

# the *BeeLine*

Volume 27

Fall 2007

*Newsletter of the Western Cascade Fruit Society*

## Inside:

Message from Our President - page three

More on Colony Collapse Disorder - page five

Plant Blueberries - page six

Watercore - page nine

Hybrid Grapes for the Puget Sound Region - page ten

WCFS Board Meeting Highlights - page twelve

Mad Scientist - page fourteen

WCFS Chapter News page fifteen

[www.wcfs.org](http://www.wcfs.org)



The BeeLine is a quarterly publication of Western Cascade Fruit Society, a non-profit 501(c)3 corporation in the State of Washington.

## HONEY BEE COLONY DECLINES

By Elizabeth A. Vogt, Ph.D., Vashon Island Fruit Society

Consider this: one third of the human adult diet in developed countries is derived from insect-pollinated plants, and 80% of these plants depend upon honey bees for their pollination. In light of this relationship, it is apparent that our lives without the honey bee, or with severely reduced populations of available honey bees, would be profoundly affected.

Over the past year, the disappearance of millions of honey bees in the US and abroad has caught worldwide attention. The following is a brief review of the situation as of August 2007, impacts fruit growers may experience in the Pacific Northwest, possible causes and some considerations for the future. A list of resources is included if readers wish to stay current with colony decline developments.

### Background

In October 2006, a Pennsylvania beekeeper who moved his bees south to Florida for a few winter months -- a typical migratory practice -- discovered upon examining his hives just 3 weeks after their move, that many were empty; the bees had literally vanished. Word of this mysterious phenomenon spread and by December dozens of east coast commercial beekeepers had also described severe hive declines. A Working Group formed, consisting of scientists from three organizations: Pennsylvania State University, the USDA Honey Bee Research Lab in Maryland and a private consulting firm in Montana called BeeAlert. Later, North Carolina State University, Florida Dept. of Agriculture, University of Illinois and the University of Delaware joined. Heavy losses, from 50% - 90%, of colonies in commercial, as well as hobbyist yards, were documented. The group named the rapid die-offs "Colony Collapse Disorder" (CCD). It is characterized by 1) a sudden decline of adult bees in or anywhere near the hive, 2) no accumulation of dead bees, 3) brood (bees in the larval or pupal stage) are present, sometimes with the queen and a small entourage of adult bees and 4) colony losses in large numbers. These symptoms are uncharacteristic of previous bee die-offs which have been reported infrequently since the 1890's. The most recent reports indicate that CCD has affected apiaries, both large and small, in 35 US states, Puerto Rico, the United Kingdom, the Netherlands and various European countries. In March and June of this year, congressional hearings about CCD were attended by US research groups. An Action Plan, developed from survey data collected by BeeAlert and other reports presented at the hearings, is due next month.



**What is at risk**

Over 90 fruit and vegetable crops require pollination services from commercial beekeepers. Demand for pollination services is growing. There are approximately 135,000 beekeepers in the US. Of these, only 1% are commercial and migratory, meaning they truck thousands of hives across the country to pollinate crops at crucial windows in the flowering cycle, enabling seed set. It is this 1% who manage most of our nation's 2.4 million honey bee hives. Therefore, CCD could so diminish the livelihoods of our commercial beekeepers that a dearth in their numbers could then precipitate a pollination disaster.

Here is a condensed list of US crops at risk which includes only the "top ten". These numbers are based on data from the 2000 Cornell Report and the National Research Council 2006 report. Let's begin with our region, the Pacific Northwest: sweet cherries (80% production is dependent on honey bees), blueberries (70 %), and apples (90%); California: almonds (100%); CA and Florida: oranges (27%), onions (90%), carrots (90%), and broccoli (90%); the South : cotton (16%), and soybeans (5%).

If you include the large quantities of pollinated forage converted to animal feed, dairy products and native ecosystems relying on honey bees, the risks multiply.

**Possible Causes of CCD**

Currently there are several suspects being seriously considered by researchers as causing, or at least contributing to, CCD. They may work together in the development of the disorder creating a "death by a thousand tiny cuts".

\* Migratory practices -- stress from long-distance confinement and overheating, poor nutrition, and increased exposure to pathogens and insecticides.

