

Commercial Examination of the Supply of Nursery Stock in British Columbia

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For

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There is concern in the British Columbia Tree Fruit Industry that there is a shortage of Nursery Stock for new plantings in Plum, Peach, Nectarine and Pear. From this, the BC Fruit Growers Association contracted James Calissi, P.Ag of Calissi Farms Inc. to prepare a Commercial Examination into historical and potentially new sources of fruit trees.

Washington

Calissi Farms Inc. conducted executive interviews with 3 nurseries in Washington State: C&O, Van Well, and Willow Drive Nursery. Note: Columbia Basin Nursery, who historically shipped into British Columbia is no longer in operation. The following reasons why fruit trees are no longer shipped to BC are:

1. There is a lack of certified seed for rootstock in Peach and Nectarine. Historically CFIA was satisfied that non certified Lovell seed could be used as a source for rootstock in Peach and Nectarine since virus infected seed would not germinate. This level of virus safety was acceptable by CFIA. Then CFIA changed their protocol and insisted that virus certified seed be used. This was fine, until the certified seed trees were removed, for unknown reasons, then the Washington Nursery no longer had certified material to ship to Canada.
2. The fumigation protocol is problematic. It is not that fumigation is an extra step needed for shipment to British Columbia. The problem is that the Methyl Bromide is hazardous and worker safety became an issue. In addition, the US inspectors clamped down on old fumigation rooms since they were not properly sealed. So, no one really has a good fumigation room anymore in the nursery industry. New construction would be \$100,000 plus. BC is the only region in North America that requires fumigation.
3. The local British Columbia rep decided he no longer wished to import fruit trees. He was getting older and wanted to spend more time with his family.
4. Fruit breeders were commercializing new varieties directly with growers and shippers, so the supply of new varieties was drying up for the nurseries.
5. Some nurseries stopped propagating stone fruits all together.
6. Between royalties, exchange rates, fumigation and extra administration costs for British Columbia, trees were coming too expensive for British Columbia farmers, and British Columbia growers grew their own trees or purchased them from BC nurseries.
7. Tree prices in Washington have not been keeping up with labour costs and profit margins were shrinking. Nurseries were losing money on British Columbia sales.

Ontario

Nurseries in Ontario are reluctant to ship to British Columbia. They have shipped to British Columbia in the past and had poor success. The combination of a long shipping distance, the additional need for fumigation, plus CFIA paper work is required to ship to plants from one province to another, have made it difficult.

California

Nurseries in California have historically not shipped to British Columbia, and have no desire to add British Columbia to their sales territory.

New Zealand

Even though New Zealand has a very strict phytosanitary process in place for virus and other pests, there is currently no protocol between the Canadian and New Zealand governments to allow fruit trees to be imported into Canada. Hence, fruit trees cannot be imported from New Zealand.

Peach and Nectarine Rootstock

Peach and Nectarine are propagated on specific rootstock. Bailey and Lovell are propagated from seed and are often used for rootstock. The seed is germinated and the resulting plant forms a rootstock. In the United States Lovell was used frequently, since it historically was a canning peach and seed was readily available from peach canneries. Most of the peach trees that originated from Washington nurseries used Lovell seedling as a rootstock.

St Julien is a plum rootstock propagated from cuttings, which is compatible with peach and nectarine. St Julien is available from US nurseries but in limited quantities.

Krymsk 86 is a relatively new rootstock, propagated by cuttings or tissue culture. Originally Mori Nursery in Ontario had an exclusive license for Canada, and limited amounts were available almost exclusively in Ontario with a \$3.50 royalty. More recently, the exclusive license from Mori Nursery was removed and more nurseries in Canada are being allowed to propagate the Krymsk 86.

Apricots and Plums are propagated on various plum rootstock which are readily available as certified stock from Oregon nurseries. They are readily available.

Summerland Varieties Corp

Summerland Varieties Corp currently produces 50-75,000 virus certified Bailey peach seed per year. Current 2022 shipments have been taken up by nurseries in Ontario nurseries, Byland's Nursery and to BC growers. According to Summerland Varieties Corp, there are no plans to remove these trees from the bud wood orchard and the supply of Bailey is expected to continue.

Access to New Varieties

The list of new varieties of peaches, nectarines, plums and apricots is endless. Sourcing and trialing these new varieties can consume resources from any organization. This in itself would not be an issue if the British Columbia acreage were not relatively small and the commercial potential for tree sales is limited.

In the past, individual growers would source new plum, apricot and peach varieties, trial them for a short period of time and decide which ones seemed appropriate for local growing conditions. This in combination with a nursery is a good and inexpensive process to utilize, rather than a large research driven, resource intensive trial process.

