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92/R/P/1 Control of Storage Diseases - Potatoes

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92/R/P/1

POTATOES

CONTROL OF STORAGE DISEASES

Object: To study the effects of applying fungicides to seed tubers, harvest dates and post-harvest physical treatments on tuber diseases - Great Knott I.

Sponsors: G.A. Hide, P.J. Read, S.M. Hall.

Design: 3 randomised blocks of 2 whole plots split into 21 sub plots.

Whole plot dimensions: 1.5 x 7.62.

Treatments:

Whole plots

1. **HARVDATE** Harvest dates:

H1	Early
H2	Later

Sub plots: All combinations of:-

2. **FUNGRATE** Concentration of a mixture of thiabendazole (30%) and imazalil (10%) as a pre-planting dip:

0	None
F1	0.07% active ingredient of mixture
F2	0.27% active ingredient of mixture

3. **POSTHARV** Post-harvest treatment:

NONE	No curing
DC1WK	One week dry curing
DC2WK	Two weeks dry curing
FC2H	Two hours field drying
F2H+D1WK	Two hours field drying plus one week dry curing
BLSTD60H	60 hours blast drying
F2H+D2H	Two hours field drying plus two hours dry curing

Experimental diary:

25-Aug-91 : B : Chopped straw.
07-Nov-91 : B : Ploughed.
21-Feb-92 : B : PK as (0:18:36) at 940 kg.
14-Apr-92 : B : NPK as (12:20:20) at 1750 kg.
21-Apr-92 : B : Rotary harrowed.
22-Apr-92 : B : Ridged, King Edward hand planted, ridges split back.
06-May-92 : B : Rota-ridged.
13-May-92 : B : Rotalin at 5.5 l in 200 l.
22-Jun-92 : B : Chiltern Manex at 2.0 l with Nu-Film P at 0.18 l in 200 l.

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Experimental diary:

- 08-Jul-92 : B : Chiltern Manex at 2.0 l, Aphox at 0.28 kg with Nu-Film P at 0.18 l in 200 l.
 16-Jul-92 : B : Chiltern Manex at 2.0 l with Nu-Film P at 0.18 l in 200 l.
 28-Jul-92 : B : Chiltern Manex at 2.5 l with Nu-Film P at 0.18 l in 200 l.
 17-Aug-92 : T : **HARVDATE** H1: Haulm mechanically destroyed.
 18-Aug-92 : T : **HARVDATE** H2: Chiltern Super Tin 4L at 0.56 l with Nu-Film P at 0.18 l in 200 l.
 03-Sep-92 : T : **HARVDATE** H1: Lifted by machine, hand picked.
 11-Sep-92 : T : **HARVDATE** H2: Haulm mechanically destroyed.
 29-Sep-92 : T : **HARVDATE** H2: Lifted by machine, hand picked.

Previous crops: W. barley 1990, w. wheat 1991

NOTE: Tuber diseases were assessed after harvest and in storage.

TOTAL TUBERS TONNES/HECTARE

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

HARVDATE	H1	H2	Mean	
POSTHARV				
NONE	52.9	68.4	60.6	
DC1WK	49.4	67.3	58.3	
DC2WK	49.8	67.3	58.5	
FC2H	49.1	64.7	56.9	
F2H+D1WK	50.4	66.1	58.2	
BLSTD60H	49.6	68.5	59.1	
F2H+D2H	51.5	65.0	58.2	
Mean	50.4	66.8	58.6	
FUNGRATE	0	F1	F2	Mean
HARVDATE				
H1	51.7	50.3	49.2	50.4
H2	68.0	65.9	66.5	66.8
Mean	59.8	58.1	57.8	58.6
FUNGRATE	0	F1	F2	Mean
POSTHARV				
NONE	59.8	59.3	62.9	60.6
DC1WK	61.5	57.7	55.8	58.3
DC2WK	62.5	56.2	57.0	58.5
FC2H	57.5	56.8	56.5	56.9
F2H+D1WK	57.8	58.9	57.9	58.2
BLSTD60H	59.4	57.6	60.2	59.1
F2H+D2H	60.2	60.1	54.4	58.2
Mean	59.8	58.1	57.8	58.6

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TOTAL TUBERS TONNES/HECTARE

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

HARVDATE	FUNGRATE POSTHARV	0	F1	F2
H1	NONE	53.5	51.2	53.9
	DC1WK	50.5	49.7	47.8
	DC2WK	47.5	51.3	50.6
	FC2H	52.6	48.2	46.5
	F2H+D1WK	50.7	51.2	49.2
	BLSTD60H	51.6	49.5	47.8
	F2H+D2H	55.2	50.9	48.4
	H2	NONE	66.1	67.3
DC1WK		72.4	65.7	63.8
DC2WK		77.4	61.2	63.3
FC2H		62.4	65.4	66.5
F2H+D1WK		65.0	66.6	66.6
BLSTD60H		67.2	65.6	72.7
F2H+D2H		65.2	69.3	60.4

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

FUNGRATE	POSTHARV	HARVDATE* FUNGRATE	HARVDATE* POSTHARV
0.97	1.49	1.38	2.10
FUNGRATE POSTHARV	HARVDATE* FUNGRATE POSTHARV		
2.58	3.64		

* Within the same level of HARVDATE only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	80	4.46	7.6
PLOT AREA HARVESTED	0.00114		