\* Mites -- two mite pests were introduced into the US in the early 1980's: the external "blood-sucking" *Varroa destructor*, enabling the accompanying Parasitic Mite Syndrome of viruses, and the internal tracheal mite. Both species suppress the insect's immune system. Both have contributed to a dramatic decrease in hives over the past 20 years. Miticides to control these pests may also have a deleterious effect on the bees.

\* Pathogens/infectious agents -- a number of viruses and fungi, possibly opportunistic agents flourishing in a compromised bee immune system,

have been identified. One theory is that because bees will naturally abandon a hive to die when they are ill, large numbers of bees disappearing from the apiary may be due to a disease. A scientist at Columbia University will soon publish his work demonstrating a virus associated with CCD. Is this virus a cause or a symptom of something else? Possibly a more virulent viral strain has developed.

\* Pesticides -- the long term exposure to trace amounts of agricultural chemicals may play a role. The latest research approach in this area is exposing honey bees directly and indirectly via their wax and hive materials to low-dose neonicotinoids, a widely-used class of insecticides on a variety of US crops.

\* A pre-existing cycle -- could CCD be a re-cycling of an old epidemic ? "Disappearing diseases" have been reported for many years. Do modern beekeeping practices encourage a "perfect storm" for an old enemy ?

**Considerations "CCD2"**

Researchers are speculating that a second hit by CCD this fall or winter could have much more devastating effects. Many hives are already weakened, as reported by beekeepers from all over the US. If drought occurs where bees need healthy forage, the next stage in the CCD scenario looks bleak.

It behooves all of us, fruit and vegetable growers and consumers, to support healthy beekeeping practices. How to do that is for another article.

**CCD Sources of Information**

There are many websites providing information on CCD, from speculating blogs to summaries of all national and international news articles. The following provide the latest, most reliable scientific research updates.

1) [www.maarec.cas.psu.edu](http://www.maarec.cas.psu.edu)

**This is the website for the Mid-Atlantic Apiculture Research and Extension Consortium (MAAREC)**

2) [www.beeculture.com](http://www.beeculture.com) (click on the "Feature" CCD)

3) [www.beealert.info/](http://www.beealert.info/) (Jerry Bromenshank's Montana company)

4) [www.ars.usda.gov/research](http://www.ars.usda.gov/research)

5) [www.masterbeekeeper.org](http://www.masterbeekeeper.org) (Cornell U.)

6) [www.fas.org/sgp/crs/misc/](http://www.fas.org/sgp/crs/misc/) (for Congressional reports)



## MESSAGE FROM OUR PRESIDENT

By Ron Weston, Vashon Island Fruit Club

Once again this issue of the *BeeLine* is primarily being distributed via e-mail. For those of our members for whom this is not the preferred method for receiving our newsletter, I apologize. As I've explained in previous columns, the cost of preparing and delivering a printed newsletter to our full membership "busted the budget" last year and caused the WCFS Board to adopt an electronic format. While this has accomplished the immediate goal of reducing costs, it is still a work in progress that is not yet fully serving all of our members' expectations. For those who are unable to receive an electronic newsletter, or strongly prefer a printed version, please make sure your Chapter representatives are aware of your concerns. As the Board sorts through options on how to best deal with getting the *BeeLine* to all of our members, it is important that we have a clear idea of how many are not satisfied with the current delivery method.

At the last WCFS Board meeting, the Board decided to move toward posting the *BeeLine* on an upgraded WCFS web site. We determined that we would seek further information on the costs of preparing a members-only portion of the WCFS web site that would allow our members to access the current issue from any computer with internet access. This method of distribution would avoid some of the problems of electronically "mailing" it to each individual member, although it will not solve the problem of those who do not have computers or who object to the electronic format. An upgraded web site would also allow us to place all of the back

issues of the *BeeLine* in an electronic archive on the web site. This is a truly exciting possibility and Board member Patti Gotz has graciously volunteered to convert the stack of back issues to electronic files. Once this is done we can perhaps "burn" CD-ROM copies of the archive and/or post them to the web site. However, it is going to take time and some expert assistance to accomplish these possibilities. I ask for your patience as the Board sorts through the different options.

