

Day Degree Accumulation

District		Season 10/11	Season 09/10	Average	Hot Shock	Cold Shock
Emerald	From 05/10/10	722	890	872	0	2
Emerald	From 15/11/09	262	382	341	0	0
Theodore	From 02/10/10	686	884	806	0	4
Theodore	From 12/11/09	294	412	346	0	0

Crop Stages versus Day Degree Accumulation.

Emerg.	5th leaf	1st Sq	1st Flow	Peak Flow	Cracked Boll	60% open
80	330	505	777	1302	1527	2050

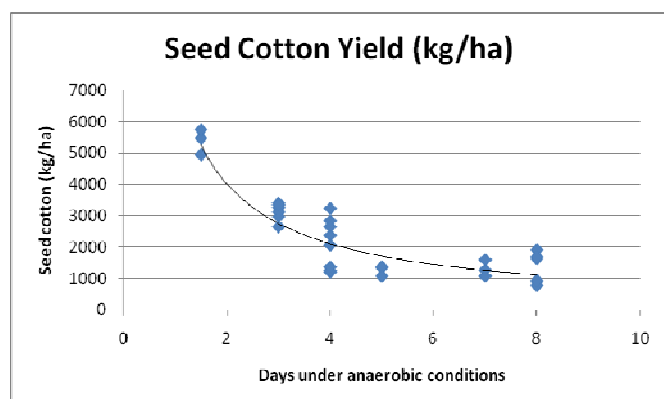
Cotton response to Flood

Thanks to Michael Bange & Greg Constable for assistance with this article

With an estimated 5000ha of cotton already inundated due to recent weather and flooding, I thought it would be useful to have a look at industry experience from flooding at this stage in the season.

In a Namoi survey conducted in 2000, Dr Pongmanee Thongbai recorded soil oxygen in flooded fields. Below is a plot of days in zero oxygen (anaerobic) conditions during and after flooding versus hand picked yield (Seed Cotton Yield in kg/ha). Cotton in this flood was at a similar stage to the current CQ flooded cotton. This graph highlights the range of impacts that inundation can have on yield. It is important to remember that this was for the Namoi where time for compensation is limited compared to CQ growing conditions where the ability to compensate through autumn is greater.

Aneorbic conditions continue until some of the fine roots at the soil surface are no longer in saturated soil. Drying hills are sufficient to relieve anerobic conditions even though water remains in the furrows.



For crops that are not killed outright, the situation is the same as waterlogging (see previous CQ cottontale). There can be reduced growth directly from lack of oxygen at roots and indirectly from lack of N due to denitrification



Sometimes there are negative interactions with nutrients such as Fe and P. Many crops will recover naturally. Crops need sunshine on the leaves & oxygen at the roots.

Where there have been nutritional disorders with N and Fe, foliar sprays have been used but it needs to be emphasised that the foliar spray is only trying to address a problem that has already occurred – the crop will not necessarily be as good as it would have been. A crop will use something like 5 kg N/ha/day and 10 g Fe/ha/day, so rates of foliar sprays should consider those demands (some foliar sprays only have a few hours of nutrition).

With a lot of damage occurring at tail drain ends, management of uneven plant stages will be a particular challenge. The use of cutout rates of Pix late in the growing season may be an option to assist with evenness of maturity.

For crops coming out of water logging and no longer inundated, management of the vegetative growth is going to be an issue. Refer to Cottassist Crop Development Tool, to help with PIX decisions.

Farm Financial Counsellors:

If you have been flood affected and would like to discuss your situation with someone:

Richard Lewis is a DEEDI Senior Farm Financial Counsellor 07 4967 0715 or 0419 734 667.

Emma Cook is a RFCS Financial Counsellor 07 4987 6886 or 0427 373 572

These counsellors will also be able to help you link with other services.

Pump evaluations – Do you know how much it costs you to move each ML of water? How does your pump compare to the industry benchmark of 5kWh hours per meter of head per ML? Improvements to efficiency can sometimes be found through changes to operating procedure (eg. optimum motor rev range), and modifications to existing infrastructure. Improved energy efficiency translates to reduced irrigation costs. If you are interested in having pump efficiency evaluations conducted contact Lance Pendergast 0749837416 lance.pendergast@deedi.qld.gov.au.