

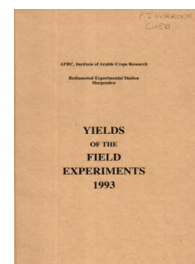
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93/R/P/4 Effects of Silver Scurf and Black Dot - Potatoes

Rothamsted Research

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93/R/P/4

POTATOES

EFFECTS OF SILVER SCURF AND BLACK DOT

Object: To investigate the effect of planting seed with and without silver scurf into soil with or without black dot inoculum on disease in the subsequent crop at two harvest dates and after storage - Long Hoos V 2.

Sponsors: P.J. Read.

Design: 3 blocks of 2 x 2 x 2 x 2.

Whole plot dimensions: 1.5 x 5.7.

Treatments: All combinations of:-

1. **VARIETY** Varieties:
ESTIMA Estima
K EDWARD King Edward
2. **SIL SCRF** Infection with silver scurf (*Helminthosporium solani*):
SS NONE None
SS INF Infected
3. **BLK DOT** Infection with black dot (*Colletotrichum coccodes*):
BD NONE None
BD INF Infected
4. **HARVEST** Time of harvesting:
SEP September
OCT October

- NOTES:** (1) **SIL SCRF** SS NONE: Tubers treated with imazalil to guarantee no infection.
(2) **SIL SCRF** SS INF: Tubers naturally infected with silver scurf.
(3) **BLK DOT** BD INF: Vermiculite, infected with black dot, scattered on tubers at planting.

Experimental diary:

- 08-Oct-92 : B : PK as (0:18:36) at 1390 kg.
22-Jan-93 : B : Ploughed.
25-Mar-93 : B : NPK as (12:12:20) at 1250 kg.
20-Apr-93 : B : 34.5% N at 220 kg.
05-May-93 : B : Heavy spring-tine cultivated.
 : B : Rotary harrowed.
06-May-93 : B : Rotary ridged.
11-May-93 : T : **VARIETY** ESTIMA, K EDWARD: Varieties hand planted, ridges split back.
13-May-93 : B : Rotary ridged.

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Experimental diary:

19-May-93 : B : Rotalin at 5.5 l in 200 l.
 22-Jun-93 : B : Ashlade Mancozeb FL at 2.2 l with Intracrop BLA at 0.20 l in 200 l.
 08-Jul-93 : B : Ashlade Mancozeb FL at 2.2 l in 200 l.
 22-Jul-93 : B : Ashlade Mancozeb FL at 2.2 l with Intracrop BLA at 0.20 l in 200 l.
 06-Aug-93 : B : Ashlade Mancozeb FL at 2.2 l with Intracrop BLA at 0.20 l in 200 l.
 25-Aug-93 : B : Chiltern Super-Tin 4L at 0.56 l with Intracrop BLA at 0.20 l in 200 l.
 18-Sep-93 : B : Haulm mechanically destroyed.
 22-Sep-93 : T : **HARVEST** SEP: Dug by hand.
 26-Oct-93 : T : **HARVEST** OCT: Lifted by machine, hand picked.

Previous crops: Lupins 1991, mustard 1992.

NOTE: Black dot and silver scurf were assessed on tubers after harvest and after six months storage.

TOTAL TUBERS TONNES/HECTARE

***** Tables of means *****

SIL SCRF	SS NONE	SS INF	Mean
VARIETY			
ESTIMA	48.4	52.4	50.4
K EDWARD	55.6	58.4	57.0
Mean	52.0	55.4	53.7
BLK DOT	BD NONE	BD INF	Mean
VARIETY			
ESTIMA	50.1	50.7	50.4
K EDWARD	59.3	54.7	57.0
Mean	54.7	52.7	53.7
BLK DOT	BD NONE	BD INF	Mean
SIL SCRF			
SS NONE	53.5	50.5	52.0
SS INF	55.9	54.9	55.4
Mean	54.7	52.7	53.7
HARVEST	SEP	OCT	Mean
VARIETY			
ESTIMA	51.3	49.5	50.4
K EDWARD	58.3	55.7	57.0
Mean	54.8	52.6	53.7

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TOTAL TUBERS TONNES/HECTARE

***** Tables of means *****

HARVEST		SEP	OCT	Mean
SIL SCRF				
SS NONE		53.4	50.6	52.0
SS INF		56.2	54.5	55.4
Mean		54.8	52.6	53.7

HARVEST		SEP	OCT	Mean
BLK DOT				
BD NONE		57.0	52.4	54.7
BD INF		52.6	52.8	52.7
Mean		54.8	52.6	53.7

VARIETY	BLK DOT	BD NONE	BD INF
SIL SCRF			
ESTIMA	SS NONE	48.6	48.2
	SS INF	51.6	53.1
K EDWARD	SS NONE	58.4	52.9
	SS INF	60.1	56.6

VARIETY	HARVEST	SEP	OCT
SIL SCRF			
ESTIMA	SS NONE	49.6	47.2
	SS INF	53.1	51.7
K EDWARD	SS NONE	57.2	54.0
	SS INF	59.3	57.4

VARIETY	HARVEST	SEP	OCT
BLK DOT			
ESTIMA	BD NONE	52.7	47.5
	BD INF	49.9	51.4
K EDWARD	BD NONE	61.3	57.3
	BD INF	55.3	54.2

SIL SCRF	HARVEST	SEP	OCT
BLK DOT			
SS NONE	BD NONE	56.4	50.6
	BD INF	50.4	50.7
SS INF	BD NONE	57.6	54.1
	BD INF	54.8	54.9

VARIETY	SIL SCRF	BLK DOT	BD NONE	OCT	BD INF	OCT
		HARVEST	SEP		SEP	
ESTIMA	SS NONE		51.1	46.1	48.1	48.4
	SS INF		54.4	48.8	51.8	54.5
K EDWARD	SS NONE		61.7	55.1	52.8	52.9
	SS INF		60.9	59.4	57.7	55.4

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TOTAL TUBERS TONNES/HECTARE

*** Standard errors of differences of means ***

VARIETY	SIL SCRF	BLK DOT	HARVEST
1.29	1.29	1.29	1.29
VARIETY	VARIETY	SIL SCRF	VARIETY
SIL SCRF	BLK DOT	BLK DOT	HARVEST
1.83	1.83	1.83	1.83
SIL SCRF	BLK DOT	VARIETY	VARIETY
HARVEST	HARVEST	SIL SCRF	SIL SCRF
		BLK DOT	HARVEST
1.83	1.83	2.59	2.59
VARIETY	SIL SCRF	VARIETY	
BLK DOT	BLK DOT	SIL SCRF	
HARVEST	HARVEST	BLK DOT	
		HARVEST	
2.59	2.59	3.66	

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	4.48	8.3
PLOT AREA HARVESTED	0.00086		