As you are reading the Chapter notes, I would like to highlight a recent field trip taken by the Vashon and Peninsula Chapters to the Bainbridge Island Winery and two wonderful Kitsap orchards. This field trip was organized by Dr. Bob Norton with the very helpful assistance of Mike Shannon, President of the Peninsula Chapter, and serves as a great example of what we can accomplish when our Chapters work together. When your Chapter plans a program or field visit that might be of interest to others, please consider involving a neighboring Chapter. It's a great way to get to know one another better and to help each other advance our knowledge and enjoyment of fruit-growing.

As you read this issue of the *BeeLine*, many of our members will be preparing to depart on a trip to northern Italy with Dr. Bob Norton to visit the premier fruit-growing regions of that lovely country. I am sure those who are going will return with many great memories to share with the rest of us. I wish them a safe journey, and a speedy return to our beautiful Puget Sound region.

---

The Fall 2007 *BeeLine* was produced by Editors Marilyn Couture and Carlyn Syvanen, with input from membership.

Please contribute your articles for our next issue!

**Issue Deadlines:**

**Winter December 15; Spring February 15; Summer May 15; Fall August 15**

Email your articles to:

Carlyn Syvanen at: [carlynbee@teleport.com](mailto:carlynbee@teleport.com)

Permission to copy from the *BeeLine* is granted with attribution.

**Olympic Orchard Society**

Jeff Carl  
Sam & Carolina Lachmann  
Jim Mraz,  
Gary, Darcy & Molly Gort  
Gordon Clark.

**North Olympic Orchard Society**

Katy Festinger  
Michael Garling

**Peninsula Fruit Club**

Jim & Judy Charrette

**Seattle Tree Fruit Society**

Lory Armitage  
Barbara Broderick  
Lynda Caughey  
Carol Cerimele  
Phyllis Cubbin  
Catherine Dahlgren  
Kim Demarest  
Kathy Dennis  
John Dubois  
Marlene Falkenbury  
Sara Farmer  
E. Fawcett  
Laura Fife  
William Frankenburg  
K.D. Hansen  
Carol Hardan  
Chris Haynes  
Joseph Hess  
Karen Isaacson

**WCFS NEW MEMBERS**

Joe Krutenat  
Bruce & Terry Larson  
Robin Leshar  
Bill Lynch  
M.P. Martin  
Phyllis McKeehen  
Patricia Merrill  
Gary Odle  
Dean Patterson  
Betsy Pernotto  
Steven Reed  
Crilly Ritz  
Marilyn Roberts  
Christine Robertson  
Thomas Ruddell  
Ed Scullywest  
Marina Skumanich  
Jane Slager  
Penny Smay  
Jim Suthers  
Walter & Laura Swan  
Martina Unglert  
Eric Veach  
Robert Waage  
Tom Wheeler  
Wilton Whisler

**South Sound**

Carolyn Trefts  
Merry Anne Magie

**Vashon Island Fruit Society**

Barb Smith & Lotus  
Roger Jackson & Nistor Turca  
Patrick Christie  
John & April Muth  
Marcy Summers  
Doug & Kim Drape  
Allison Kennedy Taylor &  
Mark Ellison Taylor  
Elizabeth & Neal Jellison  
Michael Shosboek  
Hartmut & Ilse Reimnitz  
Alice Bentley  
Cliff Goodman & Cara Aguilera  
Ivy Sacks  
David & Jeri Osgood  
Nancy Soriano  
Les & Deanna Peterson  
Karen Hedlund  
John Kimble & Valerie Willson  
Paul Macapia  
Joanna Guglielmino & Kirk Haupt  
Kurt Schumacker  
Robert Kajca  
Erik Lacitis  
Ken Miller  
Mark & Sandra Pavolka  
Ethan Russo

**BLOSSOMING AND FRUITING SPRAY**

This is a foliar spray to promote blossoming. Apply it at the rate of 2 gallons per acre.

