

# ALASKA PIONEER FRUIT GROWERS' NEWSLETTER

Summer 1996

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## CALL FOR CONTRIBUTIONS TO THE NEXT NEWSLETTER

Many thanks to Bob Purvis, Clair Lammers, and Helen Butcher for their contributions to this Newsletter! If you have something for the Fall Newsletter, please try to get it to me by October 5. I will aim to go to press on Oct. 10.

If at all possible, to spare me the extra typing, send your contribution on diskette. I use Word 5.1 for the Macintosh in putting together the Newsletter. For Mac users, save your work in this format if you can; if not, a good alternative would be as "Text Only" or similar. If you use Windows, a good format to save your text is Word for Windows v. 2. I can handle IBM-formatted diskettes, both 3.5" and the old-fashioned 5".

If pressed for time, you might also try submitting your contribution via e-mail, either as a letter, or as an attachment, to: [dbradly@tundra.wr.usgs.gov](mailto:dbradly@tundra.wr.usgs.gov).

## SEPTEMBER APPLE TASTING

Our annual tasting of Alaska-grown apples will be held on Thursday evening, Sept. 26, at Bradley's in Peters Creek. We hope to start tasting apples at 7 PM but please arrive early (say, 6:30) if you are bringing apples that will need slicing, or if you want to wander through the orchard. As always, pies, sauce, and other fruit concoctions will be welcomed. At the end of the evening, we'll squeeze a batch of cider from the leftovers. Spouses, children, and guests are welcome, as always.

Directions: From Anchorage, take the Glenn Highway to the first Peters Creek exit, which is about 25 miles out of town and a mile past the North Birchwood exit. At the end of the ramp, turn left and you come almost immediately to a four-way stop. Go straight across the intersection (Voyles Blvd.), and drive 0.6 miles to a "T" intersection at the bottom of a hill. The driveway is straight across the "T". There is a chain link fence and sign for Bradley, 22008 Voyles Blvd. The phone number is 688-1268. If coming from the Matanuska Valley, take the second Peters Creek exit, which is labeled "South Peters Creek". Turn right at

the end of the ramp, and refer to the directions above starting at the four-way stop.

**THIS WILL BE YOUR  
ONLY ANNOUNCEMENT  
UNLESS THERE IS A CHANGE**

## NEW CHALLENGES FOR APFGA FOUNDER

*by Dwight Bradley*

Bob Purvis, founder of the Alaska Pioneer Fruit Growers and its first president (1984-89), left his job as a horticulturist with Agrimanagement, Inc. in Yakima in mid-February 1996 to become the horticulturist for Chiawan Orchards/Columbia Reach Pack in yakima. Bob recently wrote to me and commented on his new job:

"I left Agrimanagement with some misgivings but am really glad now to have made the switch. My duties in the new job are somewhat similar to the old one, but with different emphases. First of all, some comments about the company. It is owned by a partnership of four men: two apple growers (my boss, Bruce Allen; and the director of sales, Dave Newman), a Federal judge, and an attorney. The partnership has been in business since 1981 and began packing its own fruit in 1991 in a facility that used to be owned by Stadelman Fruit, Inc. Bruce is the operating partner and in charge of the day-to-day operations of both sides of the business.

"Bruce foresaw the need for a horticulturist in mid-1995 and after creating this position, initially offered it to a Hort classmate of mine, who referred Bruce to me in the latter part of January.

"Chiawana Orchards has 800 acres under cultivation in Mattawa, Royal City, Othello (these are all towns in the Columbia Basin), Richland, and on the Naches Heights. We are raising mostly apples — Red and Golden Delicious, Granny Smith, Gala, Braeburn, Fuji, and now Pink Lady. We have 18 acres of Bings and Rainiers, 9 acres of Red Clapp Favorite pears, and Bosc, Bartlett, and some D'Anjou pears.

"Soon after my arriving on the job, Bruce purchased a neutron probe and sent me to Kennewick to learn how to use it. After that, I used a power auger to emplace aluminum irrigation pipe in the soil at sites where we want to monitor the soil moisture. In previous years, Bruce did irrigation scheduling "by guess and by golly", but this year I am using



the neutron probe to write recommendations for the ranch foremen. Already, we are seeing the benefits of doing so—less money being spent to run the pumps or to pay for water, far fewer losses of trees due to collar rot, and far less fireblight on the new growth of our pears and Galas. Data from the neutron probe is uploaded into my laptop computer, where the raw data is turned into files that show how many inches of water are available in each 6-inch layer of the soil.

