

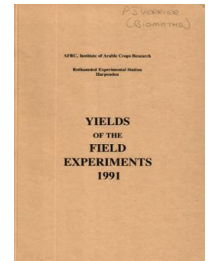
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91/R/CS/327 Control of Stem Nematode - Lucerne

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91/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 fourth year, lucerne.

For previous years see 88-90/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** Residues of carbofuran (kg) applied 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: (0:16:36) at 510 kg. Weedkillers: 2,4-DB at 1.3 kg in 220 l. Paraquat at 0.40 kg ion in 220 l. Fluazifop-P-butyl at 0.19 kg in 220 l.

Cultivations, etc.:- P and K applied: 16 Nov, 1990. 2,4-DB applied: 14 Dec. Paraquat applied: 7 Mar, 1991. Fluazifop-P-butyl applied: 10 Apr. Cut: 20 May, 9 July, 12 Aug and 3 Oct.

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1ST CUT (20/5/91) DRY MATTER TONNES/HECTARE

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

CARBRATE	(0.0)	(1.5)	Mean		
VARIETY					
EUROPE	2.67	1.88	2.28		
EUVA	4.48	3.59	4.04		
VELA	1.02	1.07	1.04		
VERTUS	5.80	5.11	5.45		
Mean	3.49	2.91	3.20		
ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	2.62	1.94	2.28		
EUVA	4.34	3.73	4.04		
VELA	1.23	0.86	1.04		
VERTUS	5.92	4.99	5.45		
Mean	3.53	2.88	3.20		
ROWSPACE	15	30	Mean		
CARBRATE					
(0.0)	3.76	3.23	3.49		
(1.5)	3.30	2.53	2.91		
Mean	3.53	2.88	3.20		
	ROWSPACE	15	30		
VARIETY	CARBRATE				
EUROPE	(0.0)	3.07	2.28		
	(1.5)	2.17	1.59		
EUVA	(0.0)	4.62	4.35		
	(1.5)	4.07	3.11		
VELA	(0.0)	1.19	0.86		
	(1.5)	1.27	0.86		
VERTUS	(0.0)	6.16	5.44		
	(1.5)	5.68	4.54		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	2.10	3.88	1.32	4.56	2.96
GRAND MEAN	3.16				

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.322	0.161	0.114	0.114
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.228	0.228	0.161	0.322

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1ST CUT (20/5/91) DRY MATTER TONNES/HECTARE

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.322	10.2
1ST CUT MEAN DM%	15.7		

2ND CUT (9/7/91) DRY MATTER TONNES/HECTARE

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

CARBRATE	(0.0)	(1.5)	Mean		
VARIETY					
EUROPE	3.68	3.79	3.74		
EUVA	4.89	4.40	4.65		
VELA	3.34	3.67	3.51		
VERTUS	5.42	5.16	5.29		
Mean	4.34	4.26	4.30		
ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	4.00	3.48	3.74		
EUVA	4.93	4.37	4.65		
VELA	3.88	3.13	3.51		
VERTUS	5.48	5.10	5.29		
Mean	4.57	4.02	4.30		
ROWSPACE	15	30	Mean		
CARBRATE					
(0.0)	4.58	4.09	4.34		
(1.5)	4.56	3.95	4.26		
Mean	4.57	4.02	4.30		
VARIETY	ROWSPACE	15	30		
	CARBRATE				
EUROPE	(0.0)	3.89	3.48		
	(1.5)	4.11	3.47		
EUVA	(0.0)	5.11	4.68		
	(1.5)	4.76	4.05		
VELA	(0.0)	3.66	3.01		
	(1.5)	4.09	3.25		
VERTUS	(0.0)	5.67	5.18		
	(1.5)	5.30	5.03		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	3.61	4.53	3.49	4.93	4.14
GRAND MEAN	4.27				

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2ND CUT (9/7/91) DRY MATTER TONNES/HECTARE

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.311	0.155	0.110	0.110
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.220	0.220	0.155	0.311

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.311	7.3

2ND CUT MEAN DM% 17.4

3RD CUT (12/8/91) DRY MATTER TONNES/HECTARE

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

CARBRATE	(0.0)	(1.5)	Mean
VARIETY			
EUROPE	3.16	2.93	3.04
EUVA	3.79	3.56	3.67
VELA	2.34	2.59	2.46
VERTUS	4.14	4.03	4.08
Mean	3.36	3.28	3.32
ROWSPACE	15	30	Mean
VARIETY			
EUROPE	3.26	2.83	3.04
EUVA	3.66	3.69	3.67
VELA	2.72	2.20	2.46
VERTUS	4.25	3.92	4.08
Mean	3.47	3.16	3.32
ROWSPACE	15	30	Mean
CARBRATE			
(0.0)	3.48	3.24	3.36
(1.5)	3.47	3.08	3.28
Mean	3.47	3.16	3.32