Into a 5 gallon bucket of water add:

1 pint plain household ammonia  
2 pints apple cider vinegar  
1 can regular Coke

Apply 1 quart of solution to larger plants such as tomatoes, at the base of their roots. If blossoms come but then fall off, repeat dose

**ATTENTION APPLE GROWERS**

The folks in the Seattle Tree Fruit Society have had very good results with protecting their apples from apple maggots by using apple maggot barriers, formerly known as footies. If you are interested in ordering for next year you can contact:

**John Reardon by email:**  
**[johnstrongtree@yahoo.com](mailto:johnstrongtree@yahoo.com)**





## MORE ON COLONY COLLAPSE DISORDER

By Marilyn Couture, Olympic Orchard Society

In an article on the Journal Science web site, "Correlation between Israeli Acute Paralysis Virus and Colony Collapse Disorder" September 7, 2007, it was reported that months of genetic testing have fingered a virus that was first reported in Israel three years ago and may have passed through Australia on its way to the United States.

Pennsylvania State University entomologist Diana Cox-Foster, the lead author of the Science report, said it's likely that several factors are contributing to the bee disappearances — including environmental stresses, pesticides, viruses and parasitic Varroa mites, which all weaken the bees' immune systems. The latest research moves Israeli Acute Paralysis Virus (IAPV) to the top of the list as a "significant marker" for Colony Collapse Disorder. Scientists checked the genetic sequences for bees collected over the past three years from 30 colonies that suffered a collapse and 21 healthy colonies. The presence of IAPV was found to be the best indicator for Colony Collapse Disorder, with a 96.1 percent correlation. Israeli Acute Paralysis Virus, or IAPV is a little-known organism that sets bees' wings shivering and eventually causes paralysis. IAPV afflicted bees are typically found



dead outside their hives.

Some bees in Israel become resistant to IAPV by incorporating the virus' code into their own genes. Scientists may attempt creating virus-resistant strains of bees, either through genetic modification or old-fashioned breeding.

Researchers will continue to focus upon unanswered questions:

- Is IAPV really a cause, or will it turn out that vulnerability to the virus is merely a consequence of the disease?
- How and when did IAPV get into the United States?
- Why did the Australian bees (and even a few American bees) seem healthy even though they were carriers of the virus?
- What roles are played by other organisms that were found in the bee samples, such as the Kashmir bee virus and Nosema fungi?
- If the cause or causes can be definitively identified, what can be done to stop the collapse?
- Researchers behind the Science study will try combining IAPV with other stress factors to see if they can experimentally create the conditions that tip a healthy bee colony into a collapse.

### THE 9TH ANNUAL SALT SPRING ISLAND APPLE FESTIVAL

MARVELLING AT MOTHER NATURE'S BOUNTY

Growing over 350 varieties of apples organically.

Sunday, Sept 30, 2007  
9 AM to 5 PM

A chance to visit Apple Heaven while still on earth!

<http://www.saltspringmarket.com/apples/>



Apple

**At the center, a dark star wrapped in white  
When you bite, listen for the crunch of boots on snow, snow that has ripened. Over it stretches the red, starry sky.**

Nan Fry

**PLANT BLUEBERRIES!**

By John Reardon, Seattle Tree Fruit Society

**Why Plant Blueberries?** Blueberries are the fruit that is the most fun to eat off the plant. Blueberries are a fabulous shrub for every farmer: urban, suburban or rural. They make a good hedge. They mix well with other plants. Some provide good fall color, others are evergreen. Put them in your perennial border. Plant them between the street and the sidewalk, plant them along the path and steps, in the flower bed or as a background; plant them along a fence or anywhere you need a small or large shrub. Substitute for boxwood, azalea, Ilex or any other hedge. Most domestic blueberries are deciduous, except for some fabulous varieties native to the northwest. Pick varieties that grow from one to six or more feet high. They grow faster with water but do well in a wide variety of conditions and sun exposure. They like peat moss and other compost.



The best berries I have had were some stumpy, neglected plants in a horrible location in a lawn, next to a sidewalk, in full sun and no water or compost added ever. They had survived a long time, were producing a lot of fruit (for their small size) which was delicious. The literature talks about an acid preference, but I interpret that as any soil not overly alkaline. I have seen them in acid soils doing poorly and neutral soils doing extremely well. There is even one variety that is well adapted to alkaline soils. All the soils I have seen around here seem to be exactly neutral so don't worry. If your rhododendrons are doing well, blueberries will do well also. Blueberries belong to the heath (Ericaceae) family whose other members include the cranberry and bilberry as well as the azalea,

mountain laurel and rhododendron. Cultivated blueberries are typically mildly sweet. Those that grow wild have a more tart and tangy flavor, and retail for much higher prices.