"My other primary duty is pest scouting. In past years, we relied on fieldmen from the fertilizer and chemical dealerships to do the pest scouting, but their reports lacked internal consistency. Most of my previous experience with insects was here at my home, so this was something new. Thank goodness, we still have an independent pest consultant doing much of the Richland ranch. I call her every week and learn about what pests and diseases I need to be watching for. So far, I haven't missed anything major although my reports of what I see are less detailed than hers. I feel glad that my weekly monitoring of every orchard block has given us justification for delaying or even omitting sprays, or has called for sprays when we didn't know of the need.

"In an orchard block, I have at least one pheromone trap set out to catch male codling moths and pandemis or oblique-banded leafroller moths. I make weekly trap counts and then clean the trap. I also keep a record for each ranch of how many moth degree days have been accumulated so that we know when the first- and second generation of moths are about to hatch. Besides monitoring traps, I visually inspect trees to see what might be chewing on or discoloring the foliage, and I collect leaves from the block and scan them with a hand lens to see if mites or other hard-to-see pests are becoming a problem. Usually a day or two after visiting one of the ranches, I tell Bruce what pests are active and we discuss how to control them.

"I did some Agrimanagement-style soil fertility sampling in March in preparation for planting the Pink Lady and new Braeburn blocks at Richland and also at Mattawa to determine what might be the cause of poor growth on a four-year-old block of spur Red Delicious. The Reds are growing more vigorously now that we have treated for nematodes and soil diseases and watered the trees according to their actual needs. They are in good enough vigor now that we can afford to let them grow a crop of apples this year.

"For my work, Bruce bought me a 1996 Ford half-ton pickup. It has air conditioning; I'm mighty thankful for that. Also, he provided me with a four-wheeler (all-terrain vehicle), which I use to travel from block to block with a given ranch; and with a cellular phone. So, I have a lot of 'toys' to keep track of.

My duties result in fairly long hours, typically 8:30 AM to about 6-7 PM, often followed by a 1-1/4 hour drive home from the Columbia Basin. Still, it is satisfying and very instructive to watch the weekly changes in our apple, pear, and cherry trees as they go from being almost fully dormant to blossoming, setting fruit, and now sizing it. This has to be one of the best jobs a NAFEX member who loves fruit and fruit trees can work at and be paid for.

"Of our ranch foremen, two are white and three are Hispanic, and 100% of our orchard (and many of those on the packing line) are Hispanic. Virtually all of them are permanently settled in the Yakima Valley or Columbia

Basin; there are relatively few migrant workers employed here. I'm glad for the Spanish that I learned in the spring of 1995 (a course taught at my church by the Spanish teacher at a Yakima high school) and am looking forward this fall to improving my knowledge of the language. I try to use it some but feel frustrated because I don't have time to learn it better.

"I've enjoyed working with Bruce Allen and others in the packing house and ranches. It's great to be working at a job where there is a lot of opportunity to make a difference in the lives of both the trees and those who care for them! The sunny climate and working outdoors are quite a change from interpreting seismic sections in a sealed building in Anchorage. Still, there are times when I miss Alaska, such as when the mercury approaches 100°F and it's only 1 PM. On the whole, I have a lot to be thankful for."

## ESTABLISHING NEW FRUIT TREES—SOME LESSONS LEARNED

*by Bob Purvis*

During the past sixteen years, I have planted a few hundred fruit trees and recently watched the planting of several thousand at our Richland fruit ranch. Here are some observations I would like to pass on to Alaska Pioneer Fruit growers members who plan to plant trees in 1997.

The first comment is that good preparation of the planting site pays off handsomely down the road. The first thing to consider is sun exposure—for best fruitfulness, a site should have at least six hours of direct sun per day. The second is to evaluate the condition of the soil. The testing laboratories I am familiar with here in the Pacific Northwest charge about \$38-43 to do a complete soil analysis, which will tell you the pH and amount of nitrogen, phosphorus, potassium, calcium, sulfur, magnesium, organic matter, soluble salts, and micronutrients such as boron and zinc in the soil. As I think back on my experiences with apple trees in Alaska, I recall that the one subject that we were almost totally ignorant of was soil-fertility management. In 1985, my mentor Dan Whitney came up to visit and took a leaf sample off my apple trees. This showed the trees to have excessive amounts of phosphorus and potassium, marginal amounts of calcium and magnesium, and low levels of zinc and especially boron. These last two micronutrients are especially important for developing healthy leaf and flower buds. Boron is critical for the meristematic tissues in fruit trees—flower buds, shoot tips, and root tips—where active cell division is occurring. It is generally at marginal to deficient levels in central Washington unless supplementary applications are made. This element is less available when the soil pH is somewhat above or well below neutral (pH of 7.0).

