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RESEARCH

## Yields of the Field Experiments 1982

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

#### Rothamsted Research

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82/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 and E.

Sponsor: J.R. Lofty.

The ninth year, 1ey.

For previous years see 74-81/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 in December, 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: 13 Nov, 1981. NK applied: 22 Mar, 1982, 7 June, 16 July. Cut: 1 June, 14 July, 10 Nov.

82/R/CS/130

1ST CUT (1/6/82) DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 3.71 | 4.05     | 3.63     | 3.66     | 3.76 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.407    |

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

|          |    |       |      |
|----------|----|-------|------|
| STRATUM  | DF | SE    | CV%  |
| BLOCK.WP | 6  | 0.498 | 13.2 |

1ST CUT MEAN DM% 23.7

2ND CUT (14/7/82) DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 1.81 | 1.98     | 1.91     | 1.79     | 1.87 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.057    |

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

|          |    |       |     |
|----------|----|-------|-----|
| STRATUM  | DF | SE    | CV% |
| BLOCK.WP | 6  | 0.070 | 3.7 |

2ND CUT MEAN DM% 20.5

82/R/CS/130

3RD CUT (10/11/82) DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 1.01 | 0.78     | 1.05     | 0.89     | 0.93 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.170    |

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

|          |    |       |      |
|----------|----|-------|------|
| STRATUM  | DF | SE    | CV%  |
| BLOCK.WP | 6  | 0.208 | 22.3 |

3RD CUT MEAN DM% 36.0

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

|          |      |          |          |          |      |
|----------|------|----------|----------|----------|------|
| WORMSPEC | NONE | ALLOLOBO | LUMBRICU | SIX SPEC | MEAN |
|          | 6.53 | 6.80     | 6.59     | 6.34     | 6.56 |

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

|       |          |
|-------|----------|
| TABLE | WORMSPEC |
| ----- | -----    |
| SED   | 0.539    |

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

|          |    |       |      |
|----------|----|-------|------|
| STRATUM  | DF | SE    | CV%  |
| BLOCK.WP | 6  | 0.660 | 10.1 |

TOTAL OF 3 CUTS MEAN DM% 26.7

PLOT AREA HARVESTED 0.00046