

CLEAN UP LAST YEAR'S COTTON PLANTS

There is a lot of concern about ratoons and stalks from last season's crop still standing. This is particularly worrying when some of these crops have had mealybugs or had reasonably high percentages of cotton bunchy top.

With the first of the planted cotton emerging, it is important that this clean up is given immediate priority. Leaving this to focus on cotton planting is highly risky as it potentially exposes this next crop to significant losses from mealybugs & cotton bunchy top, as well as increased insect pressure from aphids, thrips, and silverleaf whitefly.

It is a requirement of the Bollgard II RMP that:

"As soon as practical after harvest, Bollgard II cotton crops must be destroyed by cultivation or herbicide so that they do not continue to act as hosts for Helicoverpa spp."

Isolated volunteers and ratoons should also be removed. Ensure all your employees are informed about the value in removing rogue cotton. For a fresh set of eyes, ask your consultant to mark any problem area on a farm map as they are surveying the farm.

WATER USE EFFICIENCY INDICES

With the season underway it is timely to reflect on the two water use indices most commonly used to benchmark crop water use efficiency and determine if you are currently collecting sufficient data to make the best decision for your business.

- Gross Production Water Use Index (**GPWUI**) = Bales produced (Ba/ha) / total water received (i.e. both irrigation water + effective rainfall)

GPWUI is expressed as Bales/ML

- Irrigation Water Use Index (**IWUI**) = Bales produced (Ba/ha) / total irrigation water received.

IWUI is also expressed as Bales/ML

These two indices enable comparisons to be made between fields, farms, districts and years. Calculating these indices annually is considered industry best practice and myBMP can provide technical assistance to complete this.

A SNIPPET TO DAZZLE AT THE NEXT PARTY

A typical cotton crop has approximately 6.9 tonnes per ha of above ground biomass (dry weight) at the fruiting stage.



Assuming that only 10 -15% of total root biomass is "actively absorbing roots" then total active root biomass would be approximately 0.7 tonnes per ha.



These roots would consume 84,000 L O₂ per hectare per day, or 3,500 L O₂ per hectare per hour.



A saturated heavy clay soil will contain, up to 250 m³ per ha air.



This air in turn would contain 50 m³ per hectare, or 50,000 L per hectare oxygen.



This oxygen would be sufficient to support root respiration for 14 hours. Although oxygen dissolved in the soil water will provide further oxygen this source will, at best, add a few hours supply. The time taken for water logged soils to return to normal is much more than 14 hours.

So...when the available oxygen is depleted we have the full blown consequences of waterlogging. In an attempt to maintain respiration, alternative metabolic pathways are adopted but these require a lot more energy at the expense of other normal process:

- Root function stops;
- No more uptake of nutrients;
- No more uptake of water;
- Some unwanted hormonal activity by a plant in panic, and
- A cessation of growth until air (and the oxygen contained) can be replaced from the atmosphere and the plant can commence the recovery process to eventually get back to doing what you want it to do, ie growing again.

Water use efficiency helps to minimise the length of these water logging events.

HAVE YOU MAPPED YOUR COTTON?

Don't forget to go to www.cottonmap.com.au to update where you have cotton planted. This free-of-charge service is the industry best-bet initiative to minimise off target damage from herbicides, particularly Group I (including phenoxy) spray drift.