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ROTHAMSTED RESEARCH

Yields of the Field Experiments 1985

Full Table of Content

Maize

Rothamsted Research

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85/R/MA/1

MAIZE

VARIETIES, SOWING DATES AND POLYTHENE COVERS

Object: To study the effects of two sowing dates and polythene covers to the seedbed on the maturity dates and yield of three maize varieties grown for forage and grain - Long Hoos IV 6.

Sponsor: A.J. Barnard.

Design: 3 randomised blocks of 12 plots.

Whole plot dimensions: 1.6 x 10.4.

Treatments: All combinations of:-

1. VARIETY	Varieties:	
	BASTILLE	
	FRONICA	
	LEADER	
2. SOW DATE	Dates of sowing:	
	10 APR	10 April, 1985
	10 MAY	10 May
3. COVERS	Covers to seedbed after sowing:	
	NONE	None
	POLYTHNE	Polythene sheet

NOTES: The covers were photo-degradable and were laid by hand, within 7 days of sowing, and then perforated at about 10 cm intervals over the drill rows to allow seedling emergence.

Basal applications: Manures: Muriate of potash at 520 kg. 'Nitro-Chalk' (27.5% N) at 550 kg. Weedkiller: Atrazine at 2.8 kg in 220 l. Insecticide: Pirimicarb at 0.14 kg in 220 l.

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

Cultivations, etc.:- Muriate of potash applied: 11 Dec, 1984. N applied: 10 Apr, 1985. Early-sown plots spring-tine cultivated and sown: 10 Apr. Atrazine and polythene treatments applied to early-sown plots: 16 Apr. Late-sown plots power-harrowed and sown: 10 May. Atrazine applied to late-sown plots: 15 May. Polythene treatment applied to late-sown plots: 17 May. Insecticide applied: 24 July. Harvested by hand: Forage harvest: 15 Oct. Grain harvest: (Cobs picked by hand, threshed by stationary combine harvester). Early-sown with polythene: 14 Oct. Early-sown no polythene: 24 Oct. Late-sown: 7 Nov. Previous crops: Potatoes 1983, maize 1984.

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NOTES: (1) Plant counts were made at establishment, mid-season and pre-harvest. Growth rates, plant heights and lengths of selected leaves were measured.

(2) Weedkiller was not applied to two plots, those with treatment combinations

VARIETY	SOW DATE	COVERS
LEADER	10 APR	POLYTHNE
BASTILLE	10 APR	POLYTHNE

The yields of these plots were treated as missing and estimated values were used in the analysis.

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85/R/MA/1

FORAGE DRY MATTER TONNES/HECTARE

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

SOW DATE VARIETY	10 APR	10 MAY	MEAN
BASTILLE	14.02	14.42	14.22
FRONICA	14.95	13.99	14.47
LEADER	13.26	13.54	13.40
MEAN	14.07	13.99	14.03

COVERS VARIETY	NONE	POLYTHNE	MEAN
BASTILLE	15.63	12.80	14.22
FRONICA	16.18	12.76	14.47
LEADER	14.19	12.61	13.40
MEAN	15.33	12.73	14.03

COVERS SOW DATE	NONE	POLYTHNE	MEAN
10 APR	15.76	12.39	14.07
10 MAY	14.91	13.06	13.99
MEAN	15.33	12.73	14.03

SOW DATE	10 APR		10 MAY	
COVERS VARIETY	NONE	POLYTHNE	NONE	POLYTHNE
BASTILLE	16.10	11.93	15.16	13.68
FRONICA	17.49	12.41	14.87	13.12
LEADER	13.68	12.83	14.70	12.39

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

TABLE	VARIETY	SOW DATE	COVERS	VARIETY SOW DATE
SED	1.008	0.823	0.823	1.426

TABLE	VARIETY COVERS	SOW DATE COVERS	VARIETY SOW DATE COVERS
SED	1.426	1.164	2.017

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

STRATUM	DF	SE	CV%
BLOCK.WP	20	2.470	17.6

GRAIN MEAN DM% 23.0

PLOT AREA HARVESTED 0.00028

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85/R/MA/1

GRAIN YIELD

GRAIN TONNES/HECTARE

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

SOW DATE VARIETY	10 APR	10 MAY	MEAN
BASTILLE	5.57	4.55	5.06
FRONICA	5.45	4.13	4.79
LEADER	5.61	6.01	5.81
MEAN	5.54	4.89	5.22

COVERS VARIETY	NONE	POLYTHNE	MEAN
BASTILLE	4.96	5.16	5.06
FRONICA	4.02	5.56	4.79
LEADER	4.82	6.80	5.81
MEAN	4.60	5.84	5.22

