Numerical Results of the Field Experiments 1968

Full Table of Content

Annual Experiments

Rothamsted Research

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68/Da/1.1

WINTER WHEAT

(BG)

Sowing dates and bulb fly, Stackyard 1968.

Design: 4 randomised blocks of 3 plots, split into 2 for covering to prevent egg-laying (unrandomised).

Area of each sub plot: 0.0121. Area harvested: 0.0064.

Treatments: All combinations of:-
Whole plots: 1. Sowing dates: 10 Oct, 1967 (E), 27 Nov (M), 20 Dec (L).
Seed rate 180 lb.
Sub plots: 2. Not covered (O), covered with polythene sheet to prevent egg-laying 1 July to mid-September 1967 (C).

NOTE: The O sub plots were sprayed with diquat (Reglone at 4 pints in 30 gals) on 29 Aug 1967 to control weeds.

Basal applications: 280 lb (6:15:15) combine drilled, 0.8 cwt N as 'Nitro-Chalk' top dressed in spring, ground chalk at 50 cwt. Seed dressed with organo-mercury fungicide only. Weed-killers: Ioxynil at 9 oz and mecoprop at 27 oz in 20 gals.

Cultivations, etc.: Rotary cultivated: 5 June and 22 June, 1967. Deep-tine cultivated: 30 June. Diquat applied to O sub plots: 29 Aug. Ploughed: 25 Sept. Ground chalk applied: 7 Oct. L plots rotary cultivated: 20 Dec. 'Nitro-Chalk' applied: 11 Apr, 1968. Ioxynil/mecoprop applied: 26 Apr. Combine harvested: 25 Aug. Variety: Cappelle.

NOTE: The populations of wheat bulb fly larvae were estimated from plant samples taken from uncovered plots.

Standard errors per plot. Grain:
Whole plot: 2.01 or 4.7% (6 d.f.)
Sub plot: 0.97 or 2.3% (9 d.f.)

68/Da/1.2

SUMMARY OF RESULTS

GRAIN

	E	M	L	Mean
		(1) and (2)		
O	46.0	40.7	39.5	42.1
C	47.2	42.4	39.9	43.2
Mean (±1.00)	46.6	41.6	39.7	42.6

(1) (±1.42) For use in vertical comparisons only
(2) (±0.49) For use in interaction comparisons only

Mean D.M. %: 84.0

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68/Da/2.1

WINTER WHEAT

(RW 101)

Cultivations and bulb fly (Leptohylemyia coarctata) - Stackyard 1968.

Design: 4 randomised blocks of 3 plots.

Area of each plot: 0.0362. Area harvested: 0.0129.

Treatments: Tine cultivation, no ploughing (C), normal ploughing (P), scraped and ploughed (SP). All plots received a shallow rotary cultivation before drilling.

NOTE: The SP treatment was done by a special plough; the top 1-2 inches of soil were scraped into the open furrow just ahead of the plough.

Basal applications: 280 lb (6:15:15) combined drilled. 0.84 cwt N as 'Nitro-Chalk'. Ground chalk at 50 cwt. Weedkillers: Diquat (Reglone at 4 pints in 30 gals), paraquat at 0.75 lb ion in 32 gals, ioxynil/mecoprop (Actril C at 6 pints in 20 gals). Seed dressing: Organo-mercury fungicide only.

Cultivations, etc.: Rotary cultivated: 5 June, 1967. Diquat applied: 29 Aug. Paraquat applied: 3 Oct. Ground chalk applied: 7 Oct. P treatment ploughed, SP treatment scraped and ploughed: 11 Oct. C treatment deep-tine cultivated: 13 Oct. All plots rotary cultivated and spring-tine cultivated, seed drilled at 180lb: 21 Feb, 1968. 'Nitro-Chalk' applied: 11 Apr. Ioxynil/mecoprop applied: 15 May. Combine harvested: 8 Sept. Variety: Cappelle. Previous crops: Winter wheat 1966, fallow 1967.

NOTE: Samples were taken for wheat bulb fly eggs in February 1968.

Standard error per plot.
Grain: 2.46 or 9.4% (6 d.f.)

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68/Da/2.2

SUMMARY OF RESULTS

GRAIN

C	P	SP	Mean
25.9	24.9 (±1.23)	28.0	26.2

Mean D.M. %: 79.5

68/Da/3.1

WINTER WHEAT

(RW 201)

Chlormequat and eyespot (Cercosporella herpotrichoides) - Claycroft 1968.

Design: 4 randomised blocks of 4 plots, split into 2.

Area of each sub plot: 0.0145. Area harvested: 0.0076.

Treatments: All combinations of:-
Whole plots: 1. Chlormequat:* None (0), sprayed** in winter (A), in spring (S), in winter and in spring (AS).
Sub plots: 2. N: 100 (N1), 200 lb (N2) as 'Nitro-Chalk' in addition to basal.

* 2-chloroethyltrimethylammonium chloride (CCC).
** At 2 lb in 32 gals on each occasion.

Basal application: 410 lb (6:15:15) combine drilled.

Cultivations, etc.: Ploughed: 13 Sept, 1967. Seed drilled at 180 lb: 5 Oct. Sprayed with chlormequat: 5 Dec and 11 Mar, 1968. 'Nitro-Chalk' applied: 11 Apr. Combine harvested: 26 Aug. Variety: Champlein. Previous crops: Barley 1966 and 1967.

NOTE: Samples were taken in spring and summer for estimation of eyespot (Cercosporella herpotrichoides).

Standard errors per plot. Grain:
Whole plot: 2.96 or 7.4% (9 d.f.)
Sub plot: 2.59 or 6.5% (12 d.f.)

68/Da/3.2

SUMMARY OF RESULTS

GRAIN

	0	A	S	AS	Mean
		(1) and (2)			(±0.65)
N1	40.7	43.0	50.1	42.6	44.1
N2	34.1	35.8	34.0	37.9	35.5
Mean (±1.48)	37.4	39.4	42.1	40.3	39.8

(1) (±1.74) For use in horizontal and diagonal comparisons only

(2) (±1.30) For use in vertical and interaction comparisons only

Mean D.M. %: 83.6

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68/Da/4.1

WINTER WHEAT

(RW 301)

Spun and drilled seed and cultivations - Whittlocks 1968.

Design: 4 randomised blocks of 4 plots, split into 4.

Area of each sub plot: 0.0135. Area harvested: 0.0096.

Treatments:
- Spun seed: All combinations of:-
  - Whole plots: 1. Seed rate: 170 lb (M), 235 lb (H).
  - Sub plots: 2. Seedbed cultivations: Deep-tine cultivate, spring-tine cultivate twice, sow, harrow (C1). Deep-tine cultivate, spring-tine cultivate, sow, spring-tine cultivate, harrow (C2). Deep-tine cultivate, spring-tine cultivate twice, harrow, sow, harrow (C3). Deep-tine cultivate, sow, spring-tine cultivate twice, harrow (C4).
- Drilled seed: All combinations of:-
  - Whole plot: 1. Seed rate: 150 lb (L), 190 lb (M).
  - Sub plot: 2. Seedbed cultivations: C1, C3 as above (in duplicate).

Basal applications: 220 lb (0:20:20). 0.84 cwt N as 'Nitro-Chalk' in spring.

Cultivations, etc.: Deep-tine cultivated (with wide points): 19 Oct, 1967. Deep-tine cultivated (with narrow points), basal PK compound applied: 24 Oct. Seed sown: 26 Oct. 'Nitro-Chalk' applied: 11 Apr, 1968. Combine harvested: 26 Aug. Variety: Cappelle. Previous crops: Barley 1966, spring beans 1967.

Standard error per plot. Grain:
- Whole plot: 1.45 or 4.5% (6 d.f.)
- Sub plot: 2.05 or 6.4% (40 d.f.)

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68/Da/4.2

SUMMARY OF RESULTS

GRAIN

SPUN SEED

	C1	C2	C3	C4	Mean
	(1) and (2)				(±0.73)
M	31.6	31.7	30.8	33.2	31.8
H	32.9	32.9	31.9	32.1	32.5
Mean (±0.73)	32.3	32.3	31.4	32.7	32.2

DRILLED SEED

	C1	C3	Mean
	(3) and (4)		(±0.73)
L	31.3	31.2	31.3
M	31.6	32.6	32.1
Mean (±0.51)	31.5	31.9	31.7

(1) (±1.26) (3) (±0.89) For use in vertical and diagonal comparisons only
(2) (±1.03) (4) (±0.73) For use in horizontal and interaction comparisons only

General mean: 31.9
General mean D.M. %: 84.1

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68/Da/5.1

WINTER WHEAT

(RW 401)

Chlormequat, row spacing and N - Pastures 1968.

Design: 4 randomised blocks of 12 plots.

Area of each plot: 0.0212. Area harvested: 0.0140.

Treatments: All combinations of:-
1. Row spacing: 4 (C), 8 (W) inches.
2. Chlormequat*: None (O), sprayed at 2 lb in 32 gals (S).
3. N: 0.8 (N1), 1.6 (N2) 2.4 (N3) cwt as 'Nitro-Chalk'.

* 2-chloroethyltrimethylammonium chloride (CCC).

Basal applications: 340 lb (0:20:20) broadcast by drill. Ground chalk: 50 cwt to two southerly blocks, 100 cwt to two northerly. Weedkiller: Ioxynil/mecoprop (Actril C at 6 pints in 20 gals).

Cultivations, etc.: Ground chalk applied: 10 Oct, 1967. Deep-tine cultivated twice: 19 Oct. Basal PK applied, seed drilled at 180 lb: 24 Oct. Chlormequat applied: 28 Mar, 1968. 'Nitro-Chalk' applied: 22 Apr. Weedkiller applied: 26 Apr. Combine harvested: 25 Aug. Variety: Cappelle. Previous crops: Fallow 1966, potatoes 1967.

Standard error per plot.
Grain: 3.46 or 9.2% (33 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/Da/5.2

SUMMARY OF RESULTS

GRAIN

	O	S	N1	N2	N3	Mean
	(±1.00)			(±1.22)		(±0.71)
C	38.4	39.0	44.3	37.1	34.7	38.7
W	36.6	36.2	42.9	35.3	31.0	36.4
				(±1.22)		(±0.71)
		O	43.7	34.8	33.9	37.5
		S	43.4	37.5	31.8	37.6
		Mean (±0.87)	43.6	36.2	32.9	37.5

Mean D.M. %: 82.0

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68/Da/6.1

WINTER WHEAT

(RW 501)

Varieties and N - Claycroft 1968.

Design: 4 randomised blocks of 5 plots, split into 3.

Area of each sub plot: 0.0121. Area harvested: 0.0064.

Treatments: All combinations of:-
Whole plots: 1. Varieties: Cappelle (CA), Champlein (CH), Joss Cambier (JC), Maris Ranger (MR), Maris Widgeon (MW).
Sub plots: 2. N: 0.6 (N2), 0.9 (N3), 1.2 (N4) cwt as 'Nitro-Chalk' in spring (in addition to basal).

Basal applications: 340 lb (6:15:15) combine drilled.

Cultivations, etc.: Ploughed: 13 Sept, 1967. Seed drilled at 180 lb: 24 Oct. 'Nitro-Chalk' applied: 18 Apr, 1968. Combine harvested: 27 Aug. Previous crops: Barley 1966 and 1967.

Standard errors per plot.
Grain: Whole plot: 1.27 or 3.4% (12 d.f.)
Sub plot: 1.81 or 4.9% (30 d.f.)

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68/Da/6.2

SUMMARY OF RESULTS

GRAIN

	CA	CH	JC	MR	MW	Mean
			(1) and (2)			(±0.41)
N2	38.6	44.3	39.0	39.0	37.1	39.6
N3	35.7	40.7	37.1	39.8	31.4	36.9
N4	31.9	37.4	34.1	37.0	30.8	34.3
Mean (±0.63)	35.4	40.8	36.8	38.6	33.1	36.9

(1) (±0.97) For use in horizontal and diagonal comparisons only.
(2) (±0.91) For use in vertical and interaction comparisons only.

Mean D.M. %: 80.9

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68/Da/7.1

SPRING WHEAT

(RW 451)

Chlormequat, row spacing and N - Geescroft 1968.

Design: 4 randomised blocks of 12 plots.

Area of each plot: 0.0212. Area harvested: 0.0140.

