

Cherries Down Under

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As an Extension Horticulturist for Oregon State University, one of my major areas of responsibilities is to introduce growers to new and innovative sweet cherry production methods. This was the motivation behind a recent tour that I led to Australia and New Zealand in early January. Going with me on the trip were 20 cherry growers and scientists from Oregon and Washington.

The day after we flew out of Portland it began to snow throughout the Pacific Northwest. Within a few days there was three feet of snow in The Dalles where most of the participants resided. Consequently, we were glad to be in Australia, even though the temperature topped 100° F by the time we reached Adelaide in the state of South Australia.

There are four main cherry production areas in Australia. We visited three of these locations plus the cherry production region of Central Otago in New Zealand. We started in Adelaide in South Australia, then moved to Tasmania and finally to Victoria, the cherry production area located north of Melbourne.

Although the Australian and New Zealand cherry industries are small compared to American standards we found that there was much to learn from our neighbors Down-Under. The Australian cherry industry averages only 8,000 to 9,000 tons of annual production. Most of the production in the states of South Australia and Victoria is sold on the domestic market. The earliest cherries from these areas appear well before Christmas. Cherries grown in Tasmania and New Zealand are produced later and are sold mostly in the export markets of Taiwan, Hong Kong and Europe. Tasmania is the fastest growing cherry production region in Australia.

One of our first stops was at a cherry packing house in the Adelaide hills. Some of the first cherries we saw were 12 row 'Bing'. After seeing these cherries I was wondering if these would be representative of the type of fruit we would see in Australia. However, we soon learned that there was a lot of very high quality fruit being produced in Australia. We saw export quality Lapins in Tasmania and 8 ½ row 'Regina' in Victoria. One Tasmanian grower told us that his goal was to grow all 28 mm or 9 ½ row and larger fruit.

Both the Australia and New Zealand cherry industries are beginning to grow some of the same new varieties as Pacific Northwest growers. There were large plantings of 'Lapins', especially in the late districts of Tasmania and New Zealand, and 'Sweetheart' was well represented in New Zealand. However, both industries are growing some interesting varieties that are unknown in the U.S.

A few years ago a cherry named 'Celeste' was introduced into Australia from the Summerland, British Columbia breeding program. What was thought to be 'Celeste'

turned out to be a later, much higher quality cherry that the Australians named “Simone”. We saw ‘Simone’ being grown in several locations in Australia including Victoria, where they were packing some 9 ½ row fruit at the same time they were harvesting their ‘Lapins’. We were told that ‘Simone’ had about the same cracking resistance as ‘Lapins’ but stored well and pitted less readily. The fruit was crunchy firm with a strong, good sweet-acid flavor.

Both Australia and New Zealand have found what are believed to be late ripening mutations of ‘Lapins’. ‘Sweet Georgia’ ripens 21 days after ‘Lapins’, with all the quality characteristics of ‘Lapins’, both negative and positive. Although we didn’t see any producing acreage of this variety, young orchards were being planted in the cherry production areas of Tasmania. The same thing was true for ‘Sweet Valentine’ in New Zealand. Growers here were hoping that this variety would allow them to harvest fruit into late January or even February.

Australia has a cherry breeding program of its own, headed by Dr. Andrew Granger in South Australia. We were able to see numerous selections, but two stood out, ‘Sir Tom’ and ‘Dame Nancy’. ‘Sir Tom’ is a dark sweet cherry ripening with ‘Lapins’. Although not treated with gibberellic acid the fruit was large, 9 ½ row in size and very firm, registering 300 g/mm on a Firmtech instrument. The flavor was strong with a good, slightly acidic taste. Cracking resistance seemed high with only 5% cracked fruit after 1½ inches of rain.

‘Dame Nancy’ is a blush cherry that colors more readily than ‘Rainier’. It appears to be a few days earlier than ‘Rainier’ with similar size. The fruit was very firm, with a pleasant sweet flavor.

Harvest labor is a big concern throughout both Australia and New Zealand. Growers hired whomever they could find to pick their fruit. Often times this meant retired individuals or foreign backpackers who were passing through, looking to make enough money to keep going. In New Zealand foreign workers need only show the equivalent of \$3,000 New Zealand dollars in their bank account back home in order to get a 90 day work permit. They would pitch their tent and stay as long as they wanted. While visiting one orchard in New Zealand the owner had just learned that a group of pickers had quit because they were asked to pick apricots that day instead of cherries.

Most pickers are paid on a per hour rather than per pound basis, receiving approximately \$10.00 per hour plus an additional 9% for benefits. As in most of the rest of the world where an hourly pay scale prevails, there is little incentive for pickers to



Harvest labor is a limiting factor throughout orchards in Australia and New Zealand. Backpackers and local residents are most commonly used to harvest the fruit.

pick quickly. One grower told us that pickers will harvest only 220 pounds of fruit in an eight hour day when harvesting large trees with ladders. That averages to just 28 pounds per hour. However, part of the reason for this low productivity is due to color picking trees.

In order to increase productivity there is great interest in pedestrian orchards, especially in Australia. Pedestrian orchards are orchards where at least 2/3 of the crop can be harvested from the ground without the use of ladders. It was not unusual for harvest production to double in these orchards.

