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# Yields of the Field Experiments 1981

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## 81/R/CS/130 Effects of Earthworm Inoculation - Ley

### Rothamsted Research

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81/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 0 & E.

Sponsor: J.R. Lofty.

The eighth year, 1ey.

For previous years see 74-80/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.

Seed: Grass and clover mixture sown August 1973, ploughed in error in June 1976 and resown September 1976.

Cultivations, etc.: - PK applied: 18 Nov, 1980. NK applied: 20 Mar, 1981, 5 June, 11 Aug. Cut: 4 June, 5 Aug, 3 Nov.

81/R/CS/130

1ST CUT (4/6/81) DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 5.03 | 5.20     | 5.04     | 5.81     | 5.27 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.560    |

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

|          |    |       |      |
|----------|----|-------|------|
| STRATUM  | DF | SE    | CV%  |
| BLOCK.WP | 6  | 0.686 | 13.0 |

1ST CUT MEAN DM% 20.3

2ND CUT(5/8/81) DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 2.19 | 2.06     | 2.45     | 2.45     | 2.29 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.288    |

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

|          |    |       |      |
|----------|----|-------|------|
| STRATUM  | DF | SE    | CV%  |
| BLOCK.WP | 6  | 0.353 | 15.4 |

2ND CUT MEAN DM% 28.8

81/R/CS/130

3RD CUT(3/11/81) DRY MATTER TONNES/HECTARE

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

| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|----------|------|----------|----------|----------|------|
|          | 1.15 | 1.17     | 1.24     | 0.99     | 1.14 |

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

| TABLE | WORMSPEC |
|-------|----------|
| ----- | -----    |
| SED   | 0.153    |

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

| STRATUM  | DF | SE    | CV%  |
|----------|----|-------|------|
| BLOCK.WP | 6  | 0.188 | 16.5 |

3RD CUT MEAN DM% 29.7

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|----------|------|----------|----------|----------|------|
|          | 8.37 | 8.43     | 8.73     | 9.25     | 8.70 |

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

| TABLE | WORMSPEC |
|-------|----------|
| ----- | -----    |
| SED   | 0.682    |

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

| STRATUM  | DF | SE    | CV% |
|----------|----|-------|-----|
| BLOCK.WP | 6  | 0.836 | 9.6 |

TOTAL OF 3 CUTS MEAN DM% 26.3

PLOT AREA HARVESTED 0.00046