Treatments: All combinations of:-
1. Row spacing: 4 (C), 8 (W) inches.
2. Chlormequat*: None (0), sprayed at 2 lb in 32 gals (S).
3. N: 0.8 (N1), 1.6 (N2), 2.4 (N3) cwt as 'Nitro-Chalk'.

* 2-chloroethyltrimethylammonium chloride (CCC).

Basal applications: 340 lb (0:20:20) broadcast by drill. Weedkillers: Ioxynil/mecoprop (Actril C at 5 pints in 20 gals), barban (Carbyne at 2 pints in 33 gals).

Cultivations, etc.: Ploughed: 15 Sept, 1967. Basal PK applied, seed drilled at 160 lb: 11 Mar, 1968. 'Nitro-Chalk' applied: 21 Mar. Barban applied: 23 Apr. Ioxynil/mecoprop applied, chlormequat applied: 15 May. Combine harvested: 8 Sept. Variety: Kolibri. Previous crops: Fallow 1966, spring oilseed rape 1967.

NOTE: Samples were taken from each plot on 5 June and 3 July for leaf area, shoot height, fresh and dry weight and number of shoots, and for yields on 26 Aug.

Standard error per plot.
Grain: 2.36 or 6.1% (33 d.f.)

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68/Da/7.2

SUMMARY OF RESULTS

GRAIN

	O	S	N1	N2	N3	Mean
	(±0.68)			(±0.83)		(±0.48)
C	35.4	41.6	39.1	38.2	38.2	38.5
W	34.0	43.0	37.4	40.7	37.5	38.5
				(±0.83)		(±0.48)
		O	36.4	34.9	32.8	34.7
		S	40.1	43.9	42.9	42.3
		Mean (±0.59)	38.2	39.4	37.9	38.5

Mean D.M. %: 76.3

68/Da/8.1

SPRING WHEAT

(RW 601)

Effect of gaps - Little Hoos 1968.

Design: 4 randomised blocks of 7 plots.

Area of each plot: 0.0121. Area harvested: 0.0121.

Treatments: Gapping of full plant at seedling stage (each plot 17 feet 6 inches wide, i.e. nominally 30 rows at 7 inches spacing, paths 1 foot wide between plots. The full width was harvested for yield).

No rows missing, 30 rows harvested	(G0)
8 rows missing, 7 (4) 8 (4) 7 harvested	(G4)
8 rows missing, 5 (2) 4 (2) 4 (2) 4 (2) 5 harvested	(G2)
8 rows missing, 4 (1) 2 (1) 2 (1) 2 (1) 2 (1) 2 (1) 2 (1) 4 harvested	(G1)
Gaps of 1 foot in row, equivalent to 8 rows per plot:-	
Evenly distributed in all rows	(GE)
Randomly distributed in all rows	(GR)
Highly aggregated throughout plot	(GA)

NOTE: (4) etc. indicate number of blank rows.

Basal applications: 340 lb (25:10:10) combine drilled. Weedkillers: Paraquat at 0.5 lb ion in 32 gals in winter. Mecoprop/2,4-D (Methoxone Extra at 6 pints in 32 gals).

Cultivations, etc.: Ploughed 5 - 18 Sept, 1967. Paraquat applied: 4 Dec. Seed drilled at 160 lb: 8 Apr, 1968. Mecoprop/2,4-D applied: 17 May. Combine harvested: 5 Sept. Variety: Kolibri. Previous crops: Potatoes 1966, spring wheat 1967.

Standard error per plot. Grain: 1.57 or 5.0% (18 d.f.)

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68/Da/8.2

SUMMARY OF RESULTS

GRAIN

	G0	G4	G2	G1	GE	GR	GA	Mean
Mean	34.7	28.8	30.5	31.9	31.3	30.6	30.2	31.1
				(±0.79)				

Mean D.M. %: 76.3

68/Da/9.1

SPRING WHEAT

(RW 701)

Effects of paths and blank rows - Little Hoos 1968.

Design: 4 randomised blocks of 8 plots.

Area of each plot: 0.0161. Area harvested: 0.0107.

Treatments: All combinations of:-

1. Blank rows: None, 16 middle rows harvested (R0)
   2 blank rows, 3 (1) 16 (1) 3 sown (R1)
   4 blank rows, 2 (2) 16 (2) 2 sown (R2)
   6 blank rows, 1 (3) 16 (3) 1 sown (R3)
2. N: 0.6 (N1), 1.2 (N2) cwt side placed as 'Nitro-chalk'.

Plots were of 24 rows each, 16 of which were harvested. (1) etc. indicate number and position of blank (unsown) rows.

Basal applications: 280 lb (0:14:28) broadcast in seedbed.
Weedkiller: Paraquat at 0.5 lb ion in 32 gals in winter.
Mecoprop/2,4-D (Methoxone Extra at 6 pints in 32 gals).

Cultivations, etc.: Ploughed: 5 - 18 Sept, 1967. Paraquat applied: 4 Dec. Seed drilled at 185 lb, 'Nitro-Chalk' side placed, basal PK applied: 8 Mar, 1968. Mecoprop/2,4-D applied: 17 May. Combine harvested: 5 Sept. Variety: Kolibri. Previous crops: Potatoes 1966, spring wheat 1967.

Standard error per plot.
Grain: 0.95 or 2.8% (21 d.f.)

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68/Da/9.2

SUMMARY OF RESULTS

GRAIN

	R0	R1	R2	R3	Mean
		(±0.47)			(±0.24)
N1	31.3	31.5	33.3	34.1	32.6
N2	31.9	34.7	36.0	36.5	34.8
Mean (±0.33)	31.6	33.1	34.7	35.3	33.7

Mean D.M. %: 78.6

https://doi.org/10.23637/ERADOC-1-58

68/Da/10.1

SPRING WHEAT

(RW 801)

Anhydrous ammonia as a fertiliser - Little Hoos 1968.

Design: 4 randomised blocks of 8 plots.

Area of each plot: 0.0321. Area harvested: 0.0210.

Treatments: All combinations of:-

1. Forms of N: Broadcast 'Nitro-Chalk' (B), injected anhydrous ammonia (I).
2. Levels of N: 0.5 (N1), 1.0 (N2), 1.5 (N3) cwt N together with no nitrogen - without (N0), with (N0I), the injector running idle through the soil.

Basal applications: 280 lb (0:14:28) combine drilled. Weedkillers: Paraquat at 0.5 lb ion in 32 gals in winter. Mecoprop/2,4-D (Methoxone Extra at 6 pints in 32 gals).

Cultivations, etc.: Ploughed: 5 - 18 Sept, 1967. Paraquat applied: 4 Dec. Ammonia and 'Nitro-Chalk' applied, seed drilled at 185 lb: 7 Mar, 1968. Mecoprop/2,4-D applied: 17 May. Combine harvested: 5 Sept. Variety: Kloka. Previous crops: Potatoes 1966, spring wheat 1967.

Standard error per plot.
Grain: 1.28 or 4.7% (15 d.f.)

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68/Da/10.2

SUMMARY OF RESULTS

GRAIN

	N1	N2	N3	Mean
		(±0.64)		(±0.37)
B	28.9	27.9	25.6	27.5
I	27.4	28.1	25.8	27.1
Mean (±0.45)	28.2	28.0	25.7	27.3

NO	NOI
18.5	19.3
(±0.64)	

General mean: 25.2

Mean D.M. %: 78.9

68/Da/11.1

SPRING WHEAT

(RW 901)

Varieties and N - Little Hoos 1968.

Design: 4 randomised blocks of 5 plots, split into 3.

Area of each sub plot: 0.0100. Area harvested: 0.0054.

Treatments: All combinations of:-
Whole plots: 1. Varieties: Kloka (KL), Kolibri (KO), Maris Ensign (ME), Rothwell Sprite (RS), Troll (TR).
Sub plots: 2. N: 0.5 (N1), 1.0 (N2), 1.5 (N3) cwt N as basal NPK fertiliser plus 'Nitro-Chalk'.

Basal applications: 360 lb (15:15:15) combine drilled. Weedkillers: Paraquat at 0.5 lb ion in 32 gals in winter, mecoprop/2,4-D (Methoxone Extra at 6 pints in 32 gals).

Cultivations, etc.: Ploughed: 5 - 18 Sept, 1967. Paraquat applied: 4 Dec. Seed drilled at 160 lb: 14 Mar, 1968. 'Nitro-Chalk' applied: 22 Mar. Mecoprop/2,4-D applied: 17 May. Combine harvested: 4 Sept. Previous crops: Potatoes 1966, spring wheat 1967.

Standard errors per plot.
Grain: Whole plot: 0.81 or 2.6% (12 d.f.)
Sub plot: 1.61 or 5.2% (30 d.f.)

SUMMARY OF RESULTS

GRAIN

	KL	KD	ME	RS	TR	Mean
			(1) and (2)			(±0.36)
N1	30.9	34.5	28.2	28.8	28.7	30.2
N2	31.5	41.7	28.7	28.9	31.0	32.4
N3	29.4	41.0	24.9	23.9	30.0	29.9
Mean (±0.40)	30.6	39.1	27.3	27.2	29.9	30.8

(1) (±0.77) For use in horizontal and diagonal comparisons only
(2) (±0.81) For use in vertical and interaction comparisons only

Mean D.M. %: 76.6

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68/Db/1.1

BARLEY

(RB 101)

Effects of paths and blank rows - West Barnfield I 1968.

Design: 4 randomised blocks of 8 plots.

Area of each plot: 0.0161. Area harvested: 0.0107.

Treatments: All combinations of:-

1. Blank rows: None, 16 middle rows harvested (R0)
   2 blank rows, 3(1) 16(1) 3 sown (R1)
   4 blank rows, 2(2) 16(2) 2 sown (R2)
   6 blank rows, 1(3) 16(3) 1 sown (R3)
2. N: 0.5 (N1), 1.0 (N2) cwt side placed as 'Nitro-Chalk.

Plots were of 24 rows each, 16 of which were harvested. (1) etc. indicate number and position of blank (unsown) rows.

Basal applications: 280 lb (0:20:20) broadcast in the seedbed.
Weedkiller: Paraquat at 0.75 lb ion in 32 gals to stubble of preceding crop.

Cultivations, etc.: Weedkiller applied: 6 Oct, 1967. Ploughed: 23 Oct. Seed drilled at 145 lb, 'Nitro-Chalk' sideplaced, basal PK applied: 29 Feb, 1968. Combine harvested: 21 Aug. Variety: Maris Badger. Previous crops: Grass 1966, winter wheat 1967.

Standard error per plot.
Grain: 1.41 or 4.7% (21 d.f.)

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SUMMARY OF RESULTS

GRAIN

	R0	R1	R2	R3	Mean
		(±0.71)			(±0.35)
N1	29.3	32.2	35.6	33.2	32.6
N2	26.8	27.2	28.8	29.4	28.0
Mean (±0.50)	28.1	29.7	32.2	31.3	30.3

Mean D.M. %: 81.7

https://doi.org/10.23637/ERADOC-1-58

68/Db/2.1

BARLEY

(RB 201)

Spun and drilled seed and cultivations - West Barnfield II 1968.

Design: 4 randomised blocks of 4 plots, with plots split into 4.

Area of each sub plot: 0.0135. Area harvested: 0.0096.

Treatments:
- Spun seed: All combinations of:-
  - Whole plot: 1. Seed rate: 140 lb (M), 200 lb (H).
  - Sub plot: 2. Seedbed cultivations: Plough, spring-tine cultivate, harrow, sow, harrow (C1).
    Plough, spring-tine cultivate, sow, spring-tine cultivate, harrow (C2).
    Plough, spring-tine cultivate twice, sow, harrow (C3).
    Plough, sow, spring-tine cultivate, harrow (C4).
- Drilled seed: All combinations of:
  - Whole plot: 1. Seed rate: 112 lb (L), 140 lb (M).
    2. Seedbed cultivations: C1, C3 above (in duplicate).

Basal applications: 340 lb (25:10:10). Weedkiller: Paraquat at 0.75 lb ion in 32 gals.

Cultivations, etc.: Weedkiller applied: 6 Oct, 1967. Ploughed: 23 Oct. Basal fertiliser applied: 29 Feb, 1968. Seed sown: 1 Mar. Combine harvested: 21 Aug. Variety: Maris Badger. Previous crops: Grass 1966, winter wheat 1967.

