

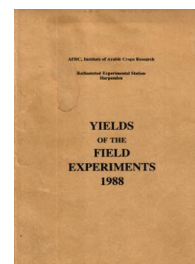
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## Yields of the Field Experiments 1988

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### 88/R/CS/327 Control of Stem Nematode - Lucerne

#### Rothamsted Research

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88/R/CS/327

### CONTROL OF STEM NEMATODE

**Object:** To study the effects of rates of carbofuran and row spacings on the incidence of stem nematode (*Ditylenchus dipsaci*) and yield of four varieties of lucerne - Long Hoos IV 3.

**Sponsor:** A.G. Whitehead.

The first year, lucerne.

**Design:** 2 randomised blocks of 20 plots.

**Whole plot dimensions:** 1.22 x 8.84.

**Treatments:** All combinations of:-

1. **VARIETY**                      Varieties:  
  
    EUROPE  
    EUVA  
    VELA  
    VERTUS
  
2. **CARBRATE**                    Rates of carbofuran (kg):  
  
    0.0  
    1.5
  
3. **ROWSPACE**                   Spacings between rows (cm):  
  
    15                              15 (6 inches)  
    30                              30 (12 inches)

plus four extra treatments:

- CA3 R015**                      Varieties given 3 kg carbofuran, on 15 cm row spacing:  
  
    EUROPE  
    EUVA  
    VELA  
    VERTUS

**NOTE:** Carbofuran was applied on 7 Apr, 1988 at sowing.

**Basal applications:** Manures: Chalk at 2.9 t. Muriate of potash at 520 kg.  
Weedkillers: Paraquat at 0.60 kg ion in 220 l. 2,4-DB at 2.1 kg in 220 l. Carbetamide at 2.1 kg in 220 l.

**Seed:** Varieties, inoculated with Rhizobium, sown at 11 kg on 30 cm rows, 22 kg on 15 cm rows.

**Cultivations, etc.:-** K applied: 29 Sept, 1987. Chalk applied: 2 Oct.  
Paraquat applied: 31 Mar, 1988. Inoculum applied as infected lucerne, spring-tine cultivated: 6 Apr. Rotary harrowed, seed sown: 7 Apr. Rolled: 8 Apr. 2, 4-DB applied: 15 June. Cut: 1 Aug and 1 Nov. Carbetamide applied: 19 Oct.

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NOTE: Plant samples were taken before the first cut to assess stem nematode damage.

1ST CUT (1/8/88) DRY MATTER TONNES/HECTARE

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

<b>CARBRATE</b>	0.0	1.5	Mean		
<b>VARIETY</b>					
EUROPE	3.59	3.87	3.73		
EUVA	3.45	4.27	3.86		
VELA	3.24	3.72	3.48		
VERTUS	2.85	3.46	3.16		
Mean	3.28	3.83	3.56		
<b>ROWSPACE</b>	15	30	Mean		
<b>VARIETY</b>					
EUROPE	4.34	3.11	3.73		
EUVA	4.25	3.46	3.86		
VELA	3.84	3.13	3.48		
VERTUS	3.81	2.51	3.16		
Mean	4.06	3.05	3.56		
<b>ROWSPACE</b>	15	30	Mean		
<b>CARBRATE</b>					
0.0	3.66	2.91	3.28		
1.5	4.47	3.19	3.83		
Mean	4.06	3.05	3.56		
<b>VARIETY</b>	<b>ROWSPACE</b>	15	30		
<b>CARBRATE</b>					
EUROPE	0.0	4.03	3.15		
	1.5	4.66	3.07		
EUVA	0.0	3.88	3.01		
	1.5	4.62	3.91		
VELA	0.0	3.35	3.14		
	1.5	4.34	3.11		
VERTUS	0.0	3.36	2.35		
	1.5	4.26	2.67		
<b>CA3 RO15</b>	<b>EUROPE</b>	<b>EUVA</b>	<b>VELA</b>	<b>VERTUS</b>	<b>Mean</b>
	3.82	4.34	4.63	3.01	3.95
<b>GRAND MEAN</b>	3.64				

