

ALASKA PIONEER FRUIT GROWERS NEWSLETTER

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President: **Pat Mulligan**, 210 Gloria, Palmer, AK 99645 ph 745-2043

Vice President: **Dan Elliot**, HC 31 Box 5196, Wasilla, AK 99654 ph 376-5196

Treasurer: **Alice Brewer**, 1201 W. 45th Ave., Anchorage, AK 99503 ph 563-6734

Web Master: **Gary Masog**, gary.masog@gci.net

Board Member at Large: **Dwight Bradley**, 22008 Voyles Blvd, Chugiak, AK 99567 ph 688-1268

Editor: **Tami Schlies**, P.O. Box 672255, Chugiak, AK 99567 ph 688-5711 Email gardenerak@yahoo.com

Membership information and dues payments contact Alice Brewer

Association News

Welcome New Members:

We have been attracting new members all summer, so keep spreading the word! The more people we have giving input, the better our knowledge base will be. The annual apple tasting was another success this year. Special thank you to the Bradley's for once again hosting the event and also sharing their cider press for those who brought apples.

Canadian Cherries And Honeyberries:

The APFGA will be offering for sale two of the long awaited Canadian Dwarf Sour Cherries from the University of Saskatchewan Breeding Program that Dr. Bors spoke to us about when we brought him over 2 years ago as well as two Honeyberries not commonly found here in the USA for Spring 2007. We will offer more varieties as they become available.

This is your chance to acquire these Cherries at club pricing. Cherries are CVI and tissue cultured meaning they are on their own roots. Estimated cost is \$7 to \$9 depending on shipping charges.

Quantities are limited and we want to make these available to all APFG members who want them.

Cherries will initially be limited to two of each variety and Honeyberries one of each variety per Member. Deadline to reserve plants is February 1st 2007, after that date we will offer more of each to those who want them. We hope to have these available for pick up at the Annual Grafting Workshop.

Please e-mail Kevin at sun-dog@alaska.com (with Canada Cherries in the subject line) or call 357-6510 (leave message) to reserve your plants.

CHERRIES

These Cherries are reported to begin fruiting at 3 years old!

SK Carmine Jewel

Stands out for its *early fruit*. Harvest mid to late July when fruit is dark red almost black. Small pit; lots of flesh. Mature height 6' to 8'

SK Crimson Passion (formerly called Big Mamma)

Dark red fruit. *Fresh eating Cherry*. No suckers. Fruit size is large at 5.8 grams per fruit. Highest sugar content (22 Brix) of all U of S cherries. Smaller bush size. Mature height 6'

REMEMBER THESE ARE NEW VARIETIES TO ALASKA AND SHOULD BE CONSIDERED EXPERIMENTAL. THEY ARE RATED AT ZONE 2. All reports suggest they should do well here.

HONEYBERRIES

Exceptionally hardy, easy to grow with no pest or disease problems. Fruit flavor similar to blueberry. From the U of S breeding program.

Cinderella

Smaller size bush. Large sized fruit. Moderate yields

Svetlana

A cross between Berry Blue and Blue Belle. Large fruit.

ALL PLANTS ARE 3" POT SIZE TISSUE CULTURED and will be approximately 3" to 6"

tall. These are from DNA Gardens in Alberta Canada, which is the only source for CVI Cherries for Import to the USA. DNA has an exclusive agreement with the University of Saskatchewan. Because the cost of larger size plants was \$20 without shipping, royalties etc. we decided on the smaller size to bring in.

For more information on these visit
www.dnagardens.com

Upcoming Events:

In October our meeting will revert to the regular schedule of the second Thursday of every month at

7PM at the BP Energy Center 900 E. Benson Blvd. The next meeting will be October 12th – *no reminder cards will be sent*, so mark your calendar now.

To get there:

If north-bound on New Seward, turn right into BP's south west entrance and turn right at the stop sign into the Energy Center parking lot. Follow the footpath thru the woods.

