

Low Chill Australia Inc.



The Taste of Spring

ABN: 28 381 271 244

LOW-CHILL STONE FRUIT INDUSTRY PROFILE



The Australian Low-chill Stone Fruit Industry

Early season (low-chill) stone fruit is primarily sourced from the coastal districts of the NSW North Coast, the QLD Sunshine Coast, and inland districts of Mundubbera, Kumbia, and the Lockyer Valley, with mid season fruit available from the Granite Belt, and the NSW Central Coast. To a lesser extent fruit is also supplied from the Sydney Hills district and the Gingin district north of Perth.

NSW low-chill producers numbering approximately 120 are located between Coffs Harbour and the Tweed. The bulk of production comes from in and around the Byron Bay-Ballina-Lismore triangle. In Queensland there are some 50 growers, principally on the Sunshine Coast, the Burnett and West Moreton regions. There is also a viable low-chill stone fruit industry developing in West Australia.

The main crops are nectarines, peaches and to a lesser extent plums. Currently there are no truly low-chill apricots or cherries.

\$40 million industry

The low-chill stone fruit season extends from late September to November, (12 weeks), peaking in October, involving a succession of varieties each with a window of 2 to 5 weeks. Low-chill production is approximately 10% of national sales by volume (10,000 tonne), and 20% on value (\$40 million). This equates to an annual production of approximately 3 million x 3.5 kg trays, or 2 million x 5kg trays.

Production costs are 30 to 50% higher for low-chill stone fruit compared to later stone fruit production due to lower yields, higher incidence of pest and disease, excessive fruit set and excessive tree vigour, requiring higher management costs.

Low-chill stone fruit quality is of importance to the wider national stone fruit industry as it sets the standard for the start of the stone fruit season. Consumers purchasing high quality peaches, nectarines and plums in September, October and November will continue purchasing during summer. However, consumers may not purchase high-chill fruit if they have adverse experiences with low-chill varieties. To consumers it is all just stone fruit regardless of the timing of production in low-chill or high-chill regions.



Low Chill Australia Inc President Bill Hatton discussing low-chill industry development with Bob Nissen, Senior Researcher, Horticulture, DPI, Maroochy Research Station, Nambour



Low Chill Australia Inc President Bill Hatton discussing the low-chill varietal program with Dr Bruce Topp, Senior Plant Breeder, DPI, Maroochy Research Station, Nambour

Industry rationalisation

Production of Low-chill stone fruit boomed during the 1980's and 1990's due to high prices for this early season fruit. In recent years there has been a rationalisation of the industry, with the industry expanding in the more favourable inland districts, and declining in the more urbanised coastal areas.

There is virtually unlimited potential for expansion of the low-chill stone fruit industry as the older inferior varieties such as Flordaprince are replaced by improved varieties such as Tropic Beauty.

The Australian industry is primarily based on older non-patented varieties developed at the University of Florida – Gainesville. Essentially, all newly release low-chill varieties are subject to plant breeders rights.

The greater percentage of fruit is marketed domestically in the major Australian eastern seaboard markets - Brisbane, Sydney and Melbourne. Lesser quantities are marketed in Adelaide, Perth and Hobart with very little finding its way into export markets in South-East Asia and the Middle East. However there is a strong potential to increase export sales to both Asia and Europe during the low-chill production period, with the increased availability of improved varieties.

Low-chill stone fruit production is seen as an attractive economic enterprise as it offers quick returns from a small area of land, however there are several constraints that currently limit the production of low-chill stone fruit. Varieties are microclimate specific, highly labour intensive, susceptible to a host of insect pests and diseases, and is more difficult to grow than most other tree crops – so the industry is not without its challenges.

Achieving “critical mass”

To achieve the required “critical mass”, the low-chill stonefruit industry will need to address current limiting factors including:

- Planting of improved varieties (some older varieties have limited consumer acceptance)
- Expansion into identified suitable production regions (coastal districts tend to be more prone to disease)
- Making a positive effort to move on from its current “cottage industry” status, to more commercial production.

Low-Chill Australia Inc (LCA)



Low Chill Australia Inc, communications manager Peter McFarlane undertakes this role (including publishing the LCA Newsletter) from his home base in South Australia.



Low Chill Australia Inc, conducts several field days each year to demonstrate orchard best practice.

Low-Chill Australia Inc, is the peak industry body representing the interests of producers of low-chill stone fruit situated in NSW, QLD and WA.

LCA publishes a respected quarterly newsletter – *The Low-chill Stone Fruit Grower*, and conducts regular field days, seminars and Update Conferences, to keep its members abreast of new developments.

One of LCA's primary functions is the management of strategic research projects, such as the low-chill varietal breeding and micro-climate evaluation projects.

Varietal Availability

University of Florida

Public varieties from the *University of Florida* low-chill stone fruit breeding program, originally developed by Dr Wayne Sherman at the *University of Florida*, provided the foundation of the Australian low-chill stone fruit industry.

Current situation

The Australian industry now has potential access to the output from two local breeding programs - *DPIF Queensland*, the *University of Western Sydney (Phytonova™)*, as well as the several other overseas programs with low to medium chill material, including *University of Florida*, *Sunworld* (California), *Texas University* (available through ANFIC), *Burchell* (available through *Mossmont / Jempi*).

In this new commercial world plant breeders / commercialisation companies around the world have moved away from public access, and are now requesting increased revenue streams for their breeding programs. Most commonly through an initial tree royalty plus an additional production royalty, or annual tree rental. In some instances there is also restricted or “closed loop” access – which limits production to a nominated “club” of producers.

Queensland Department of Primary Industries & Fisheries (QDPIF) - low chill breeding program

This Horticulture Australia funded Project (SF02015) is managed by a QDPIF team at the Maroochy Research Station, Nambour, headed by senior plant breeder Dr Bruce Topp.

The low chill breeding project is now in its 4th year and has made rapid progress in its aims of producing new, high-quality, low chill stonefruit varieties for the Australian industry. Over 4,900 hybrid seedlings were planted at Nambour in 2005 with 85% being peach and nectarine and the remaining 15% comprising plum, apricot, cherry and hybrids. An early ripening peach selection performed well at test sites in northern NSW. It will be subject to consumer evaluation tests in 2006 prior to a decision on commercial release.



(Dr Bruce Topp with some of the hybrid seedling produced by the embryo rescue technique at QDPIF Maroochy Research Station, Nambour QLD)

There is debate within the low chill industry on the use of melting versus non-melting flesh types for peach and nectarine. Currently our breeding efforts are divided equally for both types of flesh and hence we have a number of advanced selections with melting and non-melting flesh. We consider it is important to determine Australian consumer reactions to the different flesh types and have conducted a small pilot study to provide preliminary data on this subject and direction for our breeding objectives.

The current low chill breeding project is due to expire shortly and a new and final project proposal has been submitted to Horticulture Australia Ltd. This new project is to commence in July 2006 and combines the breeding and evaluation research conducted by QLD and NSW Departments of Primary Industries. We are proposing that this 5-year project will result in release of several new low chill varieties with improved eating quality characteristics.

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Low-chill stone fruit embryo rescue team leader briefing Department of Primary Industries & Fisheries, Horticulture & Forestry Sciences, and NSW Agriculture officers at the Maroochy Research Station, Nambour QLD



Department of Primary Industries & Fisheries, Horticulture & Forestry Sciences, commercialisation manager Garry Fullelove meeting with industry stakeholders to discuss commercialisation options for the low-chill stone fruit breeding program.

For Further Information

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