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71/R/P/2 Chemicals and Seed-borne Fungi - Potatoes

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71/R/P/2

POTATOES

CHEMICALS AND SEED-BORNE FUNGI

Object: To study the effects of different rates of three systemic fungicides, applied to seed tubers, on yield and tuber health of potatoes - Whittlocks.

Design: 4 randomised blocks of 2 plots, split into 8.
(Plus one extra block for sampling).

Whole plot dimensions: 5.69 x 24.8. Sub plot area harvested: 0.00135.

Treatments:

All combinations of:-

- Whole plots: 1. Varieties: Pentland Crown (PC), King Edward (KE).
Sub plots: 2. Seed treatment with chemicals: Benomyl powder (B), thiabendazole powder (T), EL 273 powder (L).
3. Rates of application: Diluted with kaolin dust to give 1% (1), 5% (5), (1% (1) and 4% (4) for EL 273).

Together with additional treatments to sub plots: None (0), kaolin dust (K). All dust treatments were applied at 4.5 kg per tonne of seed potatoes.

Basal applications: 1506 kg (13:13:20). Weedkiller: Linuron at 0.84 kg in 427 l. Fungicide: Mancozeb at 1.35 kg in 438 l on 2 occasions. Insecticide: Demeton-s-methyl at 245 g applied with the first mancozeb spray.

Cultivations, etc.: Ploughed: 1 Oct, 1970. Basal NPK applied: 6 Apr, 1971. Rotary cultivated, potatoes machine planted: 19 Apr. Weedkiller applied: 11 May. Grubbed: 4 June. Rotary cultivated: 7 June. Fungicide and insecticide applied: 24 June. Fungicide applied: 16 Aug. Sprayed with undiluted BOV at 168 l: 16 Sept. Lifted: 1 Oct. Previous crops: Spring wheat 1969, fallow 1970.

NOTE: Emergence counts were made. Diseases in the eyes of tubers were assessed after riddling.

Standard errors per plot.

Total tubers, tonnes/hectare: Whole plot: 1.17 or 2.7% (3 d.f.)
Sub plot: 2.62 or 6.1% (42 d.f.)

71/R/P/2

SUMMARY OF RESULTS

	O	K	B1	B5	T1	T5	L1	L4	Mean
TOTAL TUBERS: TONNES/HECTARE									
(1) and (2)									
									(±0.59)
KE	47.6	47.9	45.4	47.6	47.3	49.4	23.5	5.1	39.2
PC	51.6	50.2	49.7	50.4	50.4	53.8	35.3	29.3	46.3
Mean (±0.93)	49.6	49.1	47.6	49.0	48.8	51.6	29.4	17.2	42.8

(1) (±1.36) For use in vertical and diagonal comparisons only

(2) (±1.31) For use in horizontal and interaction comparisons only

‰ WARE: 4.44 CM (1.75 INCH) RIDDLE

KE	71.5	74.4	69.0	68.6	71.7	72.6	81.7	89.0	74.8
PC	83.5	83.5	84.5	82.7	83.5	85.5	91.6	93.7	86.1
Mean	77.5	79.0	76.7	75.7	77.6	79.0	86.7	91.3	80.4