If east-bound on Benson, turn right into the main entrance and keep right to the 4 way stop. Continue straight into Energy Center parking lot.

Antonovka as a Rootstock

By Kevin Irvin

Most commercially sold Apple Trees with a Hardy Standard size rootstock are budded onto M. Antonovka. Baileys Nursery a wholesale grower for the Nursery Trade uses Antonovka as well as Columbia, Borowinka and others as a Hardy rootstock. Most Nursery (Greenhouse) retail outlets here in Alaska commonly buy from Baileys among others. The Big Box stores have their suppliers. Lowes' supplier is Dave Wilson Nursery, which uses Antonovka. Home Depot and Wal-Mart I am not sure who their supplier is. St. Lawrence Nursery, a Mail Order Nursery located in Potsdam New York uses Antonovka exclusively as an apple rootstock. Lawyer Nursery also uses Antonovka exclusively as their Standard size Apple Tree rootstock. Apple Trees from Fedco (another Mail Order Nursery) are primarily on Antonovka as well.

Many members have advocated through the years that M. Ranetka as the only rootstock to use here in Alaska, and is why the club always orders and provides Ranetka at our Annual Grafting Workshop. M. Baccata is another standard size Apple rootstock. Baccata is the Hardest Apple known but has the stigma of being not compatible with some varieties of Apple. Ranetka is hardier than Antonovka but less hardy than Baccata. Ranetka is a cross of M. Prunifolia and M. Baccata (source Lawyer Nursery).

With the closing of Bear Creek Nursery a few years ago, (a mail order Nursery that provided an

extensive list of Apple varieties that were good for our growing conditions and which provided trees on numerous rootstock including Ranetka) it left one Mail Order source for numerous varieties of Apples favorable to us here in Alaska which is St. Lawrence Nursery.

After moving to Wasilla a few years ago I wanted to 'jump start' my fledgling Orchard and bought trees from St. Lawrence Nursery, Lawyer Nursery and Fedco, and one year I was provided an opportunity to buy direct from Baileys Nursery. I knew the trees I bought from St. Lawrence and Lawyer were on Antonovka and I knew that the trees from Baileys could be on Antonovka but could also be on Columbia or Borowinka.

The Trees from Baileys grew well from the get go. The Trees from St. Lawrence and Fedco seemed to 'pout' after planting but then some began to grow relatively well but never seemed to put on much growth, whereas Trees from Baileys did.

I need to point out that the trees I bought from Fedco were mostly unknown for hardiness here in Alaska but from the description 'looked' like they might do well here. Trees from Baileys were known hardy and reliable producers. Trees from St. Lawrence were varieties that others were growing and some I bought for trial, and trees from Lawyer's were known reliable hardy and producers.

Over the last couple years I have lost all the trees from Fedco roughly 70 % from St. Lawrence and Lawyer Nursery. The remaining trees from these are only "surviving"! About 40% from Baileys have died while the others are doing well.

Compared to the trees I grafted myself onto Ranetka at about the same time I bought the various 2 to 3 yr old trees from the various Nurseries, my own grafted trees are out performing hands down and I am no closer to fruit production buying any of the trees on Antonovka than I was when I first purchased them. I do have a couple trees of a variety from Baileys that are doing very well yet a couple from the same bundle of 5 are only "surviving".

What does this information mean?

Do Not Waste your time or money on Apple Trees on Antonovka rootstock.

The \$64 question's are 1) Why do all these Nurseries primarily use Antonovka as a rootstock for Hardy Apple trees for Northern areas of the US? And 2) If Antonovka is the primary Hardy rootstock in the Nursery trade, why does it not work in Alaska? I can't answer these questions.

While there might be some microclimates here in Alaska favorable to Antonovka, is it worth the wait to see? Are you going to be any closer to production? Or would it be better to graft your own onto Ranetka and wait for them to grow and mature into producing trees?

