

**2016 - 2017 – Issue 3**  
**Tuesday 8<sup>th</sup> November 2016**

## **FOCUS: PESTS AND DISEASE**

This issue of CQ Cotton Update is focused on crop disease to coincide with the recent visit from industry pathologists.

## **DAF Pathologists visit CQ**

Queensland Department of Agriculture and Fisheries pathologists Dr. Linda Smith and Ms. Linda Scheikowski have completed their early season disease survey in Central Queensland.

Field inspections across the Central Highlands and Dawson Valley identified fields with elevated levels of seedling mortality with black root rot and insect damage being a common cause. This reiterates the importance of using Bion treated seeds when sowing early and checking for the presence of soil pests. Plants establish more slowly with early planting and therefore it is essential to ensure that seedlings can grow away by having an optimal seed bed and field conditions.



**Crop watch (photos taken 24/10/16):** Cowal Agriculture 'Orana', Emerald, planting date trials. Top: planted 1<sup>st</sup> August; middle: 18<sup>th</sup> August; bottom: 14<sup>th</sup> September.  
All these photos are from plots of Sicot 746B3F.



*Growers and consultants at the CottonInfo Crop Protection R&D update in Theodore.*

## **Integrated Pest Management planning**

Challenge yourself to set goals in your farm planning that are relevant to the management of pests and diseases.

Some examples of integrated pest management (IPM) goals that your business may aspire to are:

- Limiting early season insecticide sprays as best you can by taking into account pest thresholds and the crop's retention.
- Follow the cotton industry's Insecticide Resistance Management Strategy (IRMS) when an insecticide is required.
- Look after your natural enemies of pests by checking the Beneficial Insect Disruption guidelines before making an insecticide selection.
- Minimise impact on bees and be sure to enter your farm on Cotton Australia's Bee Alert/Cotton Map website.
- Ensure good farm hygiene and practice Come Clean Go Clean.
- Remove weeds and volunteer cotton which can harbour pests. Check around drainage lines and field boundaries.

**By now you may have received your copy of the 2016 - 2017 Cotton Pest Management Guide in the mail. If you have not received a copy, please contact [Sharna](#).**

**Otherwise you can find an online version [here](#)**

## Central Queensland 2015 – 2016 Annual Disease Survey

Commercial cotton crops across Central Queensland are inspected annually by industry pathologists as part of the industry disease survey. Central Queensland was inspected early (October 2015) and late (January 2016).

### Early season overview

#### Central Highlands

Issues included:

- Higher levels of stubble and trash in some fields from summer rotation crops
- Poor emergence and seedling disease
- Insect damage

Due to a combination of the above reasons several growers have had to replant fields.

#### Dawson and Callide Valleys

- Concerns for this season's cotton production due to the high visibility of plant stunting from reniform nematodes.

### Seedling Mortality

The seedling mortality is calculated by dividing the number of established plants/m by the seeds sown per meter. This comparison includes the impact of seedling disease, seed viability, soil insects and physical problems such as fertiliser or herbicide burn.

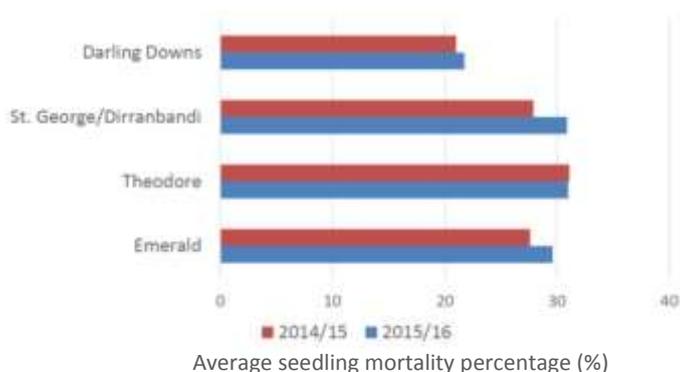


FIG 1. The average seedling mortality for both Emerald and Theodore was around 30%, with the higher levels reflecting the poor emergence, seedling disease and establishment issues that were encountered last season.

### Late season survey overview

#### Fusarium wilt

- Fusarium was not evident in field transects taken throughout the Central Highlands. The last time Fusarium was detected during the industry survey was in the 2013/14 season.
- A transect, at a previously identified field with Fusarium in Theodore, had an incidence of 0.6% Fusarium.

#### Boll rots

In Emerald, approximately 17% boll of bolls were recorded as being affected by boll rot pathogens. This incidence was recorded PRIOR to the rain that occurred in late January – early February.

After the rainfall, reports from growers suggest boll rot ranged between 10 – 50% of the crop depending on crop stage. While in Theodore, only 1 – 5% of the bolls were open at the time of the survey reflecting a lower incidence of boll rot.

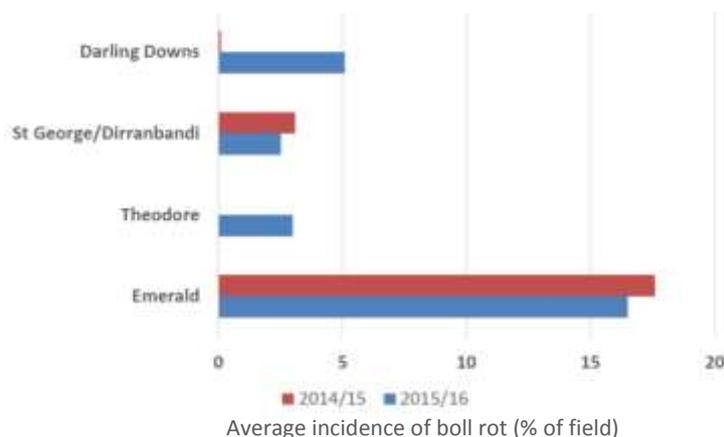


FIG 2. The annual disease surveys recorded a higher incidence of boll rot in Emerald than other Queensland cotton growing regions.

