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81/R/MA/1 Rates and Times of N - Forage Maize

Rothamsted Research

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81/R/MA/1
FORAGE MAIZE
RATES AND TIMES OF N

Object: To study the effects of a range of nitrogen fertiliser rates, applied before sowing or to the seedbed, on the yields and nitrogen uptakes of forage maize - Long Hoos V I.

Sponsor: A.J. Barnard.

Design: 3 randomised blocks of 22 plots.

Whole plot dimensions: 2.13 x 3.66.

Treatments: All combinations of:-

1. EARLY N Rates of nitrogen fertiliser (kg N) applied on 8 Apr, 1981:

0
30
60
90

2. SDBED N Rates of nitrogen fertiliser (kg N) applied on 4 June:

0
30
60
90

plus all combinations of:-

1. N TIME Times of applying nitrogen fertiliser:

EARLY 8 Apr
SDBED 4 June

2. N RATE Rates of nitrogen fertiliser (kg N):

120
150
180

Basal applications: Manures: Chalk at 2.9 t. Weedkillers: Glyphosate at 1.5 l in 340 l. Atrazine at 1.7 kg with paraquat at 0.42 kg ion in 340 l.

Seed: Fronica, sown at 100,000 seeds per hectare.

Cultivations, etc.:- Glyphosate applied: 8 Sept, 1980. Chalk applied: 20 Nov. Ploughed: 24 Nov. Spring-tine cultivated: 8 Apr, 1981. Power harrowed, seed sown: 1 June. Atrazine and paraquat applied: 5 June. Harvested by hand: 26 Oct. Previous crops: Potatoes 1979, s. barley 1980.

NOTE: Plant population counts were made in July and the N content of the harvested produce was measured.

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FORAGE DRY MATTER TONNES/HECTARE

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

SDBED N	0	30	60	90	MEAN
EARLY N					
0	7.76	9.56	10.01	9.09	9.10
30	10.26	10.15	11.33	11.39	10.78
60	9.80	11.77	9.77	11.76	10.78
90	10.44	11.68	11.19	11.58	11.22
MEAN	9.56	10.79	10.57	10.95	10.47
N RATE	120	150	180	MEAN	
N TIME					
EARLY	11.84	9.89	12.57	11.43	
SDBED	11.13	10.73	10.44	10.77	
MEAN	11.48	10.31	11.51	11.10	
GRAND MEAN	10.64				

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

TABLE	EARLY N	SDBED N	N TIME
SED	0.410	0.410	0.473
TABLE	SUBDIVN N RATE	SUBDIVN EARLY N SDBED N	SUBDIVN N TIME N RATE
SED	0.580	0.820	0.820

SED FOR COMPARING ANY ITEM IN EARLY N.SDBED N
TABLE WITH ANY ITEM IN N TIME.N RATE TABLE IS 0.820

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

STRATUM	DF	SE	CV%
BLOCK.WP	42	1.004	9.4

MEAN DM% 23.2

PLOT AREA HARVESTED 0.00039