Soil drainage is another issue which is oftentimes neglected. Planting trees on mounds will help considerably; also consider putting a few inches of fine gravel or coarse sand in the bottom of the hole and making the bottom slant, so that tree roots are not continually wet.

If you plan to order bare-root trees the following spring, consider doing this: before the soil freezes, take some of the soil from the future planting hole and keep it in a 5-gallon pot until early spring. When your trees arrive, keep them cool while the pot thaws and then plant them in the soil in



the pot until it is warm enough to plant them outside. This could be very critical if your trees are breaking dormancy when they arrive.

With regard to amending the soil, compost is best for lightening heavy clays or improving sandy soils. Go easy on mixing composted steer, rabbit, or chicken manure with the soil—no more than 5% by volume. Manures seem to be a two-edged sword: they supply a little N, P, and K and improve the soil's moisture-holding and nutrient-holding capacity, but if you overdo it, the slow release of the nitrogen can delay the tree's going dormant in the fall, which seems to be one of the main causes of trees dying in the winter in Alaska based on what I've seen.

Most members of the APFG probably know that mid-to late May (or in a warm year, early to mid-May) is a good time to plant dormant nursery stock. Once the trees are in the ground, keeping the soil adequately moist is critical in the first year and very important after that—May tends to be one of the drier months of the year in Anchorage. Here in Washington under the hottest of conditions, evapotranspiration from newly planted apple orchard blocks is about 0.21" of soil water per day. In mature orchards, this rises to 0.28-0.32" per day. Extrapolating from what the rate is here in May or September, I would estimate that in July, you should plan on mature trees extracting perhaps 0.20" of moisture per day from the soil in Anchorage; new trees, 0.15".

In establishing new orchard blocks, we like to water every 2-3 days, supplying about 0.40-0.60" of water at each irrigation. The main objective is to keep the soil moisture levels from wide fluctuations. If the soil becomes too dry, the trees will set terminal buds. The tendency for Washington fruit growers is to over-irrigate in the spring and under-irrigate in midsummer. In heavier soils, you should not apply more than 0.10-0.15" per hour; otherwise there will be either run-off or standing water in the soil. (Most of the Chiawana Orchards blocks have irrigation systems designed to supply 0.10" per hour.) Here in Selah, my microsprinkler system applies 0.16" per hour. Our loam soils accept this without runoff or standing water. You can use a tuna can or juice can to measure the amount of water being applied.

In the planting of the trees, it is essential that the roots do not dry out before planting. If the roots and packaging material look dry when your shipment arrives, put them in a bucket of lukewarm water with a little Up-Start, Vita-Start, or other transplant solution added for 12 hours or so (but never over 24) before planting. Prune off or shorten roots that circle or cross one another — this is the only opportunity you will have to train the root system.

Once the trees are in the ground, provide support to the trees. Do not tie the trees tightly to a stake, but set out two stakes opposite each other and about one foot out from the trunk. That way, light can reach all the buds on the tree, and all will have at least some chance to put out side branches (laterals). Whipping around in the wind, an unstaked tree will break off newly forming root hairs on the root crown, and this will delay its getting established in the soil. Experiments done by the WSU Horticulture Department in Pullman, plus grower experience on the Naches Heights showed that staked or supported trees typically would have 30% more shoot growth the first year and 35-40% more flowers and fruit in the second year, than those left unstaked.

Many of the containerized trees sold by nurseries in Alaska had several upright branches competing to be central leaders. If the crotch angles on them are extremely narrow (less than 30 degrees), the best thing would be to make a bench cut an inch or so from the trunk at planting. A little later in either the first or maybe in the second growing season, dormant buds on the stub will put out shoots that either will have good crotch angles or can be trained.

