Alaska Pioneer Fruit Growers Association
c/o Paul Lariviere, President
524 West 14th. Apt.B
Anchorage, Alaska 99501
For more information call (907) 276- 3074

Meeting February 12th. at 7:00 p.m.
Cooperative Extension Room 130
Topic to be announced

Meeting March 11th. at 7:00 p.m.
Cooperative Extension Room 130

The speaker will be, Bob Gorman, the Resource Development Agent, at the extension service. He will speak on fruit trees and small fruit in dealing with insects.

FROM THE PRESIDENT

Also, I talked to Nick Botner, who lives in Oregon. Nick has 2,800 varieties of apples, pears, plums, cherries, and grapes. He will be visiting Anchorage this summer and has agreed to give us a talk, so stay tuned!

It looks like I will be giving a talk in March at the Polaris school. I would like to show pictures of fruit that is being grown in the Anchorage, Wasilla area. If you have pictures that you would be willing to lend me, please put your name on the back of them and take them with you to the meeting or send them to me.

APFGA will have a large display at the fair this year. I am looking for pictures that we can enlarge of fruit trees that are in bloom or loaded with fruit, something that is pleasing to the eye or pallet. Please keep this in mind for the spring and summer.

I would like to ask all members if they have a particular topic or speaker they would like to entertain at our meeting or if you know of someone who is growing fruit trees that would like to have a tour. Please give me a call.

Dwarf Sour Cherry

— a two page guide

Dr. Bob Bors, Assistant Professor, Department of Plant Sciences, University of Saskatchewan

The University of Saskatchewan released the first dwarf sour cherry cultivar, 'SK Carmen Jewel' in 1999. 'SK Carmine Jewel' was selected because of its dwarf stature (2m) trees of excellent hardiness, which produce early-ripening, dark red fruit high in sugar and easy to harvest by shaking from the tree. The U of S expects to name and release other superior seedlings in the near future.

The dwarf sour cherry combines the small stature and excellent hardiness of Mongolian cherry *(Prunus fruticosa)* with the fruiting characteristics of sour cherry *(P. cerasus)* to produce small trees with fruit that looks and tastes like better known sour cherries cultivars such as 'Evans', 'Rose', and 'Montmorency.'

Manual: A manual dealing with production of dwarf sour cherries is presently being produced. It is slated for release in 2002.

Hardiness: Dwarf sour cherries were bred in zone 2b to survive winter lows of –40_C without damage. While 'SK Carmine Jewel' has proven hardy in Saskatoon and several other Saskatchewan locations, the dwarf sour cherry is still in the experimental stage. More testing is needed, especially in Chinook areas. Growers are advised to begin at a small scale and expand to larger operations as more becomes known.

Spacings: Within-row spacing for mechanical (over-the-row harvesters) is recommended at 1m while spacings of 1.5m are recommended for hand-harvested or shaken trees. Between row spacings of 5m or more should be determined by tractor width. Where larger implements are not being employed between-row spacings can be substantially narrower.

Fertilizer: Many prairie soils have adequate soil fertility to sustain dwarf sour cherries. Soil testing and fertilizer incorporation prior to planting is recommended. Subsequent fertilizing should take place only during spring as rapid succulent growth later in the growing season is prone to winter injury.

Watering: During the first three years watering is extremely important to tree establishment. Irrigation is less critical for established trees. The established orchard at the U of S is seldom irrigated. The underlying heavy clay soil retains enough moisture to satisfy the trees' demand. Where irrigation is provided, it should be discontinued in fall to encourage dormancy development.

Grass Cover: Grass between rows serves to reduce mud, and to complete with trees for moisture at the end of the growing season. In dry areas it is best to maintain grass-free alleys between rows. Similarly, establishing trees should be kept grass and weed free. In areas with adequate moisture, grass can be permitted to fill in below established trees. Some growers keep orchards weed/grass free through July, but permit weeds and grass to grow in August to reduce the available moisture supply promoting dormancy, and also facilitates snow trap. Long grass in winter may however also provide winter cover for rodents that gnaw bark and girdle trees.

Windbreaks: Protection to the west and north of any prairie orchard is highly recommended. Winter damage is often a function of desiccation caused by direct exposure to prevailing winds.

Harvest: Trees begin bearing three years after planting with respectable crops after five years and peak capacity reached after seven. In Saskatoon 'SK Carmine jewel' is harvested in late july and early August. The fruit holds well for at least three weeks after ripening. Future

cultivars slated for release should extend the harvest season to early September.
Yield: Yield data collection is still in preliminary stages. However preliminary estimates fall in the range of 10 to 15Kg per fully mature tree.

Pests: Deer browse winter twigs as well as leaves and fruit so deer fencing is recommended. At the U of S we spray two to three times per season in May and June for cherry fruit fly. Very few other pests are observed. The trees show excellent resistance to black knot, but a few cases of bacterial canker have been noted.

Pruning: More research is needed to determine optimum pruning techniques for dwarf sour cherries. Until more is known. trees may be pruned to an open centre vase, like plums, or as a renewable shrub like saskatoons. Pruning should be undertaken in winter or early spring.