Standard errors per plot.
- Grain: Whole plot: 1.34 or 3.9% (6 d.f.)
  Sub plot: 1.90 or 5.6% (40 d.f.)

68/Db/2.2

SUMMARY OF RESULTS

GRAIN

SPUN SEED

	C1	C2	C3	C4	Mean
		(1) and (2)			(±0.67) [illegible]
M	30.3	34.6	31.7	37.1	33.4
H	30.9	35.2	32.6	35.8	33.7
Mean (±0.67)	30.6	34.9	32.2	36.5	33.6

DRILLED SEED

	C1	C3	Mean
	(3) and (4)		(±0.67) [illegible]
L	35.1	34.3	34.7
M	33.3	35.3	34.3
Mean (±0.47) [illegible]	34.2	34.8	34.5

(1) (±1.16) (3) (±0.82) [illegible] For use in vertical and diagonal comparisons
(2) (±0.95) (4) [illegible] (±0.67) For use in horizontal and interaction comparisons

General mean: 34.0
General mean D.M. %: 85.0

68/Db/3.1

BARLEY

(RB 301)

Varieties x N and eyespot (Cercosporella herpotrichoides) - Long Hoos IV 1968.

Design: 4 blocks of 4 plots, split into 3.

Area of each sub plot: 0.0121. Area harvested: 0.0063.

Treatments: All combinations of:-
Whole plots: 1. Varieties: Impala (IM), Maris Badger (MB), Sultan (SU), Zephyr (ZE).
Sub plots: 2. Nitrogen: 0.6 (N2), 0.9 (N3), 1.2 (N4) cwt N as 'Nitro-Chalk'.

Basal applications: 2 cwt (0:20:20) combine drilled. Weedkiller: Paraquat at 0.5 lb ion in 32 gals.

Cultivations, etc.: Ploughed: 6 Sept, 1967. Weedkiller applied: 4 Dec. Seed drilled at 140 lb: 28 Feb, 1968. 'Nitro-Chalk' applied: 15 Mar. Combine harvested: 20 Aug. Previous crops: Spring beans 1966, winter wheat 1967.

NOTE: Samples were taken in June for the incidence and severity of eyespot (Cercosporella herpotrichoides).

Standard errors per plot. Grain:
Whole plot: 2.22 or 7.3% (9 d.f.)
Sub plot: 2.30 or 7.6% (24 d.f.)

68/Db/3.2

SUMMARY OF RESULTS

GRAIN

	IM	MB	SU	ZE	Mean
		(1) and (2)			(±0.57)
N2	33.2	29.0	35.0	35.8	33.2
N3	29.5	25.0	31.4	34.0	30.0
N4	27.2	20.7	32.4	30.3	27.6
Mean (±1.11)	30.0	24.9	32.9	33.3	30.3

(1) (±1.45) For use in horizontal and diagonal comparisons
(2) (±1.15) For use in vertical and interaction comparisons

Mean D.M. %: 78.1

https://doi.org/10.23637/ERADOC-1-58

68/Db/4.1

BARLEY

(RB 401 & WB 201)

Deep drilled fertiliser - Rothamsted (R) Great Knott II and Woburn (W), Schoolfield, 1968.

Design: 4 randomised blocks of 10 plots.

Area of each plot: Great Knott II (R): 0.0080. Area harvested: 0.0080
Schoolfield (W): 0.0061. 0.0080.

Treatments: All combinations of:-
1. Methods of fertiliser application: Injected deeply *(I), broadcast (B).
2. Fertiliser rates: 224 lb (1), 448 lb (2) (25:10:10).
3. Row spacing: 4 (C), 8 (W) inches.

Together with fertiliser combine-drilled at rate 1 (D1W) or rate 2 (D2W), row spacing 7 inches.

* by 'Tume' drill in rows 5.5 ins. apart.

Basal applications: Great Knott II (R): None. Schoolfield (W): Weedkiller: Paraquat at 0.5 lb ion in 33 gals, ioxynil/mecoprop (Actril C at 5 pints in 25 gals).

Cultivations, etc.:-
Great Knott II (R): Ploughed: 19 Sept, 1967. Fertiliser treatments applied, seed drilled at 140 lb: 7 Mar, 1968. Combine harvested: 19 Aug. Variety: Zephyr. Previous crops: Spring beans 1966, winter wheat 1967.
Schoolfield (W): Ploughed: 25 Sept, 1967. Paraquat applied: 2 Mar, 1968. Fertiliser treatments applied, seed drilled at 140 lb: 8 Mar. Ioxynil/mecoprop applied: 27 Apr. Combine harvested: 21 Aug. Variety: Zephyr. Previous crops: Barley 1966 and 1967.

Standard errors per plot. Grain:
Great Knott II (R): 3.33 or 9.2% (27 d.f.)
Schoolfield (W): 1.91 or 8.6% (27 d.f.)

SUMMARY OF RESULTS

GRAIN

	GREAT KNOTT II (R)	SCHOOLFIELD (W)
	(±1.66)	(±0.96)
I1C	37.1	25.7
I1W	34.4	23.3
I2C	38.7	21.6
I2W	34.2	21.8
B1C	36.4	24.5
B1W	34.7	21.9
B2C	40.5	22.4
B2W	36.0	18.2
D1W	37.1	24.2
D2W	32.5	18.2
Mean	36.2	22.2
Mean D.M. %:	77.2	79.5

https://doi.org/10.23637/ERADOC-1-58

68/Db/5.1

BARLEY

(WB 101)

Varieties and N - Woburn Great Hill Bottom I, 1968.

Design: 4 blocks of 4 plots, split for N.

Area of each sub plot: 0.0024. Area harvested: 0.0013.

Treatments: All combinations of:-
Whole plots: 1. Varieties: Impala (I), Maris Badger (MB), Sultan (S), Zephyr (Z).
Sub plots: 2. Nitrogen: 0.6 (N2), 0.9 (N3), 1.2 (N4) cwt N as 'Nitro-Chalk'.

Basal applications: 4 cwt (15:15:15) combine drilled. Weedkillers: Paraquat at 0.5 lb ion in 33 gals, ioxynil/mecoprop (Actril C at 5 pints in 25 gals).

Cultivations, etc.: Deep-tine cultivated: 25 Sept, 1967. Ploughed: 20 Feb, 1968. Paraquat applied: 2 Mar. Seed combine drilled at 140 lb: 7 Mar. 'Nitro-Chalk' applied: 14 Mar. Ioxynil/mecoprop applied: 3 May. Combine harvested: 22 Aug. Previous crops: Fallow 1966, potatoes 1967.

Standard errors per plot.
Grain: Whole plot: 3.14 or 11.9% (9 d.f.)
Sub plot: 4.10 or 15.6% (24 d.f.)

68/Db/5.2

SUMMARY OF RESULTS

GRAIN

	I	MB	S	Z	Mean
		(1) and (2)			(±1.03)
N2	25.4	22.7	30.2	28.3	26.6
N3	23.7	23.9	40.8	24.2	28.1
N4	20.7	20.6	32.0	22.8	24.0
Mean (±1.57)	23.3	22.4	34.3	25.1	26.3

(1) (±2.29) For use in horizontal and diagonal comparisons only
(2) (±2.05) For use in vertical and interaction comparisons only

Mean D.M. %: 82.9

https://doi.org/10.23637/ERADOC-1-58

68/Dc/1.1

SPRING BEANS

(RBe 101 and WBe 101)

The effect on yield of inoculating beans with different strains of Rhizobium leguminosarum - Rothamsted (R) Summerdells II and Woburn (W) Roadpiece 1968.

Design: 4 randomised blocks of 6 plots.

Area of each plot: 0.0202. Area harvested: Summerdell II (R) - 0.0152 Roadpiece (W) - 0.0127.

Treatments: Seed inoculum (Rhizobium leguminosarum):-

None	(0)
Strain 1013	(1)
Strain 1026	(2)
Strain 1027	(3)
Strain 1034	(4)
Strain VSP	(5)

Basal applications: 360 lb (0:14:28) placement drilled. Weedkiller: Simazine at 1 lb in 33 gals. Roadpiece (W): Insecticide: Demeton-s-methyl at 3.4 oz in 37 gals.

Cultivations, etc.:

Summerdells II (R): Ploughed: 26 Sept, 1967. Seed drilled at 200 lb: 7 Mar, 1968. Weedkiller applied: 8 Mar. Combine harvested: 12 Sept. Variety: Tarvin. Previous crops: Fallow 1966, winter wheat 1967.

Roadpiece (W): Ploughed: 9 Nov, 1967. Seed drilled at 200 lb, weedkiller applied: 1 Mar, 1968. Insecticide applied: 1 June. Combine harvested: 13 Sept. Variety: Tarvin. Previous crops: Barley 1966, spring wheat 1967.

NOTE: Counts of Rhizobium leguminosarum in soil were made in March before sowing.

Standard errors per plot. Grain:

Summerdells II (R): 1.21 or 4.8% (15 d.f.)
Roadpiece (W): 1.92 or 6.9% (15 d.f.)

https://doi.org/10.23637/ERADOC-1-58

SUMMARY OF RESULTS

GRAIN

0	1	2	3	4	5	Mean
			SUMMERDELLS II (R)			
25.6	24.9	26.0	24.8	25.7	23.9	25.2
		(±0.61)				
			ROADPIECE (W)			
27.3	27.1	27.6	29.8	28.5	27.3	27.9
		(±0.96)				

Mean D.M. %: Summerdells II (R): 79.4
Roadpiece (W): 76.6

https://doi.org/10.23637/ERADOC-1-58

68/Dc/2.1

SPRING BEANS

(WBe 201)

The effect of B-Nine*, irrigation, nitrogen and its time of application on the yield and growth of spring beans - Woburn Butt Close Series II, 1968.

Design: 3 replicates o 2 x 2 x 4 in 6 blocks of 2 whole plots split into 2 and further split into 2.

Area of each sub plot: 0.0121. Area harvested: 0.0064.

Treatments: All combinations of:-
Whole plots: 1. Irrigation: None (O), full irrigation (C).
Half plots: 2. B-Nine*: None (O), B-Nine at 5 lb in 35 gals at four leaf stage, and three weeks later (S).
Quarter plots: 3. Nitrogen: None (O), 1.5 cwt N in the seedbed (E), 1.5 cwt N in late May (L), 1.5 cwt N in the seedbed, 1.5 cwt N in late May (EL), N as 'Nitro-Chalk'.

* (N-dimethylaminosuccinamic acid).

Basal applications: 360 lb (0:14:28) placed. Weedkiller: Simazine at 0.75 lb in 33 gals. Insecticide: Demeton-s-methyl at 3.5 oz in 37 gals. Magnesian limestone at 22.5 cwt.

Cultivations, etc.: Ploughed: 19 Sept, 1967. Magnesian limestone applied: 25 Oct. Deep-tine cultivated: 26 Oct, 10 Nov. 'Nitro-Chalk' applied to E and EL plots, seed drilled at 200 lb: 28 Feb, 1968. Weedkiller applied: 1 Mar. B-Nine applied: 15 May. 'Nitro-Chalk' applied to L and EL plots: 29 May. B-Nine applied: 5 June. Insecticide applied: 13 June. C plots irrigation applied at 0.5 inches: 14 June, 0.75 inches: 20 July. Combine harvested: 13 Sept. Variety: Tarvin. Previous crops: Spring wheat 1967, potatoes 1966.

NOTES: (1) Germination counts were made and scores made for nodulation and root growth. Stem and pod counts were made and stem height measured.
(2) 1000 grain wts. and percentage N in the grain were taken.
(3) Counts of free living nematodes were taken after harvest.
(4) After the first application of B-Nine there was evidence of weedkiller damage from residues left in the sprayer, most severe on the first plots sprayed. Because of this the first two half plots sprayed were treated as missing plots and estimated values used in the analysis.

Standard error per plot (pooled).
Grain: 2.25 or 8.2% (26 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/Dc/2.2

SUMMARY OF RESULTS

GRAIN

		O	S	O	E	L	EL	Mean
		(±0.65)			(±0.92)			(±0.46)
O		27.7	26.4	26.1	29.8	23.5	28.9	27.1
C		28.2	27.3	28.2	27.5	26.6	28.6	27.7
					(±0.92)			(±0.46)
	O			28.6	28.8	24.0	30.4	27.9
	S			25.7	28.5	26.1	27.2	26.9
	Mean (±0.65)			27.1	28.7	25.0	28.8	27.4

	O				C			
	O	E	L	EL	O	E	L	EL
	(±1.30)							
O	27.9	30.8	21.7	30.3	29.3	26.8	26.2	30.4
S	24.2	28.8	25.2	27.6	27.1	28.2	26.9	26.9

Mean D.M. %: 77.8

https://doi.org/10.23637/ERADOC-1-58

68/Dc/3.1

SPRING BEANS

(MC)

B-Nine* and nitrogen, Summerdells II 1968.

