

This is an abstract from David Hall's original article 'Efficient nutrient strategies for high yielding cotton'. For the full version, please turn to page 10 of Incitec Pivot Limited's Summer Crop newsletter, inserted in this issue of The Australian Cottongrower.

Efficient nutrient strategies for high yielding cotton

By David Hall, Regional Agronomist, Incitec Pivot Limited, Toowoomba

Irrigated cotton yields in Australia have dramatically increased over the past two decades. In some cases, growers are now yielding twice as much as they were in the early 1980s.

The biggest yield increases in recent times have come about as a result of the broad adoption of Bollgard cotton, grown under irrigation.

It has a different fruiting pattern and fruit retention level than conventional varieties, leading to increases or at least changes in nutrient requirements, such as the timing and amount of nutrient needed and overall nutrient removal.

Essential nutrients such as nitrogen that are required in large amounts do not become plant available until after the applied fertiliser has undergone physical, chemical and microbial breakdown. These processes depend on external drivers such as soil temperature, moisture, pH and soil microbes.

Soil testing

The amount of fertiliser nitrogen required will vary depending on the reserves in the soil.

Regular soil testing, with accurate interpretation of the results, is valuable in assessing soil nutrient levels and their availability prior to planting.

Incitec Pivot's Nutrient Advantage Advice offers a range of soil analyses appropriate for cotton growers, with the laboratory backed by NATA accreditation and the benefit of local advice from accredited agronomists.

With the right fertiliser strategy and the introduction and adoption of new technology in the management of cotton crops, growers can dramatically improve nitrogen use efficiency.

Other nutrients

Cotton has a high demand for relatively immobile nutrients in the soil such as phosphorus and potassium.

Considering the effective rooting depth of irrigated cotton, cotton may be extracting significant levels of these nutrients, particularly potassium, from other pools in the soil. Incitec Pivot is promoting the sustainable use of our soils with research into these and other related questions.

As with other nutrition issues, Bollgard crops are particularly vulnerable to low Vesicular Arbuscular Mycorrhizae (VAM). The early stress and poor seedling vigour could allow other seedling diseases to enter.



David Hall.

There is little quantitative data available to date that proves a relationship between soil VAM levels and crop responses, but Incitec Pivot is currently investigating methods of testing soils for VAM levels and other soil microbes specifically to answer these questions.

In the meantime, it is recommended that growers use a starter fertiliser with phosphorus and zinc, such as Granulock SuPreme Z fertiliser, in a band close to the plant line to help ensure access to these key nutrients.

Please see your local Incitec Pivot Business Partner agronomist to develop a specifically tailored fertiliser plan for your cotton crops this season.

