

Emerald grower Cotton Catch Up meeting

‘Setting Yourself Up for Success’: Thursday 16th July 2026

This CottonInfo blog article from CQ CottonInfo REO Tami Buranda provides a summary of the key discussion points at the Cotton Catch up.

I'd like to acknowledge Paul Grundy, CottonInfo Tech Lead and Research Scientist, QDPI, Tim Weaver, CottonInfo Tech Lead – Nutrition, Research Scientist, UniSyd, Samuel Krekeler, Crop Protection Research Scientist, QDPI and Dinesh Kafle, The Australian Cotton Disease Collaboration, QDPI for presenting at the grower catchup from which the information below is sourced.

Nutrition Session:

Below are some of the practical take-home messages from the nutrition session, particularly as growers face rising fertiliser prices and ongoing supply chain challenges.

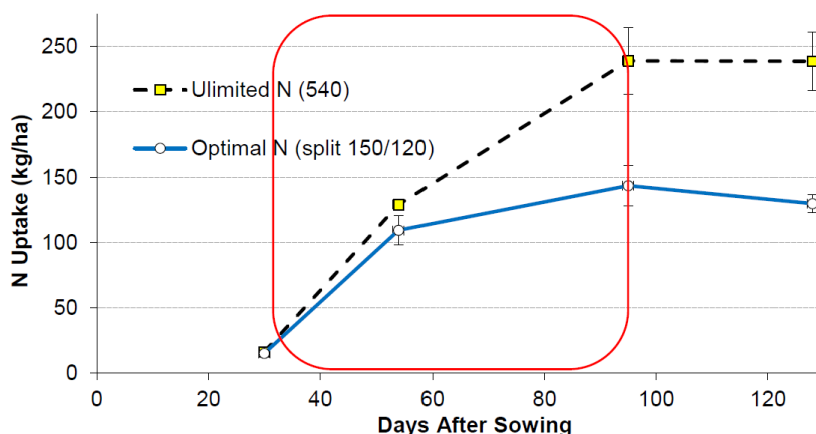
Getting the Most from Your Nitrogen Investment

Nitrogen is a major driver of crop productivity and photosynthesis. However, successful nitrogen management is not about maximising nitrogen supply—it is about matching nitrogen availability to the crop's changing demand throughout the season. Achieving this balance helps maintain the right relationship between vegetative growth and boll production.

When Does Cotton Need Nitrogen?

Cotton typically takes up 3–4 kg N/ha/day from around 30–40 days after sowing (mid squaring) through to 90–100 days after sowing (cutout). Ideally, soil nitrate should be readily available during this peak demand period.

Too much nitrogen outside this window can lead to excessive vegetative growth, reduced efficiency, and increased risk of nitrogen losses.



Nitrogen Uptake in Grow-On Cotton

One common question is how nitrogen uptake changes in crops that are grown on for a second fruiting cycle. Research conducted by Paul Grundy using N¹⁵ tracing technology followed the fate of applied fertiliser and provided several important insights.

Key findings included:

- Overall, nitrogen fertiliser uptake efficiency was similar to levels reported by other cotton researchers, including Constable, Rochester and Baird, with recovery rates of 25–30%.
- In grow-on cotton, the crop re-commences nitrogen uptake from the soil once it begins to grow again and can continue to make use of soil nitrate from earlier fertiliser application. Nitrogen use during growing on is very efficient because
 - the crop makes use of residual soil nitrate that could otherwise be lost
 - the plant recycles nitrogen from the older canopy that is senescing naturally into the second cycle of bolls
 - the existing root system enables rapid uptake of any fertiliser applied at cutout prior to the growing on period.As a result, crops do not need large applications of nitrogen for the growing on period. Whilst a generic amount cannot be specified, more than 90 units of N (approx. 200kg Urea) is likely to be excessive.