* Dimethylamino-succinamic acid, a dwarfing compound, formerly known as DSA.

Design: 2 randomised blocks of 18 plots.

Area of each plot: 0.0022. Area harvested: 0.0005.

Treatments: All combinations of:-
1. B-Nine: Unsprayed (0), sprayed on 3 occasions with B-Nine at 4 lb in 56 gals (S).
2. Nitrogen: None (N0), 1.5 (N1), 3.0 (N2) cwt N as 'Nitro-Chalk'.
3. Time of application of N: All in seedbed (E), all in late May (L), half in seedbed, half in late May (EL).

Basal applications: 360 lb (0:14:28) placement drilled. Weedkiller: Simazine at 1 lb in 33 gals.

Cultivations, etc.: Ploughed: 26 Sept, 1967. Seed drilled at 200 lb: 6 Mar, 1968. Weedkiller applied: 8 Mar. 'Nitro-Chalk' applied to E and EL plots: 12 Mar. S plots sprayed with B-Nine: 14 May. 'Nitro-Chalk' applied to EL and L plots: 27 May. S plots sprayed with B-Nine: 7 June and 3 July. Harvested by hand: 9 Sept. Variety: Tarvin. Previous crops: Fallow 1966, winter wheat 1967.

NOTE: Observations were made of stem height, number of stems and of pods. 1000 grain weights and percentage N in the grain were determined.

Standard error per plot.
Grain: 3.19 or 11.4% (17 d.f.)

68/Dc/3.2

SUMMARY OF RESULTS

GRAIN

		NO	N1	N2	E	L	EL	Mean
			(±1.30)			(±1.59)		(±0.75)
O		24.6	29.0	29.2	30.1	29.6	27.5	27.6
S		27.2	29.9	28.5	28.1	30.9	28.7	28.5
						(±1.59)		(±0.92)
			N1		29.6	31.4	27.5	29.5
			N2		28.6	29.1	28.8	28.8
			Mean (±1.13)		29.1	30.3	28.1	28.1

Mean D.M. %: 72.9

NOTE: The (E L EL) (OS) table is meaned over N1 and N2 only. The means for O and S are meaned over NO, N1 and N2.

https://doi.org/10.23637/ERADOC-1-58

68/Dd/1.1

WINTER OILSEED RAPE

(RRa 101)

Row spacing, N and K - Delafield 1968.

Design: A single replicate of 3 x 3 x 3 x 3 in 9 blocks of 9 plots.

Area of each plot: 0.0193. Area harvested: 0.0138.

Treatments: All combinations of:-
1. Row spacing: 4 (C), 8 (M), 16 (W) inches.
2. Levels of K: 0.5 (K1), 1.0 (K2), 1.5 (K3) cwt K2O as muriate of potash (including basal).
3. Levels of N: 1.0 (N2), 1.5 (N3), 2.0 (N4) cwt N as 'Nitro-Chalk' (in addition to basal).
4. Time of applying N: Early (E), late (L), split dressing, half applied early and half late (EL).

Basal applications: 350 lb (8:20:16) in seedbed.

Cultivations, etc.: Ploughed: 14 Sept, 1967. Basal NPK and test K applied: 23 Sept. Seed drilled at 8 lb: 25 Sept. 'Nitro-Chalk' applied (E and EL treatments): 20 Feb, 1968. 'Nitro-Chalk' applied (EL and L treatments): 4 Apr. Combine harvested: 19 Aug. Variety: Victor. Previous crops: Barley 1966 and 1967.

Standard errors per plot:

Grain (at 90% dry matter):	2.89 or 17.7% (13 d.f.)
Yield of fixed oil, lb per acre:	139.23 or 18.2% (13 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/Dd/1.2

SUMMARY OF RESULTS

GRAIN

	K1	K2	K3	N2	N3	N4	E	L	EL	Mean
	(±0.96)			(±0.96)			(±0.96)			(±0.56)
C	15.3	18.1	16.2	15.6	16.6	17.4	16.3	18.6	14.6	16.5
M	16.4	16.3	16.0	14.0	16.0	18.7	16.2	15.9	16.6	16.2
W	14.6	15.5	18.5	14.1	14.8	19.8	17.5	15.9	15.2	16.2
				(±0.96)			(±0.96)			(±0.56)
		K1		13.5	16.1	16.7	15.4	15.7	15.2	15.4
		K2		15.3	15.5	19.1	17.0	17.4	15.5	16.6
		K3		14.8	15.7	20.1	17.6	17.4	15.8	16.9
							(±0.96)			(±0.56)
					N2		14.2	15.5	13.9	14.5
					N3		16.1	15.7	15.6	15.8
					N4		19.6	19.3	17.0	18.6
Mean (±0.56)							16.7	16.8	15.5	16.3

Mean D.M. %: 80.6

https://doi.org/10.23637/ERADOC-1-58

68/Dd/1.3

% FIXED OIL

	K1	K2	K3	N2	N3	N4	E	L	EL	Mean
C	43.7	43.3	43.2	43.8	43.2	43.3	43.3	43.3	43.5	43.4
M	43.2	43.4	43.6	44.1	43.2	42.9	43.6	43.1	43.5	43.4
W	43.3	43.1	43.5	44.0	43.3	42.6	43.3	43.1	43.5	43.3
		K1		44.0	43.3	42.9	43.4	43.4	43.5	43.4
		K2		43.7	43.2	42.9	43.5	42.9	43.4	43.3
		K3		44.1	43.1	43.0	43.3	43.3	43.6	43.4
					N2		44.0	43.8	44.0	43.9
					N3		43.1	43.0	43.5	43.2
					N4		43.1	42.7	43.0	42.9
Mean							43.4	43.2	43.5	43.4

https://doi.org/10.23637/ERADOC-1-58

68/Dd/1.4

YIELD OF FIXED OIL

	K1	K2	K3	N2	N3	N4	E	L	EL	Mean
		(±46.4)			(±46.4)			(±46.4)		(±26.8)
C	724	844	755	735	775	813	765	870	687	774
M	763	767	752	665	746	871	761	742	779	761
W	681	722	867	668	692	910	815	741	714	757
					(±46.4)			(±46.4)		(±26.8)
		K1		641	754	772	723	733	712	722
		K2		720	726	887	798	806	729	778
		K3		706	733	935	819	814	740	791
								(±46.4)		(±26.8)
					N2		675	732	661	689
					N3		753	730	730	737
					N4		914	891	790	865
Mean (±26.8)							780	784	727	764

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68/Dd/2.1

SPRING OILSEED RAPE

(RRa 201)

Row spacing, N, K and seed rate - Long Hoos V 1968.

Design: A single replicate of 2 x 3 x 3 x 3 in 3 blocks of 18 plots.

Area of each plot: 0.0193. Area harvested: 0.0138.

Treatments: All combinations of:-
1. Seed rate: 5 lb (S), 10 lb (D).
2. Row spacing: 4 (C), 8 (M), 16 (W) inches.
3. K (in addition to basal): None (K1), 0.5 (K2), 1.0 (K3) cwt K2O as muriate of potash.
4. N: 1.0 (N5), 1.4 (N7), 1.8 (N9) cwt N as 'Nitro-Chalk'.

Basal applications: 280 lb (0:20:20) broadcast, 4 tons ground chalk. Weedkiller: Paraquat at 0.5 lb ion in 32 gals. Insecticide: Malathion at 18 oz in 38 gals.

Cultivations, etc.: Ploughed: 6 Sept, 1967. Weedkiller applied: 4 Dec. Chalked: 20 Feb, 1968. Basal PK applied: 29 Feb. Muriate of potash applied, seed drilled: 12 Mar. 'Nitro-Chalk' applied: 22 Mar. Insecticide applied: 11 June. Combine harvested: 27 Aug. Variety: Nilla. Previous crops: Fallow 1966, winter and spring wheat 1967.

Standard errors per plot.

Grain (at 90% dry matter):	2.27 or 13.1% (8 d.f.)
Yield of fixed oil, lb per acre:	88.8 or 12.7% (7 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/Dd/2.2

SUMMARY OF RESULTS

GRAIN

	C	M	W	K1	K2	K3	N5	N7	N9	Mean
	(±0.76)			(±0.76)			(±0.76)			(±0.44)
S	17.6	16.7	17.6	17.1	17.1	17.6	16.8	18.2	16.9	17.3
D	17.7	18.4	16.3	18.2	18.0	16.3	17.6	17.5	17.3	17.5
				(±0.93)			(±0.93)			(±0.54)
		C		17.6	17.7	17.6	16.9	17.8	18.2	17.6
		M		17.8	17.5	17.2	17.5	17.9	17.1	17.5
		W		17.5	17.4	16.0	17.1	17.8	16.0	17.0
								(±0.93)		(±0.54)
					K1		17.8	18.2	16.9	17.7
					K2		17.3	18.0	17.3	17.5
					K3		16.4	17.3	17.1	16.9
Mean (±0.54)							17.2	17.8	17.1	17.4

Mean D.M. %: 79.6

68/Dd/2.3

% FIXED OIL

	C	M	W	K1	K2	K3	N5	N7	N9	Mean
S	36.4	36.2	36.1	35.5	36.5	36.8	36.8	37.0	35.0	36.2
D	36.3	36.9	35.9	36.3	36.4	36.4	37.0	36.7	35.5	36.4
		C		36.0	36.6	36.6	37.2	36.7	35.3	36.4
		M		36.1	36.7	36.8	37.7	37.1	34.9	36.6
		W		35.6	36.1	36.3	35.8	36.7	35.6	36.0
					K1		36.6	36.2	34.9	35.9
					K2		37.2	36.9	35.3	36.5
					K3		37.0	37.3	35.5	36.6
Mean						36.9	36.8	35.2	36.3	

https://doi.org/10.23637/ERADOC-1-58

68/Dd/2.4

YIELD OF FIXED OIL

	C	M	W	K1	K2	K3	N5	N7	N9	Mean
		(±29.6)			(±29.6)			(±29.6)		(±17.1)
S	704	665	702	673	688	711	679	739	653	690
D	707	746	677	726	719	686	749	706	676	710
					(±36.3)			(±36.3)		(±20.9)
		C		701	708	708	696	716	706	706
		M		709	707	700	726	732	658	705
		W		688	695	686	721	719	629	690
								(±36.3)		(±20.9)
					K1		719	728	651	699
					K2		707	729	673	703
					K3		716	710	669	698
Mean (±20.9)							714	722	664	700

68/De/1.1

POTATOES

(RP 1/1)

Effect of gaps - Great Harpenden II 1968.

Design: 5 blocks of 2 split into 6.

Area of each plot: 0.0067. Area harvested: 0.0033.

Treatments: All combinations of:-
Whole plots: 1. Time of gapping: At emergence on 30 May (E), at flowering on 5 July (F).
Sub plots: 2. Amount of gapping: Normal plant population (G0), 4 (G4), 8 (G8), 12 (G12), 16 (G16), 24 (G24) per cent of plants removed.

Basal applications: 3 tons ground chalk, 7 tons FYM, 8 cwt (13:13:20). Weedkiller: Paraquat at 0.5 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 36 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz applied with mancozeb on one occasion.

Cultivations, etc.:- FYM applied: 8 Dec, 1967. Ground chalk applied, ploughed: 20 Dec. Basal NPK applied: 20 - 27 Mar, 1968. Rotary cultivated, potatoes machine planted: 8 Apr. Weedkiller applied: 4 May. Grubbed: 17 June. Rotary ridged: 18 June. Mancozeb applied: 5 July. Mancozeb and demeton-s-mehtyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 5 Sept. Lifted: 17 Oct. Variety: Majestic. Previous crops: Grass 1959 - 1967.

