

Opportunities for fruit production In Saskatchewan

by Dr. Bob Bors, Plant Sciences Department, U. of S.

Introduction

It may be surprising to some that fruit breeding and research has been ongoing at the University of Saskatchewan since the early 1920's. Fruit breeding takes at least a decade between generations, so improvement in both hardiness and fruit quality have taken a while to achieve. For some crops, notably apples and sour cherries, the quality of some of the new varieties equals or surpasses what is commonly found in grocery stores. These achievements as well as research done on producing native fruits have greatly reduced the risks a fruit farmer needs to take. With any crop there is always a risk. I get alarmed when someone asks "What crop should I grow?" To grow only one crop is rather risky. A better question would be "What crops would be good to grow together?" Having a diversity of crops helps to make every year a good year. 2000 was a good year for strawberries and cherries, but a disaster for saskatoons. 2001 was a disaster for strawberries, good for cherries, but a bumper crop for saskatoons. Diversity also spreads the cost of equipment, labour and facilities.

Fruit farms that have diversified are mainly pick-your-own farms or take produce to market. There are also a number of farms which specialize in native fruits which have wide appeal locally and make interesting products for niche markets internationally. In this article I want to discuss two other options with potential: fruit that can be mechanically harvested or those that can be produced organically. I have also included a couple charts on the crops of which I am most familiar in which I have highlighted some of the main points to consider when planning a fruit farm.

Mechanically harvested crops

Harvesting a fruit crop is easily one third or more of the cost of production. Depending upon the weather, harvest season can be very short, drawn out, early or late. This does not make it easy to plan for a workforce to harvest a crop. It is even more difficult to raise a labour force when Saskatchewan has a low population base, laws are unfavourable for importing foreign labour, most young people would rather have a steady job, and most farms are far from the cities. Even if foreign labour is allowed, it will be difficult to attract workers, since our growing season is much shorter than other places in North America. A creative solution would be to have many different crops or some other business that could employ workers over a longer period. Perhaps an organic farm would be a more desirable place to work and might have an easier time attracting employees.

Mechanically harvested crops that would fit well together are blue honeysuckles, saskatoons, dwarf sour cherries, and raspberries. These four crops could be harvested with the same over-the-row harvester. And could utilize some of the same cleaning and cooling equipment. Except for some overlap between the cherries and raspberries, the above crops have different harvest times, which would be especially good for producing a series of products. They can be used in similar products, such as jams, pies, and toppings. Pruning for blue honeysuckles, saskatoons, and dwarf sour

cherries would be very similar and easier to teach employees.

I did not include seabuckthorn in the above list because it is uncertain if it can be mechanically harvested. Specialized equipment is being developed that could make all the difference in the feasibility of this crop. As seabuckthorn is very difficult to pick, it might be possible that a seabuckthorn harvester will be able to harvest other crops too.

Also, breeders at PFRA are attempting to breed easier to harvest varieties.

Organic Production

The cold winters and dry, hot summers have the advantage of keeping down insects and pests. Fruit farms in the Okanagan valley or Niagra region are close together which facilitates the spread of pests. But in Saskatchewan, fruit farms are separated by many miles. Also, we can't grow most varieties from other regions we probably don't import as many pests with our tree fruits. (But we regularly import pests in strawberry and raspberry plants). Wild stands of native crops such as saskatoons and chokecherries can be a constant source of pests, especially to native crops. When crops not native to our area are planted, it is less likely that native pest will attack them, so these crops that have the greatest potential for organic production.

It is extremely difficult to produce organic fruit in the major fruit producing regions. Consequently, there is a great shortage of organic produce and conversely a large demand. Most fruit producing areas in North America spray their crops every 7 to 10 days. To skip spraying once, often means the crop will suffer heavy damage and may become a loss. (Incidentally, while saskatoon growers may complain about the amount of spraying they do, they are in fact spraying far less growers in other regions). At the U of Sk. We spray 2 or 3 times years for many crops and hardly have any fruit loss. This is quite remarkable considering we have been growing fruit for 80 years at that location and that we are located in the city. City dweller often don't spray so pests could build up, if it weren't for our winters. I would venture to guess that an organic producer could get 50% more either wholesale or retail levels for his produce. Contrary to popular belief, costs for organic production is often higher than conventional farming (hand weeding, organic fertilizers, organic pesticides). It takes sharp, observant individuals to be successful organic producers. Often growers encounter pests for which there is no ready-made organic solution and the grower must experiment on his own to find a solution. One should keep in mind that the longer one is in production the more likely that pests can build up in an orchard.

For organic production I recommend apples, dwarf sour cherries, blue honeysuckles, and seabuckthorn. These crops have few insects or disease problems in Saskatchewan. The apples and cherries have a wide appeal in the marketplace while honeysuckles and seabuckthorn are virtually unknown.