Kym Green, a South Australia grower has done much to promote a modified Spanish Bush system throughout Australia. Kym began to experiment with the system on his farm near Adelaide about the same time that I introduced the system to growers in Oregon. Most Oregon growers thought the Spanish Bush was too complicated, but Kym simplified the system by reducing the mature tree pruning to mainly large renewal cuts on major scaffold branches. Growers throughout Australia, but especially in South Australia and Tasmania have adopted the system in their new plantings.



Trees on mazzard rootstock are planted 3 feet apart in this modified Spanish Bush orchard.

Most Australian soils are shallow and relatively poor. The Australians have used this to their advantage by combining full size rootstocks, such as mazzard and colt, with the Spanish Bush system to keep their trees only eight feet tall. We saw 'Sweetheart' and 'Lapins' trees trained to a Spanish Bush system planted three feet apart on mazzard rootstock. Trees were young, however, and it will be interesting to see if the grower will be able to maintain this spacing indefinitely.

Irrigation water is an area where Oregon growers have a distinct advantage over their counterparts in Australia. In Victoria growers are paying approximately \$500 per acre-foot for both river and rain water. Large holding ponds are formed where rain water is accumulated, but growers must pay for all of the water that is collected and used on their orchard.

It seems, however, Australian growers have turned this disadvantage into an advantage. Australians maximize the use of the little water that is available. Most Australian growers monitor their soil moisture content closely. Growers used different devices to determine soil moisture content, but without exception, every grower we asked had some way of measuring their soil moisture. One system reported the soil moisture content to a computer every hour. A short duration irrigation was then applied every two or three days so that the trees were not stressed and fruit size was maximized.

We were also intrigued by the use of straw mulch that reduced soil moisture needs by 20% and increased the organic content of the soil, a practice that we saw in Victoria. It seems that this practice may also have other benefits in helping to reduce erosion and potentially the use of herbicides. Soil under this mulch was friable and moist, compared to uncovered rows where the soil was hard and compacted. Since they don't have mice in Australia, they didn't have to worry about mice inhabiting the straw and damaging the trees in winter.



Birds can be a major problem for orchardists as harvest approaches.

It seemed that birds were a concern for all growers in Australia and New Zealand. In Australia, birds are not only a problem as the fruit is ripening, but there is a parrot that will eat the buds in the dormant stage. One of the simplest systems used to protect the fruit was to drape bird netting over rows of trees, creating a huge tent over the orchard. To apply chemical sprays for brown rot (Australia and

New Zealand don't have cherry fruit fly or powdery mildew) the end of the netting is raised to allow admittance for

a tractor. Even this minimal protection was costing growers \$1,500 to \$2,100 per acre. More substantial, permanent structures using aluminum posts to support the nets, were constructed by some growers at the cost of \$7,500 to \$9,000 per acre. Netting is erected three weeks before harvest. With the permanent structure, it takes a full day to cover four acres with nets. Of course, some growers in New Zealand decided on a more active approach in dealing with birds. They simply erected signs saying "Caution, bird shooting in progress" and blasted away.

Bird Net draped: Birds can be a major problem for orchardists as harvest approaches. Perhaps one of the most interesting innovations that we saw on our trip was a mobile orchard. Devised by a New Zealand grower, this system consisted of delaying the ripening of late varieties such as 'Lapins' and 'Sweetheart' by storing trees that were grown in pots in cold storage during the late dormant season. The cold storage delays bloom from mid-October until early December. There is room for 1500 trees in the current cold storage facility. The soil medium is crushed bark,



Sweetheart trees are grown in pots to delay harvest for the Valentines Day market in this mobile orchard.

mixed with a little lime. Just prior to bloom trees are moved outdoors to their permanent summer site. By mid-summer trees are fertigated with six to 12 quarts of liquid fertilizer per day. The oldest trees were in their fourth and fifth leaf. We saw the second harvestable crop when we were there. Overall, harvest was delayed by about one month, long enough to provide the grower with a Valentines Day market for his cherries.

On our tour, we saw several new production techniques, and recognized that growers Down-Under have some advantages over Pacific Northwest growers. The biggest advantage our southern neighbors can claim is in the price they receive for their fruit. Last year growers in The Dalles received an average of \$0.90 per pound for their fresh cherries. Australian cherry growers received \$2.00 to \$2.75 per pound for their 12 row cherries and as much as \$3.40 per pound for their 10 to 9 ½ row cherries.

Without exception we were impressed with the overall quality of the fruit that we saw throughout Australia and New Zealand. It was obvious that growers were striving to produce the best cherries possible. We saw export quality cherries in Tasmania and New Zealand that are as good as anything we grow in Oregon. We saw 8½ row 'Regina' in Victoria and 8 row 'Lapins' in New Zealand. Wherever we went growers were utilizing new technology such as pedestrian orchards, new varieties and soil moisture monitoring devices to increase both their efficiency and quality to produce the best cherries possible. However, the most impressive thing about both of these cherry industries was the open, friendly attitude of the growers themselves. The growers Down-Under made this tour a success.