

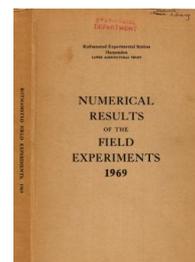
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Numerical Results of the Field Experiments 1969

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69/R/CS/42 - Effect of Invertebrates on Yield - Grass

Rothamsted Research

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GRASS

(69/R/CS/42)

Effect of invertebrates on yield, Road Piece 1969, the first year.

Design: 4 randomised blocks of 12 plots.

Area of each plot: 0.0043. Area harvested: 0.0016.

Treatments: Chemical control of foliar (F) and soil (S) invertebrates:-

Untreated, no sampling	(O)
Untreated, sampled	(B)
Chlorbenseide spray at 19 oz in 200 gals (against mites)	(FCB)
Menazon spray at 6 oz in 200 gals (against aphids)	(FMZ)
Dimethoate spray at 12 oz in 200 gals, plus CB and MZ (against all foliar invertebrates)	(F3)
+Formalin 2-3 times (against earthworms)	(SFO)
Parathion/bran bait - parathion at 8 oz (against leatherjackets)	(SL)
C 14421 at 40 lb, once (against nematodes)	(SN)
Metaldehyde bait (once a month) at 2.25 lb a.i. plus metaldehyde spray at 2.5 lb in 200 gals on three occasions (against slugs and snails)	(SMT)
Aldrin at 20 lb in 200 gals and treatment N once, plus MF monthly (against all invertebrates except earthworms)	(S3)
Chlordane at 20 lb in 200 gals once only, plus S3 (against all soil animals)	(S4)
F3 plus S4 (against all foliar invertebrates and all soil animals)	(F3 + S4)
All treatments once a month, except where otherwise stated.	

+ Not applied in 1969, because of dry conditions and the risk of plant damage.

Basal applications: 4 cwt (0:14:28) and 3.5 cwt (25:0:16) in spring.
200 lb (25:0:16) after each cut except the last.

Cultivations, etc.: Basal PK and NK compounds applied: 4 Mar, 1969.
Cut three times: 5 June, 17 July, 18 Sept. NK compound applied
after first two cuts. Chemical treatments applied:
Chlorbenseide: 17 June, 10 July, 11 Aug, 11 Sept, 14 Oct, 11 Nov.
Menazon: 25 July, 11 Aug, 11 Sept, 15 Oct, 10 Nov.
Dimethoate: 9 July, 11 Aug, 11 Sept, 14 Oct, 11 Nov.
Parathion: 10 July, 12 Aug, 12 Sept, 14 Oct, 14 Nov.
C 14421: 13 June.

Metalddehyde bait: 8 July, 11 Aug, 12 Sept, 14 Oct, 13 Nov.
Metalddehyde spray: 13 June, 14 Oct, 13 Nov.
Aldrin: 13 June.
Chlordane: 13 June.

Previous crops: Grass since 1945 (mainly grazed).

NOTE: Samples of fauna were taken throughout the year. Samples were also taken for botanical analysis. All plots except treatment O were sampled as treatment B.

Standard errors per plot. Dry matter, cwt:	
2nd cut:	1.77 or 10.8% (33 d.f.)
3rd cut:	1.95 or 15.6% (33 d.f.)
Total of 2nd and 3rd cuts:	3.16 or 10.9% (33 d.f.)

SUMMARY OF RESULTS

DRY MATTER: CWT

1ST CUT

Mean: 31.5

	2ND CUT	3RD CUT	TOTAL OF 2ND AND 3RD CUTS
O	15.8	10.7	26.5
B	16.6	10.5	27.1
FCB	16.6	11.1	27.6
FMZ	16.9	12.5	29.4
F3	15.3	12.3	27.6
SFD+	14.6	10.5	25.1
SL	17.1 (± 0.89)	11.7 (± 0.97)	28.9 (± 1.58)
SN	16.2	11.5	27.7
SMT	17.7	11.7	29.3
S3	17.7	16.3	34.0
S4	17.9	16.3	34.2
F3 S4	15.0	14.4	29.4
Mean	16.4	12.5	28.9

Mean D.M. %: 1st cut: 17.4
 2nd cut: 22.1
 3rd cut: 21.6
 Total of 2nd and 3rd cuts: 21.9

+ Not applied 1969 (=B)