I recommend purchasing late ripening and large berries varieties. They will then be less inviting to birds because birds find the blackberries ripening at the same time to be more desirable. The large berry size makes eating difficult for our beaked friends. Purchase blueberries at many mail-order and some local nurseries. The King Conservation District also sells our native varieties.

**Pruning:** It is important that blueberries get established before allowing them to bear fruit. Thereafter, they should be pruned each year to avoid over-fruiting which results in small fruit or poor growth. Remove all blooms, as they appear the first year.

In years thereafter, follow these steps after the leaves have dropped. Remove low growth around the base. If it doesn't grow up, it gets pruned out! Remove the dead wood, and non-vigorous twiggy wood. Select for bright-colored wood with long (at least 3 inch) laterals. Remove blotchy-colored short growth.

Remove about 1/3 to 1/2 of the wood to thin out the fruiting laterals and small branches until this balance has been obtained.

**History:** Blueberries are native to North America where they grow in the woods and mountainous regions in the United States and Canada. This fruit is rarely found growing in Europe and has only been recently introduced in Australia. There are approximately 30 different species of blueberries with different



ones growing throughout various regions. **Highbush** varieties can be found throughout the Eastern seaboard from Maine to Florida. **Lowbush** varieties grow throughout the Northeast and Eastern Canada, and the **Evergreen** varieties thrive throughout the Pacific Northwest. They will all grow well here in the Northwest. While blueberries played an important role in North American Indian food culture, they were not consumed in great amounts by the colonists until the mid-19th century. This seems to be related to the fact that people did not appreciate their tart flavor, and only when sugar became more widely available as a sweetener did they become more popular. Blueberries were not cultivated until the beginning of the 20th century, becoming commercially available in 1916.

**Health Benefits:** Blueberries are nutritious yet very low in calories. Tufts University analyzed 60 fruits and vegetables for antioxidants. Blueberries came out on top, rating highest in their capacity to destroy free radicals. Red wine is touted as cardioprotective since it is a good source of antioxidant anthocyanins. A study published in the Journal of Agriculture and Food Chemistry found that **blueberry wine** delivered more anthocyanins than red wine. In addition to anthocyanins, blueberries contain the antioxidant ellagic acid, which blocks metabolic pathways that can lead to cancer. In a study of over 1,200 elderly people, those who ate the most strawberries (another berry that contains ellagic acid) were three times less likely to develop cancer than those who ate few or no strawberries. In addition to containing ellagic acid, blueberries are high in the soluble fiber pectin, which has been shown to lower cholesterol.

Blueberries contain the same compounds found in cranberries that help prevent or eliminate urinary tract infections. These berries reduce the ability of the problem bacterium, *E. coli*, to adhere.

Due to **processing**, commercial **baby foods** containing berries have no anthocyanins, the

plant pigments responsible for the blue, purple, and red color of berries and for many of their health benefits. Anthocyanins are found in fresh and frozen berries, but not in processed foods. A study published in the Journal of Agricultural and Food Chemistry found anthocyanins were almost undetectable in canned foods, bread, cereals, and baby foods containing berries, even in baby foods prepared from fruits high in anthocyanins, such as blueberries. To give your children the full health benefits of berries, purchase fresh or frozen berries and purée them.

**Storage:** Ripe blueberries should be stored in the refrigerator where they will keep for about a week. Don't wash berries until right before eating as washing will remove the bloom that protects the berries' skins from degradation. Berries can also be frozen, although this will slightly change their texture and flavor. Spread the berries out on a cookie sheet or baking pan, freeze, and then place in container. Berries should last up to a year in the freezer.

**Preparing** and eating blueberries: Fresh berries are very fragile and should be washed briefly and carefully and then patted dry just before eating. If you know the source of either wild or organic berries try not to wash them at all. Use blueberries in all smoothies, shakes, deserts, muffins, pancakes and cold cereals. Use as or with desserts. I enjoy **fresh blueberries** the most, plain, as a snack. It's the least work and the most fun and I think they taste best that way. Eat them off the bush.

