

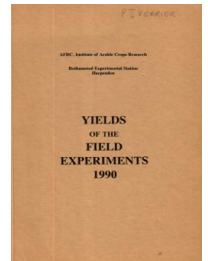
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90/R/CS/327 Control of Stem Nematode - Lucerne

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90/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 third year, lucerne.

For previous years see 88-89/R/CS/327.

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) in first year only:

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, in first year only:

EUROPE
EUVA
VELA
VERTUS

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

Basal applications: Manures: (0:18:36) at 500 kg.

Cultivations, etc.:- PK applied: 23 Nov, 1989. Cut: 15 May, 1990, 27 June, 16 Aug and 14 Nov.

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1ST CUT (15/5/90) DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean
VARIETY			
EUROPE	2.69	2.41	2.55
EUVA	3.72	2.92	3.32
VELA	1.73	1.88	1.81
VERTUS	4.60	4.60	4.60
Mean	3.18	2.95	3.07

ROWSPACE	15	30	Mean
VARIETY			
EUROPE	2.85	2.25	2.55
EUVA	3.38	3.26	3.32
VELA	1.82	1.79	1.81
VERTUS	5.12	4.08	4.60
Mean	3.29	2.85	3.07

ROWSPACE	15	30	Mean
CARBRATE			
0.0	3.32	3.05	3.18
1.5	3.26	2.64	2.95
Mean	3.29	2.85	3.07

	ROWSPACE	15	30
VARIETY	CARBRATE		
EUROPE	0.0	2.72	2.65
	1.5	2.98	1.85
EUVA	0.0	3.95	3.48
	1.5	2.80	3.04
VELA	0.0	1.40	2.05
	1.5	2.25	1.52
VERTUS	0.0	5.20	4.01
	1.5	5.03	4.16

CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	2.51	3.59	2.76	4.70	3.39

GRAND MEAN 3.13

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.474	0.237	0.168	0.168
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.335	0.335	0.237	0.474

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1ST CUT (15/5/90) DRY MATTER TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.474	15.1

1ST CUT MEAN DM% 17.3

2ND CUT (27/6/90) DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean		
VARIETY					
EUROPE	2.70	2.42	2.56		
EUVA	3.57	3.48	3.52		
VELA	1.72	1.78	1.75		
VERTUS	4.45	4.64	4.55		
Mean	3.11	3.08	3.10		
ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	2.79	2.33	2.56		
EUVA	3.87	3.17	3.52		
VELA	1.92	1.58	1.75		
VERTUS	4.88	4.21	4.55		
Mean	3.37	2.82	3.10		
ROWSPACE	15	30	Mean		
CARBRATE					
0.0	3.21	3.01	3.11		
1.5	3.52	2.64	3.08		
Mean	3.37	2.82	3.10		
VARIETY	ROWSPACE	15	30		
	CARBRATE				
EUROPE	0.0	2.74	2.66		
	1.5	2.84	2.00		
EUVA	0.0	3.65	3.48		
	1.5	4.09	2.87		
VELA	0.0	1.76	1.68		
	1.5	2.09	1.48		
VERTUS	0.0	4.71	4.20		
	1.5	5.05	4.23		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	2.45	3.68	2.45	4.31	3.22
GRAND MEAN	3.12				

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2ND CUT (27/6/90) DRY MATTER TONNES/HECTARE

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.383	0.191	0.135	0.135
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.271	0.271	0.191	0.383

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.383	12.3
2ND CUT MEAN DM%	19.2		

3RD CUT (16/8/90) DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean
VARIETY			
EUROPE	3.36	2.75	3.05
EUVA	3.86	4.01	3.94
VELA	2.01	1.90	1.96
VERTUS	4.27	4.71	4.49
Mean	3.38	3.34	3.36
ROWSPACE	15	30	Mean
VARIETY			
EUROPE	3.31	2.80	3.05
EUVA	4.20	3.67	3.94
VELA	1.91	2.00	1.96
VERTUS	4.58	4.40	4.49
Mean	3.50	3.22	3.36
ROWSPACE	15	30	Mean
CARBRATE			
0.0	3.50	3.26	3.38
1.5	3.51	3.18	3.34
Mean	3.50	3.22	3.36

