

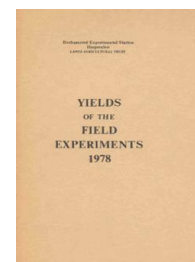
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78/R/P/3 Growth Study - Potatoes

Rothamsted Research

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78/R/P/3

POTATOES

GROWTH STUDY

Object: To study the effects of modifying haulm structure by mechanical or chemical means on growth, tuber bulking, radiation interception, photosynthesis rates and yield of potatoes - Long Hoos IV 3.

Sponsor: D.W. Wood.

Design: 2 randomised blocks of 2 plots split into 4.

Whole plot dimensions: 11.6 x 22.0.

Treatments: All combinations of:-

Whole plots

- | | |
|-------------|--|
| 1. TBR SIZE | Seed tuber sizes: |
| SMALL | In the weight range 60- 80 g per tuber |
| LARGE | In the weight range 95-125 g per tuber |

Sub plots

- | | |
|-------------|--|
| 2. TREATMNT | Treatments: |
| NONE | None |
| APEX R | Stem apex removed after tuber initiation |
| BRANCH R | Lateral branches removed after tuber initiation |
| GRTH REG | Growth regulator, chlorflurenol methyl ester applied as foliar spray at tuber initiation |

NOTE: Chlorflurenol methyl ester applied at 8.4 g in 840 l on 28 June, 1978.

Basal applications: Manures: (0:14:28) at 720 kg. (20:14:14) at 600 kg. 'Nitro-Chalk 25' at 280 kg. Weedkiller: Metribuzin at 0.98 kg in 430 l. Insecticide: Pirimicarb at 0.14 kg. Fungicide: Mancozeb at 1.3 kg in 430 l on the first occasion, applied with the insecticide, at 1.9 kg in 900 l on the second and third occasions.

Seed: Pentland Crown.

Cultivations, etc.: Autumn PK applied: 4 Oct, 1977. Ploughed: 10 Oct. NPK and additional N applied: 18 Apr, 1978. Heavy spring-tine cultivated: 9 May. Rotary cultivated, ridged, hand planted and split back: 10 May. Rotary ridged: 25 May. Weedkiller applied: 16 June. Insecticide and fungicide applied: 10 July. Fungicide applied: 17 Aug and 28 Aug. Lifted: 9 Oct. Previous crops: Beans 1976, spring wheat 1977.

NOTE: Seed sprout characteristics were assessed at planting. Emergence counts were made daily in early June. Full growth analyses were done at fortnightly intervals between early July and mid-September. Photosynthetic and respiration rates of leaves were assessed. Radiation interception was measured in July.

78/R/P/3

TOTAL TUBERS TONNES/HECTARE

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

TREATMNT TBR SIZE	NONE	APEX R	BRANCH R	GRTH REG	MEAN
SMALL	44.3	44.3	45.9	37.3	43.0
LARGE	46.9	43.5	44.7	41.2	44.1
MEAN	45.6	43.9	45.3	39.2	43.5

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

TABLE	TREATMNT	TBR SIZE* TREATMNT
SED	0.67	0.95

* WITHIN SAME LEVEL OF TBR SIZE ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	6	0.95	2.2

PLOT AREA HARVESTED 0.00181

PERCENTAGE WARE 4.45CM (1.75INCH) RIDDLE

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

TREATMNT TBR SIZE	NONE	APEX R	BRANCH R	GRTH REG	MEAN
SMALL	47.0	41.8	31.5	26.8	36.8
LARGE	28.6	22.2	29.7	22.0	25.6
MEAN	37.8	32.0	30.6	24.4	31.2

PLOT AREA HARVESTED 0.00181