**1 cup of blueberries contains:** 81.20 calories, Vitamin C: 18.86 mg, Manganese: 0.40 mg, Dietary fiber: 3.92 g, Vitamin E: 1.46 mg and lots of other good stuff.

Have fun growing your blueberries!

For more information on blueberries and healthy eating try **www.whfoods.com**. You will find some very well documented information about why good foods are good. Check it out.



**BLUEBERRY HAVEN FARM FALL TOUR**

By Erik Simpson and Marilyn Couture, Olympic Orchard Society

Olympic Orchard Society toured Blueberry Haven Farm in September. Gary, Deborah and Daniel Heaton, OOS members, maintain over 1300 Highbush blueberry plants, representing 8-10 varieties with the majority of them having been planted in the mid to late 1970s. Erik Simpson devised this quiz based on information provided by Gary Heaton.

1. *How do you know when a blueberry is ripe without tasting it?* It's ripe about 10 days after it turns blue. Check for shiny berries.
2. *How often do you water?* The plants need up to 2" of moisture a week during the summer or one gallon twice a week.
3. *What is the most important part about growing blueberries?* Proper soil preparation.
4. *What can you expect for yield from a mature plant in 7-8 years, and how many plants should you plant?* About 10 lbs./per plant. Most people have 4-6 plants of two to three different varieties. This should provide enough early yields, allowing you to give away some berries later on when yields increase.
5. *What soil acidity do you want to achieve, and what can you use to lower soil pH?* 4 – 5 pH. Elemental sulfur is applied which is considered organic.
6. *What is mummy berry?* Shriveled blue diseased berry.
7. *How do you deal with mummy berry?* Mulch, remove diseased berries and spray with Serenade, a biofungicide, if necessary. Apply weekly from March through early May. This is listed as an organically approved product.
8. *How much mulch?* Sawdust mulch (about 350-400 cubic yards) is applied each year over the fields about 4" deep in the late winter. This saves water, decreases weeds, and helps control the mummy berry fungus.
9. *Should you fertilize?* A good certified organic fertilizer is advisable.
10. *What about pruning?* Each winter the plants are pruned back, removing older canes and brushy twiggy growth.

Gary recommends these resources:

- A Growers Guide to Pruning Highbush Blueberries OSU video
- *Pruning Simplified*, Lewis Hill
- <http://www.blueberryplants.com/home.html>  
<http://berrygrape.oregonstate.edu/>
- Northwest Berry and Grape Information Network
- *Growing Small Fruits for the Home Garden*, Charles Brun
- *Highbush Blueberry and its Management*, Robert Gough, PhD.
- *Highbush Blueberry Production, Guide* NRAES-55
- *Highbush Blueberry Production, PNW 215* January 1993

The last three are WSU Cooperative Extension publications



Erik Simpson, Carlyn Syvanen and Steve Vause at Blueberry Haven Farm on the Olympic Peninsula.

