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92/R/RAW/1 Fungal Pathogens and Glucosinolates - W. Oilseed Rape

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92/R/RAW/1

WINTER OILSEED RAPE

FUNGAL PATHOGENS and GLUCOSINOLATES

Object: To monitor the accumulation of glucosinolates in pods and seeds following inoculation with a fungal pathogen - New Zealand.

Sponsors: K.J. Doughty, J. Fieldsend, G.F.J. Milford, R. Wallsgrove.

Design: 6 randomised blocks of 3 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

FUNGINOC	Fungicides and inoculation with fungal pathogen:
NOPRINA	No prochloraz, inoculation in autumn
PROCINS	Prochloraz applied in autumn and spring, inoculation in summer
PROCIPRO	Prochloraz applied in autumn and spring, iprodione in summer

NOTES: (1) **FUNGINOC** NOPRINA: Plots were inoculated with rape straw infected with *Alternaria* Sp., *Pyrenopeziza brassicae* and *Leptosphaeria maculans*.
(2) **FUNGINOC** PROCINS: Plots were inoculated with a mycelial suspension of *Alternaria brassicae*.

Experimental diary:

06-Sep-91 : B : Straw chopped.
06-Sep-91 : B : Dolomite at 5.0 t.
07-Sep-91 : B : Ploughed and furrow pressed.
09-Sep-91 : B : Rotary harrowed twice, Bienvenu drilled at 5.6 kg, rolled.
22-Oct-91 : B : Butisan S at 1.5 l and Pilot at 0.075 l with Actipron at 2.0 l in 200 l.
10-Nov-91 : T : **FUNGINOC** NOPRINA: Inoculated.
02-Dec-91 : T : **FUNGINOC** PROCINS and PROCIPRO: Autumn prochloraz at 0.50 kg in 200 l.
20-Feb-92 : B : 34.5% N at 220 kg.
25-Mar-92 : B : 34.5% N at 290 kg.
01-Apr-92 : T : **FUNGINOC** PROCINS and PROCIPRO: Spring prochloraz at 0.50 kg in 200 l.
15-Jun-92 : T : **FUNGINOC** PROCINS: Inoculated.
22-Jun-92 : T : **FUNGINOC** PROCIPRO: Iprodione at 0.50 kg in 200 l.
22-Jul-92 : B : Reglone at 3.0 l with Farmon Blue at 0.52 l in 260 l.
28-Jul-92 : B : Combine harvested.
Previous crops: W. wheat 1990 and 1991.

NOTE: Samples were taken for disease assessment in December, May, June and July. Pods and seeds were sampled in June and July to measure glucosinolates and the activity of glucosinolate biosynthetic enzymes.

92/R/RAW/1

GRAIN (AT 90% DRY MATTER) TONNES/HECTARE

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

FUNGINOC	
NOPRINA	2.79
PROCINS	2.32
PROCIPRO	3.08
Mean	2.73

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

FUNGINOC	
	0.141

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	10	0.245	9.0

GRAIN MEAN DM% 86.8

PLOT AREA HARVESTED 0.00230