If the trees you get are small (less than 3' tall), try to get them to grow to at least 4' before promoting branching, by cutting off the growing tip. In view of the danger of snow breaking off limbs as it forms crusts, do not allow the tree to form permanent branches less than 3' above the ground.

I strongly advocate putting limb spreaders in the crotches of branches. Most of you know that a limb growing out at a 45 degree or flatter angle will fruit earlier and heavier than those that are growing vertically. Also, the crotches will be stronger and less likely to break.

Unless you have an exceptionally heavy or vigorous tree, it is probably best not to allow it to fruit the first year it is planted — or if you must, no more than one apple! A small crop the next year (its second growing season in Alaska) should be permissible, but follow the rule of having at least 40 leaves for each piece of fruit. Consider thinning the fruit when it is about the size of a dime, to no more than one fruit per spur.

With regard to fertilizing fruit trees, the key here is to use quick-acting forms of fertilizer, Miracle-Gro being a good example, or possibly calcium nitrate. The latter is about 16% by weight. In the first year, a few waterings with perhaps a gallon of Miracle-Gro (15-30-15) should be enough to get your tree growing well. Using calcium nitrate, the best time would be early June, and half a pound of the material spread around the trunk of the tree should be quite sufficient. It would also be okay to spray your trees with Miracle-Gro in early August. Here in Washington State, researchers have found that if nitrogen is applied to trees in small quantities (20-25 lbs/acre of actual N to the soil, or 4-5 lbs/acre of actual N as foliar urea) in early to mid-August, it does not promote additional shoot growth but goes into storage reserves and actually promotes better flowering the following spring.

One of the key cultural practices to promoting good tree growth is to keep the area around the tree free of weeds. In reviewing slides I had taken of Alaska fruit trees, Dan Whitney observed that most of them had a lot of weeds or grass growing around them. This is especially critical of newly-planted trees; mature trees will cast some shade and thereby discourage weed growth.

To summarize, analyzing and preparing the soil the previous year will help greatly in establishing your trees. Find out what the soil is lacking and then supply it; determine its faults and try to correct them. Be sure that broken or circling roots are pruned back before planting the tree. Give the tree support, spread the branches, and give it water in small but frequent doses. Try to do as little pruning as possible the first year, and keep the first whorl of branches above the snow line. Supply fertilizer in small quantities, early, of substances that act quickly.



After you have read this article, let the editor know if there are other topics related to cultural practices that you would like an article written on, and I will see what I can do.

## **ESTABLISHING BENCH GRAFTS — SOME LESSONS LEARNED**

*by Bob Purvis*

I've done a lot of bench grafting over the past ten years and then grown the trees in pots or in the garden or (more recently) in a pasture. There have been some good success stories, but also some disappointments. Here are some lessons I've learned in the horticulture department of the University of Hard Knocks to pass on to members of the Alaska Pioneer Fruit Growers.

The first has to do with the care of plant materials. With regard to rootstocks, it is essential to keep moisture levels in storage high enough that they don't dry out, yet not so wet that mold develops. It's okay to let the rootstocks warm up for a day or so before you graft them. Be sure that the rootstock you graft is alive and in good health, especially if you are using scionwood that was hard to obtain or of thin caliper.

With regard to storage of scions, plastic bags and a refrigerator temperature of 30-36°F is fine. It's a good idea to add a slightly moist paper towel to the bag, and to check the bag every week or two to make sure it's not sopping wet inside, which can lead to the scionwood's developing mold. If you are grafting stone fruits—apricots, plums, or cherries—be sure the wood you use is completely dormant when you graft, and the grafts (at least for apricots and plums) should be kept at room temperature to promote rapid callousing.

Many of you have developed a fair degree of proficiency as grafters. The real test now is not how well you make your cuts, but rather how you care for your grafts after the buds begin to break through the wax. I've had good results keeping the roots of the rootstock covered with bark shavings or sawdust and watering this lightly and frequently. I now would use 5-gallon pots with holes in the bottom, sitting in 5-gallon buckets, so that any excess water will drain away from the roots. If you can make up a light soil mix from potting soil and sand and replace the bark shavings or sawdust with this during the period between the graft's beginning to grow and planting them in the garden, nursery row, or pots, you should get some good hair roots to grow.

