Cotton Catchment Communities CRC
Queensland Government Department of Primary Industries and Fisheries

COTTON *TALES*

Central Queensland

Susan Maas ☎ 07 49837403 🖷 07 49837459 💻 susan.maas@dpi.qld.gov.au
Lance Pendergast ☎ 07 49837416 💻 lance.pendergast@dpi.qld.gov.au

2008/09
No.10
09/12/08

Day Degree accumulation to the 8 Dec 08

District	Season 08/09	Season 07/08	Season 06/07	Cold Days	Hot Days
Emerald (from 15/09/08)	1115	1105	1117	2	15
Theodore (from 25/09/08)	932	962	926	5	15

Sampling Bollgard II® Survivors

While many of you would be aware of the Helicoverpa survivors on Bollgard II® in St George last year, it may be surprising for some to learn that almost 25% of the 2007/08 Bollgard II® cotton hectares in Emerald was reported to reach threshold (at least 2 Helicoverpa larvae/m 3-8mm in at least two consecutive checks or 1 larvae/m >8mm on the first check). No survivors were reported in Dawson Callide. As with reports from other regions, the larvae found in Bollgard II® were predominately seen around peak to late flowering. The reason for survivors is under investigation by CSIRO & Monsanto but considerable data demonstrates that Bt resistance is not the mechanism.

The resistance monitoring programs run by CSIRO & Monsanto have shown the majority (>99.9%) of larvae collected as survivors are susceptible to both toxins in Bollgard II®. In addition, the frequencies of resistance genes in survivors is similar to those in random sample of insects tested in the resistance monitoring programs.

In order to keep a check on resistance we need to continue to provide samples of survivors! If your crop reaches or is close to threshold, please let me know ASAP so that I can collect samples for further testing.

Weed Species Shift

There have been reports from CQ growers, of problems with in crop weed control this year. With increased reliance on glyphosate as a means of control, the diversity of weeds can change to dominant species that are difficult to control or can't be controlled with glyphosate. This is known as a species dominance shift. Flaxleaf fleabane & feathertop Rhodes grass have increased in prevalence in CQ cotton systems. Control of vines & sesbania have also been a problem.

At all stages it is important to scout fields & consider the weed species present. If the weeds are not going to be controlled by glyphosate, another option such as a lay-by residual application or inter-row cultivation, prior to row closure, or chipping may need to be considered. It is important to stop seed set on these weeds. For a list of herbicides registered for control after crop emergence, refer to the Cotton Pest Management Guide.

In a Roundup Ready Flex® crop, there is a maximum of three aerial applications of glyphosate allowable up to 16 nodes. One directed application with a ground rig is permitted between 16 & 22 nodes. Beyond 22 nodes, the next application is not permitted until between 60% boll open & harvest. Consult the Roundup Ready Flex® Technical Manual for more information.

Thanks to Vicki Osten for assistance with article.

Evaluating In Crop Nutrient Status

Both petiole & leaf tissue tests can be used to evaluate crop nutrient status. Petioles are ideal for monitoring nitrate N & potassium concentrations until mid-flowering. Beyond flowering, leaf tests are a better method of monitoring crop nutrition.

Leaf samples can be used to monitor all nutrients including micronutrients. Micronutrients are most accurately assessed with leaf blade samples. Sampling twice (at flowering & boll opening) produces the most useful information although leaves can be sampled at any time. Leaf tissue tests can identify nutrient imbalances, deficiencies & toxicities more precisely than soil testing & assist in optimising fertiliser programs.

The table below is from NutriLOGIC & outlines ideal, high & low leaf tissue levels of each major nutrient at 2 stages during the season. Requirement for nutrients change as the crop matures.

	Days after sowing	Ideal	High	Low
Macronutrients (%)				
N %	70	4.49	4.99	3.99
	120	4.01	4.51	3.51
P %	70	0.34	0.39	0.29
	120	0.31	0.36	0.26
K %	70	1.66	1.69	1.64
	120	1.35	1.37	1.32
S %	70	0.88	0.91	0.85
	120	1.10	1.113	1.07
Ca %	70	3.16	3.08	3.24
	120	3.70	3.78	3.78
Mg %	70	0.7	0.71	0.68
	120	0.81	0.82	0.79
Micronutrients (ppm or mg/kg)				
Na	70	<1050	1900	
	120	<1200	2100	
Cu	70	7.39	8.39	6.39
	120	6.43	7.43	5.43
Zn	70	28	34	22
	120	23.3	29.3	17.3
Fe	70	225	305	145
	120	155	235	75
Mn	70	104	134	74
	120	111	141	81
B	70	69	89	49
	120	88	108	68

Late season options for alleviating deficiencies are limited, particularly for macronutrients. After cut out, crops should be able to fill bolls with the nutrients already taken up. Applying more nutrients may encourage vegetative growth rather than enhance yield. Late season micronutrient deficiencies could be alleviated through foliar applications.

Bull Mitchell grass (*Astrebla* sp.)-Spotted on a head ditch near Emerald, it forms tussocks to 100 cm tall with coarse, stems & leaves. The individual seeds are wide (>4 mm) & prickly (because of hooks on the end of each awn) with long silky hairs at the base. Like Feathertop Rhodes grass, once Mitchell grass hits a certain size, glyphosate does not work well & it can be difficult to control. *Thanks to Vicki Osten & Kirsty Wild for ID & information.*