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88/R/PE/1 Effects of Pea Seed-borne Mosaic Virus - Peas

Rothamsted Research

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88/R/PE/1

PEAS

EFFECTS OF PEA SEED-BORNE MOSAIC VIRUS

Object: To study the transmission, symptoms and effects on yield of pea seed-borne mosaic virus in two varieties of peas with and without insecticide - Long Hoos IV 6.

Sponsors: A.J. Cockbain, D. Wang.

Design: 4 randomised blocks of 2 whole plots split into 3.

Whole plot dimensions: 9.2 x 5.0.

Treatments: All combinations of:-

Whole plots

1. **INSCTCDE** Insecticide:

NONE	None
PH+CY+PI	Phorate at 1.7 kg to the seedbed on 26 Apr, 1988. Cypermethrin at 0.025 kg with pirimicarb at 0.14 kg in 220 l on 1 and 20 June, 5 July

Sub plots

2. **VAR INF** Varieties and infection:

PROGR H	Progreta, healthy stock
WAVER H	Waverex, healthy stock
WAVER I	Waverex, seed infected with 4% pea seed-borne mosaic virus

NOTE: Plots were netted against birds from early June to harvest.

Basal applications: Manure: Chalk at 2.9 t. Weedkillers: Terbutryne at 0.98 kg and terbuthylazine at 0.42 kg in 220 l. Fungicides: Benomyl at 0.50 kg with chlorothalonil at 1.0 kg in 220 l on four occasions. Desiccant: Diquat at 0.60 kg ion in 220 l.

Seed: All sown at 600,000 seeds per hectare:

Progreta at 200 kg.
Waverex (healthy) at 66 kg.
Waverex (infected) at 54 kg.

Cultivations, etc.:- Chalk applied: 2 Oct, 1987. Ploughed: 14 Dec. Rotary harrowed, seed sown: 26 Apr, 1988. Weedkillers applied: 27 Apr. Fungicides applied: 30 June, 2, 11, 23 Aug. Desiccant applied: 5 Sept. Combine harvested: 9 Sept. Previous crops: Maize 1986, fallow 1987.

NOTE: Aphid numbers were assessed during the growing season. Virus incidence was assessed in the plants during the season and in the seed from all plots after harvest.

88/R/PE/1

GRAIN TONNES/HECTARE

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

VAR INF INSCDCDE	PROGR H	WAVER H	WAVER I	Mean
NONE	2.81	2.49	1.22	2.17
PH+CY+PI	3.65	2.87	2.30	2.94
Mean	3.23	2.68	1.76	2.56

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

VAR INF	INSCDCDE*
	VAR INF
0.158	0.223

* Within the same level of INSCDCDE only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	12	0.316	12.4

GRAIN MEAN DM% 77.8

SUB PLOT AREA HARVESTED 0.00072