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84/R/MA/1 Varieties, Sowing Dates and Polythene Covers - Maize

Rothamsted Research

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84/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: 2.13 x 11.6.

Treatments: All combinations of:-

- | | |
|-------------|---------------------------------|
| 1. VARIETY | Varieties: |
| | BASTILLE |
| | BEAUPRE |
| | FRONICA |
| 2. SOW DATE | Dates of sowing: |
| | 11 APR 11 April, 1984 |
| | 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 5 days of sowing, and then perforated at about 10 cm intervals over the drill rows to allow seedling emergence.

Basal applications: Manures: 'Nitro-Chalk' at 560 kg. Weedkiller: Atrazine at 1.7 l in 220 l. Insecticides: Omethoate at 0.64 kg in 220 l. Pirimicarb at 0.14 kg in 220 l.

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

Cultivations, etc.:-

Ploughed: 18 Nov, 1983. Spring-tine cultivated, N applied to all plots, early sown plots, power harrowed, and sown: 11 Apr, 1984. Weedkiller applied to early-sown plots: 12 Apr. Power-harrowed, late-sown plots, seed sown: 10 May. Weedkiller applied to late-sown plots: 14 May. Omethoate applied: 19 June. Pirimicarb applied: 17 July.

Harvested by hand:-

Forage harvest: First sowing date, polythene-covered Beaupre harvested: 5 Sept, Bastille and Fronica: 13 Sept. Remaining plots: 4 Oct.

Grain harvest: (Cobs picked by hand, threshed by stationary combine harvester). All varieties, first sowing: 24 Oct, second sowing: 7 Nov. Previous crops: Mixed cereals 1982, potatoes 1983.

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NOTE: Plant counts were made at establishment, mid-season and pre-harvest. Growth rates, plant heights, length of selected leaves at harvest and the ratio of cob weight to stems were measured.

84/R/MA/1

FORAGE DRY MATTER TONNES/HECTARE

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

SOW DATE	11 APR	10 MAY	MEAN
VARIETY			
BASTILLE	15.79	15.49	15.64
BEAUPRE	13.59	14.38	13.98
FRONICA	14.47	14.08	14.27

MEAN	14.61	14.65	14.63
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COVERS	NONE	POLYTHNE	MEAN
VARIETY			
BASTILLE	16.22	15.06	15.64
BEAUPRE	13.75	14.22	13.98
FRONICA	13.79	14.76	14.27

MEAN	14.58	14.68	14.63
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COVERS	NONE	POLYTHNE	MEAN
SOW DATE			
11 APR	14.25	14.98	14.61
10 MAY	14.92	14.38	14.65

MEAN	14.58	14.68	14.63
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SOW DATE	11 APR	10 MAY	
COVERS	NONE	POLYTHNE	NONE POLYTHNE
VARIETY			
BASTILLE	15.13	16.45	13.67
BEAUPRE	14.30	12.88	15.56
FRONICA	13.33	15.61	13.91

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

TABLE	VARIETY	SOW DATE	COVERS	VARIETY SOW DATE
SED	0.958	0.782	0.782	1.355

TABLE	VARIETY COVERS	SOW DATE COVERS	VARIETY SOW DATE COVERS
SED	1.355	1.107	1.917

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	2.347	16.0

GRAIN MEAN DM% 29.6

PLOT AREA HARVESTED 0.00029

84/R/MA/1

GRAIN TONNES/HECTARE

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

SOW DATE	11 APR	10 MAY	MEAN
VARIETY			
BASTILLE	7.83	7.38	7.61
BEAUPRE	7.74	6.52	7.13
FRONICA	7.68	7.25	7.47

MEAN	7.75	7.05	7.40
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COVERS	NONE	POLYTHNE	MEAN
VARIETY			
BASTILLE	7.54	7.67	7.61
BEAUPRE	6.62	7.63	7.13
FRONICA	6.71	8.23	7.47

MEAN	6.96	7.85	7.40
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COVERS	NONE	POLYTHNE	MEAN
SOW DATE			
11 APR	7.06	8.44	7.75
10 MAY	6.85	7.25	7.05

MEAN	6.96	7.85	7.40
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SOW DATE	11 APR		10 MAY	
COVERS	NONE	POLYTHNE	NONE	POLYTHNE
VARIETY				
BASTILLE	7.43	8.23	7.64	7.12
BEAUPRE	6.89	8.60	6.36	6.67
FRONICA	6.86	8.51	6.56	7.95

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

TABLE	VARIETY	SOW DATE	COVERS	VARIETY SOW DATE
SED	0.448	0.366	0.366	0.634

TABLE	VARIETY COVERS	SOW DATE COVERS	VARIETY SOW DATE COVERS
SED	0.634	0.518	0.897

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	1.098	14.8

GRAIN MEAN DM% 62.0

PLOT AREA HARVESTED 0.00029