Take Home- Sunn Hemp

- Sunn hemp is a vigorous, easy-to-establish legume that produces substantial biomass in a relatively short period.
- It suppresses reniform nematodes, making it a valuable option in some cropping systems.
- Sunn hemp is an effective nitrogen fixer, with above-ground biomass typically containing 100–150 kg N/ha. However, the relative contribution of nitrogen fixation compared with nitrogen scavenged from the soil is not yet fully understood.
- In addition to its nitrogen benefits, Sunn hemp may provide other soil and system advantages, including improvements in soil health and ground cover.
- The impact of Sunn hemp on soil-borne diseases such as Verticillium wilt and black root rot remains unclear. Therefore, growers should exercise caution when considering Sunn hemp in paddocks with a known history of these diseases.
- **Disease Session**

Key take-home messages from the disease session:

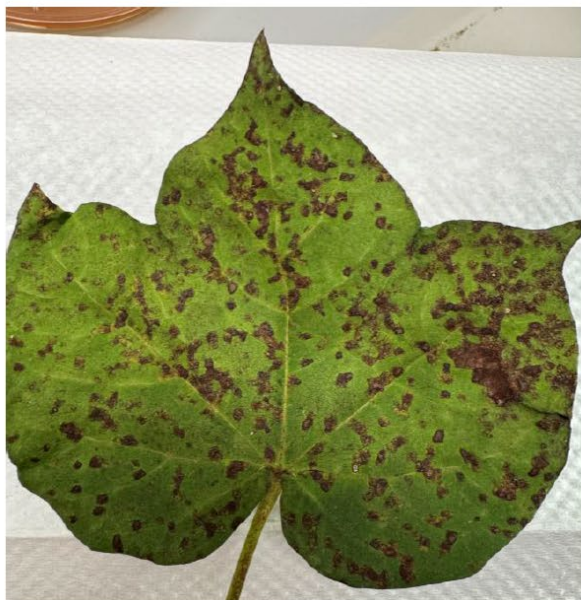
Several key disease management messages emerged from the presentations. One of the strongest recommendations was to regularly monitor crops and submit samples whenever unusual symptoms

or signs are observed. Early identification is critical for effective disease management and helps improve our understanding of emerging disease issues in Central Queensland.

Another important point was the need to maintain clean paddocks. Many disease-causing fungi can survive between seasons on crop residues, volunteer cotton, and ratoon cotton, creating a source of infection for future crops. Effective crop hygiene is therefore essential to reducing disease pressure.

Ramularia Leaf Spot

Also known as Areolate Mildew, False Mildew, or Grey Mildew.



Ramularia leaf spot thrives under warm, humid conditions and can spread rapidly through repeated infection cycles. Disease development is favoured by temperatures between **20°C and 27°C**, combined with prolonged relative humidity above **80%**. Free moisture from rainfall, irrigation, or heavy dews significantly increases spore germination and disease spread, particularly within the dense lower canopy where humidity is highest.

Source of inoculum:

The fungus survives the off-season on crop residues, volunteer cotton, and ratoon cotton. Continuous cotton production in the same paddock, or nearby fields containing volunteers and regrowth, can lead to a build-up of inoculum that may infect new crops early in the season.

Secondary spread:

Once established, Ramularia reproduces continuously throughout the season. Spores are readily dispersed by wind, rainfall, and irrigation, allowing the disease to spread rapidly through crops.

Target Spot

Target spot is caused by the fungus *Corynespora cassiicola*. Symptoms include chocolate-brown leaf lesions, often displaying concentric rings and typically lacking a dark border. The disease generally begins in the lower canopy and can lead to significant premature defoliation.

Warm, wet conditions favour disease development. Other contributing factors include:

- High planting populations
- Excessive nitrogen application
- Narrow row spacing
- Vigorous or rank crop growth

While leaf lesions are characteristic of the disease, the greatest concern is often the premature defoliation it causes. Both lesions and leaf loss typically begin in the lower canopy and progress upwards through the crop.



Best Management Practices – Leaf Spot and Ramularia

- Avoid back-to-back cotton and rotate with non-host crops.
- Consider planting density and row spacing to improve airflow through the canopy.
- Manage crops to avoid excessive or rank growth.
- Maintain balanced nutrition, particularly adequate potassium (K), and avoid excessive nitrogen (N) application.
- Incorporate crop residues as soon as possible after harvest.
- Control weed hosts, volunteer cotton, and ratoon cotton.
- Most importantly: **Come clean, go clean.**

Take-home message: Disease management starts long before symptoms appear. Good crop hygiene, sound agronomic practices, and regular crop monitoring are the most effective tools for reducing disease risk and protecting yield potential.

For more information contact Tami Buranda, CQ CottonInfo REO: tami.buranda@cottoninfo.net.au