For pears, there are new varieties of pears, but the consumer demand for the new pear fruits in North America either does not exist or is in an infancy. Bartlett, D'Anjou and Bosc remain the mainstay of the British Columbia Pear Industry.

Of course all new tree fruit varieties are proprietary and an organization would be required to manage licensing of growers and packers.

Process to Acquire New Varieties

To bring new Varieties into Canada, several steps are required.

1. A licensing agreement must be in place between a foreign breeder and grower to allow for the production of the new variety. This is usually done in British Columbia through a nursery or through an organization like Summerland Varieties Corp. Usually a testing agreement is put in place first. If a variety is found suitable then a full production agreement is written.
2. The material must be virus certified. For example, the material could originate from a virus certified source such as the USDA in Prosser or a similarly recognized source.
3. If the material is not virus certified, it is required to be sent to AAFC in Saanich, where it will go through a multiyear process to have known viruses removed. Clean material is then sent to a nursery or to the bud wood orchard where the material is then propagated as bud wood trees and made available for general tree propagation. The time line of this process from importation of bud wood to initial fruit examination is a minimum of 5 years.

Viruses in Stone Fruit

Viruses in stone fruit can be particularly problematic over that of apples.

1. Virus is more easily spread in stone fruits, than in apples. Insects such as aphids can carry virus in stone fruit from one tree to the next. In addition, the virus is often contained in the pollen and honey bees carry the virus in the pollen from one tree to the next.
2. The viruses can be more virulent or deadly, causing tree death or unmarketable fruit. This can result in an entire block of trees being removed.

Options to Expand the Peach Acreage in British Columbia:

Status quo

This option has the current fruit industry utilize Bailey rootstock and any of the varieties currently in the bud wood orchard at Summerland Varieties Corp. Plum rootstock could be ordered from Oregon nurseries for apricot and plums. Pear rootstock is readily available from Oregon rootstock.

Growers and local nurseries would propagate trees. Production would need to be "ramped-up" to accommodate additional plantings. Growers would need to order rootstock and trees 3 years in advance. Variety selection would be limited to varieties already located in British Columbia.

Plus One and Two

This option allows for the use of Krymsk 86 rootstock. Rootstock could be imported from Oregon nurseries or be propagated by a locally licensed tissue culture nursery (e.g. Floramaxx, located in Lake Country). This option would take an added 1 to 2 years to the status quo, and would take place in addition to the status quo option.

Plus Three to Five

This option would incorporate importing finished trees from New Zealand and Ontario. Discussions would need to take place between the New Zealand and Canadian government to examine whether phytosanitary conditions and protocols are acceptable by the Canadian government. An alternative to fumigation would be one item of discussion too. These discussions are generally slow, involving different levels of government. An agreement may never be reached. The time line would be 5 years.

Ontario discussions are easier. Currently, trees can be imported from Ontario, provided they are fumigated. The major issue would be to convince Ontario nurseries to ship trees to British Columbia. Currently they are reluctant to do so. The elimination of fumigation would be nice but is unlikely in the foreseeable future. The time line would be 3 years added to the status quo time line.

Over the next 7 to 8 years, the acreage of peaches, plums, apricots and pears could be increased. The industry would initially use plant material that already exists in British Columbia and begin to attempt to source material from other locations like Ontario and possibly New Zealand.

New Varieties of Peaches, Nectarines and Plums

This process involves finding new varieties and importing them into British Columbia. If there are virus certified sources (e.g. California or Washington State), propagation material could be imported from those sources. A testing agreement would need to be negotiated. Interested growers would be contacted to test the varieties. Testing would take 5 to 7 years.

If the propagation material originates from non-virus certified sources then the material would need to go through the heat treatment process in Saanich. This would add 2 to 3 years to the process.

Alternatives to Fumigation

At this time there are no alternatives to fumigation for fruit trees. When required, Methyl Bromide fumigation is utilized. There are no chemical substitutes for Methyl Bromide in tree fruits e.g. hot water treatment or pesticides. CFIA in cooperation with USDA could examine alternatives to Methyl Bromide, for example monitoring nurseries for specific pests, additional pesticide applications and the like. This pest certification has the potential to replace fumigation.

Improving Advanced Planning

With the reduction of commercial fruit tree nurseries in British Columbia and the stoppage of Washington State trees coming into British Columbia, growers need to plan their nursery tree needs further in advance. Typically a commercial nursery requires advanced planning of 2 years, at the time of purchasing rootstock.

Time Line

2022 _____ 2024 _____ 2026 _____ 2031

Alternatives: Status Quo

Krymsk 86
Introduced

Alternatives to Fumigation,
New Varieties Introduced
Ontario and New Zealand Trees Available