COMBINED PEAS

DISEASE CONTROL - PRODUCTS AND TIMING COMPARISONS

G M Palmer and D B Stevens

Summary

In this experiment on Solara semi-leafless peas there was no disease and there were no yield effects from a range of protectant fungicide treatments. Over the period from 1989 to 1991 the results were similar with no disease seen and no treatment effect on yields.

Keywords: Dry peas, combined peas, disease, fungicides

Object

This trial is intended to assess the influence of disease on dry pea yields by recording disease levels on plots treated with a range of fungicide treatments and relating these to yield. A second objective is the determination of differences between fungicide products and programmes to provide guidance in the selection of appropriate steps for economic disease control.

Materials and method

A range of fungicide treatments were applied at predetermined stages of crop growth to plots of Solara protein peas drilled on 26 March. The treatments are listed in Table 1 with the active ingredients used given in Table 2.

Fungicide treatments were applied by hand using a CO_2 powered knapsack sprayer and fanjets with 8003 nozzles delivering 200l/ha. The treatments were arranged in randomised blocks with 3 replicates. The treated and harvest areas were 36 m^2.

---

*NOT FOR PUBLICATION WITHOUT THE DIRECTOR'S CONSENT. This report deals primarily with only one year's work, so any conclusions given are only provisional.

Table 1. Fungicide treatments
Spray timings (rates of product l/ha)

	Flower buds visible GS201 (17 June)	Early flowering GS203 (4 July)	Pods filling GS206 (17 July)
1.	Nil	Nil	Nil
Product comparison			
2.	-	Bavistin FL* (1.0)	Bavistin FL* (1.0)
3.	-	Bravo (3.0)	Bravo (3.0)
4.	-	Ronilan (1.0)	Ronilan (1.0)
5.	-	Rovral (2.0)	Rovral (2.0)
6.	-	Compass (3.0)	Compass (3.0)
7.	-	Bravocarb (2.0)	Bravocarb (2.0)
8.	-	NAS F124	NAS F124
9.	-	NAS F130	NAS F130
Tank-mix programme comparison			
10.	-	Ronilan (1.0) + Bravo (3.0)	-
11.	-	-	Ronilan (1.0) + Bravo (3.0)
12.	-	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)
13.	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)
14.	-	Ronilan (0.5) + Bravo (1.0)	Ronilan (0.5) + Bravo (1.0)
15.	-	As 14 + Bav.FL(0.5)	As 14 + Bav.FL(0.5)
16.	-	Bravo (1.0) + + Bav.FL (0.5)	Bravo (1.0) + Bav.FL (0.5)
17.	-	Compass (1.5)	Compass (1.5)

* Bavistin FL applied with additional wetter.

Table 2. Products weed and active ingredients

Product	active ingredient (g ai/l)
Bavistin Fl	carbendazim (500)
Bravo	chlorothalonil (500)
Ronilan	vinclozolin (500)
Rovral	iprodione (250)
Compass	iprodione (167) + thiophanate-methyl (167)
Bravocarb	chlorothalonil (450) + carbendazim (100)

Results

1991

Crop growth was satisfactory after initial problems resulting from pigeon grazing. Regular observations showed that there were no disease symptoms in the crop in a season which started with dry weather in May but which became much wetter in June before reverting to dry conditions at the beginning of July.

Table 3. (Yield of dry peas (t/ha at 85% dm)
Spray timings (rates of product l/ha)

	Flower buds visible GS201 (17 June)	Early flowering GS203 (4 July)	Pods filling GS206 (17 July)	
1.	Nil	Nil	Nil	4.12
Product comparison				
2.	-	Bavistin FL* (1.0)	Bavistin FL* (1.0)	4.30
3.	-	Bravo (3.0)	Bravo (3.0)	4.36
4.	-	Ronilan (1.0)	Ronilan (1.0)	4.17
5.	-	Rovral (2.0)	Rovral (2.0)	4.10
6.	-	Compass (3.0)	Compass (3.0)	4.33
7.	-	Bravocarb (2.0)	Bravocarb (2.0)	4.15
8.	-	NAS F124	NAS F124	4.22
9.	-	NAS F130	NAS F130	4.33
Tank-mix programme comparison				
10.	-	Ronilan (1.0) + Bravo (3.0)	-	4.24
11.	-	-	Ronilan (1.0) + Bravo (3.0)	4.18
12.	-	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)	4.45
13.	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)	4.15
14.	-	Ronilan (0.5) + Bravo (1.0)	Ronilan (0.5) + Bravo (1.0)	4.19
15.	-	As 14 + Bav.FL(0.5)	As 14 + Bav.FL(0.5)	4.30
16.	-	Bravo (1.0) + + Bav.FL (0.5)	Bravo (1.0) + Bav.FL (0.5)	4.33
17.	-	Compass (1.5)	Compass (1.5)	4.19
LSD				NS
SE per plot (34 df)				±0.169
or as % GM				4.0

* = Bavistin FL applied with wetter LSD = least significant difference
NS = not statistically significant

The analysed yields (Table 3) show no statistically significant differences between treatments, a result which reflects the lack of disease.

3 year mean results - 1989 to 1991

There were generally dry conditions in each of the three years of the experiment and no disease was recorded. Yields for the core treatments included in each of the three years are shown in Table 4.

Table 4. Mean yields of dry peas - 1989 to 1991

	Fungicide timings (rates of products l/ha) Early flower to first pod set (GS 203-204)	Pods filling (GS 205-206)	(t/ha at 85% dm)
1.	Nil	Nil	4.18
2.	Bravo (3.0)	Bravo (3.0)	4.38
3.	Ronilan (1.0)	Ronilan (1.0)	4.36
4.	Ronilan (1.0) + Bravo (3.0)	Ronilan (1.0) + Bravo (3.0)	4.39
5.	Ronilan (0.5) + Bravo (1.0)	Ronilan (0.5) + Bravo (1.0)	4.33
6.	Bravo (1.0) + Bavistin FL (0.5)	Bravo (1.0) + Bavistin FL (0.5)	4.21
LSD			NS
SE per plot (45 df)			±0.322
or as % GM			7.5

There were no significant differences between the fungicide treatments. It can be concluded that none of the fungicide treatments could be justified as routine sprays over the period covered by this experiment.

Appendix

Site and trial diary details for the 1991 experiment are given in an Appendix which is available on request.

APPENDIX - NAS 929 ML 91

Site details

Site:	Morley (Raven's Grove)
Soil type:	Sandy loam over chalky boulder clay (Ashley series)
Previous cropping:	Winter wheat
Variety:	Solara

Diary

26 March	Trial drilled by Norsten drill into good seedbed. Seedrate: 80 seeds/m^2
1 May	Plant counts show mean population of 70/m^2
31 May	Pigeon grazing has set the plant development back in a period of cold dry weather.
17 June	Flower buds visible, enclosed by leaves. Applied pre-flowering treatment. No disease seen.
4 July	First flowers have set pods. Applied early flowering fungicide treatments. No disease seen.
17 July	Good crop growth after June rain (80.6 mm). Applied late treatments. No disease seen.
22 August	Combined all plots.