Standard errors per plot. Total tubers:
Whole plot: 0.774 or 5.3% (4 d.f.)
Sub plot: 1.174 or 8.0% (40 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/1.2

SUMMARY OF RESULTS

	G0	G4	G8	G12	G16	G24	Mean
			TOTAL TUBERS				
			(1) and (2)				(±0.379)
E		15.11	15.61	14.67	14.18	14.45	14.80
F		15.55	14.60	13.79	13.11	13.25	14.06
Mean (±0.371)	15.30	15.33	15.10	14.23	13.64	13.85	14.58*

(1) (±0.591) For use in vertical and diagonal comparisons only
(2) (±0.525) For use in horizontal and interaction comparisons only

			% WARE				
E		97.8	97.9	98.0	97.8	98.5	98.0
F		98.2	98.3	98.1	98.0	98.4	98.2
Mean	97.9	98.0	98.1	98.0	97.9	98.4	98.1*

* General mean

https://doi.org/10.23637/ERADOC-1-58

POTATOES

(RP 2/1)

Effects of gangrene (Phoma spp.) - Long Hoos I and II, 1968.

Design: 6 blocks of 2 plots split into 4.

Area of each plot: 0.0067. Area harvested: 0.0033.

Treatments: All combinations of:-
Sub blocks: 1. Varieties: King Edward (KE), Majestic (M).
Plots: 2. Levels of seed infection (Gangrene): Clean (A), moderately infected (B), severely infected (C), unselected stock (D).

Basal applications: 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz in 37 gals applied with mancozeb on one occasion.

Cultivations, etc.: Deep-tine cultivated twice: 2 Oct, 1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK compound applied: 14 Mar. Plots rotary cultivated, potatoes machine planted: 11 Apr. Weedkiller applied: 4 May. Plots grubbed and rotary ridged: 17 June. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 14 Oct. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

NOTE: Emergence counts were made on 20 May and 13 June. After burning off and prior to lifting, counts were made of stem and plant number.

Standard errors per plot. Total tubers:
Whole plot: 0.726 or 4.6% (5 d.f.)
Sub plot: 0.955 or 6.1% (30 d.f.)

https://doi.org/10.23637/ERADOC-1-58

SUMMARY OF RESULTS

	A	B	C	D	Mean
		TOTAL TUBERS			
		(1) and (2)			(±0.296)
KE	18.08	16.55	12.91	13.80	15.34
M	17.66	16.09	13.57	16.58	15.98
Mean (±0.276)	17.87	16.32	13.24	15.19	15.66

(1) (±0.449) For use in vertical and diagonal comparisons
(2) (±0.390) For use in horizontal and interaction comparisons

		% WARE			
KE	96.5	94.7	95.2	95.2	95.4
M	98.3	97.6	96.6	97.8	97.6
Mean	97.4	96.1	95.9	96.5	96.5

https://doi.org/10.23637/ERADOC-1-58

68/De/3.1

POTATOES

(RP 3/1)

Effects of stem-canker (Rhizoctonia solani) - Long Hoos I and II, 1968.

Design: 6 blocks of 2 plots split into 4.

Area of each plot: 0.0033. Area harvested: 0.0033.

Treatments: All combinations of:-
Whole plots: 1. Varieties: King Edward (KE), Majestic (M).
Sub-plots: 2. Levels of seed infection (Rhizoctonia solani): Clean (A), moderately infected (B), severely infected (C), unselected stock (D). B and C were assessed from sclerotia on skin.

Basal applications: 10 cwt (13:13:20) Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions: Insecticide: Demeton-s-methyl at 3.5 oz applied with mancozeb on one occasion.

Cultivations, etc.: Deep-tine cultivated twice: 2 Oct,1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK applied: 14 Mar. Plots rotary cultivated, potatoes machine planted: 11 Apr. Weedkiller applied: 4 May. Grubbed and rotary ridged: 17 Jun. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 14 Oct. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

NOTE: Emergence counts were made on 20 May and 13 June. A count of the number of plants infected with Corticium solani (the perfect stage of Rhizoctonia solani) was made on 22 July. After burning off and prior to lifting, counts were made of stem and plant number.

Standard errors per plot. Total tubers:
Whole plot: 0.617 or 3.3% (5 d.f.)
Sub plot: 1.247 or 6.7% (30 d.f.)

https://doi.org/10.23637/ERADOC-1-58

SUMMARY OF RESULTS

	A	B	C	D	Mean
		TOTAL TUBERS			
		(1) and (2)			(±0.252)
KE	21.32	19.19	19.92	21.09	20.38
M	16.70	17.00	16.48	16.73	16.73
Mean (±0.360)	19.01	18.10	18.20	18.91	18.55

(1) ±0.508 for use in vertical and diagonal comparisons
(2) ±0.509 for use in horizontal and interaction comparisons

	% WARE				
KE	95.8	96.1	96.0	95.6	95.9
M	98.0	97.5	97.4	98.3	97.8
Mean	96.9	96.8	96.7	97.0	96.8

https://doi.org/10.23637/ERADOC-1-58

68/De/4.1

POTATOES

(RP 4/1)

Effects of skin-spot (Oospora pustulans) - Long Hoos I and II, 1968.

Design: 6 blocks of 2 plots split into 4.

Area of each sub-plot: 0.0033. Area harvested: 0.0033.

Treatments: All combinations of:-
Whole plots: 1. Varieties: King Edward (KE), Majestic (M).
Sub-Plots: 2. Levels of seed infection (Oospora pustulans): Clean (A), moderately infected (B), severely infected (C), unselected stock (D). B and C were assessed by area covered by skin-spots.

Basal applications: 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz applied with mancozeb on one occasion.

Cultivations, etc.: Deep-tine cultivated twice: 2 Oct, 1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK applied: 14 Mar. Plots rotary cultivated, potatoes machine planted: 9 Apr. Weedkiller applied: 4 May. Grubbed and rotary ridged: 17 June. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 15 Oct. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

NOTE: Emergence counts were made on 20 May and 13 June. After burning off and prior to liftttting, counnn

https://doi.org/10.23637/ERADOC-1-58

SUMMARY OF RESULTS

	A	B	C	D	Mean
	TOTAL TUBERS				
	(1) and (2)				(±0.153)
KE	21.46	19.80	17.01	20.08	19.59
M	17.24	17.17	13.18	15.73	15.83
Mean (±0.292)	19.35	18.49	15.10	17.90	17.71

(1) (±0.389) For use in vertical and diagonal comparisons only
(2) (±0.413) For use in horizontal and interaction comparisons only

	% WARE				
KE	96.9	97.2	97.8	96.9	97.2
M	98.0	98.0	97.9	97.6	97.9
Mean	97.4	97.6	97.8	97.3	97.5

https://doi.org/10.23637/ERADOC-1-58

68/De/5.1

POTATOES

(RP 5/1 and WP 3/1)

Commercial, dipped and healthy stocks - Rothamsted (R) Great Harpenden II and Woburn (W) Lansome III, 1968.

Design: 4 randomised blocks of 6 plots, split into 3.

Area of each sub plot: 0.0036. Area harvested: Rothamsted - 0.0036, Woburn - 0.0036.

Treatments: All combinations of:-
Whole plots: 1. Seed: Healthy (free from Oospora and Rhizoctonia) (O), healthy, reinfected with Oospora (CO), healthy, reinfected with Rhizoctonia (CR), once-grown, from Rothamsted farm (F), the same, dipped in fungicide (FD), stock seed (S).
Sub plots: 2. Varieties: King Edward (KE), Majestic (M), Pentland Dell (PD).

Basal applications:
Great Harpenden II (R): 3 tons ground chalk, 7 tons FYM, 8 cwt (13:13:20). Weedkiller: Paraquat at 0.5 lb ion plus linuron at 0.75 lb in 40 gals. Fungicide: Mancozeb at 1.2 lb in 40 gals on 3 occasions.
Lansome III (W): 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.5 lb in 50 gals. Fungicide: Mancozeb at 1.2 lb in 38 gals on 3 occasions.

Cultivations, etc.:-
Great Harpenden II (R): FYM applied: 8 Dec, 1967. Ground chalk applied, plots ploughed: 20 Dec. Basal NPK compound applied: 20 Mar, 1968. Plots rotary cultivated, potatoes planted, plots rotary ridged: 22 Apr. Weedkiller applied: 6 May. Fungicide applied: 5 July, 22 July, 5 Aug. Sprayed with undiluted BOV at 15 gals: 5 Sept. Lifted: 16 Oct. Previous crops: Grass 1959 - 67.
Lansome III (W): Spring-tine cultivated: 11 Mar, 1968. Basal NPK compound applied: 16 Mar. Plots rotary cultivated, potatoes planted: 17 Apr. Grubbed: 25 Apr. Ridged: 26 Apr. Weedkiller

applied: 3 May. Fungicide applied: 12 July, 18 July, 30 July. Sprayed with undiluted BOV at 15 gals: 16 Aug. Lifted: 30 Sept. Previous crops: Spring wheat 1966, fallow 1967.

NOTE: Emergence counts were made on 29 May on Lansome III (W) and on 4 June on Great Harpenden II (R).

Standard errors per plot. Total tubers:

Great Harpenden I (R):	Whole plot:	1.107 or 6.0% (15 d.f.)
	Sub plot:	1.867 or 10.2% (36 d.f.)
Lansome III (W):	Whole plot:	1.157 or 8.2% (15 d.f.)
	Sub plot:	1.354 or 9.6% (36 d.f.)

68/De/5.3

SUMMARY OF RESULTS

GREAT HARPENDEN II (R)

	O	CO	CR	F	FD	S	Mean
			TOTAL TUBERS				
			(1) and (2)				(±0.381)
KE	19.11	18.68	17.62	18.28	17.86	20.99	18.76
M	19.32	19.35	17.09	17.21	18.61	13.23	17.47
PD	18.85	19.15	18.46	18.72	18.41	20.00	18.93
Mean (±0.554)	19.10	19.06	17.73	18.07	18.29	18.07	18.39

(1) (±0.942) For use in horizontal and diagonal comparisons
(2) (±0.934) For use in vertical and interaction comparisons

			% WARE				
KE	96.9	98.3	96.7	97.1	96.1	97.7	97.1
M	98.3	98.9	98.6	98.9	97.9	98.0	98.4
PD	98.5	99.0	98.9	97.9	97.5	99.3	98.5
Mean	97.9	98.7	98.0	98.0	97.2	98.4	98.0

https://doi.org/10.23637/ERADOC-1-58

68/De/5.4

LANSOME III (W)

	O	CO	CR	F	FD	S	Mean
	TOTAL TUBERS						
	(1) and (2)						(±0.276)
KE	13.60	14.51	12.63	12.45	12.82	13.75	13.29
M	17.15	17.49	17.51	16.60	15.56	14.01	16.39
PD	13.07	13.10	13.03	12.87	11.74	12.24	12.68
Mean (±0.579)	14.60	15.03	14.39	13.98	13.38	13.33	14.12

(1) (±0.800) For use in horizontal and diagonal comparisons
(2) (±0.677) For use in vertical and interaction comparisons

% WARE

KE	56.5	65.0	55.6	59.6	57.3	73.5	61.2
M	84.1	85.5	86.0	85.9	79.1	87.6	84.7
PD	64.1	70.9	78.5	73.6	57.9	76.8	70.3
Mean	68.3	73.8	73.3	73.0	64.8	79.3	72.1

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68/De/6.1

POTATOES

(RP 6/1)

Coiled sprout and Verticillium nubilum - Great Harpenden II 1968.

Design (each variety): 4 blocks of 2 split into 6.

Area of each sub plot: 0.0029. Area harvested: 0.0029.

Treatments: 4 blocks of Arran Pilot, 4 of Pentland Dell. All combinations of:-

Whole plots: 1. Weed control: By cultivation (see below under 'Cultivations etc.') (WO), by pre-emergence weedkiller (Paraquat at 0.5 lb ion plus linuron at 0.75 lb in 36 gals) (WW).

Sub plots: 2. Seed treatment (seed of the same stock, differentially chitted): Chitted, coil prone (CP), chitted non-coil prone (CO), unchitted, non-coil prone (OO).

3. Fungus inoculation: Seed tubers dipped in water (O), dipped in suspension of Verticillium nubilum (F).

Basal applications: 3 tons ground chalk, 7 tons FYM, 8 cwt (13:13:20).
Fungicide: Mancozeb at 1.2 lb in 40 gals on 3 occasions.

