. <b>IRRIGATN</b> | Irrigation: |
| 0                  | None        |
| I                  | Irrigated   |

Sub-plots

- |             |                           |
|-------------|---------------------------|
| 2. <b>T</b> | Nitrogen or leaf removal: |
| -           | None                      |
| SN          | Spring nitrogen           |
| FN          | Foliar nitrogen           |
| HR          | Half leaves removed       |
| AR          | All leaves removed        |

**Experimental diary:**

27-Aug-97 : B : Ploughed and furrow pressed.  
12-Sep-97 : B : Rolled, rotary harrowed, DTN 20, undressed, drilled at 60 seeds per m<sup>2</sup>. Rolled.  
15-Sep-97 : B : Stomp 400 SC at 5.0 l in 200 l.  
18-Sep-97 : B : Spannit at 1.1 l in 200 l.  
05-Dec-97 : B : Gesatop 500 SC at 2.3 l in 200 l.  
19-Feb-98 : B : Folicur at 0.5 l in 200 l.  
24-Feb-98 : B : Rovral Flo at 1.0 l in 200 l.  
16-Mar-98 : B : Skirmish at 1.0 l in 200 l.  
02-Apr-98 : B : Danadim Dimethoate 40 at 850 ml in 200 l.  
08-Apr-98 : T : T SN: 46% N at 217 kg.  
30-Apr-98 : T : T SN: 46% N at 217 kg.  
09-May-98 : B : Laser at 1.25 l with Chiltern Cropoil at 1.0 l in 200 l.  
20-May-98 : B : Folicur at 0.5 l in 200 l. Aphox at 280 g in 200 l.  
04-Jun-98 : T : **IRRIGATN** I: Irrigated 12 mm.  
15-Jun-98 : T : **IRRIGATN** I: Irrigated 12 mm.  
12-Jun-98 : B : Alto 240 EC at 0.33 l with Bravo 500 at 1.5 l in 200 l.  
03-Jul-98 : T : T FN: 46% N at 32.6 kg in 220 l.  
15-Jul-98 : T : T FN: 46% N at 32.6 kg in 220 l.

98/R/LP/3

**Experimental diary:**

22-Jul-98 : T : T HR, AR: Leaf removal started.  
 23-Jul-98 : T : IRRIGATN: Irrigated 25 mm.  
 24-Jul-98 : T : T FN: 46% N at 32.6 kg in 220 l.  
 31-Jul-98 : T : T FN: 46% N at 32.6 kg in 220 l.  
 07-Aug-98 : T : T HR, AR: Leaf removal finished.  
 12-Aug-98 : T : IRRIGATN: Irrigated 20 mm.  
 25-Sep-98 : B : Combine harvested.

Previous crops: W. rape 1996, w. wheat 1997.

**NOTE:** Plants were sampled regularly for biomass production and nitrogen content. Leaf and pod photosynthesis was measured regularly and light interception weekly. Flowering date was also noted.

**GRAIN TONNES/HECTARE**

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

T	-	SN	FN	Mean
<b>IRRIGATN</b>				
O	3.50	3.05	3.12	3.34
I	3.04	2.77	2.90	2.96
Mean	3.27	2.91	3.01	3.15

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

T	IRRIGATN*	
		T
0.216	0.305	min.rep
0.176	0.249	max-min

\* within the same level of IRRIGATN only

min.rep Any of the remainder  
 max-min - v any of the remainder

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	12	0.305	9.7
GRAIN MEAN DM%	69.9		
SUB-PLOT AREA HARVESTED	0.00223		