In my opinion, after the few years I have been here in Wasilla, I should have put all the effort into grafting more trees onto Ranetka and planting them out rather than to waste the money spent on trees

plus shipping from any of these Nurseries. I am no closer to production on any of the trees I purchased on Antonovka than I was 3 years ago. Any remaining trees I know that are on Antonovka are or will soon be dug up and replaced with my grafts on Ranetka.

Would I buy from Bailey's again given the chance? The answer is no. It's not worth the gamble you will get a tree on something other than Antonovka.

While I can't say for sure how trees on Baccata will do (as I only have a couple on Baccata which are doing fine) I do know others here in Alaska are using it successfully.

I will still continue to experiment with varieties and new rootstock as they become available, as I believe we need to find a backup rootstock should Ranetka become unavailable as it did a couple years back. I won't experiment getting producing Apple trees anymore. If someone wants to start an Orchard here in Alaska and wants the shortest route to apple production I will only recommend trees on Ranetka rootstock.

This Article is only information as observed by my growing here in Wasilla and should not be taken that you shouldn't buy anything from any of these Nurseries. I should also point out that Lawyer Nursery is the only source I know of for Ranetka rootstock here in the US.

The following web link may be of interest to some, it's an Article written by Cathy Wright who used to work at the Plant Materials Center in Palmer and is a rootstock trial from the 1980's here in Alaska.

<http://www.dnr.state.ak.us/ag/21Appleroostocks.pdf#search=%22M.ranetka%22>

Making Jam and Jelly

By Tami Schlies

Jams and jellies are a fine balance of four essential ingredients: fruit, pectin, sugar, and acid. Each type of fruit provides at least some natural pectin and acid, with slightly under-ripe fruit providing slightly more than the fully ripe counterpart. This is why many recipes suggest using about one-fourth under-ripe fruit, so the fully ripe fruit balances the flavor

of the sugar, while the less ripe fruit helps gel the mixture. Over-ripe fruit will yield runny jelly or jam.

Pectin is concentrated in the skins and cores of various fruits, which is why many recipes boil the whole fruit to make the juice for jelly. Excessive

cooking – too slow or too long – can reduce the gelling property of any pectin. This is also why boxes of commercial pectin require you to work in small batches, as the longer cooking time required to heat larger batches zaps the pectin into uselessness. Today most commercial pectin is made from the white inner part of citrus fruits, but in the old days apple juice was added to less pectin rich fruits to make them gel.

Like pectin, acid is an essential component in the gelling of fruits. Many recipes call for the addition of lemon juice in order to bring the acid ratio into balance. To determine if the fruit you are using needs lemon juice, compare the flavor of your fruit juice with the tartness of a mixture of 1 t. of lemon juice, 3 T. water, and ½ t. sugar. If the juice is not tart enough, add lemon juice before making jelly - up to one tablespoon per cup of fruit juice.

The final component of jam or jelly is sugar. Sugar helps the gel to form, is a natural preservative, and for most people improves the flavor of the product. I myself prefer the flavor of the fruit to shine through, which is why I like Pomona's Universal Pectin, a low-methoxyl pectin that uses calcium to boost gelling power with less sugar. I use this for sweet fruits like strawberries and raspberries. However, very sour fruits, such as currants or wild blueberries, require more sugar, and I make jam and jelly without added pectin for these fruits. To make these fruits gel, sugar is added in an almost cup per cup ratio with the juice. I make a wonderful, rich currant jelly with nothing but 4 cups of fruit juice and 3 cups of sugar cooked to 220 F on a candy thermometer.

An example of a few fruits that have enough natural acid and pectin to gel with only sugar include crabapples, cranberries, currants, gooseberries, lemons, wild blueberries, and plums. Sour cherries *may* have enough pectin and acid if they are not over-ripe, as well as chokecherries, elderberries, and grapes. Fruits that always need added pectin and acid include apricots, peaches, pears, prunes, raspberries, and strawberries.

