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79/R/CS/241 Pesticides and Slot-seeding - Ryegrass

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79/R/CS/241

PESTICIDES AND SLOT-SEEDING

Object: To study the effects of aldicarb and phorate, applied at sowing, on the incidence of pests and on the survival and yield of ryegrass sown into an existing grass sward by a slot-seeding drill - Little Knott II.

Sponsors: I.F. Henderson, A.M. Spaul, R.W. Gibson.

The first year, grass.

Design: 3 randomised blocks of 7 plots split into 3.

Whole plot dimensions: 2.0 x 24.0.

Treatments: All combinations of:-

Whole plots

1. TREATMNT	Treatments, applied to old grass:
0 0 0	None
0 S 0	Slot seeder used not sowing seed
G S R	Old grass killed with glyphosate, RvP ryegrass sown by slot-seeder
0 S B	Baroldi ryegrass sown by slot-seeder
0 S M	Grasslands Manawa ryegrass sown by slot-seeder
0 S R	RvP ryegrass sown by slot-seeder
0 S S	S.24 ryegrass sown by slot-seeder

Sub plots

2. PESTICIDE	Pesticides applied at sowing:-
NONE	None
ALDICARB	Aldicarb at 10 kg
PHORATE	Phorate at 10 kg

- NOTES: (1) The slot-seeder cut slots in the sward 2.5 cm deep and 30 cm apart, using knife coulters. Seed was sown at 12 kg.
(2) Glyphosate to G S R was applied at 3.0 kg in 1000 l on 4 Apr, 1979.
(3) One replicate of each of the treatment combinations 0 S B ALDICARB, 0 S B NONE, 0 0 0 NONE, 0 0 0 ALDICARB, was sprayed with glyphosate in error. Estimated values were used in the analysis.

Basal applications: Manures: (20:14:14) at 125 kg combine drilled. (Applied by hand in rows 30 cm apart to 0 0 0). (25:0:16) at 200 kg after each cut except the last.

Cultivations, etc.: Seed sown: 6 Apr, 1979. Cut: 30 May, 27 June, 25 July, 22 Aug, 18 Sept, 17 Oct. NK applied: 6 June, 28 June, 26 July, 24 Aug, 19 Sept.

NOTE: Samples of harvested produce were sorted and weighed to determine amounts of original sward, dicotyledonous weeds and sown species.

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1ST CUT (30/5/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	3.08	3.10	3.44	3.21
O S O	2.84	2.39	2.74	2.65
G S R	0.32	0.24	0.44	0.33
O S B	2.45	2.98	2.63	2.69
O S M	2.65	2.95	2.73	2.78
O S R	2.23	2.56	3.10	2.63
O S S	2.56	2.54	2.50	2.53
MEAN	2.31	2.39	2.51	2.40

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.170	0.092	0.261
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.243

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.208	8.7
BLOCK.WP.SP	24	0.298	12.4

2ND CUT (27/6/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	1.35	1.33	1.23	1.30
O S O	1.69	1.41	1.76	1.62
G S R	1.63	1.90	2.08	1.87
O S B	1.41	1.38	1.79	1.52
O S M	1.38	1.50	1.45	1.44
O S R	1.53	1.68	1.49	1.56
O S S	1.54	1.52	1.69	1.58
MEAN	1.50	1.53	1.64	1.56

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.204	0.062	0.244
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.165

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.250	16.0
BLOCK.WP.SP	24	0.202	13.0

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3RD CUT (25/7/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	1.09	0.76	0.86	0.90
O S O	0.81	0.82	0.92	0.85
G S R	1.20	1.43	1.36	1.33
O S B	0.84	0.96	0.75	0.85
O S M	0.57	0.72	0.75	0.68
O S R	0.73	0.81	0.89	0.81
O S S	0.59	0.91	0.87	0.79
MEAN	0.83	0.91	0.91	0.89

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.109	0.046	0.148
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.123

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.133	15.0
BLOCK.WP.SP	24	0.150	17.0

4TH CUT (22/8/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	1.14	1.10	1.13	1.13
O S O	0.90	1.16	1.26	1.11
G S R	1.35	1.50	1.53	1.46
O S B	1.18	1.15	1.27	1.20
O S M	1.05	1.20	1.12	1.12
O S R	1.15	1.27	1.22	1.21
O S S	0.84	1.17	1.33	1.11
MEAN	1.09	1.22	1.27	1.19

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.075	0.058	0.147
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.155

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.092	7.8
BLOCK.WP.SP	24	0.189	15.9

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5TH CUT (18/9/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	0.79	0.56	0.68	0.68
O S O	0.72	0.80	0.69	0.74
G S R	0.68	0.69	0.76	0.71
O S B	0.80	0.79	0.64	0.74
O S M	0.60	0.68	0.69	0.66
O S R	0.71	0.82	0.86	0.80
O S S	0.49	0.70	0.72	0.64
MEAN	0.68	0.72	0.72	0.71

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.077	0.034	0.106
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.089

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.094	13.3
BLOCK.WP.SP	24	0.109	15.4

6TH CUT (17/10/79) DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	0.47	0.72	0.62	0.60
O S O	0.54	0.46	0.53	0.51
G S R	0.53	0.49	0.55	0.52
O S B	0.40	0.41	0.56	0.46
O S M	0.57	0.54	0.56	0.56
O S R	0.44	0.53	0.57	0.52
O S S	0.50	0.51	0.57	0.52
MEAN	0.49	0.52	0.57	0.53

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.041	0.029	0.074
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
TREATMNT			0.076

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.050	9.6
BLOCK.WP.SP	24	0.093	17.6

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TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

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

PESTCIDE TREATMNT	NONE	ALDICARB	PHORATE	MEAN
O O O	7.93	7.57	7.96	7.82
O S O	7.50	7.03	7.89	7.48
G S R	5.71	6.24	6.72	6.23
O S B	7.08	7.66	7.65	7.46
O S M	6.82	7.58	7.30	7.23
O S R	6.78	7.68	8.14	7.53
O S S	6.51	7.35	7.66	7.18
MEAN	6.90	7.30	7.62	7.28

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

TABLE	TREATMNT	PESTCIDE	TREATMNT PESTCIDE
SED	0.222	0.143	0.381
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF: TREATMNT			0.380

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.272	3.7
BLOCK.WP.SP	24	0.465	6.4

1ST CUT MEAN DM% 17.2
 2ND CUT MEAN DM% 17.8
 3RD CUT MEAN DM% 26.2
 4TH CUT MEAN DM% 18.8
 5TH CUT MEAN DM% 23.1
 6TH CUT MEAN DM% 18.0
 TOTAL OF 6 CUTS MEAN DM% 20.2

AVERAGE PLOT AREA HARVESTED 0.00071