Cotton Catchment Communities CRC
NSW DEPARTMENT OF PRIMARY INDUSTRIES

COTTON *TALES*

Macquarie Valley and Bourke

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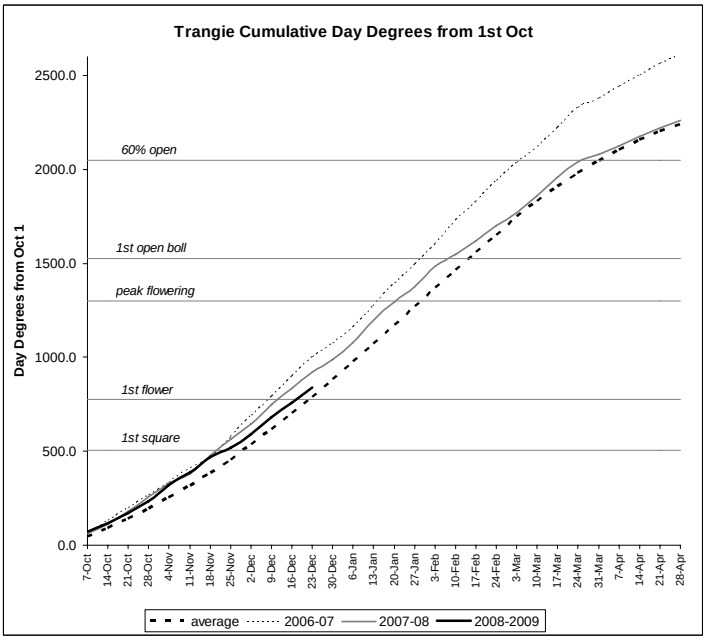
2008/09
No.10
24/12/08



Early Season Disease Survey Data for NSW

The cool, wet conditions experienced at the start of the cotton growing season in most areas, including the Macquarie, created a good environment for early season diseases in cotton.

The survey results from 2008-09 show the incidence and severity of early season disease in the Macquarie continues to be a major factor in increased seedling mortality and reduced early season vigour.

Thanks to Chris Anderson, NSW DPI, for providing the survey data and summary.

Black Root Rot Summary for Survey 2008-2009

Valley	% Fields	% Plants	Severity (1-10)
Bourke/Walgett	13	2	0.1
Macintyre	60	21	0.7
Gwydir	29	6	0.3
Namoi	100	66	4.0
Macquarie	64	25	1.8
Lachlan	57	18	1.4
Murrumbidgee	0	0	0.0
Season	**52**	**24**	**1.4**

Seedling Mortality Summary for Survey 2008-2009

Valley	%
Bourke/Walgett	27
Macintyre	24
Gwydir	30
Namoi	26
Macquarie	39
Lachlan	29
Murrumbidgee	25
Season	**29**

Wireworm Damage Summary for Survey 2008-2009

Valley	% fields
Bourke/Walgett	13
Macintyre	20
Gwydir	57
Namoi	6
Macquarie	27
Lachlan	29
Murrumbidgee	71
Season	**30**

Other disorders summary

Hormone Damage

Observed at Bourke and in the Gwydir totalling 6% of fields

Fusarium wilt

30% of fields in the Macintyre

Verticillium wilt

20% of fields in the Macintyre, 6% of fields in the **Namoi**

Chemical burn – fertilizer, herbicide

22% of fields in NSW

Summary

73 fields and 14600 plants were surveyed in NSW. Seedling mortality caused by abiotic and biotic factors including the seedling pathogens *Rhizoctonia solani* and *Pythium* averaged at 29% across the state with the highest levels in the Macquarie valley (39%) and lowest in the Gwydir (24%). The pathogen *Rhizoctonia solani* was observed in 100% of fields. *Pythium* and *Rhizoctonia* were collected from diseased plants across the state. The fungus *Macrophomina phaseolina,* which causes charcoal rot was also collected from diseased plants in a number of fields.

Black root rot was observed in 52% of fields in the state on 24% of plants surveyed. Incidence and severity were highest in the Namoi valley where the disease was present in 100% of fields and on 66% of plants. The disease was also widespread in the Macintyre, Macquarie and Lachlan valleys. This disease continues to spread throughout the state and is locally severe (eg. at one field in the Macquarie, 100% of plants averaging a severity of 9.5/10).

Wireworm damage was locally severe and was associated with wheat stubble. Seedlings were damaged by hormone drift at Bourke and in the Gwydir.

Although very early in the season, Fusarium and Verticillium wilt were clearly present in a number of fields, probably due to the cool wet conducive conditions that have prevailed throughout much of the early season. We anticipate both of these diseases will be highly visible if cool wet conditions persist.

Chemical burn, including fertilizer burn and herbicide damage was present in 22% of fields. Abiotic factors like chemical burn and soil compaction are likely to reduce overall plant vigour and increase susceptibility to pathogen attack.