For those who don't like to rely on the grocery store pectin to make jam or jelly, you can make your own liquid pectin out of apples.

Pectin can be used right away or frozen in small amounts (half or whole pints) or canned for future use. To use it, add 4-6 tablespoons of pectin per every cup of prepared juice (experiment first with the pectin).

Crabapple pectin

2 pounds sliced, unpeeled crabapples
3 cups water

Simmer while stirring for 30 or 40 minutes, adding water as needed. Put the mash into a colander lined with cheesecloth and set it over a bowl and squeeze the juices through. To clear the juice, heat it and pour it thorough a jelly bag that has been pre-moistened in hot water.

Tart Apple pectin

4 pounds sliced apples with peels and cores
8 cups water

Simmer for 3 minutes. Press apples through a sieve to remove cores and skins. Return juice to pan and boil until reduced by half. Clarify as above.

Researching Cherry Fruit Bud Hardiness

Below is a forwarded email from Lynn Long a Hort. Extension agent from the University of Oregon. [Kevin] came across the attached Article written by Lynn and thought it would be good information for the Newsletter. Lynn has given permission to reprint.

Hello, I came across your paper on Fruit Bud Hardiness on Sweet Cherry Trees. I am in Alaska and am past President and Vice President of the Alaska Pioneer Fruit Growers Assn. I have a small Orchard here in Wasilla AK and have been having trouble with my Pie Cherry Trees Winter killing. I have been growing the Evans and Northstar. The Evans are tissue culture so are on their own roots and the Northstar are on Mahaleb root.

Mahaleb isn't hardy here. The tree will live for a couple years then slowly die out so I and others in the group have been experimenting with the Amur chokecherry as a root since it is extremely hardy here in AK. The Evans however keep dieing back so your article kind of explains why. We have often extreme fluctuations in temps through the winter. Last February we had close to -50 and rain then it dropped back to 0 in a weeks time. I have suspected that fluctuation was the cause of the severe dieback I had on the trees. However I have one Evans where I had little dieback on! So I am not sure what to think. I know your article was on Sweet Cherries but am I wrong to assume one could extrapolate the same could be true for the Pie Cherries? Albeit the temp range would certainly be different as Pie Cherries are Hardier. Also, I am wondering if with your permission I could pass your article onto our Newsletter Editor to include in our next issue. I am sure our Members would find the Article very informative.

*Kevin Irvin Sundog Orchards
Wasilla Alaska*

Kevin,

The information that I provided on sweet cherries can indeed be extrapolated to include sour cherries, although as you suggest, the critical temperatures would be different. I don't know what those temperatures are for sour cherries, however. Jim Nugent from Michigan State University might have that answer as most sour cherries are grown in Michigan. Feel free to reprint the article in your newsletter. Can I ask the name of your newsletter and your circulation number? Thanks.

Lynn

Fruit Bud Hardiness

*Lynn E. Long, Extension Horticulturist
Oregon State University, Wasco County Extension*

If severe cold can kill entire trees, it can obviously damage fruit buds. Cold sensitivity in buds varies with the season and weather, which helps to explain how sweet cherry trees in Traverse City, Michigan, can withstand temperatures of -30°F without bud damage, but trees in The Dalles are damaged at -10°F.

Cherry buds become hardy sometime in October. This hardiness capability is largely due to their ability to supercool (cooling below the freezing point of a liquid without solidifying). Once this ability is obtained, buds are capable of withstanding temperatures around -6°F until the period of rest is fulfilled, generally sometime in January. During this time, the buds would not grow even if temperatures were warm.

What happens though if the temperature drops below -6°F? Are the buds automatically killed? Not necessarily. Tree fruit buds have an ability to become more resistant to cold over a period of time. Cold days, when temperatures remain below freezing, cause the bud hardiness to drop. As long as the florets around the buds remain frozen, bud hardiness in cherries will drop about 4° per day.

