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00/W/CS/428 Metal-amended Liquid Sludge - Grass

Rothamsted Research

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00/W/CS/428

METAL-AMENDED LIQUID SLUDGE

Object: To study the effects of zinc, copper and cadmium on soil microbial activity with low organic matter inputs - Woburn, Butt Close West.

Sponsor: S.P. McGrath, A. Chaudri.

The sixth year, grass.

For previous year see 98-99/W/CS/428.

Design: 3 randomised blocks of 13 plots.

Whole plot dimensions: 1.2 x 3.5.

Treatments:

SLUDGE

T21	None (duplicated)
T22	Uncontaminated (duplicated)
T23	Zinc, rate 1
T24	Zinc, rate 2
T25	Zinc, rate 3
T26	Copper, rate 1
T27	Copper, rate 2
T28	Copper, rate 3
T29	Cadmium, rate 1
T30	Cadmium, rate 2
T31	Cadmium, rate 3

Experimental diary:

28-Aug-99	: B :	: Alpha Glyphogan at 3.0 l in 200 l.
07-Sep-99	: B :	: Hand dug and raked.
01-Oct-99	: B :	: tm)PDQ at 3.0 l in 200 l.
	: B :	: tm)Enhance Low Foam at 100 ml in 200 l.
13-Oct-99	: B :	: Hand raked. Broadcast Cotswold ryegrass Mix A at 40 kg. Rolled.
12-Nov-99	: B :	: Spannit at 1.5 l in 100 l.
25-Feb-00	: B :	: Muriate of potash at 100 kg. 34.5% N at 116 kg.
19-Mar-00	: B :	: Legumex Extra at 7.0 l in 200 l.
07-Apr-00	: B :	: Broadcast Danergo and Ligrane ryegrass 50:50 mix at 100 kg.
11-Apr-00	: B :	: 27.0% N at 407 kg.
14-Jun-00	: B :	: Cut.
17-Jul-00	: B :	: Azural at 4.0 l in 200 l.
28-Jul-00	: B :	: Topped.

00/W/CS/428

1ST CUT (14/6/00) DRY MATTER TONNES/HECTARE

***** Tables of means *****

SLUDGE

T21	4.68
T22	5.76
T23	5.55
T24	6.95
T25	6.77
T26	6.54
T27	6.17
T28	7.93
T29	6.34
T30	5.59
T31	5.26

Mean	6.00
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*** Standard errors of differences of means ***

SLUDGE

0.884	min.rep
0.765	max-min
0.625	max.rep

SLUDGE

Max-min	T21 or T22 v any of the remainder
Min.rep	Any of the remainder
Max.rep	T21 v T22 only

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	26	1.082	18.0

1ST CUT MEAN DM% 29.5

PLOT AREA HARVESTED 0.00032