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Yields of the Field Experiments 1974

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74/R/CS/123 Effects of Viruses - Ryegrass, Red Clover

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74/R/CS/123

EFFECTS OF VIRUSES

Object: To study the effects of virus infection on yield and persistence of ryegrass and red clover in pure and mixed stands - Garden Plot 14.

Sponsors: A.J. Cockbain, R.T. Plumb.

The second year, red clover and Italian ryegrass.

For previous year see 73/R/CS/123.

Design: 4 randomised blocks of 8 plots split into 2.

Whole plot dimensions: 3.35 x 1.22. Area harvested: 0.00011.

Treatments: All combinations of:-

Whole plots: 1. Crop and inoculation with virus:	CROP VIR
Red clover uninoculated	Clover/O
Italian ryegrass uninoculated	Grass/O
Red clover and Italian ryegrass (mixed within rows) uninoculated	CloGr/O
Red clover inoculated with Pea Mosaic Virus (PMV)	Clover/P
Italian ryegrass inoculated with Ryegrass Mosaic Virus (RMV)	Grass/R
Red clover and Italian ryegrass (mixed) inoculated with PMV	CloGr/P
Red clover and Italian ryegrass (mixed) inoculated with RMV	CloGr/R
Red clover and Italian ryegrass (mixed) inoculated with PMV and RMV	CloGr/PR
Sub plots: 2. Aldicarb (kg) after each cut:	ALDICARB
None	0
10	10

NOTE: Inoculation with PMV was unsuccessful.

Basal applications: Manures: (0:14:28) at 800 kg, 'Nitro-Chalk' at 300 kg after each cut.

Cultivations, etc.: - PK applied: 30 Oct, 1973. Aldicarb applied: 3 June, 1974, 25 July, 19 Sept. Cut and N applied: 28 May, 11 July, 9 Sept.

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- NOTES: (1) Crop was scored for Ryegrass Mosaic Virus: 2 May.
(2) Mites (*Abacarus hystrix*) were counted on 11 July, 9 Sept, 21 Oct.
(3) Red clover was sampled for virus incidence during the period 29 Oct to 10 Nov.
(4) 3rd cut. Because of a faulty balance the yields from 3 whole plots CROP VIR - Clogr/PR, Clover/O, and Clogr/P were not recorded. Estimated values were used in the analysis.

Standard errors per plot. Dry matter: tonnes/hectare:

1st cut.	Whole plot: 0.833 or 10.7% (21 d.f.)
	Sub plot: 0.761 or 9.7% (24 d.f.)
2nd cut.	Whole plot: 0.585 or 10.3% (21 d.f.)
	Sub plot: 0.419 or 7.4% (24 d.f.)
3rd cut.	Whole plot: 0.769 or 14.3% (18 d.f.)
	Sub plot: 0.640 or 11.9% (21 d.f.)
Total of 3 cuts.	Whole plot: 1.766 or 9.4% (18 d.f.)
	Sub plot: 1.012 or 5.4% (21 d.f.)

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TABLES OF MEANS

1ST CUT. DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
CROP VIR			
Clover/O	7.27	7.31	7.29
Grass/O	7.95	8.98	8.47
CloGr/O	8.17	7.84	8.00
Clover/P	6.11	6.66	6.38
Grass/R	7.78	8.46	8.12
CloGr/P	8.58	8.76	8.67
CloGr/R	7.87	8.84	8.35
CloGr/PR	6.89	7.47	7.18
Mean	7.58	8.04	7.81

STANDARD ERRORS OF DIFFERENCES

CROP VIR	ALDICARB	CROP VIR ALDICARB
0.589	0.190	0.702
Except when comparing means with same level of CROP VIR		
		0.538

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2ND CUT. DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
CROP VIR			
Clover/O	5.74	6.75	6.24
Grass/O	4.10	5.70	4.90
CloGr/O	5.61	5.36	5.48
Clover/P	5.59	6.16	5.87
Grass/R	4.25	5.52	4.89
CloGr/P	5.33	6.18	5.75
CloGr/R	6.18	6.10	6.14
CloGr/PR	5.93	6.01	5.97
Mean	5.34	5.97	5.66

STANDARD ERRORS OF DIFFERENCES

CROP VIR	ALDICARB	CROP VIR ALDICARB
0.414	0.105	0.464
Except when comparing means with same level of CROP VIR		
		0.296

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3RD CUT. DRY MATTER: TONNES/HECTARE

	ALDICARB		Mean
	0	10	
CROP VIR			
Clover/O	5.10	7.34	6.22
Grass/O	2.61	4.07	3.34
CloGr/O	5.73	6.26	6.00
Clover/P	5.36	5.85	5.61
Grass/R	3.17	4.18	3.67
CloGr/P	5.97	6.37	6.17
CloGr/R	5.89	6.12	6.00
CloGr/PR	6.10	5.84	5.97
Mean	4.99	5.75	5.37

STANDARD ERRORS OF DIFFERENCES

CROP VIR	ALDICARB	CROP VIR ALDICARB
0.544	0.160	0.631
Except when comparing means with same level of CROP VIR		
		0.453

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TOTAL OF 3 CUTS. DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
CROP VIR			
Clover/O	17.77	21.78	19.77
Grass/O	14.66	18.75	16.71
CloGr/O	19.51	19.46	19.48
Clover/P	17.05	18.67	17.86
Grass/R	15.20	18.16	16.68
CloGr/P	19.80	21.39	20.59
CloGr/R	19.93	21.06	20.50
CloGr/PR	18.59	19.23	18.91
Mean	17.81	19.81	18.81

STANDARD ERRORS OF DIFFERENCES

CROP VIR	ALDICARB	CROP VIR ALDICARB
1.248	0.253	1.347
Except when comparing means with same level of CROP VIR		
		0.716
Mean D.M. %	1st cut:	21.1
	2nd cut:	21.2
	3rd cut:	20.8
	Total of 3 cuts:	21.0