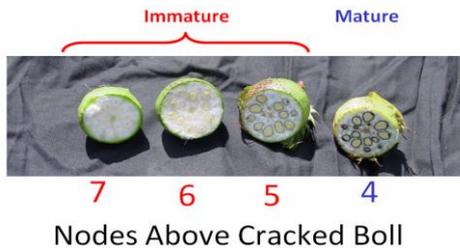


Growers' Influences on Gin Sample Quality:

Defoliation:

Defoliation plays a key role in ensuring a quality module is presented to the gin. Crops should be defoliated on time, when the upper most pickable boll is mature. The consequences of in-correct timing of defoliation are not only yield reductions but also an increase in immature fibres and **NEPS**. Additional costs may also be incurred in corrective measures to achieve adequate defoliation of leaf.



Nodes Above Cracked Boll

Picking: Timing and Maintenance:

The timing of picking is a balance between waiting for all the cotton to be ready for picking and the risk of weathering damage from inclement weather. Picking too early can result in yield decline due to unopened bolls not being picked and increased trash levels with green leaf in the sample. Extra lint cleaning required to remove leaf can impact on fibre quality, particularly staple length. As with defoliation, the upper most pickable boll is the determining factor in correct timing, and it is a matter of waiting for this boll to present itself.



The correct set up and alignment of the picking heads is critical in ensuring clean quality cotton is put into modules. Ensure spindles, doffer cylinders and moisture tower pads are in alignment, and cleaning the spindles. Close the pressure doors so they are tight enough to ensure the most cotton and least amount of trash is picked from the plant, and adjust head height and angle to allow bottom bolls to be harvested without scooping dirt into the sample. Tinkering with the picker head set up is a continual process as crops and fields change. It is not a "set and forget" adjustment. The head set-up should be tuned for each situation to ensure the most cotton and least amount of dirt and bark is put into the module.

Module Design and Location:

Similar principles apply for round modules as they do for conventional modules. Ideally modules should be built on flat, clean ground, be packed, firmed and rounded in the middle to assist in shedding rainwater from the tarp, and be free of contaminants.

Quite obviously if a module is built on contaminated (e.g. oil spill) or trashy ground (picker clean down waste, weedy vegetation, in field) some of this material is going to be delivered to the gin with the module, decreasing the quality of the cotton.

For round modules depositing them at the head or tail drain areas is ideal. As this action limits the possibility of snagging plant material and damaging the integrity of the plastic as the round module is relocated from the field to the staging area for transport.

Consideration should be given as to how the modules are going to be transported to the gin. Points to consider include:

- Ensuring there is adequate turning room for trucks to manoeuvre around channels as well as built modules.
- Is there room for an in-field loader or chain bed to back up to and load trucks? In-field loaders require at least 1m grace along the side of a module to enable it to pick the module up.
- Modules should only be made on the rota buck pad if it is known that they will be removed quickly, as rainfall in this situation could make for very difficult and messy removal.



In terms of conventional modules, tarps should be checked for holes, tears and fraying edges pre-season, and repaired. They should be kept in a dry, vermin free store to ensure their quality and long life. Tarp type, whether it be fitted or valeron is of lesser concern than badly fitted or secured tarps. Most growers have their own individual preference about the way they tie their tarps on, the number of ropes, and configuration. The main issue, however, is to ensure that the tarp stays on and that only cotton rope is used to tie down the tarps. Place module tickets in the same location on each tarp, this will help when loading and allow for easy checking that each module has been tagged.

Considerations with round modules should be around the drop off points, if possible rounds should be dropped in stubble free zones (tail drains, road ways and rotobuck areas). By far the greatest risk of ripping the plastic is by cotton plants during the pickup from field to staging area as well as loading and transporting to the gin.

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Module Moisture Content:

Module moisture plays a vital role in the preservation of the quality of the cotton and the ginning process. Ideally a module should have a moisture content ranging from 6-10%. At this percentage, little heat is required to condition the seed cotton as it goes into the gin. As the moisture content increases, more heat is required. This can affect the fibres especially fibre length, resulting in an increase in short fibre content and decrease in length uniformity.



CSD Seed Increase team measuring and monitoring the moisture content of round bales in the gin yard

Modules with moisture content above 12% require the ginner to work harder to ensure a good quality sample and also lend themselves to a reduction in efficiency and increased risk of fire. At this moisture content, the fibre can be further degraded by micro-organisms and lead to colour down grades, spotted cotton and reduced strength.

There are three factors which can influence the moisture content of a module.

1. **Defoliation:** as mentioned in the previous issue of *Facts on Friday*, defoliation is critical to the quality of seed cotton presentation to the gin. The amount of green leaf still present will add moisture to a module as well as cause green stain in severe cases.
2. **Picking Times:** picking should only occur when conditions are suitable. Trouble arises when picking is recommenced too soon after rainfall events, or is pushed into the night after dews have settled in. Pushing the limits in the morning is less of a risk as the cotton is drying.
3. **Tarping Practices:** Round modules have taken away much of the danger of traditional tarps, such as, wear and tear on tarps. However, allowing rain moisture into the module through holes and the like still remain. Ensure that modules are staged correctly to allow for evaporation and water run off.

Contamination:

Australian cotton has a very clean, contamination free image and it is paramount for growers' interests that it stays that way. Contaminated modules can lead to downgraded cotton and associated merchant discounts and gin machinery damage and fires. It can result from:

- **Carelessness and Poor Housekeeping:** It is important that everyone in the picking crew fully

understand the ground rules and standards which are required. For example, correct disposal of items such as drink cans and plastic food wrappers is essential.

- **Poor Location of Rounds & Module Builders:** Ensure that the tail drain or rota-buck area is free of weeds, stones, waste or spills. As mentioned previously, any foreign material where modules are built on is easily transported to the gin.
- **Machine Failures:** it is common for pickers, boll buggies and presses to break down at some stage during the season. On-site repair of these machines can lead to contamination of the module. e.g.: Module builder hydraulic oil if a strict clean up policy is not followed. Also, wrapping malfunctions when wrap is fed into the module whilst still under construction.



- **Sacking of Staff:** Although not desirable, there are situations where staff has to be let go. A common cause of module contamination reported by the gins is the actions of disgruntled ex-employees.

It is important that if there is a suspected problem with a particular module, the gin is notified to allow precautions to be taken in the management of the module.

Grower Involvement:

There should be as much co-operation between the grower and the ginner as possible. The Australian Cotton Ginning Association is actively encouraging growers to be present during the ginning process. The aim of the gin is to allow the grower to achieve the best quality cotton, and therefore the highest possible price. Growers' input in the ginning operation is essential. In the simplest form it can be notification of problem modules. However, it can also include getting the ginner to configure the gin to get the desired result for your cotton, for example the number of lint cleaners, heat and moisture levels.

FURTHER INFORMATION:

- CSD Grower Information "Picking for Quality" and "Defoliation for Quality Cotton" www.csd.net.au
- Discuss these issues with you Gin Manager before the start of Picking Season.
- René van der Sluijs- Fibre Technical Specialist Cotton Info

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