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3RD CUT (12/8/91) DRY MATTER TONNES/HECTARE

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

VARIETY	ROSPACE	15	30		
	CARBRATE				
EUROPE	(0.0)	3.42	2.90		
	(1.5)	3.09	2.76		
EUVA	(0.0)	3.63	3.95		
	(1.5)	3.69	3.44		
VELA	(0.0)	2.54	2.14		
	(1.5)	2.91	2.27		
VERTUS	(0.0)	4.31	3.97		
	(1.5)	4.19	3.87		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	2.87	3.66	2.50	3.56	3.15
GRAND MEAN	3.28				

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

CA3 RO15	VARIETY	CARBRATE	ROSPACE
0.387	0.194	0.137	0.137
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROSPACE	ROSPACE	CARBRATE
0.274	0.274	0.194	0.387

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.387	11.8
3RD CUT MEAN DM%	16.3		

4TH CUT (3/10/91) DRY MATTER TONNES/HECTARE

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

CARBRATE	(0.0)	(1.5)	Mean
VARIETY			
EUROPE	1.79	1.62	1.70
EUVA	2.19	2.15	2.17
VELA	1.12	1.21	1.16
VERTUS	2.53	2.44	2.48
Mean	1.91	1.85	1.88

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4TH CUT (3/10/91) DRY MATTER TONNES/HECTARE

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

ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	1.91	1.49	1.70		
EUVA	2.23	2.11	2.17		
VELA	1.29	1.04	1.16		
VERTUS	2.59	2.37	2.48		
Mean	2.01	1.75	1.88		
ROWSPACE	15	30	Mean		
CARBRATE					
(0.0)	1.99	1.82	1.91		
(1.5)	2.02	1.69	1.85		
Mean	2.01	1.75	1.88		
VARIETY	ROWSPACE	15	30		
CARBRATE					
EUROPE	(0.0)	2.06	1.51		
	(1.5)	1.77	1.46		
EUVA	(0.0)	2.13	2.26		
	(1.5)	2.34	1.96		
VELA	(0.0)	1.20	1.03		
	(1.5)	1.37	1.05		
VERTUS	(0.0)	2.59	2.47		
	(1.5)	2.60	2.28		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	1.58	2.23	1.29	2.38	1.87
GRAND MEAN	1.88				

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

CA3 RO15	VARIETY	CARBRATE	ROWSpace
0.174	0.087	0.062	0.062
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSpace	ROWSpace	CARBRATE
0.123	0.123	0.087	0.174

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	19	0.174	9.3
4TH CUT MEAN DM%	20.8		

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TOTAL OF 4 CUTS DRY MATTER TONNES/HECTARE

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

CARBRATE	(0.0)	(1.5)	Mean		
VARIETY					
EUROPE	11.31	10.22	10.76		
EUVA	15.35	13.71	14.53		
VELA	7.81	8.54	8.18		
VERTUS	17.89	16.74	17.32		
Mean	13.09	12.30	12.70		
ROWSPACE	15	30	Mean		
VARIETY					
EUROPE	11.79	9.73	10.76		
EUVA	15.17	13.90	14.53		
VELA	9.12	7.24	8.18		
VERTUS	18.24	16.39	17.32		
Mean	13.58	11.81	12.70		
ROWSPACE	15	30	Mean		
CARBRATE					
(0.0)	13.81	12.38	13.09		
(1.5)	13.35	11.25	12.30		
Mean	13.58	11.81	12.70		
VARIETY	ROWSPACE	15	30		
CARBRATE					
EUROPE	(0.0)	12.44	10.18		
	(1.5)	11.14	9.29		
EUVA	(0.0)	15.47	15.24		
	(1.5)	14.86	12.56		
VELA	(0.0)	8.59	7.04		
	(1.5)	9.65	7.44		
VERTUS	(0.0)	18.73	17.05		
	(1.5)	17.76	15.72		
CA3 RO15	EUROPE	EUVA	VELA	VERTUS	Mean
	10.16	14.30	8.60	15.42	12.12
GRAND MEAN	12.58				

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

CA3 RO15	VARIETY	CARBRATE	ROWSPACE
0.929	0.465	0.329	0.329
VARIETY	VARIETY	CARBRATE	VARIETY
CARBRATE	ROWSPACE	ROWSPACE	CARBRATE
			ROWSPACE
0.657	0.657	0.465	0.929

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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%
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BLOCK.WP	19	0.929	7.4
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TOTAL OF 4 CUTS MEAN DM% 17.5

PLOT AREA HARVESTED 0.00045