### Tight lock, seed rot and other boll rots

In Emerald, seed rot was the most predominant boll rot cause identified during the survey. In Theodore significant tight lock was reported at harvest, with up to 40% loss reported.

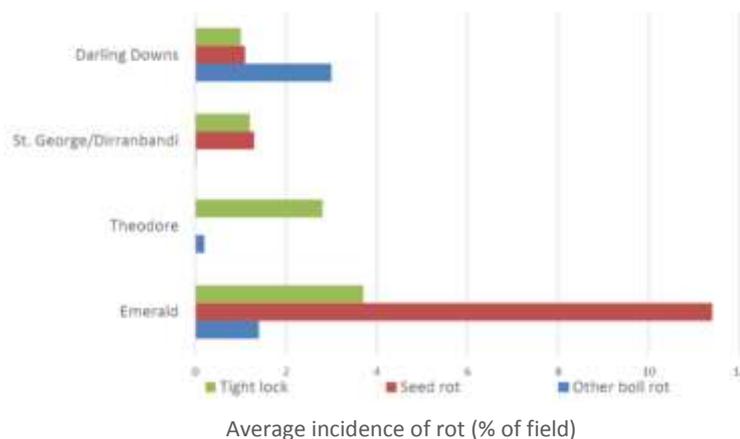


FIG 3. Seed rot was the most predominant rot recorded in Emerald at the time of surveying while the rots detected in fields in Theodore were largely tight lock.

This coming season, growers surveyed as part of the industry annual disease surveys will receive a personalised farm disease survey report

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### The latest update on reniform nematode trials in the Dawson Valley

Reniform nematodes (rn) are a problematic pest in areas of Central Queensland. Rn were first detected in Emerald in November 2003 with their presence in Theodore confirmed in November 2012. They are still present in the original fields at Emerald, and have since been detected on two other Emerald properties.



FIG 4. Some of the symptoms of reniform nematodes include uneven growth and stunted plants.

### Why are reniform nematodes a problem?

- The lifecycle of rn is completed in 17 – 23 days
- An adult female lays approximately 60 – 80 eggs
- Large populations can develop within a single season
- Rn have a large host plant range
- They can survive without a host for up to two years
- Populations of nematodes have been recorded at depths of up to one meter in the soil profile
- Near impossible to eradicate
- The best strategy is to practice good farm hygiene and prevent this pest from entering your farm!

### Non Host Crop Rotation Trials

Crop rotation experiments have been held in Theodore since 2014 to measure and compare the effect different cropping sequences have on reniform nematode populations.

Rotation crops included in the experiment:

1. Cotton
2. Fumig8tor forage sorghum
3. Grain sorghum
4. Corn PAC606
5. Corn PAC 727

### Results

Number of reniform nematodes per 200ml of soil:

2014/15 pre-plant	2014/15 treatment	2014/15 post-harvest	2015/16 pre-plant cotton	2015/16 post-harvest cotton
34 a	Cotton	814 a	16 a	5704 b
21 a	Fumig8tor	18 b	0 b	2630 a
41 a	Grain Sorghum	18 b	2 b	3572 ab
30 a	Corn (606)	9 b	2 b	5422 b
31 a	Corn (727)	13 b	1 b	4078 ab

Sicot 746B3F planted across trial

Yield (b/ha) - Grain sorghum: 9.4, Fumig8tor: 8.8, Corn (727): 8.7, Cotton: 8.5, Corn (626): 8.1

Rotation with corn drops reniform nematode population numbers but reniform numbers can increase rapidly again when cotton is grown.

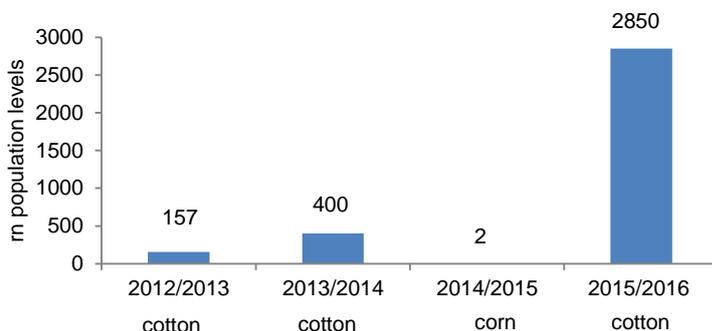


FIG 5. The rn population numbers can increase rapidly again when cotton is grown.

### 2016 – 2017 season

- Experiments will begin using Barmac’s NutriSmart to measure the effect this product has on rn populations. NutriSmart is a microbial fertiliser and soil amendment, and has previously been used in the horticultural industry to reduce the incidence and impact on nematodes.
- CSIRO are screening several breeding lines. This will be a long term trial as there are currently no resistant cotton varieties available.

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CQ Cotton Update is the Central Queensland’s regional CottonInfo newsletter. The aim of this publication is to provide you with timely and relevant crop management information as well as keeping you abreast of cotton research going on in the region. If you have any feedback, questions or ideas for future topics please get in contact.

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