

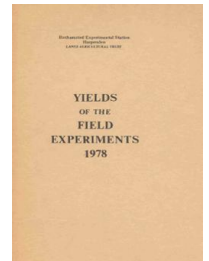
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78/R/CS/41 Cultivations and Soil Invertebrates - Old Grass, New Grass

Rothamsted Research

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78/R/CS/41

CULTIVATIONS AND SOIL INVERTEBRATES

Object: To study the effects of cultivations on yield of grass and on populations of soil animals - Road Piece.

Sponsor: C.A. Edwards.

The tenth year, old grass, new grass.

For previous years see 69/R/CS/41(t), 70/R/CS/41(t) and 71-77/R/CS/41.

Design: 4 blocks of 8 plots, randomisation restricted.

Whole plot dimensions: 6.40 x 7.32.

Treatments: Cultivations and reseeded:

CULTIVTN

0 No treatments to old grass (two plots per block)

Grass ploughed up:-

SF	In spring 1969, reseeded after fewest cultivations needed to produce a seedbed
SM	In spring 1969, reseeded after many seedbed cultivations
AM	In autumn 1969, reseeded spring 1970 after many seedbed cultivations
SFR	Every spring since 1969, reseeded each year after fewest cultivations needed to produce a seedbed
SMR	Every spring since 1969, reseeded each year after many seedbed cultivations
AMR	Every autumn since 1969, reseeded every following spring after many seedbed cultivations

Seeds mixture for 1978: RvP Erecta timothy at 6.7 kg. S.215 meadow fescue at 13.5 kg. Huia white clover at 2.2 kg. Sown at 22.4 kg.

Basal applications: Manures: (0:14:28) at 500 kg in winter. (25:0:16) at 440 kg in spring and at 220 kg after each of the first two cuts.

Cultivations, etc.: Basal PK applied: 8 Dec, 1977. AMR plots ploughed: 6 Jan, 1978. SFR and SMR plots ploughed: 2 Mar. NK applied: 7 Mar. Rotary harrowed AMR, SMR, SFR plots twice: 18 May, 22 May. Disc harrowed AMR, SMR plots three times, SFR plots once, spike harrowed, rolled and sown AMR, SMR, SFR plots: 22 May. Cut (excluding AMR, SMR, SFR plots): 5 June. NK applied to all cut plots: 7 June. All plots cut: 26 July, 6 Nov. NK to all plots: 4 Aug.

NOTE: Soil cores were taken to assess total soil fauna and quadrats were sampled on each plot for earthworms in autumn and spring.

78/R/CS/41

1ST CUT (5/6/78) DRY MATTER TONNES/HECTARE

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

CULTIVTN	O	SF	SM	AM	MEAN
	5.70	5.74	4.82	6.06	5.60

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

TABLE	CULTIVTN
SED	0.398 MIN REP 0.345 MAX-MIN

	CULTIVTN
MAX-MIN	O V ANY OF REMAINDER
MIN REP	ANY OF REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	13	0.563	10.1
1ST CUT MEAN DM%	16.4		

2ND CUT (26/7/78) DRY MATTER TONNES/HECTARE

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

CULTIVTN	O	SF	SM	AM	SFR	SMR	AMR	MEAN
	2.49	2.82	2.75	2.84	1.10	1.31	1.26	2.13

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

TABLE	CULTIVTN
SED	0.240 MIN REP 0.208 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	0.340	15.9
2ND CUT MEAN DM%	17.0		

78/R/CS/41

3RD CUT (6/11/78) DRY MATTER TONNES/HECTARE

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

CULTIVTN	O	SF	SM	AM	SFR	SMR	AMR	MEAN
	3.54	3.73	3.38	3.42	3.83	3.95	4.19	3.70

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

TABLE	CULTIVTN
SED	0.472 MIN REP 0.409 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	0.668	18.1

3RD CUT MEAN DM% 32.5

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

CULTIVTN	O	SF	SM	AM	SFR	SMR	AMR	MEAN
	11.74	12.29	10.95	12.33	4.93	5.26	5.46	9.34

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

TABLE	CULTIVTN
SED	0.623 MIN REP 0.540 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	0.882	9.4

TOTAL OF 3 CUTS MEAN DM% 22.8

PLOT AREA HARVESTED 0.00074