Seedling apple rootstocks generally have a fairly good root system. I've had the worst problems with pear rootstocks and pear trees. Experience here in Washington State has shown that pears are much more subject to transplant shock than apples. Therefore, if you want to try grafting and growing some summer pears, consider buying your pear rootstocks and planting them in soil in pots immediately after grafting—or better yet, grow them for a year in pots and then graft them if you can wait that long. The newly grafted tree will grow a lot more vigorously with a two-year-old root system.

If you plant your grafts out in a special nursery area in your garden, do all you can to ensure your soil is in good shape, and do not rush the season. I had apricot and apple bud grafts killed by 22°F cold outdoors on May 3 of this year here in Selah.

Only allow one bud on the scion to grow, if two or more begin to put out leaves. It is far better to have one long shoot than two short ones, and the more horizontal shoot will be too low to the ground to be a permanent scaffold limb on the tree.

Once the growing season is underway, strive to see that soil moisture levels stay fairly constant, neither too wet nor too dry. Don't plant grafts in extremely sandy soils, or if you must, work some organic matter or heavier soil into the rows. Be sure that you control weeds. Consider occasional watering with a liquid fertilizer product such as Miracle-Gro at the label rate or less. Another good practice, as soon as 6" of growth has been produced, is to stake the young tree so that the growth is not damaged by wind.

## **TART-CHERRY OBSERVATIONS**

*by Bob Purvis*

In 1993 I planted a Meteor tart cherry on a Mazzard rootstock and in 1994, a Baird pie cherry, grafted from the tree in Bill Baird's yard in Anchorage. This year I had the opportunity to watch closely as both trees set a good crop of cherries and ripened them. Alongside the Meteor and the Baird are bearing trees of Montmorency, Mesabi, and NY 13272 pie cherry (and a non-bearing tree of Bali cherry, a.k.a. Evans, from St. Lawrence Nurseries). I can now (July 14, 1996) report that the fruit on both trees is ripe at the same time (about a week after Montmorency and NY 13272). The fruit is identical in appearance, size, and flavor; and the two trees seem to be the same in productivity, resistance of blossoms to killing frosts at bloom, and growth character. Therefore, I tentatively conclude that Bill Baird's tree is probably a Meteor, and unlikely that it is a Mahaleb or Mazzard seedling of superior quality.

## **PLUM OBSERVATIONS**

*by Bob Purvis*

Growing in my orchard here in Selah, Washington are a number of European plums — Opal, Earliblue, Seneca, Early Italian, President, Cambridge Gage, Mount Royal, and Count Althann's Gage as well as the as yet unnamed new plum from the Prosser breeding program, Prosser Plum 7524-7.

The trees I want to discuss are those that have borne for 2-3 years. They all went through the same tests in 1996. We had five days in late January and early February with temperatures in the minus teens, culminating in a -18°F reading on February 3. The cold notwithstanding, all of the trees that had fruited in 1995 had a heavy bloom in April 1996. On May 3, 1996, the mercury dropped to 22°F as the plums were approaching petal fall. In spite of that, there is now (7/14/96) a heavy set of plums on the President and Earliblue, an average set on the PP 7524-7, a fair set on the Seneca, and a light set on the Opal and Early Italian.

The key observation I want to pass on to fruit growers in Anchorage is that Earliblue ripens only a few days after Opal. Based on its performance here, Earliblue would seem to be a good candidate to pair up with Opal in Anchorage or other south-central Alaskan locations, where the ripening date should be sometime around September 15-25. The fruit is blue, with soft, yellow, juicy freestone flesh, is of excellent quality and flavor, and can be kept for 3-4 weeks in the refrigerator, or half-dried in a dehydrator and frozen.

Earliblue has been highly productive here and quite vigorous. I bought my tree from Stark Brothers Nursery, but it is not under patent protection. For Alaskan conditions, it could be grafted to myrobalan or possibly Julian A plum. If anyone wants scionwood or budwood, please contact me. The tree is about 10' tall and growing well.

My collection of American hybrid plums took a beating from the May 3 freeze. The only tree that currently has a good crop of plums was LaCrescent (this tree endured -34°F in Anchorage for me). My Toka and Gracious have one plum apiece on them (after a profuse bloom and initial fruit set); the Pitsin #5 and 9, Superior, Redcoat, Waneta, Pobeda, Hanska, and Kahinta, none. The Underwood plum acted like pear tree—it put out some rat-tail blooms after the frost and they actually set fruit (but there's only a few of them).

