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84/R/CS/247 Organic Matter and Earthworm Inoculation - S. Barley

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84/R/CS/247

ORGANIC MATTER AND EARTHWORM INOCULATION

Object: To study methods of inoculating earthworms into arable soil and the influence of organic materials on subsequent multiplication and spread - Hoosfield.

Sponsor: C.A. Edwards.

The fifth year, s. barley.

For previous years see 80-83/R/CS/247.

Design: 3 randomised blocks of 9 plots.

Whole plot dimensions: 7.85 x 7.62.

Treatments: All combinations of:-

1. WORMINOC(80) Earthworms and inoculation method for 1980 crop only:

NONE	None
	Earthworms (<i>Lumbricus terrestris</i>) applied at 16,700 per hectare in November 1979:
EVEN	Evenly spaced throughout
CONC	Concentrated in metre squares, 100 earthworms per square metre

2. ORG MATT Forms of organic matter:

NONE	None
STR	Straw at 6.50 t for 1980, 3.25 t for 1981 and 1982
STR+FYM	Straw at 6.50 t for 1980, 3.25 t for 1981 and 1982 plus farmyard manure at 40 t for each year including 1984

Basal applications: Manures: (20:10:10) at 630 kg. Weedkillers: Paraquat at 0.4 kg ion in 250 l. 3, 6-dichloropicolinic acid at 0.05 kg and bromoxynil at 0.24 kg with mecoprop (as 'CMPP' at 3.0 l) in 250 l with the fungicide. Fungicide: Tridemorph at 0.52 kg.

Seed: Triumph, seed dressed with ethirimol, sown at 160 kg.

Cultivations, etc.: - Paraquat applied: 21 Oct, 1983. Deep spring-tine cultivated twice: 11 Nov. FYM treatment applied: 24 Nov. NPK applied: 8 Mar, 1984. Spring-tine cultivated twice, seed sown: 10 Mar. 3, 6-dichloropicolinic acid, bromoxynil, mecoprop and tridemorph applied: 16 May. Combine harvested: 17 Aug.

NOTE: Soil fauna were estimated from soil cores taken monthly from April to August and from pitfall trapping in the same period. Earthworm samples were taken in the autumn.

84/R/CS/247

GRAIN TONNES/HECTARE

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

ORG MATT WORMINOC(80)	NONE	STR	STR+FYM	MEAN
NONE	6.79	6.73	7.34	6.95
EVEN	6.77	6.39	6.55	6.57
CONC	6.52	6.83	6.65	6.67
MEAN	6.69	6.65	6.85	6.73

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

TABLE	WORMINOC(80)	ORG MATT	WORMINOC(80) ORG MATT
SED	0.269	0.269	0.466

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.571	8.5

GRAIN MEAN DM% 84.7

PLOT AREA HARVESTED 0.00244