Market Potential

Much of market potential has to do with price and quality. Land is much cheaper in Saskatchewan than major fruit producing regions. Prices of \$10 to 15K/acre are common in some fruit producing areas. We don't have the water bills of the western US

either. If mechanical harvesting and less pesticides needed are added to the calculations, it would seem that we have potential to be have very competitive prices. Our long sunny days and cool nights are very good for developing good colour and high sugar content in fruit. As an example, some of our cherries have 40% more sugar than the standard sour cherry variety 'Montmorency'. Much of fruit quality comes from the breeding, and for some crops we have good varieties. Other crops such as plums, grapes and pears still have a way to go before we can hope to compete. By the way, the blue honeysuckles that I consider to have potential are Russian cultivars and not the older varieties that have been around for 40+ years. Organic production, if it can be done on a large scale, would be icing on the cake.

One of our constraints is the lack of infrastructure and the economies of scale. We don't produce enough to supply the needs of large food manufacturers. Another difficulty is expertise in growing fruit crops. Most of our fruit growers have limited experience while growers in other regions may come from families with several generations of expertise. On the positive side a young industry may be more eager to learn and may invest in modern equipment. Success stories of crops such as kiwi and cranberry have shown us in recent years that it is entirely possible for a new crop to build into a multimillion dollar industry.

Traditionally, winter kill has been our worst obstacle. With improved varieties, better production techniques and little help from global warming this is becoming less of a problem. Many of the new varieties being developed are worth being tested.

For new growers, I recommend starting small and increase acreage as your expertise and marketing skills are improved. I encourage you to look in grocery stores for local produce and similar products to what we can grow. In Saskatchewan stores you will find cranberry muffins, dried cranberries, cranberry juice, fresh and frozen cranberries. Its absolutely amazing how the lowly cranberry has been used in so many products. You will be hard pressed to find as many saskatoon products. It is interesting to count the cherries in turnovers or cherry yogurt. Often they contain 2 or 3 cherries. With cherries in particular, it is interesting to see products from Switzerland, Hungary and Poland and only a few products from Canada.

Learn More

In Saskatchewan we have a few secondary processors that manufacture juice, jam, pie, wine, candy, and other products. It would be a good idea to interact with these companies. The Saskatchewan Fruit Growers association is a good organization to join. They have annual conferences, field days, and are co-publishers of the Prairie Fruit Journal. The U. of S. has several manuals of fruit production and has an apple testing program that teaches growers to do grafting. Several regional Sask Ag offices have pruning demonstrations and fruit seminars.

Acknowledgement

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Table 1. Comparison of some key attributes of a few fruit crops

Crop	Harvest Time in SK	winter hardiness	Frost on flowers	Organic potential	Mechanical Harvesting
Blue Honeysuckle	mid to late June	Very Hardy	Possible	very possible	yes
Strawberries	early July	depends on year	Possible	difficult	no
Saskatoons	July	Very Hardy	Possible	difficult	yes
Dwarf Sour Cherries	late July - early Sept.	depends on variety	Possible	possible	yes
Raspberries	early Aug (summer bearers) or early fall	depends on variety	unlikely	maybe	yes
Apples	Sept - Oct	depends on variety	Possible	possible	no
Seabuckthorn	Sept	Very Hardy	unlikely	very possible	under development

Table 1. Comparison of some key attributes of a few fruit crops, continued

Crop	Marketing Advantages	Marketing Disadvantages
Blue Honeysuckle	1 st fruit in season, ripens before strawberries! Multi-use Similar colour to saskatoons and blueberries Juice is deep red/purple	Virtually unknown in North America Unusual shape fruit, unlike any other berries, (Reminds me of an butterfly pupae) Short harvest window Soft fruit, more difficult for fresh market
Strawberry	Early fruit Familiar crop to North Americans Local produce has better taste	California competition Soft fruit, more difficult for fresh market Bending over to pick them
Saskatoons	Well known locally Several Sk manufacturers producing products Looks like a blueberry Niche markets	Virtually unknown outside of Prairies Soft fruit, more difficult for fresh market
Dwarf Sour Cherries	Familiar crop to North Americans U of Sk varieties have much better quality than the standard 'Montmorency'. Highly coloured juice Nutraceutical potential	Deer love it, deer fences usually needed Pit removal needed for many products Soft fruit, more difficult for fresh market
Raspberries	Familiar crop to North Americans Multiuses	Very soft fruit, more difficult for fresh market Thorns
Apples	Rare to see organic apples in the market Familiar crop to North Americans Can be stored fresh for many months Consumers are trying new varieties Apples are often combined with other fruits in juices and fruit leather	Oversupply of apples international

Seabuckthorn	neutraceutical potential high in vitamins juice potential cosmetic uses	Virtually unknown in North America
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