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3RD CUT (16/8/90) DRY MATTER TONNES/HECTARE

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

VARIETY	ROWSpace	15	30		
	CARBRATE				
EUROPE	0.0	3.31	3.42		
	1.5	3.31	2.18		
EUVA	0.0	4.49	3.24		
	1.5	3.91	4.11		
VELA	0.0	1.85	2.18		
	1.5	1.98	1.82		
VERTUS	0.0	4.34	4.21		
	1.5	4.82	4.59		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	3.85	4.54	2.71	3.72	3.70
GRAND MEAN	3.43				

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

CA3 RO15	VARIETY	CARBRATE	ROWSpace
0.603	0.301	0.213	0.213
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSpace	ROWSpace	CARBRATE
			ROWSpace
0.426	0.426	0.301	0.603

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.603	17.6
3RD CUT MEAN DM%	27.5		

4TH CUT (14/11/90) DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean
VARIETY			
EUROPE	0.63	0.39	0.51
EUVA	0.66	0.70	0.68
VELA	0.19	0.14	0.17
VERTUS	0.72	0.82	0.77
Mean	0.55	0.51	0.53

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4TH CUT (14/11/90) DRY MATTER TONNES/HECTARE

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

ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	0.63	0.40	0.51		
EUVA	0.81	0.54	0.68		
VELA	0.14	0.19	0.17		
VERTUS	0.73	0.80	0.77		
Mean	0.58	0.48	0.53		
ROWSPACE	15	30	Mean		
CARBRATE					
0.0	0.60	0.51	0.55		
1.5	0.56	0.46	0.51		
Mean	0.58	0.48	0.53		
VARIETY	ROWSPACE	15	30		
EUROPE	CARBRATE				
	0.0	0.68	0.59		
	1.5	0.58	0.20		
EUVA	0.0	0.95	0.37		
	1.5	0.68	0.71		
VELA	0.0	0.15	0.24		
	1.5	0.13	0.14		
VERTUS	0.0	0.61	0.82		
	1.5	0.85	0.78		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	0.70	0.89	0.23	0.54	0.59
GRAND MEAN	0.54				

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.287	0.144	0.101	0.101
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.203	0.203	0.144	0.287

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.287	52.9
4TH CUT MEAN DM%	24.4		

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TOTAL OF 4 CUTS DRY MATTER TONNES/HECTARE

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

CARBRATE	0.0	1.5	Mean
VARIETY			
EUROPE	9.38	7.97	8.68
EUVA	11.81	11.11	11.46
VELA	5.65	5.70	5.68
VERTUS	14.05	14.76	14.40
Mean	10.22	9.89	10.05

ROWSpace	15	30	Mean
VARIETY			
EUROPE	9.57	7.78	8.68
EUVA	12.26	10.65	11.46
VELA	5.80	5.55	5.68
VERTUS	15.31	13.50	14.40
Mean	10.74	9.37	10.05

ROWSpace	15	30	Mean
CARBRATE			
0.0	10.63	9.82	10.22
1.5	10.85	8.92	9.89
Mean	10.74	9.37	10.05

VARIETY	ROWSpace	15	30
CARBRATE			
EUROPE	0.0	9.44	9.33
	1.5	9.71	6.24
EUVA	0.0	13.04	10.57
	1.5	11.49	10.73
VELA	0.0	5.16	6.14
	1.5	6.44	4.97
VERTUS	0.0	14.86	13.24
	1.5	15.75	13.76

CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	9.50	12.70	8.16	13.27	10.91

GRAND MEAN 10.22

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

CA3 RO15	VARIETY	CARBRATE	ROWSpace
1.532	0.766	0.542	0.542
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSpace	ROWSpace	CARBRATE
			ROWSpace
1.083	1.083	0.766	1.532

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TOTAL OF 4 CUTS DRY MATTER TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	1.532	15.0
TOTAL OF 4 CUTS MEAN DM% 22.1			
PLOT AREA HARVESTED 0.00045			