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Yields of the Field Experiments 1985



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85/R/P/4 Seed Health Progeny - Potatoes

Rothamsted Research

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85/R/P/4

POTATOES

SEED HEALTH PROGENY

Object: To compare the health and yields of two varieties grown for seed in 1984, under three sets of treatments, with the same varieties grown to AA standard in Scotland in 1984 - Road Piece E.

Sponsors: R.W. Gibson, G.A. Hide, G.R. Cayley.

Design: 4 randomised blocks of 16 plots.

Whole plot dimensions: 1.5 x 15.2.

Treatments: All combinations of:-

1. VARIETY Varieties:

> **EDWARD** King Edward PIPER Maris Piper

PATHCONT(84) Pest and pathogen control in 1984 (in addition to basals in 1984):

STANDARD

ENHANCED Seed treatment with tolclofos methyl at 0.24 kg and imazalil at 0.01 kg per tonne of tubers, applied by hydraulic and uncharged electrostatic sprayers respectively. Cypermethrin at 0.04 kg with 7.0 1 oil in 500 l applied by hydraulic sprayer on 31 May, 1984. Plants with 'virus' symptoms were removed on 11 June, 20 June and 5 July

FULL As for ENHANCED plus:-

> The imazalil was applied by charged electrostatic sprayer. Plants with 'blackleg' symptoms were removed on 11 June, 20 June and 5 July. Cypermethrin at 0.04 kg with oil at 7.0 l, in 200 1 for the first and last occasions and 500 1 for the remainder, was applied on 15 June, 29 June, 16 July, 27 July and, (to HAULM D(84) LATER plots only) 13 Aug

3. HAULM D(84) Dates of destroying haulm and of lifting in 1984:

EARLY Haulm mechanically destroyed on 3 Aug. Haulm

desiccant applied on 6 Aug and potatoes lifted on

LATER Haulm mechanically destroyed on 8 Sept. Haulm

desiccant applied on 22 Sept and potatoes lifted

on 11 Oct

85/R/P/4

plus two extra treatments:

XTR SCOT

Scottish AA seed varieties:

EDWARD

King Edward (duplicated)

PIPER

Maris Piper

NOTE: Basal pest and pathogen control in 1984 (other than to XTR SCOT for which it is not known) was phorate at 1.7 kg with the seed, fentin hydroxide at 0.28 kg with pirimicarb at 0.14 kg on 19 June, 3 July, 17 July and 30 July. The above rate of fentin hydroxide was applied in addition to HAULM D(84) LATER on 13 Aug and with pirimicarb at the above rate, on 28 Aug.

Basal applications: Manures: (0:18:36) at 690 kg. (10:10:15+4.5 Mg) at 1960 kg. Weedkillers: Linuron at 1.3 kg with paraquat at 0.50 kg ion in 200 l. Fungicides: Mancozeb at 1.4 kg in 200 l on four occasions, with the pirimicarb on the second and third occasions. Fentin hydroxide at 0.28 kg in 200 l on two occasions. Insecticides: Phorate at 1.7 kg. Pirimicarb at 0.14 kg on two occasions. Haulm desiccant: BOV at 170 l.

Cultivations, etc.:- PK applied: 10 Oct, 1984. Ploughed: 19 Nov. NPK Mg applied: 4 Apr, 1985. Rotary harrowed: 17 Apr. Potatoes planted by hand, phorate applied: 18 Apr. Weedkillers applied: 16 May. Mancozeb applied: 20 June, 6 Aug. Mancozeb with pirimicarb applied: 4 July, 23 July. Fentin hydroxide applied: 21 Aug, 11 Sept. Haulm desiccant applied: 11 Oct. Lifted: 22 Oct. Previous crops: S. barley 1983, w. beans 1984.

NOTE: Viruses were assessed throughout the season. Tuber samples were taken at harvest to observe storage diseases.

PATHCONT(84) STANDARD ENHANCED FULL MEAN VARIETY EDWARD 69.8 71.9 71.7 71.1 PIPER 74.1 76.5 76.6 75.8 MEAN 72.0 74.2 74.2 73.4 HAULM D(84) EARLY LATER MEAN VARIETY EDWARD 70.7 71.6 71.1 PIPER 76.5 75.0 75.8 MEAN 73.6 73.3 73.4 HAULM D(84) EARLY LATER MEAN PATHCONT(84) STANDARD 73.2 70.7 72.0 ENHANCED 73.2 75.2 74.2 FULL 74.3 74.0 74.2 MEAN 73.6 73.3 73.4 PATHCONT(84) STANDARD ENHANCED FULL 74.3 74.0 74.2 MEAN 73.6 73.3 73.4 PATHCONT(84) EARLY LATER EARLY LATER EARLY VARIETY EDWARD 69.7 70.0 70.1 73.8 72.4 PIPER 76.8 71.4 76.4 76.7 76.2 XTR SCOT EDWARD PIPER MEAN 73.7 79.0 76.3 GRAND MEAN 74.2	0(84)
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VARIETY EDWARD 69.8 71.9 71.7 71.1	
PATHCONT(84) STANDARD ENHANCED FULL MEAN	
TOTAL TUBERS TONNES/HECTARE ***** TABLES OF MEANS *****	

SE

3.36

CV%

4.5

DF

47

STRATUM

BLOCK . WP

85/R/P/4

PERCENTAGE WARE 4.44CM (1.75 INCH) RIDDLE

**** TABLES OF MEANS ****

PLOT AREA HARVESTED 0.00229

PATHCONT(84)	STANDARD	ENHANCED	FULL	MEAN		
VARIETY						
EDWARD	80.6	81.9	83.8	82.1		
PIPER			83.0			
MEAN	79.6	80.7	83.4	81.3		
HAULM D(84)	EARLY	LATER	MEAN			
VARIETY	LAKET	LAILK	HEAR			
	80.0	84.2	82 1			
PIPER		82.3				
FIFER	70.5	02.5	00.4			
MEAN	79 3	83.2	81 3			
HEAR	73.5	00.2	01.5			
HAULM D(84)	FARLY	LATER	MEAN			
PATHCONT(84)	2711121	Errich	.,,			
	78.2	81.1	79.6			
ENHANCED	78 A	83.0	80.7			
		85.6				
FULL	01.2	03.0	03.4			
MEAN	79.3	83.2	81.3			
PATHCONT(84)					FULL	
HAULM D(84) VARIETY		LATER	EARLY	LATER	EARLY	LATER
		82.1	70 0	05 0	02 2	0E /
PIPER	11.2	80.1	78.1	81.1	80.3	85.8
XTR SCOT	FUMARU	PIDER	MFAN			
ATK 3001		86.9				
	00.5	50.5	50.7			
GRAND MEAN	82 6					
GRAND MEAN	02.0					

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