

Season DD Progress

Day degree for the period 5th Oct. to 10th Jan 2008

Met site	07/08	06/07	Average DD	C/Shock 07/08
Benerambah	1061	1021.5	881	19 (38.2)
Hay	1072.1	990.7	920	21 (34.8)
Hillston	1112.3	1049.2	969	17 (28.9)
Whitton	1051	1033.5	877	18(38.2)

Trial Update

This season there are a number of trials being run in the area including:

Mirids Protocol Trial

This trial is being jointly run by Alice Del Socorro from the University of New England, Armidale and Peter Gregg from the Cotton Catchment Communities CRC, Australian Cotton Research Institute (ACRI), Narrabri.

This trial is testing how useful pheromone traps may be in mirid management as a monitoring tool for field populations. The aim is to compare how pheromone catches are correlated with the population ecology of mirids. This will help us determine and understand how pheromone trap data should be interpreted and whether pheromone traps are useful for monitoring. Throughout the season I am checking the pheromone traps that attract adult male green mirids and comparing the numbers found by visual checks, sweep nets and using a powerful 2 stroke vacuum cleaner. This trial is being conducted in most of the cotton valleys so there should be good data for evaluation at the end of the season.

Nitrogen Efficiency Trial

This trial is being run Dr Ian Rochester from CSIRO based at the (ACRI), Narrabri and Julie O'Halloran from the NSW DPI, Moree.

This trial involves comparing an area of Nil N fertilizer to an area with the standard application of N. During the season N will be measured in the soil, the plant and in the final product thereby enabling a complete N balance to be determined.

The crop N uptake, Nitrogen use efficiency (NUE) and N fertiliser recovery are the measures to come from the trial (as defined below).

Crop N uptake refers to the amount of N contained in a crop. This is the most convenient method of assessing how efficiently N is used by a crop and indicates whether the crop was over or under fertilized. Generally, cotton takes up about 200kg N/ha. This measurement is required to assist cotton growers and consultants manage N fertiliser inputs and provide alternative N fertiliser management practices where required.

Crop Nitrogen Use Efficiency (NUE) indicates how effectively a crop produces lint yield from the N that it has accumulated. The crop NUE measurement does not discriminate between soil N or fertiliser N sources and is therefore independent of how much N fertiliser was applied. It indicates how efficiently the cotton crop uses all N sources available to it.

It is measured by dividing lint yield by the crop N uptake (i.e. kg lint produced per kg N uptake). To determine the crop nitrogen use efficiency, crop N uptake and crop yield need to be determined.

Nitrogen fertiliser recovery (NFR) indicates how well a crop uses the N fertiliser that has been applied. This is the proportion of the applied N fertilizer that is taken up by the crop, expressed as a percentage of that applied. It is calculated by taking the difference in crop N uptake between fertilised and unfertilised cotton, divided by the rate of fertilizer applied.

Generally, soils with naturally high N fertility will have poorer NFR and crop NUE, because the crop accesses most of its N from the soil and little N fertiliser is required.

Row Space Trial

This season we are running the row space trial at Merrowie Hillston. This trial has been designed by Dr Rose Roche and Dr Mike Bange from the CSIRO and the Cotton CRC based at the ACRI, Narrabri. The project seeks to determine optimum planting configurations for yield and quality in this area.

Background: Narrow row (NR) cotton (rows spaced less than 40cm apart) has long been seen as a potential alternative system for cotton, especially in regions with shorter growing seasons. Advances in harvesting technology by John Deere to allow spindle picking of narrow row cotton crops (38cm/15" rows) has generated further interest in these systems, with claims of improved yield and earlier maturity while avoiding discounts for fibre quality associated with stripper harvest.

Recent research has found that NR can have significant yield benefits but there has been little difference in maturity compared to 1 m spaced cotton. This research compared the two row spacing's without any differences in management. The two systems may have different requirements in timing and application of inputs and this needs to be assessed to determine the influence of different management in achieving better yields or earlier maturity in NR systems. Agronomic factors that may be considered include defoliation, crop nutrition (soil and petioles), effects of irrigation (timing, water deficiency & water logging) and the use of growth regulator's

This trial forms part of a detailed physiology/ agronomic studies that quantify the physiological basis of different plant spacing's on cotton growth, yield and fibre quality. The trial will be useful in developing guidelines to help growers utilise the relative benefits of using NR configurations for improving maturity, yield and quality when considering the system for their region and farm.