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80/R/CS/130 Effects of Earthworm Inoculation

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80/R/CS/130

EFFECTS OF EARTHWORM INOCULATION

Object: To study the effects of different species of earthworms on yield and other characteristics of grass - Fosters O & E.

Sponsor: J.R. Lofty.

The seventh year, ley.

For previous years see 74-79/R/CS/130.

Design: 3 randomised blocks of 4 plots.

Whole plot dimensions: 8.53 x 9.14.

Treatments: Inoculation with earthworm species in 1974, 1975 and 1979:

WORMSPEC

NONE	None
ALLOLOBO	Allolobophora longa at 15,000 per hectare in 1974; 5,000 in 1975; 96,000 in 1979
LUMBRICU	Lumbricus terrestris at 5,000 per hectare in 1974 and 1975; 96,000 in 1979
SIX SPEC	Six species - A. caliginosa, A. chlorotica, A. longa, A. rosea, L. rubellus, L. terrestris at a total of 35,000 per hectare in 1974, 12,000 in 1975, none in 1979

NOTES: (1) The experiment was ploughed in error in July 1976 and resown in autumn 1976.

(2) Earthworms for the 1979 crop were applied on 1 Dec, 1978 to one block only. Applications to other blocks have been postponed.

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

Seeds mixture: Combi perennial ryegrass at 8.4 kg, S24 perennial ryegrass at 8.4 kg, S23 perennial ryegrass at 5.6 kg, S26 cocksfoot at 5.6 kg, S37 cocksfoot at 5.6 kg, S48 Timothy at 2.8 kg, Pecora Timothy at 2.8 kg, Huia white clover at 2.8 kg, wild white clover at 2.8 kg. Sown at 45 kg.

Cultivations, etc.: - PK applied: 7 Nov, 1979. NK applied: 11 Mar, 1980, 3 June, 25 July. Cut: 28 May, 21 July, 24 Oct.

80/R/CS/130

1ST CUT (28/5/80) DRY MATTER TONNES/HECTARE

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

WORMSPEC	NONE	ALLOLOBO	LUMBRICU	SIX	SPEC	MEAN
	3.03	2.98	2.97		2.95	2.98

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

TABLE	WORMSPEC
-----	-----
SED	0.342

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.419	14.1

1ST CUT MEAN DM% 29.6

2ND CUT (21/7/80) DRY MATTER TONNES/HECTARE

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

WORMSPEC	NONE	ALLOLOBO	LUMBRICU	SIX	SPEC	MEAN
	2.45	2.70	2.64		2.37	2.54

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

TABLE	WORMSPEC
-----	-----
SED	0.285

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.349	13.7

2ND CUT MEAN DM% 23.7

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3RD CUT (24/10/80) DRY MATTER TONNES/HECTARE

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

WORMSPEC	NONE	ALLOLOBO	LUMBRICU	SIX SPEC	MEAN
	2.28	2.33	2.92	3.30	2.71

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

TABLE	WORMSPEC
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SED	0.506

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.620	22.9

3RD CUT MEAN DM% 27.2

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

WORMSPEC	NONE	ALLOLOBO	LUMBRICU	SIX SPEC	MEAN
	7.76	8.00	8.53	8.62	8.23

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

TABLE	WORMSPEC
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SED	0.726

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	0.889	10.8

TOTAL OF 3 CUTS MEAN DM% 26.8

PLOT AREA HARVESTED 0.00046