Cultivations, etc.: FYM applied: 8 Dec, 1967. Ground chalk applied, plots ploughed: 20 Dec. Basal NPK compound applied: 20 - 27 Mar, 1968. Rotary cultivated, potatoes planted, rotary ridged: 22 Apr. WO plots chain-harrowed: 23 Apr. Weedkiller applied to WW plots: 6 May. WO plots grubbed: 20 May, mechanically weeded: 24 May, rotary ridged: 28 May, grubbed: 7 June, rotary ridged: 10 June. WW plots grubbed: 17 June. WW plots ridged with ridging bodies (Pentland Dell plots only): 18 June. Sprayed with mancozeb: 5 July, 22 July, 5 Aug. Sprayed with undiluted BOV at 15 gals: 21 Aug. Lifted (Pentland Dell only): 16 Oct.
Previous crops: Grass 1959 - 67.

NOTE: No yields were taken from the Arran Pilot plots which were sampled fortnightly to assess the rate of bulking and incidence of coiled sprout and Verticillium nubilum.

Standard errors per sub plot.
Total tubers: 1.097 or 8.5% (30 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/6.2

SUMMARY OF RESULTS

PENTLAND DELL

	CP	CO	OO	O	F	Mean
			TOTAL TUBERS			
	(±0.388)*			(±0.317)*		(±0.306)
WO	10.27	15.20	13.37	13.65	12.25	12.95
WW	9.25	16.28	13.17	13.42	12.38	12.90
				(±0.388)		(±0.274)
		CP		10.09	9.44	9.76
		CO		16.97	14.51	15.74
		OO		13.53	13.00	13.27
Mean (±0.224)				13.53	12.32	12.92

* For use in horizontal and interaction comparisons only

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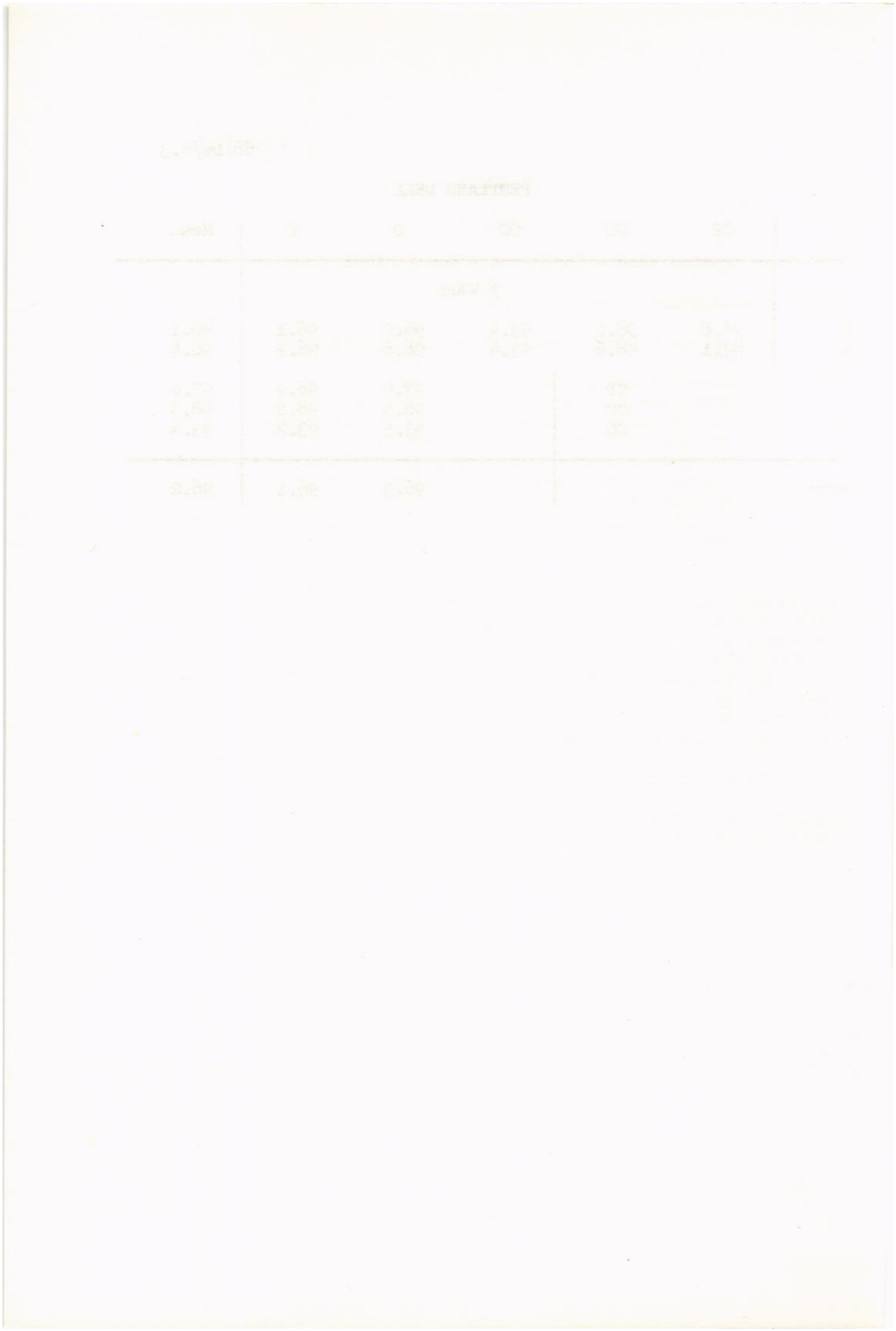
68/De/6.3

PENTLAND DELL

	CP	CO	OO	O	F	Mean
			% WARE			
O	96.8	98.0	93.4	96.0	96.1	96.1
W	97.1	98.6	93.4	96.6	96.2	96.4
		CP		97.0	96.9	97.0
		CO		98.4	98.2	98.3
		OO		93.5	93.2	93.4
Mean				96.3	96.1	96.2

https://doi.org/10.23637/ERADOC-1-58



https://doi.org/10.23637/ERADOC-1-58

68/De/7.1

POTATOES

(RP 7/1)

Warm water treated seed - Long Hoos I and II 1968.

Design: 4 randomised blocks of 6 plots.

Area of each plot: 0.0033. Area harvested: 0.0033.

Treatments: None (0) and all combinations of:-
1. Warm water treatment: 45 (L), 50 (M) degrees C.
2. Duration of water treatment: 20 (2), 30 (3) minutes.
   Also 55 degrees C (H) for 10 minutes (1).

Basal applications: 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz applied with mancozeb on one occasion.

Cultivations, etc. Deep-tine cultivated twice: 2 Oct, 1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK compound applied: 14 Mar. Rotary cultivated, potatoes machine planted: 9 Apr. Grubbed and rotary ridged: 17 June. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 15 Oct. Variety: Majestic. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

NOTE: Emergence counts were made.

Standard error per plot.
Total tubers: 1.601 or 9.3% (15 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/7.2

SUMMARY OF RESULTS

0	L2	L3	M2	M3	H1	Mean
			TOTAL TUBERS			
18.49	21.48	19.93	19.33	7.72	16.68	17.27
			(±0.800)			
			% WARE			
96.3	96.6	96.8	95.8	93.9	96.6	96.0

POTATOES

(RP 8/1)

Chemicals and seed-borne fungi - Long Hoos I and II 1968.

Design: 3 randomised blocks of 16 plots.

Area of each plot: 0.0033. Area harvested: 0.0033.

Treatments: None (O)

Seed treated in autumn:

Chemical	Percentage		
Agallol	0.5	Solution	(A)
Aardisan	0.5	Solution	(B)
Thiabendazole lactate (S4)	0.1	Solution	(C)
Thiabendazole lactate (S4)	0.01	Solution	(D)
Thiabendazole (W7)	0.1	Solution	(E)
Aardisol	2.0	Solution	(F)
Aretanol	2.0	Solution	(G)
Trametan	50.0	Dust	(H)
Vitavax	0.45	Suspension	(J)
Plantvax	0.45	Suspension	(K)
Polyram	7.0	Dust	(L)

Seed treated in spring (April) with 10 per cent dusts of the following chemicals:

Plantvax	(M)
Vitavax	(N)
F 849	(P)
EF 1991	(Q)

NOTE: Dusts were applied at 10 lb per ton of seed, the solutions and suspensions by immersing the seed tubers for 5 minutes. In the cases of Agallol and Aardisan the time of immersion was 45 seconds. The seed rate was approximately one ton per acre.

Basal applications: 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz applied with mancozeb on one occasion.

Cultivations, etc.: Deep-tine cultivated twice: 2 Oct, 1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK compound applied: 14 Mar. Rotary cultivated, potatoes machine planted: 8 Apr. Weedkiller applied: 4 May. Grubbed and rotary ridged: 17 June. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 15 Oct. Variety: King Edward. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

NOTE: Emergence counts were made.

Standard error per plot.
Total tubers: 1.021 or 5.6% (30 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/8.2

SUMMARY OF RESULTS

	TOTAL TUBERS	% WARE
	(±0.590)	
O	18.51	95.3
A	16.86	94.5
B	19.27	94.6
C	20.59	96.2
D	20.16	95.9
E	18.26	95.0
F	17.30	95.5
G	16.72	95.5
H	19.85	95.5
J	18.61	95.6
K	19.64	95.5
L	20.04	95.3
M	14.59	94.5
N	16.33	96.0
P	16.15	97.0
Q	18.39	95.8
Mean	18.20	95.5

https://doi.org/10.23637/ERADOC-1-58

68/De/9.1

POTATOES

(RP 10/1)

Effects of aphids - Great Harpenden II 1968.

Design: 4 x 4 Latin square.

Area of each plot: 0.0274. Area harvested: 0.0035.

Treatments: All combinations of:-
1. Insecticide applied early: None (O), 1.5 lb phorate as granules applied at planting (E).
2. Insecticide applied late: None (O), sprayed with demeton-s-methyl at 3.5 oz in 37 gals on 5 July (L).

Basal applications: 3 tons ground chalk, 7 tons FYM, 8 cwt (13:13:20). Weedkiller: Paraquat at 0.5 lb ion and linuron at 0.75 lb in 36 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions.

Cultivations, etc.: FYM applied: 8 Dec, 1967. Chalk applied, plots ploughed: 20 Dec. Basal NPK compound applied: 20 Mar, 1968. Plots rotary cultivated, potatoes machine planted: 11 Apr. Weedkiller applied: 4 May. Rotary ridged: 10 June. Mancozeb applied: 5 July, 19 July, 5 Aug. Sprayed with undiluted BOV at 15 gals: 21 Aug. Lifted: 18 Oct. Variety: King Edward. Previous crops: Grass 1959 - 67.

NOTE: Aphids were counted on leaves removed from potato plants.

Standard error per plot.
Total tubers: 0.648 or 4.2% (6 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/9.2

SUMMARY OF RESULTS

	O	L	Mean
	TOTAL TUBERS		
	(±0.324)		(±0.229)
O	15.53	15.55	15.54
E	15.49	15.68	15.59
Mean (±0.229)	15.51	15.62	15.56
	% WARE		
O	95.8	96.3	96.0
E	96.1	95.1	95.6
Mean	96.0	95.7	95.8

https://doi.org/10.23637/ERADOC-1-58

68/De/10.1

POTATOES

(RP 11/1)

Comparison of fungicides - Great Harpenden II 1968.

Design: 6 x 6 Latin square.

Area of each plot: 0.0129. Area harvested: 0.0086.

Treatments:

No fungicide	(O)
Fentin acetate at 0.21 lb plus maneb at 0.07 lb	(A)
Fentin acetate at 0.07 lb plus maneb at 0.021 lb	(B)
Fentin acetate at 0.07 lb plus maneb at 0.021 lb plus 7 lb wax	(C)
Dibutyltin dilaurate at 0.07 lb a.i.	(D)
Triphenyltin sulphide at 0.028 lb a.i.	(E)

All the above were applied in 70 gals on two occasions.

Basal applications: 3 tons ground chalk, 7 tons FYM, 8 cwt compound (13:13:20). Weedkiller: Paraquat at 0.38 lb ion and linuron at 0.75 lb in 36 gals.

Cultivations, etc.: FYM applied: 8 Dec, 1967. Ground chalk applied, plots ploughed: 20 Dec. Basal compound fertiliser applied: 20 - 27 Mar, 1968. Rotary cultivated, potatoes machine planted: 1 Apr. Weedkiller applied: 3 May. Grubbed: 7 June. Rotary ridged: 10 June. Fungicides applied: 20 July, 15 Aug. Sprayed with undiluted BOV at 15 gals: 31 Aug. Lifted: 17 Oct. Variety: King Edward. Previous crops: Grass 1959 - 67.