## ORCHARD REPORT

*by Helen Butcher*

*(Received July 8, 1996)*

The Golden Transparents received for Mothers Day 1986 have had a steady, not always consistent production. Several years ago I started culling down to two left on each group with resulting larger, regular-sized apples. Maybe the weather played a part? The trees are in the open with only the early morning sun shadows from my neighbors' houses. Eating these apples reminds me of the summer apples picked off our trees in June in the Issaquah-Bellevue area. One year I left them on the trees too long, so they were soft and didn't keep. I then started picking earlier. Stored with paper towels between the rows, or with a separate section for each, they are handy in the refrigerator.

The last year, there have been a lot of leaf rollers, which spread from my currants. Karl Franke last year finally settled on cutting the rolled leaves, but if the trees don't have lots of foliage, that can be a problem. Caught unaware too late, Malathion spray helped but did not solve the problem. I also have been snipping those I can reach. Karl says he lost about half of his trees this year(?), but all mine survived, with some poor pruning by the moose who come every morning.

I had a disaster last year with my Beacon. Completely defoliated with no fruit — I thought it was a goner. Perhaps I may have mistakenly watered it with some chemical residue. This year it bloomed, but half of the tree has decided to give up, while the other half has leaves and small apples, so maybe it will survive.

Another crabapple over ten years old was saved from destruction by blooming, with three or four blossoms. It has yellow falling leaves every year, but still manages to keep a lot of the green. This year I watered it more than usual. My big crabapple had large fruit last year, two inches in diameter, very sweet. No doubt because of our late warm weather, and my decision to leave them on longer. Because I wasn't enthusiastic about jam, I cooked the cut-up apples, added cinnamon, and froze them in half-pint containers. Putting the cooked apples on toast was very tasty, without the sweetness of frozen or cooked jam. Wine making was attempted a couple of years ago, but the bottle I received was not drinkable and was poured out. Should have saved it for flavoring.

The earthworms underneath the apple trees when first weeding were sprightly, but most of any others I saw were lethargic and appeared half dead. Since we've had such a dry summer, maybe they are surviving underground. Gifted a few when giving away raspberry bushes. Have so far no slugs and one early cutworm when the soil was turned over. As soon as sign of slugs shows up when we get rains, I put out boards which they like to hid under, turn over, and spray ammonia water which dissolves them. Or, dip in a jar of ammonia water. Getting them early reduces their impact later in the summer, I have found.

To end this story, thanks to Bob Boyer for pruning my trees this year. And for successfully grafting because my friend bought a "Butcher Golden Transparent" from the apple growers' grafting party.

## REVISED SURVIVAL FOR WINTER

**1995-1996**

*by Clair Lammers*

(1364 Esro Road, Fairbanks, AK 99712)

phone 907-488-6446)

Our coldest temp was -40°F on 12-5-95 with a snow cover of 1.5 inches. We did receive an additional 18 inches on 2-20-96 with a total for the winter of 26 inches. Total rainfall for the 1995 growing season was 11.10 inches. Our last freeze was 5-22-95 with a low of +22°F and the first freeze was on 10-3-95 with a low of +26°F.

This year there will not be column for "under snow" because all of the trees were definitely not under snow (with only 1.5 inches of snow on the ground when it got down to -40°F). Again, as in the past, if there is nothing in the column, it means that the tree survived 100%. The S means slight injury (3" or less) and the numbers mean percent of dieback.

I was "hammered" more severely than I initially thought. Most of the dead trees started to grow but then died (roots were dead) and some even started to bloom, then died.

It would be nice to hear from you folks to see how your stuff survived.

Anyway, I hope you can get some use out of this report.

(CONTINUED ON FOLLOWING PAGES)



Clair Lammers' Variety List  
Summer 1996

Variety	Survival
#1139	D
#1197	D
#379	D
#927	D
15th St. Mystery	D
8th & M Mystery	90
8901	D
8902	
8903	D
8905	
8908	
8910	
8911	
8912	
8913	
8915	90
8916	
8919	
8920	
8921	
8922	
922 End	
A R 1367	
A. kamenchika	80
A. mitchurin	90
A. polutorafuntunaya	30
Acme	D
Adam	
Adams Elderberry	D
Adanac	D
Advance	
Ajou	D
Al Ma Sweet	
Alexander	D
Alexis	
Alfred	D
Alice	50
Altaiski Sweet	
Amed	50
Americana	
Amur Red	
Andrew	
Anis Aley	
Anoros	
Arbor Dale	
Arctic Red	
Aroma	D
Assiniboine	
Avenarius	D
B.A. 21	10
B.A. 34	