This will continue until the buds reach a hardiness level of about -30°F. If temperatures drop faster than the buds can adjust, then some or all of the flower buds may be killed. At this point, the supercooled liquid freezes with the resultant crystals rupturing the cell walls. On the other hand, if temperatures rise above freezing, the buds quickly lose their added hardiness and return to a hardiness level of about -6°F.

Once rest is satisfied for the fruit tree, sometime in mid-January, the temperature at which buds are damaged rises slowly but still remains near 0°F until just before the buds begin to open. As bud development progresses, the ability to re-harden with freezing is lost. This generally takes place in mid-February. Therefore, if the temperature drops below 0°F after mid-February the buds may not be able to respond and they may be killed as was the case in 1995.

Healthier trees seem to have a somewhat greater capacity to endure cold temperatures. Therefore proper irrigation, nutrition and pruning during the growing season can affect cold tolerance the following winter. With cherry trees, over-watering

is probably as serious a concern and a greater problem than under-watering. Likewise, too much fertilizer can cause rampant growth and weak buds. Finally, healthy buds must have light to survive. A good annual pruning is necessary to maintain leaf and flower bud development in the tree center.

Highlights

- Base line hardiness of cherry buds is about -6°F.

- Cherry buds have the ability to gain about 4° of hardiness per day.
- Once temperatures rise about freezing, the added hardiness below -6°F can be lost in a few hours.
- As spring approaches, buds lose their ability to gain hardiness.
- Tree health is important in imparting cold tolerance to buds.

[Kevin] contacted Dr. James Nugent at Michigan State University where much of the Sour Cherry Research is done here in the USA (Dr. Nugent was awarded the 2006 Cherry person of the year) on hardiness of Sour Cherry varieties and if he knew of a hardier rootstock to use for them. Below is his initial reply. [Kevin] will pass along any information he gains from Dr. Greg Lang.

Hi,

Great to hear of your efforts to grow cherries in Alaska. Sour cherries are generally more winter hardy than sweet cherries. Sour cherries evolved basically in the continental climates of Europe and Asia, whereas sweet cherries evolved more in the Mediterranean climate areas of southern Europe and the Middle East. However, there is a lot of variability in hardiness between varieties. Montmorency is more cold hardy than almost all sweets, but it is not as hardy as Northstar. We have introduced three new sour cherry varieties from Hungary to N. America. Two of the three definitely have less cold hardiness than Montmorency (Balaton and Danube). The third, Jubileum, is less tested, but I believe it also is less hardy. A fruit grower in the Upper Peninsula of Michigan did quite a bit of testing and concluded after many years that the only sour cherry variety in his planting that survived and cropped well was Northstar.

As to rootstocks, I'm not so sure what to tell you. Our two major cherry rootstocks are mazzard and mahaleb. I consider mahaleb to have better winter hardiness than mazzard. We have tested mazzard rootstocks that survive well in our climate, but so does mahaleb, so I don't know what might be hardier. I will say that mahaleb is highly susceptible to phytophthora root rot, so will only tolerate a well drained soil. Soils where mahaleb will survive generally range from sandy loams to sands.

The next cherry rootstock test planting that will be established here at our cherry research station will include (I believe) some new rootstocks brought in from Russia, so I expect they may exhibit superior cold hardiness. I am taking the liberty to forward this to Dr. Greg Lang, our cherry rootstock specialist at Michigan State University. Greg will be better able to suggest potential rootstocks that would improve your chances for success.

Jim.

Notes from Dan Elliot

I re-read the excellent Ecological Fruit Production in the North this summer. Since it is out of print, I will pass on some information of interest.

Pears need high phosphorus longer than apples (10-12 years) and only half as much nitrogen.