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

<b>CA3 RO15</b>	<b>VARIETY</b>	<b>CARBRATE</b>	<b>ROWSPACE</b>
0.566	0.283	0.200	0.200
<b>VARIETY</b>	<b>VARIETY</b>	<b>CARBRATE</b>	<b>VARIETY</b>
<b>CARBRATE</b>	<b>ROWSPACE</b>	<b>ROWSPACE</b>	<b>CARBRATE</b>
			<b>ROWSPACE</b>
0.400	0.400	0.283	0.566

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1ST CUT (1/8/88) DRY MATTER TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.566	15.6
IST CUT MEAN DM%	16.7		

2ND CUT (1/11/88) DRY MATTER TONNES/HECTARE

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

<b>CARBRATE</b>	0.0	1.5	Mean		
<b>VARIETY</b>					
EUROPE	2.07	2.19	2.13		
EUVA	1.84	2.13	1.98		
VELA	1.72	2.22	1.97		
VERTUS	1.97	2.08	2.02		
Mean	1.90	2.15	2.03		
<b>ROWSPACE</b>	15	30	Mean		
<b>VARIETY</b>					
EUROPE	2.12	2.14	2.13		
EUVA	2.04	1.92	1.98		
VELA	1.93	2.02	1.97		
VERTUS	2.13	1.91	2.02		
Mean	2.06	2.00	2.03		
<b>ROWSPACE</b>	15	30	Mean		
<b>CARBRATE</b>					
0.0	1.97	1.83	1.90		
1.5	2.14	2.17	2.15		
Mean	2.06	2.00	2.03		
<b>VARIETY</b>	<b>ROWSPACE</b>	15	30		
EUROPE	<b>CARBRATE</b>				
	0.0	2.17	1.97		
	1.5	2.08	2.30		
EUVA	0.0	1.87	1.81		
	1.5	2.22	2.03		
VELA	0.0	1.72	1.72		
	1.5	2.14	2.31		
VERTUS	0.0	2.12	1.81		
	1.5	2.13	2.02		
<b>CA3 RO15</b>	EUROPE	EUVA	VELA	VERTUS	Mean
	2.32	2.03	2.18	2.19	2.18
GRAND MEAN	2.06				

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2ND CUT (1/11/88) DRY MATTER TONNES/HECTARE

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.222	0.111	0.078	0.078
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.157	0.157	0.111	0.222

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.222	10.8
2ND CUT MEAN DM%	26.0		

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean
VARIETY			
EUROPE	5.66	6.05	5.86
EUVA	5.29	6.39	5.84
VELA	4.97	5.95	5.46
VERTUS	4.82	5.54	5.18
Mean	5.18	5.98	5.58
ROWSPACE	15	30	Mean
VARIETY			
EUROPE	6.47	5.25	5.86
EUVA	6.30	5.39	5.84
VELA	5.77	5.14	5.46
VERTUS	5.94	4.42	5.18
Mean	6.12	5.05	5.58
ROWSPACE	15	30	Mean
CARBRATE			
0.0	5.63	4.74	5.18
1.5	6.61	5.36	5.98
Mean	6.12	5.05	5.58

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TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

VARIETY	ROSPACE	15	30		
	CARBRATE				
EUROPE	0.0	6.20	5.12		
	1.5	6.74	5.37		
EUVA	0.0	5.75	4.82		
	1.5	6.84	5.95		
VELA	0.0	5.07	4.87		
	1.5	6.47	5.42		
VERTUS	0.0	5.49	4.16		
	1.5	6.39	4.69		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	6.15	6.36	6.82	5.20	6.13
GRAND MEAN	5.69				

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

CA3 RO15	VARIETY	CARBRATE	ROSPACE
0.638	0.319	0.225	0.225
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROSPACE	ROSPACE	CARBRATE
			ROSPACE
0.451	0.451	0.319	0.638

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.638	11.2

TOTAL OF 2 CUTS MEAN DM% 21.3

PLOT AREA HARVESTED 0.00045