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

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94/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 VI/VII 5.

Sponsor: P.J. Read.

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

Whole plot dimensions: 1.5 x 5.7.

Treatments: All combinations of:-

1. **VARIETY**

ES	Estima
KE	King Edward

2. **SIL SCRF** Infection with silver scurf (*Helminthosporium solani*):

S-	None
SD	Infected

3. **BLK DOT** Infection with black dot (*Colletotrichum coccodes*):

B-	None
BD	Infected

4. **HARVEST** Time of harvesting:

HS	Mid-September
HO	Mid-October

- NOTES:** (1) **SIL SCRF** S-: Tubers treated with imazalil to guarantee no infection.
(2) **SIL SCRF** SD: Tubers naturally infected with *H. solari*.
(3) **BLK DOT** BD: Vermiculite, infected with *C. coccodes*, scattered on tubers at planting.

Experimental diary:

07-Sep-93 : B : PK as (0:18:36) at 1390 kg.
29-Nov-93 : B : Ploughed.
08-Apr-94 : B : NPK as (12:20:20) at 1750 kg.
25-Apr-94 : B : Heavy spring-tine cultivated twice, rotary harrowed, ridged, potatoes hand planted. Ridges split back.
16-May-94 : B : Rotary ridged.
23-May-94 : B : Farmon PDQ at 2.0 l with Rotalin at 5.0 l in 200 l.
23-Jun-94 : B : Dithane 945 at 1.7 kg with Intracrop BLA at 0.2 l in 200 l.

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Experimental diary:

07-Jul-94 : B : Dithane 945 at 1.7 kg with Pirimicarb 50 DG at 0.28 kg and Intracrop BLA at 0.2 l in 200 l.
 25-Jul-94 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.2 l in 200 l.
 15-Aug-94 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.2 l in 200 l.
 30-Aug-94 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.2 l in 200 l.
 24-Sep-94 : B : Haulm mechanically destroyed.
 27-Sep-94 : T : **HARVEST** HS: Potatoes lifted.
 25-Oct-94 : T : **HARVEST** HO: Potatoes lifted.

Previous crops: Lupins 1992, mustard and s. rape 1993.

NOTE: After harvest samples were assessed for silver scurf and black dot, further assessments were made after various storage regimes.

TOTAL TUBERS TONNES/HECTARE

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

SIL SCRF	S-	SD	Mean
VARIETY			
ES	25.4	22.9	24.1
KE	56.5	51.5	54.0
Mean	41.0	37.2	39.1
BLK DOT	B-	BD	Mean
VARIETY			
ES	24.2	24.1	24.1
KE	56.3	51.8	54.0
Mean	40.2	37.9	39.1
BLK DOT	B-	BD	Mean
SIL SCRF			
S-	40.8	41.1	41.0
SD	39.7	34.7	37.2
Mean	40.2	37.9	39.1
HARVEST	HS	HO	Mean
VARIETY			
ES	23.3	24.9	24.1
KE	51.3	56.8	54.0
Mean	37.3	40.9	39.1

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TOTAL TUBERS TONNES/HECTARE

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

HARVEST		HS	HO	Mean	
SIL SCRF					
S-		39.0	42.9	41.0	
SD		35.6	38.8	37.2	
Mean		37.3	40.9	39.1	
HARVEST		HS	HO	Mean	
BLK DOT					
B-		37.9	42.5	40.2	
BD		36.6	39.2	37.9	
Mean		37.3	40.9	39.1	

SIL SCRF		S-	SD		
VARIETY	BLK DOT	B-	BD	B-	BD
ES		24.9	25.9	23.5	22.3
KE		56.6	56.4	55.9	47.2

SIL SCRF		S-	SD		
VARIETY	HARVEST	HS	HO	HS	HO
ES		24.1	26.6	22.5	23.2
KE		53.9	59.2	48.6	54.4

BLK DOT		B-	BD		
VARIETY	HARVEST	HS	HO	HS	HO
ES		22.5	25.9	24.1	24.0
KE		53.4	59.2	49.2	54.4

BLK DOT		B-	BD		
SIL SCRF	HARVEST	HS	HO	HS	HO
S-		37.9	43.6	40.1	42.2
SD		37.9	41.4	33.2	36.2

BLK DOT		B-	BD		
VARIETY	SIL SCRF	HS	HO	HS	HO
ES	S-	22.3	27.5	25.9	25.8
	SD	22.7	24.3	22.3	22.2
KE	S-	53.6	59.7	54.2	58.6
	SD	53.2	58.6	44.1	50.2

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TOTAL TUBERS TONNES/HECTARE

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

VARIETY	SIL SCRF	BLK DOT	HARVEST
0.90	0.90	0.90	0.90
VARIETY	VARIETY	SIL SCRF	VARIETY
SIL SCRF	BLK DOT	BLK DOT	HARVEST
1.28	1.28	1.28	1.28
SIL SCRF	BLK DOT	VARIETY	VARIETY
HARVEST	HARVEST	SIL SCRF	SIL SCRF
		BLK DOT	HARVEST
1.28	1.28	1.80	1.80
VARIETY	SIL SCRF	VARIETY	
BLK DOT	BLK DOT	SIL SCRF	
HARVEST	HARVEST	BLK DOT	
		HARVEST	
1.80	1.80	2.55	

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	3.12	8.0
PLOT AREA HARVESTED	0.00086		