

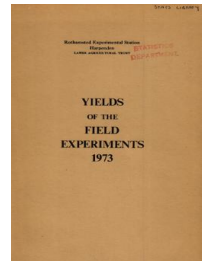
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73/R/CS/123 - Effects of Viruses - Ryegrass, Red Clover

Rothamsted Research

Rothamsted Research (1974) *73/R/CS/123 - Effects of Viruses - Ryegrass, Red Clover* ; Yields Of The Field Experiments 1973, pp 281 - 285 - DOI: <https://doi.org/10.23637/ERADOC-1-98>

73/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 and R.T. Plumb.

The first year, red clover and Italian ryegrass.

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

Whole plot dimensions: 3.35 x 1.22. Area harvested: 0.00015.

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) before sowing, repeated after each cut:	ALDICARB
None	0
10	10

Basal applications: Manures: Ground chalk at 2.4 tonnes, (0:20:20) at 780 kg, 'Nitro-Chalk' at 300 kg at sowing and after first cut.
Irrigation: 15 mm after first cut.

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Seed: Hungaropoly clover and R.V.P ryegrass both sown at 40 kg in pure stands and 32 kg clover with 8 kg ryegrass in mixture.

Cultivations, etc.:— Ploughed: 1 Dec, 1972. Seed sown and aldicarb applied: 18 Apr, 1973. Cut: 31 July and 10 Oct. Irrigation applied: 3 Aug. Aldicarb applied: 8 Aug.

NOTES. Crop was scored for:—

- (1) Ryegrass mosaic virus: 23 July and 16 Aug.
- (2) Mites (*Abacarus hystrix*): 27 July.
- (3) Clover virus (PMV) : 24 Sept.
- (4) Mildew (*Erysiphe polygoni*) on clover: 23 Aug.

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

1st cut:	Whole plot:	0.695 or 11.4% (21 d.f.)
	Sub plot:	0.515 or 8.4% (24 d.f.)
2nd cut:	Whole plot:	0.489 or 11.3% (21 d.f.)
	Sub plot:	0.567 or 13.1% (24 d.f.)
Total of 2 cuts:	Whole plot:	0.836 or 8.0% (21 d.f.)
	Sub plot:	0.922 or 8.9% (24 d.f.)

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TABLES OF MEANS

DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
	1ST CUT		
CROP/VIR			
Clover/O	5.74	6.32	6.03
Grass/O	5.94	6.17	6.05
CloGr/O	6.22	6.91	6.57
Clover/P	5.43	5.42	5.42
Grass/R	6.88	6.66	6.77
CloGr/P	5.31	6.44	5.88
CloGr/R	5.50	6.22	5.86
CloGr/PR	5.97	6.41	6.19
Mean	5.87	6.32	6.10

STANDARD ERRORS OF DIFFERENCES

CROP/VIR	ALDICARB	CROP/VIR ALDICARB
0.491	0.129	0.555
Except when comparing means with same level of CROP/VIR		0.364

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DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
	2ND CUT		
CROP/VIR			
Clover/O	4.54	5.06	4.80
Grass/O	3.15	3.80	3.47
CloGr/O	4.41	4.73	4.57
Clover/P	3.92	4.14	4.03
Grass/R	3.55	3.90	3.73
CloGr/P	4.59	4.74	4.67
CloGr/R	4.68	5.05	4.86
CloGr/PR	4.27	4.49	4.38
Mean	4.14	4.49	4.31

STANDARD ERRORS OF DIFFERENCES

CROP/VIR	ALDICARB	CROP/VIR ALDICARB
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0.345	0.142	0.447
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Except when comparing means
with same level of
CROP/VIR

0.401

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DRY MATTER: TONNES/HECTARE

ALDICARB

	0	10	Mean
TOTAL OF 2 CUTS			
CROP/VIR			
Clover/O	10.28	11.39	10.83
Grass/O	9.08	9.97	9.53
CloGr/O	10.63	11.64	11.13
Clover/P	9.35	9.55	9.45
Grass/R	10.43	10.56	10.49
CloGr/P	9.91	11.18	10.55
CloGr/R	10.18	11.27	10.72
CloGr/PR	10.24	10.90	10.57
Mean	10.01	10.81	10.41

STANDARD ERRORS OF DIFFERENCES

CROP/VIR	ALDICARB	CROP/VIR ALDICARB
0.591	0.231	0.750
Except when comparing means with same level of CROP/VIR		
		0.652
Mean D.M. % 1st cut:		19.0
2nd cut:		22.3
Total of 2 cuts:		20.7