11.4 PULSE FUNGICIDE TRIAL – LAKE BOLAC (DPI)

Researchers: Steve Holden (DPI)
Sheldon Johnson (formerly DPI)

Location: Lake Bolac

Aim:
This trial was established to look at disease management in beans and peas by the use of different varieties; different row spacings to increase airflow through the canopy and through different fungicide timing regimes.

Background:
Growing profitable pulse crops in the western districts has often been hit and miss. Many landholders have grown them successfully one year only to be hit by disease or falling prices the following year. Often getting the agronomy package right can make a big difference by increasing yields and especially improving grain quality so that the premium price for human consumption can be obtained.

Table 94: Site Management Details, Faba Bean Trial and Field Pea Trial

	Faba Bean Trial	Field Peas
Varieties:	Fiesta & Manafest	Excell & Kaspa
Sowing Rate:	Variable – aimed for 35 plants/m^2	Variable – aimed for 55 plants/m^2
Row Spacing:	15cm, 30cm & 45 cm	15cm, 30cm & 45 cm
Sowing Date:	17th June	2nd September
Fertiliser:	150 kg/ha Double Super	150 kg/ha of Double Super
Fungicide:	mancozeb @ 2.2 kg/ha	copper hydroxide @ 2.2 kg/ha
Comments:	ideal sowing time	sown a month too late

Results:

Table 95: Faba Bean Agronomy Trial Results 2003

Variety	Row Spacing	Yield(t/ha)		
		Fungicide Applications		
		Nil	2 applications	5 applications
Fiesta VF	15 cm	2.79	2.83	2.95
	30 cm	3.38	3.18	3.30
	45 cm	2.73	2.71	2.51
Manafest	15 cm	2.58	2.42	2.55
	30 cm	2.71	3.01	3.02
	45 cm	2.42	2.42	2.30
LSD 5%		**0.28 t/ha**		
CV%		**6.0**		

Table 96: Field Pea Agronomy Trial Results 2003

Variety	Row Spacing	Yield (t/ha)	
		Fungicide Applications	
		Nil	1 application
Excell	15 cm	1.21	1.35
	30 cm	1.53	1.09
	45 cm	0.89	1.10
Kaspa	15 cm	1.28	0.95
	30 cm	1.49	1.07
	45 cm	0.68	0.59
LSD 5%		**0.27 t/ha**	
CV%		**14.2**	

Discussion:

This is the second year of this trial. Last year due to the seasonal conditions, disease pressure was very low and there were no responses to the different fungicide treatments in either the beans or the peas. This result was repeated this year. Visually very little disease was observed all year and this was translated across to the yields.

Interestingly enough once again significant differences were shown up due to the row spaces. In the faba beans the highest yields were achieved with the 30cm row spacings in both of the varieties. This is believed to be due to the fact that beans require good light interception at flowering if good pod set is to be achieved. Last year the wider row spacing of 45cm was not significantly different from the 30cm spacing. This year however the 45 cm spacing was significantly lower yielding than the 30cm spacing and in fact slightly lower yielding than the 15cm row spacings. It would appear that the 30cm spacing is giving a yield increase of about 15 percent over the 15cm row spacings.

In the peas there was a significant yield depression where the row spacing was increased to 45cm. The exception to this rule occurred with the Excell peas that were sprayed, however when the results were averaged between the sprayed and unsprayed plots then the 45cm row spacing was 27% lower yielding than the 30cm row spacing.

After two years of trials it appears that the 30cm row spacing is the better option sowing width for both field peas and faba beans. These results should still be treated with caution however as disease levels were extremely low in both years and 2002 was an extremely dry year.

Even though disease levels were low in the pulse trial over the last two years, it is essential a foliar fungicide spraying regime is implemented if faba beans are being grown. In the case of faba beans, fungicides should be regarded as an insurance policy. They are most effective when applied before the disease is observed when weather conditions are favourable for disease. Do not wait until the disease is established as pulse fungicides are protectants rather than being curative. These fungicides can provide protection for 10 – 20 days when plants are actively growing. However any new growth after spraying is not protected. As a rule of thumb the beans should be sprayed 6– 8 weeks after sowing, again at the start of flowering and once more at the end of flowering to protect the developing pods. In a severe disease year additional applications may be needed.

In field peas foliar fungicidal sprays are generally not regarded as being economical in most years. A good quality seed treatment in conjunction with good agronomic practice is generally regarded as being a more viable option in most years.

Also it is extremely important to always observe with-holding periods for fungicide use before harvesting grain and grazing stubbles.