For established apple trees apply 25-50 kg (55-110 lbs) of compost per tree in spring. At the end of July apply 2 kg (4.4 lbs) of Sul-Po-Mag (or K-Mag)

and 3 kg (6.6 lbs) of dolomite lime to prepare tree for winter. A similar version recommends applying yearly 5 kg (11 lbs) of compost for every year of tree age, ie. a 5 year old tree would get 25 kg (55 lbs)

In a planting hole mix 1 part compost with 2 parts soil plus: 3 cups colloidal phosphate rock, 1 cup

bone meal, 1 cup dolomite lime, 1 cup Sul-Po-Mag (K-Mag), and 1 cup seaweed meal.

Some personal remarks follow:

With cool, cloudy summer and extra August rain, the ripening time is later, more so for my pie cherries and plums than the apples. Besides ripening later, my apples were smaller, had less

color, were juicier (though probably less sweet), and seemed to drop more readily. My Yellow Jay apple as of 9/21 hasn't fallen nor have seeds fully browned, but the flesh has browned as if it were over-ripe from long storage, yet the fruit is still crisp and juicy. It's as if it got over-ripe before it got ripe. It must be some strange symptom of so much rain.

Japanese or Manchurian Plum?

By Kevin Irvin

This information was taken from the following website: <http://www.uga.edu/fruit/plum.html>

There seems to be some confusion on what to call *Prunus salicina*, Japanese or Manchurian Plum?

What do you call it? The two names Japanese and Manchurian have been interchanged quite frequently, so let me help clarify why this is so and also provide information on *Prunus domestica* and other species of Plum.

P. salicina

Contrary to the name, this species originated in China, where it was cultivated for thousands of years. It was brought to Japan 200-400 years ago, where it then spread around the world, being falsely called "Japanese plum". Manchuria is a region in China hence the name Manchurian Plum which is actually correct!

P. domestica

This species is native to western Asia, in the Caucasus Mountains adjacent to the Caspian Sea. It was brought to North America by Spanish Missionaries (west coast) and English Colonists (east coast).

1. European plums - *Prunus domestica* L.
Worldwide, this is one of the main species grown. Fruit are generally oval, smaller, and more variable in color than Japanese plums. In the USA, *P. domestica* is used for prunes or fruit cocktail or other products, and rarely eaten fresh.
2. Japanese plums - *P. salicina* Lindl. and hybrids.
These are the most common fresh eating plums in the USA. They are larger, rounder (or heart shaped),

and firmer than European plums and are primarily grown for fresh market.

3. Damsons, Bullace plums, St. Juliens, and Mirabelles - *P. insititia* L. These are the small, wild plums native to Europe, cultivated there prior to the introduction of *P. domestica*. The 'St. Julien' types are used as dwarf rootstocks for plums. Fruit are small and oval (1 inch), purple and clingstone for Damsons and yellow and freestone for Mirabelles, with heavy bloom. They are used primarily for jams/jellies/preserves.

Rootstocks

Since plum scions are genetically diverse, many different species/selections are used as rootstocks. In the USA, Myrobalan 29C (*Prunus cerasifera*) and Marianna 2624, a hybrid between 'Myrobalan' and a Native American plum, are used most frequently since they are widely compatible with most cultivars. Myrobalan 29C produces large trees with slightly delayed ripening, and is not particularly resistant to diseases or other root related problems. Marianna 2624 produces a somewhat smaller tree with slightly earlier ripening, and is resistant to a number of problems confronting other stocks.

California is the primary growing area of most Plums in the U.S.A. mainly because the climate is favorable for reduction of disease and fruit cracking.

APFG order for spring:

We have on order for next Spring Grafting Workshop of *P. salicina* 'Mandshurica'. 'Mandshurica' refers to the seed source.

Apparently according to Lawyer Nursery, seed for this species is hard to come by at times and is why it isn't always available to us for use as rootstock.

Schlies Orchard Report 2006

By Tami Schlies

This was a good year for fruit yield at our house. Almost every apple tree produced fruit, and the Evan's cherries actually produced enough for a couple of pies (well, would have if my son had not had a fast one day while he was looking for duck eggs in the orchard.) The Opal plums and Dan's Yellow produced their first plums and were quite delicious. A handful of honeyberries and gooseberries, buckets of strawberries, and enough currants for a few jars of jelly found out my fruit larder for the year. The kiwi sulked after finally being planted in the ground this year, but will hopefully spring back next year – they were producing fruit while in the pots.