COVERS SOW DATE	NONE	POLYTHNE	MEAN
10 APR	4.99	6.09	5.54
10 MAY	4.21	5.58	4.89
MEAN	4.60	5.84	5.22

SOW DATE	10 APR		10 MAY	
COVERS	NONE	POLYTHNE	NONE	POLYTHNE
VARIETY				
BASTILLE	5.31	5.82	4.60	4.50
FRONICA	5.05	5.86	2.99	5.26
LEADER	4.61	6.60	5.02	7.00

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

TABLE	VARIETY	SOW DATE	COVERS	VARIETY SOW DATE
SED	0.436	0.356	0.356	0.617

TABLE	VARIETY COVERS	SOW DATE COVERS	VARIETY SOW DATE COVERS
SED	0.617	0.504	0.872

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

STRATUM	DF	SE	CV%
BLOCK.WP	19	1.068	20.5

GRAIN MEAN DM% 55.1

PLOT AREA HARVESTED 0.00028

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85/R/MA/2

MAIZE

DAZOMET, SOWING DATES AND POLYTHENE COVERS

Object: To study the effects of dazomet, two sowing dates and polythene covers on the growth, pathogens and yield of maize grown for forage - Long Hoos IV 4.

Sponsors: A.J. Barnard, D. Hornby.

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions: 1.6 x 5.49.

Treatments: All combinations, duplicated, of:-

1. STERILNT	Soil sterilant:	
	NONE	None
	DAZOMET	Dazomet at 450 kg
2. SOW DATE	Dates of sowing:	
	15 APR	15 April, 1985
	10 MAY	10 May
3. COVERS	Covers to seedbed after sowing:	
	NONE	None
	POLYTHNE	Polythene sheet

NOTE: The covers were photo-degradable and were laid by hand within 10 days of sowing and then perforated at about 10 cm intervals over the drill rows to allow seedling emergence.

Basal applications: Manures: Muriate of potash at 520 kg. 'Nitro-Chalk' (27.5% N) at 550 kg. Weedkillers: Glyphosate at 1.4 kg in 220 l. Atrazine at 2.8 kg in 220 l. Insecticide: Pirimicarb at 0.14 kg in 220 l.

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

Cultivations, etc.:- Glyphosate applied: 26 Sept, 1984. Muriate of potash applied: 11 Dec. Ploughed: 13 Dec. Dazomet applied and worked in by hand-controlled spiked cultivator: 12 Mar, 1985. N applied: 10 Apr. Early-sown plots spring-tine cultivated and seed sown: 15 Apr. Atrazine and polythene treatments applied to early-sown plots: 16 Apr. Late-sown plots power harrowed and sown: 10 May. Atrazine applied to late-sown plots: 15 May. Polythene treatments applied to late-sown plots: 20 May. Insecticide applied: 24 July. Harvested by hand: 16 Oct. Previous crops: Fenugreek 1983, potatoes 1984.

NOTE: Plant counts were made at establishment, mid-season and pre-harvest. Growth rates, plant heights and length of selected leaves were measured. The crop was inspected for disease on four occasions throughout the season.

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85/R/MA/2

FORAGE DRY MATTER TONNES/HECTARE

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

SOW DATE	15 APR	10 MAY	MEAN
STERILNT			
NONE	14.54	15.73	15.13
DAZOMET	15.58	16.23	15.90
MEAN	15.06	15.98	15.52

COVERS	NONE	POLYTHNE	MEAN
STERILNT			
NONE	15.24	15.03	15.13
DAZOMET	15.33	16.48	15.90
MEAN	15.28	15.75	15.52

COVERS	NONE	POLYTHNE	MEAN
SOW DATE			
15 APR	14.88	15.23	15.06
10 MAY	15.69	16.28	15.98
MEAN	15.28	15.75	15.52

SOW DATE	15 APR		10 MAY	
COVERS	NONE	POLYTHNE	NONE	POLYTHNE
STERILNT				
NONE	14.60	14.47	15.88	15.59
DAZOMET	15.17	15.99	15.50	16.96

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

TABLE	STERILNT	SOW DATE	COVERS	STERILNT SOW DATE
SED	0.468	0.468	0.468	0.661

TABLE	STERILNT COVERS	SOW DATE COVERS	STERILNT SOW DATE COVERS
SED	0.661	0.661	0.935

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

STRATUM	DF	SE	CV%
BLOCK.WP	37	1.620	10.4

FORAGE MEAN DM% 24.4

PLOT AREA HARVESTED 0.00029

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