

# 15-inch cotton: Why, where and how's it going?

By Joss Barber, Deltapine Australia

**F**ifteen inch cotton is not only showing great promise in southern production areas, it is also performing well in northern and central growing regions. Less condensed than 10-inch UNR cotton, 15-inch spaced cotton has many potential systematic and economic advantages over the 40-inch industry standard. Roundup Ready and Bollgard II cotton varieties, improved growth-control tools and adapted management techniques have made the system more feasible and cost-effective.

Jack Murray, head of Deltapine Tech Services, says that there is a selection of varieties with attributes lending themselves to successful 15-inch cotton production systems in warmer regions. Vigorous and robust Bollgard II/Roundup Ready varieties with a columnar growth structure are ideal for 15-inch systems. Growing 15-

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A 15-inch crop at Twynam, Hillston.

inch cotton in warmer regions focuses on higher yield and fields can be managed for earliness and maturity if necessary.

Genetic attributes of Roundup Ready and Bollgard II allow more flexible weed and insect control and the associated propensity for higher earlier fruit retention and less tipping out. New varieties also have longer fibre length, good strength and micronaire.

### THEODORE EXPERIENCE

Fifteen inch spindle picking heads have enabled quicker and cleaner results than stripper picking. Allen and Sue Williment from Theodore, invested in John Deere PRO-12 VRS spindle picking units which became commercially available last year.

Allen says 15-inch cotton is generally managed as a normal crop to be spindle picked, making full use of the height of the picker front. Last year's 15-inch cotton production consisted of a 26 hectare trial and the NuPearlRR yielded over 12.5 bales per hectare. This season 260 hectares were planted on 'Girrahween' and Allen is again quietly optimistic, saying the DP 556 BGII/RR looks just as good.

The 15-inch fields were planted at 180,000 seeds per hectare, whereas conventionally grown cotton was normally planted at 140,000 seeds per hectare. Allen noted that in trials where the range was from 16 to 20 seeds per square metre, the lower rates showed significantly better results. (Allen opted to plant at the median rate due to in-field soil variations).

Allen says, in his experience, Bollgard II/Roundup Ready is the way to go with 15-inch production. In two metre beds, the 15-inch cotton had two herbicide sprays (with no layby) and one insecticide spray.

The only disadvantage is that no band sprays are possible. Crop growth was controlled with cumulative applications of mepiquat chloride totalling 1.7 litres as the crop approaches full cut-out and continues boll development.

### MORE DEMANDING

Emerald cotton growers Dougall and Hamish Millar have a total of 150 hectares of 15-inch Bollgard II/Roundup Ready cotton and also manage the fields similarly to one metre spaced cotton. Dougall says on 'Trawalla' the most significant difference is that issues are intensified in their 15-inch cotton, so it is more demanding to manage. To help remedy this sensitivity, the Millars study the weather, crop physiology and growth patterns scrupulously.

Dougall says that the main area of focus



Picking a 15-inch crop.

was moisture monitoring using probes and deficits. Because 15-inch cotton has twice the plant biomass, it uses 15–20 per cent more water than conventionally grown cotton in a season. Timing is critical — Dougall found that a field that looks fine one day may threaten to curl up its toes the next.

The 15-inch was wanting for nutrients, and in retrospect Dougall says it would have benefited from another 40 units of nitrogen mid-flower. It received 180 units of N underneath the plants and a 40 unit foliar application at first flower. In comparison, the one metre spaced cotton maintained better verdure (greeness).

The milder summer experienced in the northern region has also impacted crop responsiveness to timing and amount of mepiquat chloride applications. The 15-inch received two perfectly timed mepiquat chloride applications and with 1–2 bolls per metre open, defoliation was scheduled for the end of January.

Dougall comments that fruiting is fairly even with fruiting factors averaging over one, but fruiting on the outside rows is sensational, with fruiting factors over 1.2.

The 15-inch cotton is expected to yield as well or at least as good as the conventionally grown cotton system but Dougall says there is some glorious looking one metre spaced cotton — so picking will be a very interesting time.

### GOOD IN THE GWYDIR

Twynam's Collymongle Station in the Gwydir Valley is planted 100 per cent to 15-inch production this season. Farm Manager, Bryan Goldsmith approaches 15-inch production systems with a holistic view, commenting that management practices are relative to what is happening in

the field. Planted at 20–24 kg per hectare, most fields were reasonably vigorous until the late 2004 rain events coincided with an irrigation — restricting vegetative growth, delaying maturity and lowering retention rates.

But the micro-climate of 15-inch seems to add to any varietal resilience for withstanding abnormalities in environmental pressures. Bryan says he is impressed by the ability of 15-inch fields to pack a crop on — compensating well for earlier setbacks. The recovery boll development on a per hectare basis was exceptional — 15-inch cotton retains the ability to bounce back quicker than the conventionally grown cotton.

Bryan says he is definitely more aware of moisture levels in 15-inch cotton production systems — twice as many plants per square metre diminish rain moisture much quicker than irrigation moisture. Water timing is paramount with 15-inch on a seven day cycle for all varieties, yet irrigation intervals have not been more frequent.

Bryan says that crop height is managed by applying the same principles as conventionally grown cotton and he is comfortable with boll loads as plants approach cut-out. The Bollgard II/Roundup Ready varieties seem to have great yielding potential at this stage, and Bryan asserts that a 10 bale per hectare yield is certainly achievable.

Predominantly Bollgard II/Roundup Ready planted varieties have meant a more integrated weed and pest management agenda. Growers are confident that slightly adjusted management practices should yield equivalent, or more, from 15-inch cotton in comparison with conventionally grown cotton production.