*There is a harmony in autumn  
and a luster in its sky*  
Shelley

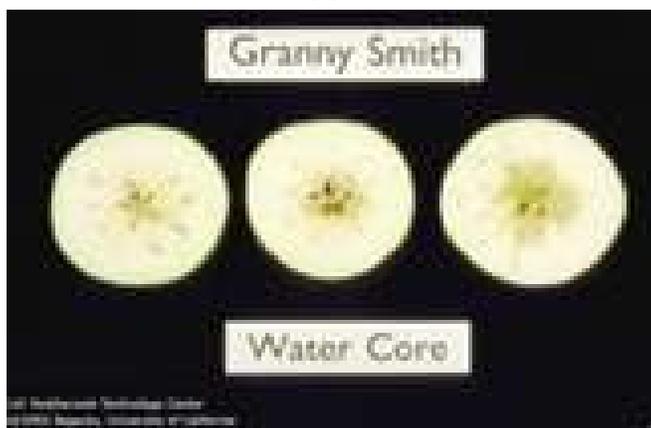


## WATERCORE

By Jean Williams, Peninsula Fruit Club

Watercore is a physiological disorder of apples, but it does not spread between fruits. It varies greatly from year to year and is easy to recognize by the appearance of water-soaked, translucent, glassy areas in the flesh. These areas may occur in a part of the apple, the entire apple, or only near the core and primary vascular bundles. Normally, the spaces between cells in an apple are filled with air, but when watercore is present, the spaces become filled with mainly sorbitol, which is the form of sugar that moves from the tree into the fruit. Sorbitol then must be converted into fructose by the apple before it can be used. The sorbitol may move into the fruit faster than it can be converted to fructose, or watercore tissue may not have the ability to make the conversion. Studies have shown differences in vascular tissues between susceptible and resistant varieties, but the reason why sorbitol accumulates in the intercellular spaces is not yet fully known.

Some varieties of apples, such as Jonathan,



Red Delicious, Braeburn, Sundowner, Stayman, Winesap, Granny Smith, Lady Williams, and Fuji are more susceptible to watercore. However, in the U.S. and Canada, watercore is not considered to be a defect in Fuji. In fact, it is considered desirable in Fuji because sorbitol is ten times sweeter than fructose and it makes the apples extra sweet. In Japan Fuji was originally bred for its ability to produce a high incidence of watercore, and in some markets, watercored Fujis command a premium price.

Watercore is associated with a number of

factors. It is associated with light crops of large fruit, excessive vigor with poor fruit set, excessive thinning, high nitrogen and boron, low calcium, over maturity, and high light exposure. Another cause of watercore is advancing maturity in apples, which can happen in the fall when lower nighttime temperatures speed up maturity. There is also a type of watercore unrelated to maturity. It is found more often on the exposed side of apples, especially on the southwest side of trees, when there are high daytime temperatures with high amounts of sunshine and lack of cloudy, rainy days. This type may also be associated with sunscald.

Slight watercore causes little harm and usually disappears after several weeks of cold storage. The symptoms of watercore do not increase after harvest. However, severe watercore causes fruit to develop internal breakdown and browning because of reduced gas diffusion and the accumulation of ethanol and acetaldehyde. These cause alcoholic off flavors during long term storage.

For the commercial grower, watercore can be a serious problem. Washington State University is working on methods for detection, such as optical density, X-ray, MRI, and water separation density. Sorting of apples by water separation density is the least expensive and easiest to adapt to packing lines. This method relies on the fact that watercored apples are denser and tend to sink while being washed. With the addition of bubbles and baffles to the washing lines, watercored apples can be separated fairly easily.

For the backyard grower, watercore is less of an issue than it is for commercial producers. Currently, the best way to handle watercore, if not prevent its appearance in the first place, is to avoid the things that seem to be associated with the disorder. Never the less, the extra sweetness watercore creates in apples can be savored by eating or by processing severely afflicted fruit right away. Another strategy is to pick apples a little sooner than usual to stop the watercore from getting severe.

**HYBRID GRAPES FOR THE PUGET SOUND REGION**

By David Johnson, Milton, Washington

Although the west side of the mountains is a far more popular place to live than the Columbia basin, its climate presents some serious problems to wine and table grape growers. A few of our most serious liabilities include:

- Rainfall at harvest season
- Low heat accumulations
- Shade from adjacent trees "for most home growers"
- Late spring frosts

Most of the commonly known grape varieties, like Concord and Thompson Seedless, require growing conditions different from the Puget Sound region. And sadly, these well-known varieties are what the big box chain stores and most nurseries throughout the Northwest



like to offer. Around 1984, I began to play around with hybridizing grapes. I made my first cross onto an old Roger's Hybrid called William's Seedless. It is not a true seedless, but it does indeed produce many seedless berries if it is not well pollinated. If the William's Seedless is crossed with another vine, it sets larger berries with seeds. It is a female flowered vine; hence it needs pollen from another vine to set seeded fruit. Of this vine, I do have one hybrid seedling still growing, which is a cross to Orange Muscat. The hybrid vine has much better flavor and retains the good qualities of William's. It has large berry size and resistance to rot in the fall. William's Seedless is one of the most bullet proof grapes for holding good condition in the fall.

There are certainly benefits to hybridizing grapes. The possibilities are endless in terms of unusual combinations of flavor and growth habits. Believe me, once you get started it becomes very addictive, but in a good way. Or, just ask someone into rhododendron or orchid breeding and you will get a sense of it.

