Cotton Catchment Communities CRC

NSW DEPARTMENT OF PRIMARY INDUSTRIES

COTTON *TALES*

Gwydir Valley *"What's happening in the north west"*

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2006/07
7.
22/12/06

Fruit retention and water use

Thanks to James Nielsen for the following information.

To measure differences in water extraction, as a measure of root development, between the high and low retention crops an experiment was established with three levels of fruit retention in the Bt transgenic variety Sicot 71BR:

Treatments

- High fruit retention – no manual fruit removal
- Medium retention – fruit removal from the bottom 5 fruiting branches
- Low retention – all fruit removed from the plant continuously until medium retention treatment reached cutout

In addition to fruit removal a water stress treatment was also included. This involved missing the first two irrigations for comparison with fully irrigated cotton. This was included to encourage the early development of the root system and to investigate if early-season water stress had any effect on the development of the root systems of the different fruit retention treatments.

Yield Bales/hectare from the high retention and medium fruit removal treatments

		Irrigation	
		Full	Stressed
High retention	2004/05	13.0	5.5
	2005/06	13.7	10.2
Medium Retention	2004/05	12.4	7.5
	2005/06	14.2	12.0

- The level of fruit retention had no effect on the depth of water extraction of the cotton crops in either season i.e. the size of the plant did not effect water use. The addition of water stress before and during flowering caused the plants to extract more water from the profile but there was no interaction with the fruit removal treatments. This indicates that water use of the plants and the level of early root development was not dictated by the level of crop fruit retention.
- The effect of the water stress was reduced in the second season as twice as much rainfall fell during January/February in the 2005/06 season as the 2004/05 season.
- In both seasons the crops that had a medium level of fruit retention out yielded the high retention crops under the water stressed conditions. The loss of early fruit may have enabled the development of a larger plant able to take greater advantage of the later irrigation applications.
- High retention crops (such as BGII) should be irrigated in a similar manner to lower retention cotton. The high level of early reproductive development does not appear to affect the below ground vegetative development of the crop.

Water Use Efficiency Officer

Janelle Montgomery has just commenced as Water Use Efficiency Officer for the Gwydir Valley with NSW DPI. Janelle can be contacted at NSW DPI on 02 6752 5111 or 0428 640 990.

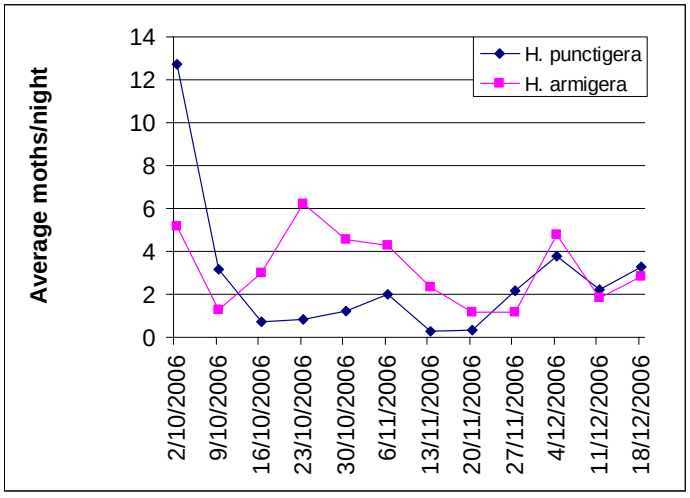
Cotton Pest Management Guide

The 2006/07 Cotton Pest Management Guide has been posted out to those currently on the cotton industry database. If you have not received a copy in the mail then it is unlikely that you are on this database and may have to update your contact details. Contact details can be updated by contacting David Larsen at ACRI on 02 6799 1500.

For those that have not yet received a copy of the Cotton Pest Management Guide copies will be available from NSW DPI in the new year.

It would be greatly appreciated if people could take the time to complete the short survey that has been distributed with the Cotton Pest Management Guide to assist us in the development of future editions.

Pheromone trap results



I hope everyone has a safe and Merry Christmas.