Uses and Fruit Quality: The fruit of 'SK Carmine Jewel' is red by mid-July, but will become almost black by early August. Because it has bright red juice and high sugar content, it is excellent for juice, wine, or any product where development of a "cherry pink" colour is desired.

Cherry pies in North America are traditionally made with 'Montmorency' cherries, which have red skin, yellow flesh and pale pink juice. Fillings made with these cherries are typically dyed to enhance the expected "cherry red" colour. Consumers used to an artificial "cherry red" may perceive pies made with 'SK Carmine Jewel' as too dark. You may need to educate consumers that your products are made without artificial dyes.

Motorized cherry pitting machines are difficult to find and expensive. You may wish to buy smaller hand-operated pitting machines and sell them to consumers.

Stains: Dwarf sour cherries do not stain countertops or clothing like other fruits. Countertops usually wipe clean, and stains wash out of clothing with a simple cold water wash.

Market: Cherries are well loved by the public. At a recent horticulture show 50% of people sampling the fruit commented they would eat them fresh with no processing. Pick-your-own cherries are good for customer flow because they follow saskatoons but precede apples.

Contacts: Many nurseries are currently propagating this cultivar with the primary propagator being D'n'A Gardens, Box 544, Elnora, Alberta (403) 773–2489. People who are new to fruit growing may consider joining one of the provincial associations: Saskatchewan call Charon Blakley (306) 645–4447, Manitoba call Waldo Thiessen (204) 328–8083, Alberta call Nadine Stielow (780) 998–0481. These groups hold conferences, tours and workshops, with members also receiving a subscription to the *Prairie Fruit Journal.*

Pollination:
Dwarf Sour Cherries are self-pollinating so only one variety is required. Bees help improve fruit set by moving pollen from anthers to the styles.

Acknowledgments: Saskatchewan Agriculture and Food and the University of Saskatchewan financed the breeding and research of dwarf sour cherries.

Dr. Les Kerr, Dr. Cecil Stushnoff and Rick Sawatzky made significant contributions over the 50 years of development.

Dr. Bob Bors, Rick Sawatzky and Forrest Scharf are currently involved in breeding dwarf sour cherries and other fruit at the University of Saskatchewan.

Hardy Sour Cherries: choosing varieties, systems and markets

Dr. Bob BorsAssistant ProfessorDepartment of Plant SciencesUniversity of SaskatchewanSaskatoon, Saskatchewan S7N 5A8

Sour cherry varieties available in Canada vary tremendously for cold hardiness, tree form and fruit quality. There are three different types:

Prunus cerasus or "Sour Cherry"

True sour cherries are native to the areas around the Black and Caspian Seas. In an effort to make them sound more appealing, growers in the States have been calling them tart cherries. These cherries are often pruned to be 3 m tall but have the potential to be 15 m. Often they are grown on rootstocks that restrict their height from 5 to 8 m. Recently, the Evan's Cherry has been planted by many growers on the Canadian Prairie with mixed results regarding hardiness. Dieback can be severe in zone 2 and partial dieback is common in Zone 3. It may be possible to improve survival of Evans in colder areas with cultural practices that will be discussed later. The cultivars Meeker, Westcor, and Northstar are recommended for Zone 4 in the southern half of Minnesota . Ontario is more conservative in its recommendation that sour cherries be planted in hardiness zones 5b or warmer. Montmorency is the most widely planted *P.cerasus* cultivar in the US and Canada providing 95% or more of the sour cherries on the market. Industrial cherry pitting machines, harvesting methods, and processing procedures have been developed for this cultivar, which may contribute to reluctance of sour cherry growers to switch to newer varieties. Harvesting of these cherries is usually done with trunk shaking equipment and large tarps that encircle the trees.

"Mongolian cherry"

In the late'40's, Dr. Les Kerr at Ag Canada's Morden Research Centre, began intercrossing *P. cerasus* and *P. fruticosa*. He continued this research when he moved to Saskatoon to become Director of the PFRA Tree Nursery (now Forestry Farm Park). What resulted was a cold hardy, bush sour cherry that grows 0.6 to 1.0m. (2 to 3 ft.) tall. Les began promoting these cherries to nurseryman and they began to be widely planted. These cherries are very sour, and most fruit are in the range of 2 to 2.5 gm in size or half the size of sour cherries. Their low form makes them difficult to pick. They are very hardy and can do well in Zone 2.

"Dwarf Sour Cherries" or University of Saskatchewan Cherries

In the 1970s, Dr. Nelson and Rick Sawatzky at the University of Saskatchewan imported and began evaluating *(P. cerasus x P. fruticosa)* hybrids from the Siberian Botanical Gardens. In the 1930's Les Kerr donated his germplasm to the University. A few years later hardy mongolian cherries with unusually large size were hybridized to some of the best varieties from Europe. The hybrid cherries that were 75% *P. cerasus* and 25% *P. fruticosa* seemed to have a good balance of characteristics from both parents. Possessing both improved hardiness, and good fruit quality the hybrids are half the size of *P.cerasus*. At the U of S, nine year old, unpruned trees are between 1.5 and 3 meters in height. At this height dwarfing rootstocks are not needed so the trees

can be on their own roots. It may be possible to use over-the-row harvesters that are more commonly used to harvest raspberries, blueberries, or saskatoons. The first cultivar released from the U of S was **SK Carmine Jewel.** Other advanced selections are being propagated for testing purposes.

