# A Fieldman's Perspective on Growing and Packing Organic Fruit

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British Columbia certified organic apples are now recognized around the world. In spite of intense regulation, including accurate production records, annual audits and inspections, organic growers have demonstrated that it is feasible to grow certified organic apples in B.C. and they can also market successfully around the world.

The data in the accompanying graphs (Fig. 1-4), supplied by Dr. Bill Wolk, Okanagan Similkameen Co-operative, are taken from regular sampling of orchards in the Similkameen Valley of British Columbia. Samples of Braeburn and Fuji apples from conventional and organic orchard blocks were analyzed for nitrogen levels, fresh weight and firmness.

Although there were consistently lower levels of N in organically grown fruit than conventional fruit, firmness, total red color and total soluble solids (data not shown) were very similar both at harvest and after storage. Both field and quality control data demonstrate that the fruit is of comparable quality. Differences are as great between organic blocks as between organic and conventional and may be attributed to factors such as site, tree vigor, crop load, seasonal variability and horticultural practices.

## GROWING ORGANIC FRUIT

### Challenges in Growing

Tree vigor and health under heavy cropping regimes sometimes can be compromised and predispose the trees to insect or disease infestation. Vigor response is limited to slow release composts and other cultural activities, such as temporarily reducing the crop volume. Desired results are sometimes slow to achieve and recovery is difficult to predict. The grower will use horticultural consultants to assist in the appraisal of developments in the field and determine the best strategy to resolve any problems.

Apple thinning is particularly challenging and can lead to innovative actions. These include pruning to thin, a technique readily applicable to super spindle plantings that involves counting the number of flower buds needed for the desired crop load and removing the rest. This action also permits new flower buds to form on a regular basis, thus preserving vigor throughout the tree. The use of caustic blossom sprays such as lime-sulfur or calcium chloride to reduce fruit set is being tested. Some successes relate to timing and weather conditions as well as to the courage of the grower.

*The grower takes an active role in the marketing and selling of his fruit.*

In the Similkameen Valley, where most of the B.C. organic fruit is grown, apple scab is rarely an issue, but powdery mildew does require constant vigilance. Other diseases are no more or less common than in conventional orchards.

### Successes in Growing

Changes in production technologies have transformed organic orchards into modern high density production units.

The urgency for a quick return on investment on planting projects compels organic growers to utilize M.9 and B.9 rootstocks planted in densities that range from 1200 to over 3000 trees/acre (2965 to 7413 trees/ha), supported by steel posts and wire.

Ground cover vegetation management includes both successes and challenges. Although equipment is costly, it is reasonably effective in the mechanical control of weeds in fertile loamy and stone-free soil, but difficult in rocky soils. The use of grass strips, "flamers" and mulches is of particular interest to organic growers.

In B.C. only fully composted manure from selected suppliers is permitted and forms the basis of a comprehensive nutrient program. Compost is used to amend and improve the soil/tree ecosystem so it is both productive and sustainable throughout the life of the orchard.

The virtual elimination of the codling moth from the Similkameen Valley through the use of Sterile Insect Release technology has essentially removed one of the more insidious pests from orchard management strategies. This development has greatly aided certified organic production. Some orchards, both conventional and organic, in this area are unprotected throughout the season while others will use mating disruption technology and/or sterile moth release as insurance against a chance outbreak of codling moth.

## MARKETING OF ORGANIC FRUIT

### Challenges in Marketing

Many of the challenges facing the organic grower parallel those felt by the conventional grower as the necessity to change varieties confronts the risk of trying something new. The customer has many choices of apple varieties and other fruits. Therefore growers, exposed to new and attractive cultivars, may minimize their risk by considering marketing a necessary investment in business or industry that is commensurate with investment in changes in production.

The organic market has experienced a rapid rate of growth based on strong consumer demand and attractive prices. This has resulted in increased certification of organic orchards which, in addition to increased production of existing organic blocks, has dramatically increased supplies. Is profitability sustainable for the organic grower?

Price sensitivity to oversupply by variety, primarily in Red and Golden Delicious, has reduced returns to growers as conventional growers try to increase returns of these varieties by converting to organic.

Variety specific demands such as for McIntosh in southwest USA and a shortage of supply of certified organic McIntosh have resulted in strong prices. However, how much can that specific market absorb and still sustain price? Spartans are not well known in the US organic and the western Canada organic market is not well developed. Therefore demand for Spartan is low. Gala continues to enjoy strong demand in the conventional as well as the organic market, and the price differential is not large. New varieties such as Ambrosia, Honeycrisp and Pink Lady are seeing attractive returns and this will result in new plantings. Corail and an unnamed yellow cultivar from the PARC Summerland breeding program offer potential for future plantings.