B.F. 9	
B.F. 135	
Baccata	
Barry	D
Bashkirian Beauty	50
Battleford	D
Baum	90
Beautiful Arcade	10
Bedford	
Bessemiaka Michurin	
Bi Li Hsiang	D
Blue Stanley	D
Bojka	D
Borowitsky	90
Boughen Delight	
Bounty	D
Breaky	
Britegold	D
Brookgold	
Brookings #1	90
Brookings #2	80
Brookings Seedlings	All dead
Brookland	80
Brookred	
Brooks 27	
Bur Oak	
Burgundy	D
C.G.E.	D
Cadet	D
Calvil Crymsky	D
Carlos Queen	90
Carroll	
Centennial	
Charlamoff	D
Charlotte	D
Chestnut	
Chipman	
Christmas Red	
City Gold	D
Clark	D
Claudius Herbsapple	D
Collenback	80
Collet	
Compass	
Concels Transparent	D
Connel Red	D
Cox Orange Pippin	D
Cranzhevoje	D
Creamy Kitaika	70
Dakota Gold	90
Dandy	
David	
Dawn	D
Dessertnaia	D
Diebel	
Diehl #1	D

Discovery	D
Dolgo	D
Dr. Bill	90
Drews #0	D
Drews #4	S
Drews 10G	D
Drews 17W	D
Drews 1W	90
Drews 8G	D
Duchess	90
Dudley	D
Dura	
Early Banana	D
Early Cortland	D
Early Gold	D
Early Harvest	D
Edith Smith	10
Edmoncot	D
Elite	D
Ellisons Orange	D
Enigma	90
Erickson	70
Erskine #1	D
Eurika	D
Evans Cherry	
Exter	
Fall Red	D
Fantaije	D
Federovski	D
Florence	
Garland	
Garnet	D
Garry	
George	D
Gideor	D
Ginger Gold	D
Glendale	10
Glenorchie	90
Goff	D
Gold Egg	
Goldcot	D
Golden Delicious	D
Golden Spice	D
Golden Uralian	
Goldgelb	D
Goldsmith	D
Goodland	
Goodmac	D
Hansa	D
Haralson	S
Harcourt	D
Harlaminsky	40
Hazel	
Hazelbert	
Hazen	D
Henry Clay	D
Hermansky	90



Heyer 12	D
Heyer 2	D
Heyer 20	
Heyer 6	
Hightop Sweet	D
Hokuto	D
Horse Chestnut	D
Hudar	D
Hwy. 61	D
Ilinka	D
Imp. Battleford	80
Iowa Beauty	D
Irish Peach	D
Jacks #1	
Jenner Sweet	D
John	10
John Wallace	
Johns Elderberry	D
Johnson #190	D
Jonagold	D
Jordan Russet	D
Joyce	D
Jubilee	D
Jumping Pound (Pin Cherry)	
Kandil Kitaika	
Katja	D
Kerr	
Kitaika Zolotaio	
Kitaika Zolotaio Ran	D
Klatt Select	10
Kootenai	D
Korichnoc Polosatoje	D
Krievu Rosmarins	
Kurosh Sib x Belfeur.	
La Cock 6	D
La Ire	D
Lasuik #1	S
Lasuik #2	S
Latvian A	D
Leafland	
Lemon	D
Leonard Transparent	D
Les Christofferson	D
Lesnaia Krasavitza	D
Lobo	90
Lodi	D
Luke	90
MacDonald	
Mac Gore St.	D
Malowsky S	D
Manalta	D
Manch. Blue	
Manch. Red	
Manch. Walnut	
Manch. Yellow	
Manchurian Plum	