Fruit Colour

Cherries are generally used according to their colour. Varieties, such as **Montmorency** and **Evan's Cherry**, are preferred for pies, preserves and toppings because of their bright red skin colour. However these varieties have yellow flesh and yellow or slightly pink juice. For this reason, most commercially produced cherry pie fillings are dyed red! The dark black cherries, such as **SK Carmine Jewel** and **Northstar**, have intensely coloured juice which is preferred for making juice, wine, jelly and adding to dairy products and baked goods. When dark cherries are used in a pie, the fruit looks a darker than what you'd buy in the store. Some European varieties being tested in Michigan as well as some U of S selections have red skin and red flesh would be a good alternative for making pies without dyes. Cherries having yellow flesh are particularly prone to oxidation, and will turn brown if not cooled and processed shortly after picking. Cooking or freezing whole or pitted cherries will release pigment from the skin of the fruit, so it is possible to obtain red juice from Evans and Montmorency.

Pit Shape and pitting

Round pits such as those in **SK Carmine Jewel, Northstar,** and **Montmorency** are best for motorized pitting machines. Long pits like those in **Evans** and **Meteor** are less desirable because they may shatter. The hand operated pitters used by homeowners are acceptable for all varieties because they do not have enough force to break pits. Plunger type pitters take more time for homeowners to pit their cherries but are inexpensive ($15-20). The old fashioned crank type are 7x faster, but the fruit comes out flat and pitters may cost $70 to150. Commercial pitting machines may cost $5000 to 30,000 US depending if you buy it used or new. They can process up to a ton per hour.

Sweetness

Surprisingly, sour cherries can have as much or more sugar than sweet cherries. Some wine recipes require less sour cherries per batch than sweet cherries. Very late in the season, some varieties of sour cherries lose most of their acidity and astringency and can be eaten fresh. The tartness doesn't completely go away, but taste tests indicate that most people enjoy the fresh taste of Evans and SK Carmine Jewel late in the season. Children, in particular enjoy them, perhaps preconditioned by the variety of sour candies on the market. Also, sour cherries are much more juicy and smaller than sweet cherries. Sour cherries taste best when they can be shaken off the trees.

Suggestions for improving hardiness

0. Plant in a protected area with well drained soil. Avoid low lying areas where cold air collects. Windbreak are recommended for North and West sides of the orchard.
1. Never do general pruning in summer or fall, it would encourage late growth and

increase chances of winter damage; late winter or early spring is the best time. Pruning of damaged branches can be done at anytime.
2. Don't remove more than 25% of the wood in any one year. To remove more wood may encourage vegetative growth and reduce fruit yield the following year.
3. Use fertilizer only if necessary and apply only in the spring.
4. Reduce or stop watering in the fall, this helps to make the trees go dormant. Exception: a drought year with young plants.
5. To encourage growth of young trees the area around trees can be cultivated to remove competition of weeds and grass. Later in summer, allow grass to grow into the row, as the competition will hasten the onset in dormancy. Full size trees can have grass growing close to the tree all season long, encouraging deep root growth.

Pollination

Sour cherries of all types are self-fruitful and do not require other varieties for pollination. However, bees are needed to transfer pollen from the anthers to the styles. Wild bees may play an important role if bloom time occurs when it is too cool for honeybees.

Pests and diseases

The most serious pest for the prairies has been has been deer and rabbits eating branches in the winter. Deer fences are highly recommended. At the University's research plots we had cherry fruit fly *(Rhagoletic cingulata)* and leaf rollers which we spray 2 or 3 times a year. We have not seen any bacterial leaf spot on our cherries, which in Michigan is a very serious disease. It is not known if Saskatchewan cherries have immunity for this disease or if Saskatchewan is climate is too unfavourable for it to become a problem.

Market potential

The cherry pie filling market is dominated by the Michigan growers but other cherry products are rare on the market. A natural pie filling without dyes could have potential in the market. Cherry juice, wine, dried cherries, cherry muffins are almost non-existent. Frozen cherries cannot be bought in the prairie provinces at any time of the year but in Ontario they are available only during harvest season. For some of these products the cranberry would be the biggest competition, but I would venture to guess that cherries are more liked by the public. Some growers in Michigan have switched to a red juiced cherry and are selling concentrated cherry juice for its medicinal properties.

Future Research

Advanced selections with good fruit quality are being propagated for testing purposes. Although hardy in Saskatoon (Zone 2b) some selection have had limited testing in zones 2 and 3, while other selections have not been tested. I am interested in co-operating with government researchers and grower groups across Canada. I believe that the Dwarf Sour Cherries have the much potential to be a new crop for northern regions.