ROTHAMSTED RESEARCH

Yields of the Field Experiments 1976

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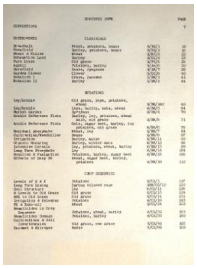

76/R/P/1 Irrigation and Seed Sources - Potatoes

Rothamsted Research

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76/R/P/1

POTATOES

IRRIGATION AND SEED SOURCES

Object: To study the effects of irrigation on the yield and incidence of bacterial and fungal infections of tubers on stocks of potatoes from a range of sources - Gt. Knott III.

Sponsors: D.H. Lapwood, G.A. Hide.

Design: 2 randomised blocks of 3 plots split into 12.

Whole plot dimensions: 15.65 x 31.62.

Treatments: All combinations of:-

Whole plots

1. IRRIGTN — Irrigation:

NONE	None
MODERATE	Moderate (equal to average rainfall) (100 mm)
MUCH	Much (greater than average rainfall) (175 mm)

Sub plots

2. SEEDSRCE — Seed sources:

FS 1(1)	Rothamsted 'bought in' seed FS1 in 1975
FS 1(1)B	Rothamsted 'bought in' seed FS1 in 1975 inoculated with blackleg
FS 1(2)	Seed from Kings Lynn area FS1 in 1975
FS 2(1)	Seed from Kings Lynn area FS2 in 1975
FS 2(2)	Seed from Kings Lynn area FS2 in 1975
FS 3	Seed from Kings Lynn area FS3 in 1975
FS	Seed from Kings Lynn area FS in 1975
A	Seed from Kings Lynn area A in 1975
OG(1)	Seed from Kings Lynn area OG in 1975
OG(2)	Seed from Kings Lynn area OG in 1975
OG(3)	Seed from Kings Lynn area OG in 1975
OG(4)	Seed from Kings Lynn area OG in 1975

NOTE: 25 mm irrigation was applied to IRRIGTN MODERATE plots on each of the following dates:- 14 June, 11 July, 5 Aug, 31 Aug; and to IRRIGTN MUCH plots on:- 4 June, 14 June, 11 July, 22 July, 5 Aug, 19 Aug, 31 Aug.

Basal applications: Manures: (13:13:20) at 1500 kg. Weedkillers: Linuron at 1.2 kg with paraquat at 0.42 kg ion in 220 l. Fungicide: Mancozeb at 1.3 kg in 450 l applied three times. Insecticide: Pirimicarb at 0.14 kg in 450 l. Haulm desiccant: Diquat at 0.59 kg ion in 220 l.

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Seed: King Edward.

Cultivations, etc.:- Heavy spring-tine cultivated: 20 Oct, 1975. Ploughed: 31 Oct. Heavy spring-tine cultivated: 10 Mar, 1976. Fertiliser applied: 22 Mar. Rotary cultivated and planted: 1 Apr. Grubbed: 2 Apr. Weedkillers applied: 7 May. Grubbed and rotoridged: 3 June. Insecticide applied: 17 June. Fungicide applied: 25 June, 28 July, 1 Sept. Haulm desiccant applied: 28 Sept. Lifted: 10 Nov. Previous crops: Winter wheat 1974, winter oats 1975.

NOTES: (1) Bacterial soft rots and gangrene were assessed during the season.
(2) Tubers were stored to study the development of storage diseases.
(3) SEEDSRCE FS 1(1)B. The inoculation technique with the blackleg organism, although satisfactory in the past, was too severe in 1976 and many plants failed to emerge. Yields for this level were therefore not taken.

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76/R/P/1 GT KNOTT III

TOTAL TUBERS TONNES/HECTARE

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

IRRIGTN / SEEDSRCE	NONE	MODERATE	MUCH	MEAN
FS 1(1)	35.3	38.1	47.8	40.4
FS 1(2)	27.3	34.1	44.5	35.3
FS 2(1)	29.3	40.0	44.5	37.9
FS 2(2)	25.8	38.1	39.5	34.5
FS 3	26.1	34.9	44.2	35.1
FS	29.3	40.1	44.4	37.9
A	22.7	34.3	43.0	33.3
OG(1)	14.3	21.5	27.3	21.0
OG(2)	14.9	20.2	27.2	20.8
OG(3)	16.2	25.6	26.5	22.8
OG(4)	19.8	23.5	35.1	26.1
MEAN	23.7	31.8	38.6	31.4

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

TABLE	SEEDSRCE	IRRIGTN* SEEDSRCE
SED	2.79	4.83

* WITHIN THE SAME LEVEL OF IRRIGTN ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	30	4.83	15.4

PERCENTAGE WARE 4.44CM (1.75 INCH) RIDDLE

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

IRRIGTN / SEEDSRCE	NONE	MODERATE	MUCH	MEAN
FS 1(1)	37.2	56.1	41.0	44.8
FS 1(2)	35.4	56.4	54.3	48.7
FS 2(1)	47.0	57.7	67.4	57.4
FS 2(2)	34.7	53.8	49.8	46.1
FS 3	43.3	59.2	63.1	55.2
FS	47.8	58.7	56.5	54.4
A	40.4	44.5	36.8	40.6
OG(1)	28.5	42.5	42.3	37.7
OG(2)	27.0	39.2	42.0	36.1
OG(3)	28.3	42.8	40.3	37.2
OG(4)	23.0	43.1	48.1	38.1
MEAN	35.7	50.4	49.2	45.1

PLOT AREA HARVESTED 0.00076

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