

Reducing Cotton Disease Risk

The results of the NSW DPI cotton disease survey for the 2008/09 season have been released showing that diseases in cotton continue to be a major factor in reducing crop yield potential. In the Macquarie, seedling mortality and black root rot are major contributors to early season plant stand loss and slow early season growth.

According to NSW DPI plant pathologist, Chris Anderson, the early season survey found seedling mortality caused by *Rhizoctonia solani* and *Pythium* pathogens and damage from insect pests was highest in the Macquarie Valley at 39 per cent and lowest in the Macintyre Valley at 24 per cent.

"Black root rot was found in 52 per cent of crops across the State with the disease peaking at 66 per cent of plants in the Namoi.

"High levels of black root rot were also evident in the Lachlan and Macquarie Valleys, 57 and 64 per cent of crops respectively, which reinforces the need to continue monitoring the pathogen in those southern valleys."

Mr Anderson said while there is currently no adequate control measure for black root rot, researchers are testing a range of amendments and fungicides for the disease.

"Spraydrift damage from phenoxy herbicides, such as 2,4-D, has unfortunately become a major problem in recent years and we found herbicide damage in all cotton growing areas with widespread damage to 22 percent of plants in the Macquarie Valley, and 19 per cent in the Namoi - some crops near Wee Waa suffered severe damage," he said.

Late season surveys detected fusarium wilt in approximately 60 per cent of crops in the Gwydir and Macintyre but Mr Anderson said that recent advances in plant breeding have delivered a number of new cotton varieties with excellent resistance to the disease.

"Most varieties also have resistance to verticillium wilt, however resistance breaks down under prolonged mild conditions - the return to warmer temperatures this

season saw just 14 per cent of plants in the Namoi affected by the disease compared with 29 per cent during last season's milder conditions."

Alternaria leaf spot and boll rots were detected in most crops at low levels.

When selecting varieties for 2009/10 it is vital to consider seed treatments and disease tolerance.

"Seed treatment fungicides continue to offer the best control measures for seedling pathogens," Mr Anderson said. As well as seed treatment fungicides to control seedling diseases *Rhizoctonia solani* and *Pythium*, a seed treatment is also available that increases the cotton plants natural defence against Black Root Rot and Fusarium. This may be worth considering if you have a history of these diseases.

Other practices that may help reduce disease incidence include:

- Plant into high, firm beds to reduce the risk of water logging
- Plant into warm weather conditions and soil temps
- Consider planting into moisture, rather than watering up

Surveys of 73 crops were funded by the [Cotton Research and Development Corporation](#) and the [Cotton Catchment Communities Cooperative Research Centre](#) as part of NSW DPI's cotton diseases project which has supported the local cotton industry for 20 years.

Aphid Resistance to Neonicotinoids

If you are considering including a seed treatment in your order for next season, begin to plan your other early season insecticide sprays. Failures with neonicotinoids against aphids have been confirmed. The neonicotinoids group includes the seed treatments Gaucho®, Genero®, Cruiser® & Amparo®, as well as the foliar sprays Intruder®, Actara®, Confidor® & Shield®. This group is important to the Australian industry because it will control OP/carbamate resistant cotton aphids. It is critical that if a neonicotinoid seed treatment is used then the first foliar spray against aphids (or mirids) isn't a neonicotinoid as well.

NSW DPI Cotton Disease Survey Valley Summaries	Seedling mortality	Black root rot	Black root rot	Verticillium wilt	Fusarium wilt	Boll rots	Hormone damage	Hormone damage
	(% Plants)	(% Plants)	(% flds)	(% Plants)	(% Plants)	(% Bolls)	(% Plants)	(% flds)
Bourke/Walgett								
2008/2009	27.1	1.9	12.5	0.7	0.0	3.1	10.8	37.5
2007/2008								
2006/2007								
2005/2006	30.9	3.9	23.1	0.6	0.6	0.0		
Macquarie								
2008/2009	38.8	24.5	63.6	0.8	0.0	0.4	29.5	72.7
2007/2008	20.3	0.0	0.0	0.0	0.0	0.1		
2006/2007	27.2	14.9	80.0	0.3	0.0	0.1		
2005/2006	23.6	28.6	87.5	1.1	0.1	0.2		