Standard error per plot.
Total tubers: 0.900 or 7.0% (20 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/10.2

SUMMARY OF RESULTS

O	A	B	C	D	E	Mean
			TOTAL TUBERS			
			(±0.367)			
12.09	13.46	12.66	13.08	12.50	12.98	12.79
			% WARE			
95.5	95.9	95.8	95.3	96.0	95.5	95.7

68/De/11.1

POTATOES

(RP 12/1)

Post-planting cultivations - Long Hoos I and II, 1968.

Design: 4 randomised blocks of 5 plots, split into 2.

Area of each sub plot: 0.0064. Area harvested: 0.0032.

Treatments: All combinations of:-

Whole plots:

1. Treatment of ridges (immediately after planting):
   - Undisturbed (U)
   - Grubbed (G)
   - Rolled (R)
   - Rolled and grubbed (RG)
   - Chain harrowed and grubbed (HG)

Sub plots:

2. Grubbing and rotary ridging (just before tops meet in rows): None (RO), grubbed and rotary ridged (RR).

Basal applications: 10 cwt (13:13:20). Weedkiller: Paraquat at 0.38 lb ion and linuron at 0.75 lb in 37 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on three occasions. Insecticide: Demeton-s-methyl at 3.5 oz (applied with mancozeb on one occasion).

Cultivations, etc.: Deep-tine cultivated twice: 2 Oct, 1967. Ploughed: 4 - 23 Jan, 1968. Basal NPK applied: 14 Mar. Rotary cultivated: 2 Apr, Potatoes machine planted: 4 Apr. Treatments G, R, RG, HG applied: 6 Apr. Weedkiller applied: 3 May. 'RR' plots grubbed: 7 June. 'RR' plots rotary ridged: 10 June. Fungicide applied: 5 July. Fungicide and insecticide applied: 19 July. Fungicide applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 21 Aug. Lifted: 21 Oct. Variety: King Edward. Previous crops: Lucerne and cocksfoot 1966, fallow 1967.

Standard errors per plot.

Total tubers: Whole plot: 1.019 or 5.3% (12 d.f.)
Sub plot: 1.588 or 8.2% (15 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/11.2

SUMMARY OF RESULTS

	O	G	R	RG	HG	Mean
	TOTAL TUBERS					
	(1) and (2)					(±0.355)
RO	18.66	18.96	19.96	19.40	18.69	19.13
RR	19.80	20.18	20.10	18.18	19.95	19.64
Mean (±0.510)	19.23	19.57	20.03	18.79	19.32	19.39

(1) (±0.758) For use in horizontal and diagonal comparisons only
(2) (±0.794) For use in vertical and interaction comparisons only

	% WARE					
RO	95.7	94.8	95.0	95.2	95.4	95.2
RR	96.1	96.5	96.1	95.8	95.7	96.0
Mean	95.9	95.6	95.5	95.5	95.5	95.6

https://doi.org/10.23637/ERADOC-1-58

68/De/12.1

POTATOES

(RP 13/1 and WP 2/1)

Varieties, nitrogen and scab (Streptomyces scabies) - Rothamsted (R) Pastures and Woburn (W) Great Hill Bottom I 1968.

Design: 4 randomised blocks of 3 plots, split into 3.

Area of each sub plot: 0.0120. Area harvested: Pastures (R): 0.0028, Great Hill Bottom I (W): 0.0029.

Treatments: All combinations of:-
Whole plots: 1. Varieties: King Edward (KE), Majestic (M), Pentland Dell (PD).
Sub plots: 2. N: None (N0), 1.0 (N1), 2.0 (N2) cwt as 'Nitro-Chalk'.

Basal applications: 6 cwt (0:14:28).
Pastures (R): Weedkillers: Paraquat at 0.75 lb ion in 32 gals. Paraquat at 0.38 lb ion plus linuron at 0.75 lb in 40 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz in 37 gals applied with mancozeb on one occasion.
Great Hill Bottom I (W): Weedkillers: Paraquat at 0.5 lb ion in 33 gals. Linuron at 0.5 lb plus paraquat at 0.38 lb ion in 50 gals. Fungicide: Mancozeb at 1.2 lb in 38 gals on 2 occasions.

Cultivations, etc.:
Pastures (R): Paraquat applied: 3 Oct, 1967. Ploughed: 29 Oct. Basal PK compound applied: 22 Mar, 1968. 'Nitro-Chalk' applied, plots rotary cultivated, potatoes machine planted: 1 Apr. Paraquat and linuron applied: 3 May. Plots grubbed: 6 June. Plots rotary ridged: 10 June. Mancozeb applied: 4 July. Mancozeb and demeton-s-methyl applied: 19 July. Mancozeb applied: 5 Aug. Sprayed with undiluted BOV at 15 gals: 21 Aug. Lifted: 4 Oct. Previous crops: Fallow 1966, barley 1967.

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Great Hill Bottom I (W): Deep-tine cultivated: 25 Sept, 1967. Ploughed: 20 Feb, 1968. Paraquat applied: 3 Mar. Basal PK compound applied: 22 Mar. 'Nitro-Chalk' applied: 3 Apr. Plots rotary cultivated, potatoes planted: 4 Apr. Linuron and paraquat applied: 2 May. Grubbed and rotary ridged: 15 June. Fungicide applied: 18 and 30 July. Sprayed with undiluted BOV at 15 gals: 15 Aug. Lifted: 4 Oct. Previous crops: Fallow 1966, potatoes 1967.

NOTE: Assessments of surface area of tubers affected by scab (Streptomyces scabies) were made at harvest.

Standard errors per plot. Total tubers:

Pastures (R):	Whole plot:	0.285 or 1.7% (6 d.f.)
	Sub plot:	1.012 or 6.0% (18 d.f.)
Great Hill Bottom I (W):	Whole plot:	0.776 or 8.4% (6 d.f.)
	Sub plot:	1.401 or 15.2% (18 d.f.)

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68/De/12.3

SUMMARY OF RESULTS

PASTURES (R)

	N0	N1	N2	Mean
		TOTAL TUBERS		
		(1) and (2)		(±0.143)
KE	13.79	20.68	19.93	18.14
M	13.28	14.76	15.36	14.46
PD	15.15	18.13	19.86	17.71
Mean (±0.292)	14.07	17.86	18.38	16.77

(1) (±0.437) For use in vertical and diagonal comparisons
(2) (±0.506) For use in horizontal and interaction comparisons

		% WARE		
KE	93.2	96.4	95.7	95.1
M	96.7	97.6	96.7	97.0
PD	98.2	99.0	98.9	98.7
Mean	96.0	97.7	97.1	96.9

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68/De/12.4

GREAT HILL BOTTOM I (W)

	N0	N1	N2	Mean
		TOTAL TUBERS		
		(1) and (2)		(±0.388)
KE	5.84	10.25	12.36	9.48
M	7.13	10.49	10.27	9.29
PD	6.36	9.13	11.20	8.90
Mean (±0.404)	6.44	9.96	11.27	9.22

(1) (±0.691) For use in vertical and diagonal comparisons
(2) (±0.700) For use in horizontal and interaction comparisons

% WARE

KE	81.7	85.8	91.4	86.3
M	90.3	92.2	94.8	92.4
PD	89.8	92.9	94.8	92.5
Mean	87.3	90.3	93.7	90.4

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POTATOES

(WP 1/1)

The effect of chemicals on common scab - Woburn Great Hill Bottom I 1968.

Design: 4 blocks of 6 plots.

Area of each plot: 0.0064. Area harvested: 0.0021.

Treatments:-
Chemicals: None (O), quintozene at 150 lb (A), captan at 50 lb (B), captan at 150 lb (C), drazoxolon at 150 lb (D), O,O-diethylphthalimidophosphonothioate at 150 lb (E).

Basal applications: Weedkiller: Paraquat at 0.5 lb ion in 33 gals. 10 cwt (13:13:20). Weedkiller: Linuron at 0.5 lb plus paraquat at 0.37 lb ion in 50 gals. Fungicide: Mancozeb at 1.2 lb in 38 gals, applied twice.

Cultivations, etc.: Deep-tine cultivated: 25 Sept, 1967. Ploughed: 20 Feb, 1968. Paraquat applied: 3 Mar. NPK applied: 22 Mar. Chemical treatments applied, rotary cultivated, potatoes planted: 11 Apr. Linuron plus paraquat applied: 3 May. Rotary ridged: 15 June. Fungicide applied: 18 July, 30 July. Sprayed with undiluted BOV at 15 gals: 16 Aug. Lifted: 4 Oct. Variety: Maris Piper. Previous crops: Fallow 1966, potatoes 1967.

NOTE: Scab counts were made.

Standard error per plot.
Total tubers: 0.907 or 7.4% (15 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/De/13.2

SUMMARY OF RESULTS

O	A	B	C	D	E	Mean
			TOTAL TUBERS			
			(±0.453)			
12.62	14.22	12.75	12.04	11.16	10.36	12.19
			% WARE			
90.2	91.9	91.3	89.6	85.5	84.4	88.8

https://doi.org/10.23637/ERADOC-1-58

68/De/14.1

POTATOES

(WP 401)

Fumigants and nutrients - Woburn Stackyard D (clean site), Great Hill III (infested site), 1968.

Design: At each site 2 blocks of 2 plots, each split into 3.

Area of each sub plot: 0.0021. Area harvested: 0.0011.

Treatments: All combinations of:-
Whole plots: 1. Fumigant: None (O), methyl bromide at 870 lb (F).
Sub plots: 2. NPK: 2 cwt (13:13:20) (T1), 10 cwt (13:13:20) (T2), 10 cwt (13:13:20) plus 100 lb Mg as Epsom salts (T2Mg).

Basal applications: Weedkiller: Paraquat at 0.5 lb ion in 33 gals before ploughing (Great Hill III only). Weedkiller: Linuron at 0.5 lb plus paraquat at 0.37 lb ion in 50 gals. Fungicide: Mancozeb at 1.2 lb in 38 gals (on three occasions). Insecticide: Demeton-s-methyl at 3.5 oz applied with fungicide on one occasion.

Cultivations, etc.:
Stackyard D: Mg applied: 8 Feb, 1968. NPK applied: 1 Apr. Rotary cultivated, methyl bromide applied: 5 Apr. Potatoes planted: 9 Apr. Linuron plus paraquat applied: 3 May. Earthed up: 14 June. Fungicide plus insecticide applied: 12 July. Fungicide applied: 18 July, 30 July. Sprayed with undiluted BOV at 15 gals: 4 Sept. Lifted: 31 Oct. Variety: King Edward. Previous crops: Fallow 1966 and 1967.
Great Hill III: Paraquat applied: 22 Sept, 1967. Subsoiled: 26 - 27 Sept. Ploughed: 7 - 9 Nov. Mg applied: 8 Feb, 1968. NPK applied: 1 Apr. Rotary cultivated, methyl bromide applied: 5 Apr. Potatoes planted: 9 Apr. Linuron plus paraquat applied: 2 May. Rotary ridged: 13 June. Fungicide plus insecticide applied: 12 July. Fungicide applied: 18 July, 30 July. Sprayed with undiluted BOV at 15 gals: 4 Sept. Lifted: 4 Nov. Variety: King Edward. Previous crops: Potatoes 1966, spring wheat 1967.

NOTES: (1) Soil samples were taken in March and September for cyst and egg counts of Heterodera rostochiensis.
(2) Plant samples were taken in July for counts of white cysts.

Standard errors per sub plot. Total tubers:

Stackyard D, clean site:	3.640 or 21.5% (4 d.f.)
Great Hill III, infected site:	1.560 or 11.2% (4 d.f.)

