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Yields of the Field Experiments 1976

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

Rothamsted Research

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76/R/CS/41

CULTIVATIONS AND SOIL INVERTEBRATES

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

Sponsor: C.A. Edwards.

The eighth year, old grass, new grass.

For previous years see 69/R/CS/41(t), 70/R/CS/41(t) and 71-75/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 1976: S215 meadow fescue at 9.4 kg; Contessa meadow fescue at 6.0 kg; Pecora certified timothy at 6.0 kg; N.Z. Huia white-clover at 2.2 kg; Wild white clover at 0.4 kg. Sown at 24 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 the first cut.

Cultivations, etc.: - Basal PK applied: 21 Nov, 1975. AMR plots ploughed: 11 Dec. SMR and SFR plots ploughed: 9 Feb, 1976. Basal NK applied, disced all plots to be reseeded: 26 Feb. Disced AMR and SMR plots four times, SFR plots twice: 13 Apr. Power harrowed and seed sown: 21 Apr. Cut (excluding AMR, SMR, SFR plots): 20 May, 29 June, 2 Nov. NK applied to all cut plots: 21 May.

NOTE: Soil cores were taken to assess total soil fauna in January, March and September. Quadrats were sampled on each plot for earthworms in December 1975, March, 1976 and September.

76/R/CS/41

1ST CUT (20/5/76) DRY MATTER TONNES/HECTARE

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

CULTIVTN	0	SF	SM	AM	MEAN
	3.74	3.40	3.00	3.71	3.52

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

TABLE	CULTIVTN
-----	-----
SED	0.475 MIN REP 0.412 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	0.672	19.1

1ST CUT MEAN DM% 18.8

2ND CUT (29/6/76) DRY MATTER TONNES/HECTARE

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

CULTIVTN	0	SF	SM	AM	MEAN
	0.58	0.81	1.28	1.14	0.88

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

TABLE	CULTIVTN
-----	-----
SED	0.246 MIN REP 0.213 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	13	0.348	39.7

2ND CUT MEAN DM% 35.2

76/R/CS/41

3RD CUT (2/11/76) DRY MATTER TONNES/HECTARE

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

CULTIVTN	0	SF	SM	AM	MEAN
	1.73	1.89	1.58	1.55	1.70

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

TABLE	CULTIVTN
SED	0.117 MIN REP 0.101 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	13	0.165	9.7

3RD CUT MEAN DM% 13.5

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

CULTIVTN	0	SF	SM	AM	MEAN
	6.05	6.11	5.86	6.39	6.09

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

TABLE	CULTIVTN
SED	0.561 MIN REP 0.486 MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	13	0.794	13.0

TOTAL OF 3 CUTS MEAN DM% 22.5

PLOT AREA HARVESTED 0.00074