

# Litchis 'Down Under'

## – A visit to the Australian litchi industry

**Regina Cronje**

ARC-INSTITUTE FOR TROPICAL AND SUBTROPICAL CROPS

After the International Horticulture Conference, which took place in Brisbane between 17 and 22 August 2014, two ARC-ITSC litchi researchers, Regina Cronje and Sakkie Froneman, visited six Australian litchi growers in the Nambour, Childers,

Yeppoon and Mackay area in the state of Queensland. Besides farm visits, the main purpose of the trip was to collect litchi bud wood and air-layers from Mr Tibby Dixon to add to the existing litchi cultivar collection.

'Kwai May Pink' is the main cultivar for most growers as it is a consistent bearer and their so-called "bread and butter". To achieve good fruit size and quality, higher amounts of fertil-

iser and water are necessary for this cultivar compared to other cultivars. The cultivar 'Mauritius' is not grown commercially in Australia anymore due to its irregular bearing. Some of the growers also have 'Fay Zee Siu', which is favoured by the Chinese market but does not fruit well in Australia. Some also grow 'Wai Chee', 'Kaimana', 'Sah Keng' and 'Salathiel'.

Three of the growers visited have



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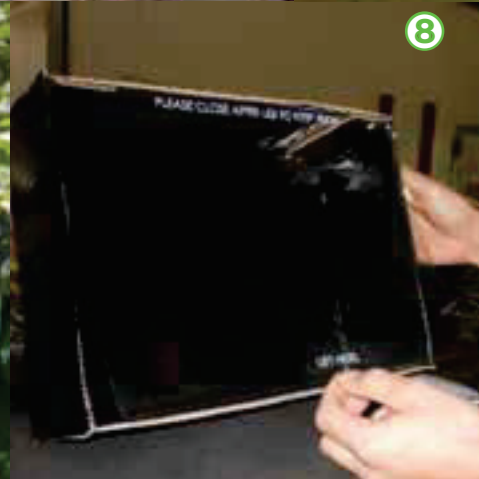
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planted the new cultivars that were imported from China in the early 2000's by Mr Dixon. These cultivars are the early 'Baitangying' (Fig. 1), the mid-season 'Chompogo' and the late-season 'Erdon Lee' (Fig. 2). These cultivars have proven themselves in the last few years by regular flowering and bearing and excellent fruit quality. The same cultivars have been introduced to South Africa recently and again with

this visit and hopefully will help extend the harvesting and marketing season of South African litchi locally as well as on overseas' markets.

Common challenges in all farms visited were the high labour costs, which forces the growers to mechanise their main orchard practices, e.g. fertilisation through irrigation and pruning. This makes them also inventive trying to make processes easier, less labour

intensive and more labour friendly (Fig 3). Many of the growers also do their own research trials on the farm. All growers visited had their litchi under net for protection against birds, flying foxes and moths that can reduce the crops to virtually nil (Fig. 4). These nets were either permanent structures or temporary, i.e. they are only pulled over the trees during the fruit growing season.

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- 1 Figure 1. Flowering 'Baitangying' trees at Ian Groves' farm near Yepoon.
- 2 Figure 2. 'Erdon Lee' flowers at Ian Groves' farm near Yepoon.
- 3 Figure 3. Rick Bronson with his adapted ladder for more stability on the ground and more labour safety.
- 4 Figure 4. Permanent netting over litchi trees at Chris Salta's farm near Nambour.
- 5 Figure 5. Bar cutter used for pruning trees.
- 6 Figure 6. Parakeets – pretty but devastating to litchi growers.
- 7 Figure 7. Erinose mite symptoms on leaves of 'Kwai May Pink'.
- 8 Figure 8. New Australian litchi box for sulphur-free litchis with plastic coated carton and plastic lid to retain moisture.
- 9 'Kaimana' (left) trees are lighter in colour than 'Sah Keng' trees (right).
- 10 Flowering 'Chompogo' trees at Ian Groves' farm near Yepoon.





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In some areas nets also help protect the trees against frost damage. Because of the netting, pruning of trees is an absolute must. Depending on the area, some growers prune immediately after harvest, others wait a few weeks to time the emergence and maturation of post-harvest flushes for optimum flowering. Most pruning is done mechanically with an All-cut or bar-cutter (Fig. 5).

Main pests on litchi are moths, fruit-spotting bug, birds (Fig. 6) and flying foxes. Insect pests are mainly controlled chemically, but also by light traps (for moths). Birds and flying foxes are kept out of the orchard with nets, as mentioned above, or permits are granted to shoot them. Erinose mite (Fig. 7) is also a serious problem which can reduce production considerably if left uncontrolled. Chemical sprays are usually done several times during early flower development and flowering to get it under control.

Australian litchi growers only market their fruit fresh without any chemical treatments. This applies to both the local and the export market. Due to the close proximity to Asia, their main markets are Hong Kong and Singapore. But fruit is also sent to the UK. Fruit are picked between 05:00 and 09:00, either as single fruit or per panicle depending on the season, cultivar and

workflow in the pack shed. This guarantees good fruit quality and avoids unnecessary damages such as torn stems. After 09:00 the pickers work in the pack shed grading and packing the fruit. Most growers have their own pack shed and cold rooms. Therefore transport time is kept to a minimum.

Because litchi in Australia are not sulphur-fumigated, hydration is of utmost importance to maintain the freshness. Therefore the fruit are hosed down with water as soon as they arrive in the pack shed. After grading, fruit are further cooled down with a hydro-cooler (conveyor belt with cold water sprayers). Fruit are then packed in 5 kg boxes with a crispy bag inside to reduce further moisture loss. Fruit is stored at 5°C. Like in South Africa, certain quality criteria need to be adhered to. Photo charts and sorting guides displaying acceptable fruit blemishes for different cultivars in the packing shed help the graders with the sorting.

The Australian litchi industry has developed a new box out of plastic coated carton without holes and a see-through plastic lid (to retain moisture), which enables the retailer to sell fresh fruit without rapid moisture loss (Fig. 8). A similar box should be considered for the South African local market for sulphur-free fruit. Fruit can be kept fresh,

without loss of moisture and colour, for about two weeks.

What can the South African litchi industry learn from the Australian litchi industry? Most certainly the way fruit should be handled at harvest through to the consumer. Picking of fruit only in the early morning hours contributes considerably to fruit quality and storability. Such fruit handling can easily be adopted in South Africa without having to give up sulphur-fumigated fruit destined for export. Fruit that are picked in the morning can be marked sulphur-free in special boxes locally. Fruit that is picked after 09:00 can be sulphur-fumigated for export.

Spreading the cultivar base on the farm is another thing South African litchi growers can use to their advantage. More cultivars spread the risk of complete crop failure, spread the harvesting season and extend the marketing season for the own farm brand and for the industry as a whole. Together with above mentioned aspects specific marketing of cultivars (introducing new cultivars to consumers) and packaging/post-harvest treatment should be improved to grow the local market within South Africa, to create more excitement about the fruit with consumers and to promote increased sales of this healthy and delicious summer fruit. **ST**



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1 Litchi colour chart as guideline for correct litchi grading.

2 Hydro-cooler with conveyor belt with cooling elements on top cooling the water that flows over the fruit.