Manden 62-1	D
Mantet	D
Maritna	D
Martha	D
Martha x Dolgo	20
Mary Liz (Pin Cherry)	
McLean	
Melba	D
Melba Red	D
Melrose	D
Mendel	D
Merten Beauty	D
Mesabi	D
Milwaukee	D
Millwoods	
Minn. 1403	D
Minn. 1691	S
Minn. 1734	90
Minn. 447	
Mishkurins Bessiemia	D
Mishurin	
Monitor	D
Moonglow	D
Moongold	
Mordel	D
Morden 358	50
Morden 359	20
Morden 360	S
Morden 370 (Red Sparkle)	
Morden 529	90
Morden 538	D
Morden Ruby	70
Morris	
Mystery #1	40
N.Y. 394	
Nertchinsk	
Newport	D
Niagara	D
Northern Gold	S
NN 170	D
Norbil 1 (8917)	
Norbil 2 (8918)	S
Norda	
Norda Super	50
Noret	
Noret Sdls.	
Norhey	D
Norkent	50
Norland	
Norlove	40
Norson	
Norther	D
Northern Gold	D
Northern Lights	D
Northfield Beauty	D
Northland	50

Norusset (8907)	90
Nova	D
Noviobrisk Sweet	
Oark	10
Oberlie	D
Obijwa	
Olia	D
Opata	D
Oralzhevo Krassinyi	D
Orel 15	D
Oriole	D
Osman	
Ottawa 292	D
PF 10	40
PF 12	
PF 21	
PF 39	90
PF 50	S
PF 51	
P. Fruitosa	
P. Ussuriensis	
Papierowska Polska	D
Parker	
Parkland	D
Patten	D
Patterson	
Patterson x Sweet Siberian	
Patton	D
Peace Garden	
Pear 2	D
Pembina	
Pepin Katrina	S
Pepinka Litovska	D
Peppin Katrinka	S
Percy	D
Perfection	90
Peter	
Petrovski	
Phillip	D
Pin Cherry (U of A)	
Pioneer 3	D
Prairie	D
Prairie Royal	D
Prairie Sky	D
Primate	D
Princess Kay	
Progress	90
PRS "Z"	D
Ptitson 5	
Ptitson 9	
Puritan x Red Astrachan	D
Quinte	D
Rae Ime	90
Ranetka	
Red Astrachan	D

Red Baron	D
Red Ester	D
Red Flesh	
Red Free	D
Red Heart	
Red Siberian	
Red Sparkle	
Red Star	
Red Sumbu	
Regent	D
Reinette Simirenko	D
Renown	
Repka Kislag	
Rescue	
Richelieu	D
Robin	
Romfo Unknown	40
Ropo	D
Rosilda	
Rosmaray	D
Rossoshanskoje polos	90
Rosthern 15	90
Rosthern 18	
Rosybrook	
Rousselet Stut. II	D
Rousselet Stut. IIV	D
Rousselet Stut. IX	D
Rousselet Stut. V	D
Rutherford	
S.W.B. Red	50
Sadow	D
Scotia	D
Scott 144	90
Scout	D
Scugog	
Sept. Ruby	10
Shafer	
Sharon	D
Shipova	D
Shirley Ann	
Silvia	
Simgold	
Simon	
Simpson	D
Sirrine	D
Slim Red	D
Sofstaholm	D
Spartan +	D
St. Lawrence	D
Stacy	D
Stalet	
State Fair	
Sterapple	D
Stone Plain	D
Stratmore	
Summer George	D
Summer Crisp	D

Summered	80
Sunnybrook	
Sunrise	D
Suprise	D
Swedish	D
Sweet Apple (N.W. & S.E.)	90
Sweet Mark	D
Sweet Russet	S
Sylvia	
Tail-Dropmore	D
Tallina Pirnoun	D
Tasty	40
Tbonza	D
Tetovsky	D
Thomas	
Thorberg	D
Tioma	
Toka	
Trail	
Trail-Shafer	
Trailman	
Trailman Sdlg	
Trubchanka	D
Popularnaia	
Tryrustrup	cut down
Tunderchild Crab	
Ukalskoje Nalivnoje	
Underwood	
Unity	D
Unknown St. Lawrence	D
Uralskoyo Nalivnoye	40
Ure	50
Valentine	
Viking	D
Virginia Gold	D
W.H. Perron	90
Waneta	D
Watson	D
Watson Striped	
Weaver	
Wedge	D
Weeping Crab	cut down
Westfort	D
Westland	S
Wien	
Williams	
Wilson Juicy	D
Winered	
Winter Queen	50
Wintered	
Wodarz	90
Yeager Sweet	D
Yellow Jay	40
York Elderberry	D

Yorktown	D
Z 61	D
Zaychuk #1	
Zuccalmaglio	D