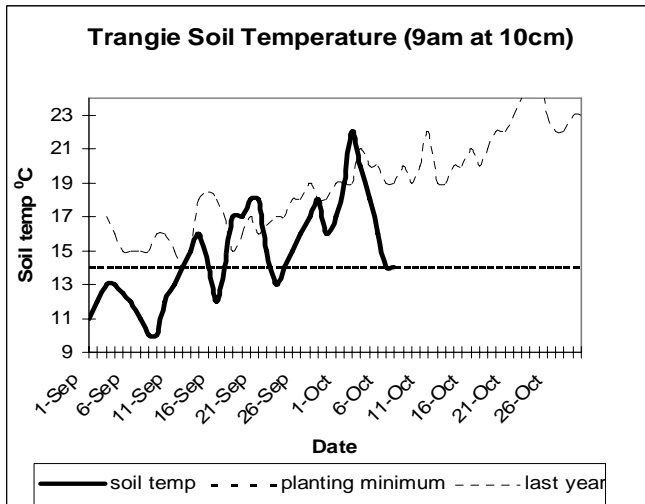


Soil Temperatures



Day Degree accumulation to the 07th Oct 08

Trangie Agricultural Research Station	Season 08/09	Season 07/08	Av.	Cold Days
15/09/08 – 30/09/08	100	99	*	12
1/10/08 – 8/10/08	74	63	44	2

* Silo patch point data temporarily unavailable to give last years average and current day degree accumulation for Bourke.

The 2008/09 start to the cotton season has been a variable one with daily maximum temperatures ranging from 16 to over 33°C and minimum night temperatures dropping below 5°C. This variability is clearly indicated in the soil temp graph showing temps to have dropped rapidly since the long weekend. Rainfall across the district has also been extremely variable, ranging from up to 75mm in violent storms in Warren over the long weekend, 38mm at Trangie to less than 10mm in some parts of the district. For cotton already in the ground, this may lead to slower emergence and/or an increased risk of seedling disease due to cooler, wetter weather.

Strategic Management of Weeds In A Flex System

Thanks to Graham Charles for his help with this article

With the introduction of Roundup Ready Flex®, growers are no longer constrained to over-the-top glyphosate applications up to 4-nodes. This has created an increased opportunity to be strategic with weed management: spraying for the weed stage, rather than the crop stage.

Graham Charles (NSW DPI, Cotton CRC) & Ian Taylor (CRDC) have developed a threshold that predicts the start & end of critical period for weed control for a range of weed types and densities. Similar to insect thresholds, the critical period for weed control is a concept that relates yield losses caused by weed competition to an economic threshold.

Before critical period – small weeds do not need to be controlled as they cause no economic loss

Critical period – weeds at densities above threshold must be controlled while still small to avoid significant yield losses. The strategy of controlling small weeds may

require more glyphosate applications, but utilize lower herbicide rates.

After critical period – Small weeds will not cause economic loss, but may need to be controlled to avoid harvesting difficulties, lint contamination & must not be allowed to set seed, as this increases future weed problems & herbicide resistance risk.

Start and end of the critical period for weed control (day degrees since planting)						
Irrigated (high yielding) cotton						
Weed density no./m ²	Broad-leaf weeds				Grasses	
	Large		Medium		Start	End
	Start	End	Start	End	Start	End
0.1	145	189	145	172	-	-
0.2	144	275	144	244	-	-
0.5	143	447	143	387	-	-
1	141	600	141	514	-	-
2	139	738	139	627	-	-
5	131	862	131	729	129	174
10	121	915	121	771	127	248
20	106	944	106	795	125	357
50	87	962	87	810	119	531
Min. density	0.06		0.07		2.5	

The predicted start & end of weed control critical period for Large broad-leaves (eg thornapples, noogoora burrs, Sesbania); Medium broad-leaves (eg bladder ketmia and Chinese lantern); & Grass weeds (eg sweet summer grass). The minimum weed densities needed to trigger the critical period are also shown.

This contrasts with another common strategy based on delaying glyphosate applications to maximise the efficacy of each spray, minimising the number of sprays & ensuring that the maximum number of weeds are controlled with each input. For example scheduling glyphosate applications at 6 nodes, with a 2nd application at 10 to 12 nodes, giving good spray efficacy and weed control. While this approach is valid, the critical period approach suggests that to avoid yield losses, the first glyphosate application may need to occur sooner, with further applications following closely after successive weed germination events. An alternative herbicide or early layby application of residual herbicide could be used to replace a glyphosate application & reduce excessive weed pressure. Prometryn or fluometuron can be applied as an early layby to cotton as small as 15cm high to control a wide range of small emerged weeds & residual control. An alternative residual, such as diuron, could be applied later in the season as a standard layby application if necessary.

Do you think this looks like a useful tool for weed control management?

I am looking for growers interested in field testing this weed control tool. Please give me a call if you are interested.