68/De/14.2

SUMMARY OF RESULTS

STACKYARD D

	T1	T2	T2MG	Mean
	TOTAL TUBERS			
	(1) and (2)			(±0.945)
O	11.56	19.95	20.00	17.17
F	10.31	18.96	20.94	16.74
Mean (±1.820)	10.94	19.46	20.47	16.95

(1) (±2.305) For use in vertical and diagonal comparisons only
(2) (±2.574) For use in horizontal and interaction comparisons only

	% WARE			
O	74.4	87.9	82.4	81.6
F	68.3	79.2	82.4	76.6
Mean	71.4	83.5	82.4	79.1

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68/De/14.3

GREAT HILL III

	T1	T2	T2MG	Mean
	TOTAL TUBERS			
	(1) and (2)			(±2.210)
O	6.15	11.25	12.14	9.84
F	14.64	19.17	20.42	18.07
Mean (±0.780)	10.39	15.21	16.28	13.96

(1) (±2.386) For use in vertical and diagonal comparisons only
(2) (±1.103) For use in horizontal and interaction comparisons only

% WARE

O	51.3	72.2	74.5	66.0
F	71.9	79.8	78.0	76.5
Mean	61.6	76.0	76.2	71.3

https://doi.org/10.23637/ERADOC-1-58

68/Df/1.1

GRASS

(RG 101)

Anhydrous and aqueous ammonia, Parklands 1968.

Design: 3 randomised blocks of 26 plots.

Area of each plot: 0.0092. Area harvested: 0.0054.

Treatments: None (ND) (2 plots per block) and all combinations of:-

1. Nitrogen fertiliser and time of application:
   - Applied in autumn:
     - Injected anhydrous ammonia (20 Nov) (IAA)
     - Injected aqueous ammonia (8 Nov) (IQA)
   - Applied in spring:
     - Injected anhydrous ammonia (14 Mar) (IAS)
     - Injected aqueous ammonia (12 Mar) (IQS)
   - Broadcast 'Nitro-Chalk':
     - Applied in 3 equal dressings (BD)
     - Applied as single dressing (BS)
2. N: 2.0 (N2), 3.0 (N3), 4.0 (N4), 5.0 (N5) cwt (total for the season).

Basal applications: 900 lb (0:14:28) in winter.

Cultivations, etc.: Basal PK compound applied: 1 Jan, 1968. 'Nitro-Chalk' applied (treatment BS and first dressing of BD): 15 Mar. Cut three times: 22 May, 9 July, 14 Sept. 'Nitro-Chalk' applied after first two cuts for BD treatment. Previous crop: Grassland for at least 35 years.

NOTE: Grass samples were taken to determine dry matter and percentage of N, P and K. Percentage of Mg was determined in some samples.

Standard errors per plot. Dry matter:

1st cut:	2.71 or 7.9% (46 d.f.)
2nd cut:	2.09 or 7.8% (46 d.f.)
3rd cut:	3.18 or 14.6% (46 d.f.)
Total of 3 cuts:	4.97 or 6.0% (46 d.f.)

https://doi.org/10.23637/ERADOC-1-58

68/Df/1.2

SUMMARY OF RESULTS

	IAA	IQA	IAS	IQS	BD	BS	Mean
			1ST CUT				
			(±1.56)				(±0.64)
N2	34.1	34.2	35.8	33.8	34.0	31.1	33.8
N3	35.7	35.4	31.8	35.0	33.5	30.6	33.7
N4	36.5	36.6	31.3	34.6	32.8	34.9	34.4
N5	33.5	38.3	32.7	34.3	34.5	33.5	34.5
Mean (±0.78)	34.9	36.1	32.9	34.4	33.7	32.5	34.1

NO: 21.2 (±1.11)

General mean: 33.1
Mean D.M. %: 14.2

2ND CUT

			(±1.20)				(±0.49)
N2	23.9	27.4	27.9	26.2	25.2	25.3	26.0
N3	26.3	27.3	27.8	28.5	26.5	28.7	27.5
N4	26.7	28.4	28.6	27.4	26.8	27.8	27.6
N5	26.4	25.9	27.9	25.6	25.6	26.0	26.2
Mean (±0.60)	25.8	27.3	28.0	26.9	26.0	27.0	26.8

NO: 18.2 (±0.85)

General mean: 26.2
Mean D.M. %: 15.6

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	IAA	IQA	IAS	IQS	BD	BS	Mean
			3RD CUT				
			(±1.84)				(±0.75)
N2	23.0	23.5	21.9	23.3	19.5	21.7	22.1
N3	21.3	22.4	22.2	24.1	20.3	23.0	22.2
N4	19.9	24.1	23.4	22.7	18.5	20.0	21.5
N5	22.1	21.8	22.2	21.5	19.7	21.2	21.4
Mean (±0.92)	21.6	23.0	22.4	22.9	19.5	21.5	21.8

NO: 23.5 (±1.30)

General mean: 21.9
Mean D.M. %: 16.6

			TOTAL OF 3 CUTS				
			(±2.87)				(±1.17)
N2	81.0	85.1	85.6	83.3	78.7	78.0	81.9
N3	83.3	85.2	81.8	87.6	80.3	82.4	83.4
N4	83.1	89.1	83.2	84.6	78.1	82.7	83.5
N5	82.0	86.0	82.9	81.4	79.8	80.7	82.1
Mean (±1.44)	82.3	86.4	83.4	84.2	79.2	80.9	82.7

NO: 62.8 (±2.03)

General mean: 81.2
Mean D.M. %: 15.5

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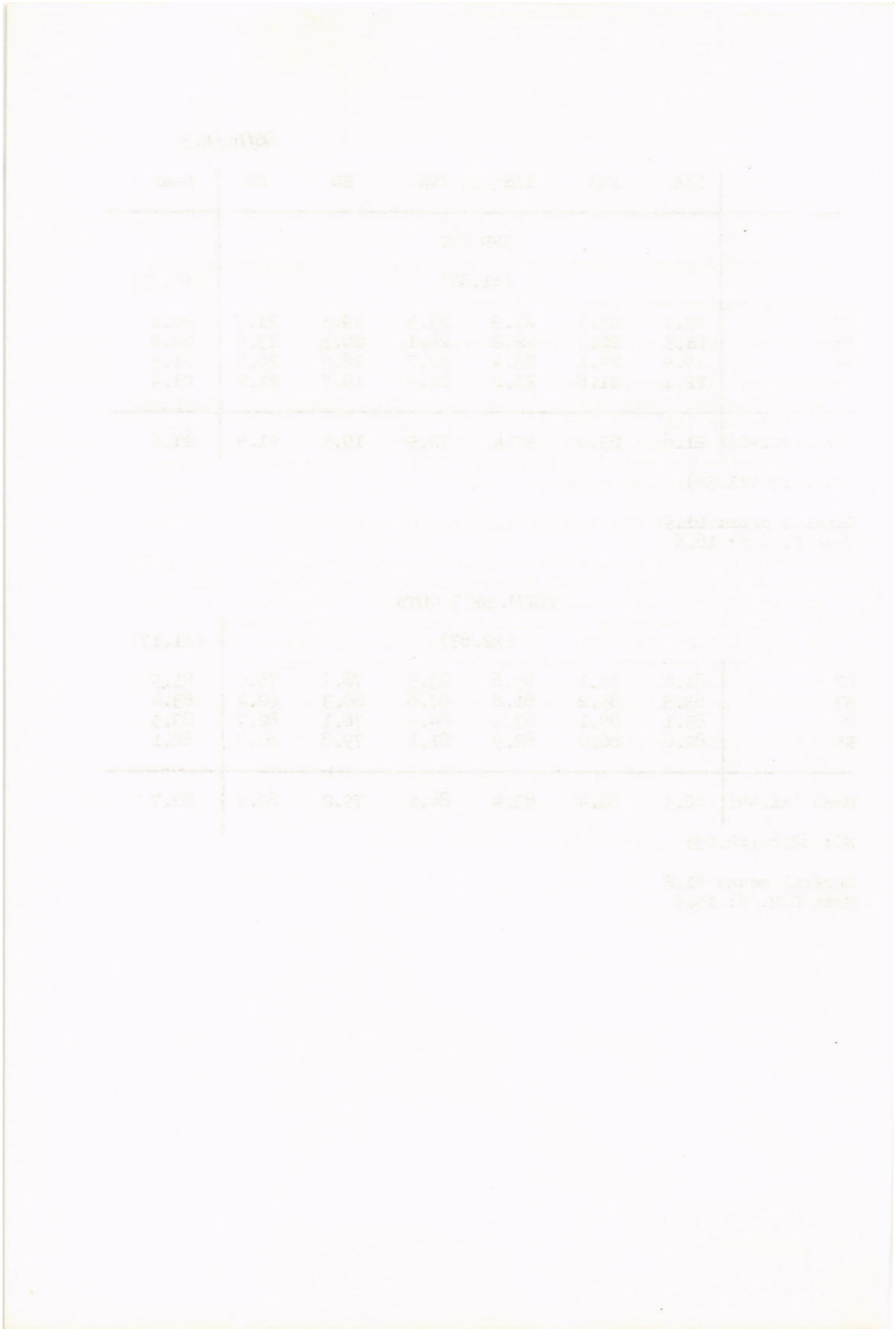

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68/Df/2.1

GRASS

(RG 201)

Nitrogen and damage to sward by ammonia-injectors - Parklands 1968.

Design: 1 randomised block of 18 plots.

Area of each plot: 0.0092. Area harvested: 0.0054.

Treatments: All combinations of:-

1. Mechanical damage by injector: None (IO), damage by 'Anhydrous' injector (IA), by 'Aqua' injector (IQ).
2. Time of damage: In autumn (A), in spring (S).
3. Nitrogen per cut: 0.3 (N1), 0.6 (N2), 1.0 (N3) cwt as 'Nitro-Chalk' broadcast by hand.

Basal applications: 900 lb (0:14:28) applied in winter.

Cultivations, etc.: Autumn injector slits made - 'aqua': 8 Nov, 1967, 'anhydrous': 21 Nov. Basal PK compound applied: 23 Jan, 1968. Spring injector slits made - 'aqua': 12 Mar, 'anhydrous': 14 Mar. 'Nitro-Chalk' applied: 15 Mar. Cut three times: 22 May, 9 July, 14 Sept. 'Nitro-Chalk' applied after first two cuts. Previous crop: Grassland for at least 35 years.

NOTE: Grass samples were taken for dry matter and percentage of N.

Standard errors per plot.

Dry matter:

1st cut:	1.73 or 5.2% (4 d.f.)
2nd cut:	2.72 or 10.4% (4 d.f.)
3rd cut:	5.38 or 23.4% (4 d.f.)
Total of 3 cuts:	8.01 or 9.8% (4 d.f.)

68/Df/2.2

SUMMARY OF RESULTS

DRY MATTER

	IA	IQ	N1	N2	N3	Mean
1ST CUT						
	(±1.00)			(±1.22)		(±0.71)
A	33.0	33.0	29.3	34.7	35.1	33.0
S	30.8	34.6	31.8	33.9	32.4	32.7
				(±1.22)		(±0.71)
	0		28.9	35.9	34.2	33.0
	IA		28.8	34.7	32.1	31.9
	IQ		32.2	33.8	35.4	33.8
Mean (±0.71)			30.0	34.8	33.9	32.9
2ND CUT						
	(±1.57)			(±1.92)		(±1.11)
A	25.4	25.9	26.3	24.7	25.9	25.6
S	26.2	26.6	27.5	25.3	26.5	26.4
				(±1.92)		(±1.11)
	0		26.8	26.5	26.2	26.5
	IA		25.5	25.1	26.9	25.8
	IQ		28.3	24.9	25.5	26.3
Mean (±1.11)			26.9	25.5	26.2	26.2

Mean D.M. %: 1st cut: 15.2
2nd cut: 15.8

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68/Df/2.3

DRY MATTER

	IA	IQ	N1	N2	N3	Mean
			3RD CUT			
	(±3.11)			(±3.81)		(±2.20)
A	20.3	24.3	23.3	20.3	23.4	22.3
S	22.9	26.6	27.1	25.5	21.7	24.8
				(±3.81)		(±2.20)
	0		25.2	17.7	22.4	21.8
	IA		25.3	19.2	20.3	21.6
	IQ		25.1	26.6	24.8	25.5
Mean (±2.20)			25.2	21.2	22.5	23.0
			TOTAL OF 3 CUTS'			
	(±4.62)			(±5.66)		(±3.27)
A	78.7	83.2	78.8	79.7	84.4	81.0
S	79.9	87.9	86.4	84.7	80.7	83.9
				(±5.66)		(±3.27)
	0		80.9	80.2	82.7	81.3
	IA		79.6	79.1	79.3	79.3
	IQ		85.7	85.3	85.8	85.6
Mean (±3.27)			82.0	81.5	82.6	82.0

Mean D.M. %: 3rd cut: 17.7
Total of 3 cuts: 16.2

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