



Monitoring to Manage

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A key part to successful management of cotton is making informed management decisions based on crop measurements and other indicators. The following outlines some measurements which will assist in optimal management based on industry best practice.

Monitor to Manage:	Post Harvest	Pre-planting/ Emergence	Planting to 1st flower/ metre	1st flower to 1st open boll/metre	1st open boll/metre to harvest
Diseases and Disorders		Where there is seedling death or stunting try to determine the cause by inspecting roots and plant. Dig rather than pull plants out.	Monitor plants for symptoms including reduced leaf area, tip damage, leaf or stem discoloration, plant stunting and other signs of non uniform growth, such as short internodes and plant stress such as cavitation (boll dangle) or parrot beak bolls. Refer to Cotton Symptoms Guide		
Energy	Review whole season Energy Use Efficiency indices. Refer Chapter 10.	Keep records of fuel and power usage and each field operation to allow energy usage to be estimated. Refer Chapter 10.			
Irrigation	Review whole season Water Use Efficiency indices. Refer Chapter 8.		Monitor soil moisture using probes to inform scheduling decisions. Monitor plant symptoms, and measure growth and retention to also provide supporting information. Refer Chapter 8.		
Nutrition	Sample soil for nutrition in a representative part of the field. Record date and time of sampling, as well as GPS location. Use a nationally accredited (NATA) laboratory. Refer Chapter 7.		Sample petioles to monitor nitrate-N up to flowering. At this stage petiole testing is not recommended for other nutrients. Refer Chapter 7.	Sample leaf tissue twice (at flowering and cut out) to monitor all nutrients including micronutrients. Refer Chapter 7.	Yield maps overlaid with other information sources such as soil maps, can help identify fertility trends and subsoil constraints. Refer Chapter 1.
Pest & Beneficials		Monitor using industry guidelines for species and numbers of pests and beneficials at least twice weekly, in addition IPM decisions should consider plant damage and health (e.g. retention) Refer to chapter 13 and the Cotton Pest Management Guide for details.			
Plant Growth		Monitor plant establishment per metre as well as the distance between plants (gappiness) within the plant stand for replant decisions. Refer Chapter 4.	Monitor fruit retention and plant growth to help with agronomic and pest management decisions (See box on next page) Measure Vegetative Growth Rate (VGR) by comparing the change in the height to node ratio over time. Refer Chapter 6 and Crop Development tool on CottASSIST.	NAWF (Nodes Above White Flower) measure is used to assess health. At 1st flower the NAWF should be above 8. To maximise yield potential try to keep the NAWF >4.5 for as long as possible. Once the NAWF falls below 4 this is termed cut out and signals the end of reproductive growth. Refer Chapter 6.	In uniform crops NACB (Nodes Above Cracked Boll) measurement is used to determine the time required before the crop reaches maturity. When the crop reaches the '4-5 NACB' stage, the uppermost boll will have reached 'effective' maturity. In non-uniform crops NACB is not reliable indicator of maturity. Refer Chapter 21 for more information on defoliation decisions.
Weeds	Assess weed species and load to plan IWM. Refer Chapter 15..	Monitor for weed survivors, post herbicide application. Refer Chapter 15.			