New variety search continues as organic growers try to find the next "hot" variety that will help pay for expensive replant projects and provide some stability and profit for the perceptible future. This challenge is exacerbated by availability of varieties at competitive prices from locations around the world.

Marketing fruit from a codling moth "free" zone may offer some opportunities to both organic and conventional growers. The challenge to the Sterile Insect Release program is to sustain the "0-level" codling moth damage assessment status over the long term.

### Successes in Marketing

The grower takes an active role in the marketing and selling of his fruit. Accountability for fruit quality ultimately rests with the grower but is felt by the packer and seller as each job carries well-defined responsibilities.

The customer or final consumer is prepared to try new and old or "antique" varieties and is willing to try cultivars that have different characteristics. They are willing to experiment.

The customer is looking for an apple product that is recognized by variety and by the usual quality standards but is different from the conventional fruit. These differences include perceptions about food safety and environmental health.

The packinghouse contract includes packing and storage only, and the fruit is pooled by grower. The grower works closely with a broker to meet the needs of a market and to agree on price and product movement levels. There are more sales in smaller quantities involving more buyers.

The grower will occasionally meet his fruit in the destination stores and perform variety demonstrations and taste tests to aid in the selling of his fruit.

## CONCLUSIONS

It is both possible and feasible to grow apples organically in British Columbia and there are increasing marketing opportunities for organic fruit. The fruit is of comparable quality to the best grown anywhere and can be sold in all markets around the world.

Prices are subjected to supply and demand criteria. Prices are generally stronger for varieties that are in demand and short supply than in the conventional market. There is a quest for new or different varieties to plant that have market potential.

Cultural practices continue to develop and meet scientific scrutiny. Certain pest, disease and ground vegetation management issues remain as "works in progress."

Organically grown fruit can always be sold in conventional markets, thereby exploiting returns throughout both systems. Process prices are generally much higher in organic markets. The 3-year transition "barrier" does create some exclusivity in time and markets, thereby buffering and signaling market trends and future supplies.

The distinction of success in organic production is in the growers' approach to marketing. The disciplined production method is matched with a customer who is looking for a fruit product that is easily recognized but is different in certain characteristics. These include perceptions of safety, nutrition and eating quality. The certification process is an important component of customer confidence. There is an indication that the growth encountered recently is sustainable in all but a few varieties, for example, Golden and Red Delicious.

**FIGURE 1**

Mean fruitlet N 1995-1997 of Braeburn fruit from conventional and organic orchards.

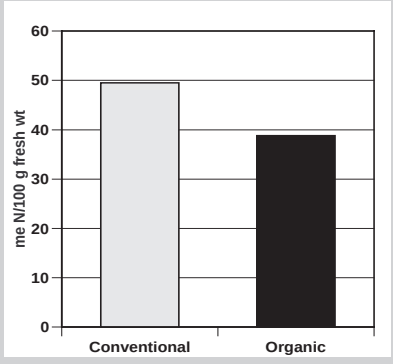


**FIGURE 2**

Mean fruitlet N 1995-1997 of Fuji fruit from conventional and organic orchards.

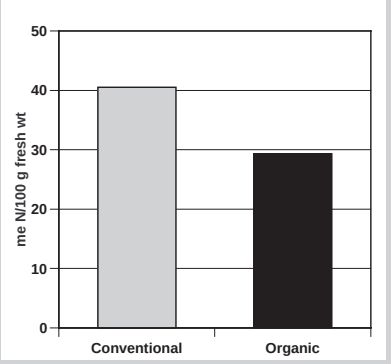


**FIGURE 3**

Firmness (lb/f) of conventional and organic Braeburn after 60 and 120 days of storage.

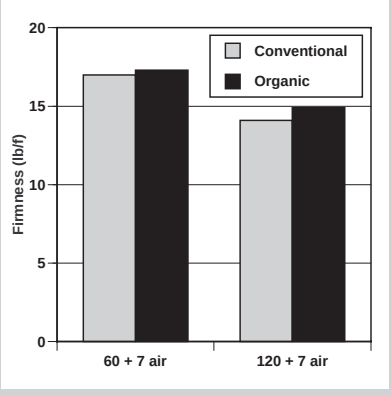


**FIGURE 4**

Firmness (lb/f) of Fuji fruit at harvest, 60 and 120 days after harvest.