I noticed when eating green fruit from my Norland tree earlier in August (yes, I am an avid green apple muncher. I like 'em sour.) that while the fruit was juicy and good, it had a brown layer inside, as if it had oxidized. This tended to be more prevalent in fruit on the southwest side of the tree. After doing some research, I believe it is brown heart. Brown heart is believed to be associated with cool, wet weather and high nitrogen fertilizer and is caused by high levels of CO₂ in the fruit. My orchard is in the poultry yard, thereby getting plenty of nitrogen. I also fertilized with bone meal and greensand this spring; the nitrogen content of the bone meal (6-12-0) may have been too much. The older the fruit got, the more apples were affected by the browning.

Brown heart can also be more severe in fruit when watercore is also present, as the accumulated fluids

prevent adequate gas diffusion in the tissues, so it is not surprising that later in the fall I noticed my large Norlands exhibiting glassy, water soaked looking flesh at the basal end: a classic watercore apple. Experts believe that late in the season if conditions are right (low night-time temperatures and plenty of rainfall), sap is delivered to the fruit cells too quickly for them to absorb, resulting in the intravascular cell spaces filling with fluid. High light intensity and temperatures exacerbate watercore symptoms, explaining the higher concentration of affected apples on the southwest side of my tree. Larger fruit also tend to develop watercore more than smaller fruit.

Calcium plays an important role in both brown heart and watercore. I added Quickcal earlier this spring, but obviously not enough. I also foliar sprayed with a weak solution of boron, but the publication from UC Davis on Postharvest Technology states that *high* fruit boron may also contribute to watercore. I intend to have the soil in my orchard tested this fall to verify how much calcium and boron is actually available to the trees.

Although watercore is unattractive, it does not lower fruit quality or flavor of apples if they are used before the accumulated sugars begin to ferment. Next fall, taking sample harvests from the southwest quadrant of the tree early on and checking for browning or watercore will be a good indicator of when I should harvest to minimize watercore damage.

Featured Recipes

Spicy Cider Syrup

Submitted by Kevin Irvin

1 cup sugar
3 tablespoons flour
¼ teaspoon ground cinnamon
¼ teaspoon ground nutmeg
2 cups Apple Cider
2 tablespoons lemon juice
¼ cup butter or margarine

In 2-quart saucepan, mix sugar, 3 T flour, ¼ tsp. cinnamon and nutmeg. Stir in cider and lemon juice. Cook over medium heat, stirring constantly, until mixture thickens and boils. Boil and stir 1 minute; remove from heat. Stir in butter; keep warm.

Note: bottled Lemon juice will work. You can add ¼ tsp. Ground cloves also if you desire. I am not sure how long this will keep.

Editor's note:

If Clearjel (available through Bakers Catalogue and even on Amazon.com) is used in place of the flour, the syrup can be processed in mason jars for shelf storage. Use sterile ½ pint jars, leave a scant ¼ inch headspace, wipe rim and place two-piece lid, then process in hot water bath for 10 mins. (from **Putting Foods By: 4th Addition**)

Applesauce Tea Bread

Submitted by Dan Elliot from Fruits and Berries for the Home Garden by Lewis Hill p. 242

1 2/3 c sifted flour
1 1/4 c sugar
1/2 tsp. baking powder
1 tsp. baking soda
1/2 tsp. salt
1 tsp. cinnamon
Sift together
Combine then add to dry mixture and beat only until moistened
1 cup applesauce
2 eggs
1/2 cup soft shortening
1/3 cup water
Add
1/2 cup nuts and/or
1/2 cup raisins (optional)
Bake in wax paper lined loaf pan at 350 F for approximately 1 hour. Cool in pan 10 minutes and remove to cooling rack.