The best way to get started with hybridizing grapes is to choose superior parent vines to work with. For our region, any of the following species of grape is

worth using:

- Vitis Labrusca
- Vitis Longii
- Vitis Coignetiae
- Vitis Riparia
- Certain Vitis Vinifera 'early ripening selections'

While at first this list may sound strange, it actually includes the great majority of commercial table and wine grapes.

Next, for ease of hybridizing, use female flowered vines and pollinate them with perfect flowered or hermaphrodite grape varieties. Most commercial grapes are perfect flowered, so that part is easy. The harder part is to find good female vines to use as seed parents. I would be happy to help anyone interested in getting a few superior female

vines, since I have a number already.

When planting the females for breeding, it is best to keep them separate from the fertile 'hermaphrodite' vines, to assure controlled crosses. Of course, if you are only going to make one particular cross it doesn't matter. Say you wanted to cross Niagara with Vitis Riparia. Just plant them next to each other and let nature take its course by moving the Niagara pollen to the Riparia vine. Well, it is a bit trickier than just that because the species Riparia blooms before the Labrusca hybrid Niagara, so the primary buds from the female Riparia vine must be striped. The grape has a compound bud with three potential growing shoots in one bud. By stripping off the primary shoot, the secondary bud 'breaks' and will delay bloom long enough to align with the Niagara bloom season.

A few crosses I have made over the years:

- Jovan: A hybrid of 'Brandis' x Don Muscat that has perfect flowers and copper maroon colored fruit of high brix and flavor a combination of Labrusca and Muscat. It is a heavy producer of small clusters and oval berries.
- ES 5-17 x Orange Muscat: A fine hybrid for



Muscat wines. It is much more disease resistant than the vinifera parent with the same strong rose petal Muscat flavor. Sadly, it has female flowers, but as a seed parent, it makes hybridizing easy.

- Czar Nicholas: An 'Alden' hybrid that produces spicy black fruit with fairly large berries and striking fall leaf color like Vine Maple.
- Richard Walden "ES 5-17 x Flame Seedless": This is my most impressive table grape. It yields a seedless fruit with light red color and heavy bloom, large berries and clusters that are quite resistant to botrytis and a flavor much like flame seedless.

Some unusual species I am working with:

- Vitis Coignetiae "Crimson Glory Vine": This Asiatic vitis has figured into several of my

hybrids and it thrives in our cool overcast growing conditions. Its vigor is off the charts so it is not for a small garden. I have seen shoot growth in excess of 25 feet in a season. It also doubles as an attractive fall color vine.

- Vitis Longii: This is commonly used in grape rootstock breeding and has a good resistance to root parasites. The fruit quality is good for a species though the clusters are small. It is a great candidate for wine grape breeders.
- Vitis Jacquemontii: This is the not too well known cousin of Vitis Vinifera, which has very impressive clusters in the wilds. It is commonly found in the mountains of Pakistan and Central Asia.

David can be reached by email at: [charchemish2000@yahoo.com](mailto:charchemish2000@yahoo.com)



Editor's Note: The following chart was part of the Olympic Orchard Society display in their booth at the Clallam County Fair. They received the Superintendent's ribbon because they were able to indicate economic impact.

### Tree Fruit Industry Economic Impact Results (2002):

Impact Location	Estimated Total Output Impact	Total Income Impact
<b>Washington Tree Fruit Industry</b>		
<b>Impact on United States</b>	<b>\$8.5 billion</b>	<b>\$4,254,613,021</b>
Impact on Northwest Region (WA, OR, & ID)	\$6.5 billion	\$3,288,632,945
State of Washington	\$5.6 billion	\$2,842,333,172
Yakima Valley Region (FRD 4)	\$2.1 billion	\$1,075,744,611
North Central Region (FRD 3)	\$1.5 billion	\$ 798,499,222
Columbia Basin Region (FRD 5)	\$820 million	\$ 409,606,035
Other FRDs (1,2,6 & 7)	\$350 million	\$ 178,890,063
FRD 1 (24% of Other FRDs)	\$ 84 million	\$ 42,933,614
Clallam County (9.5% of FRD 1)	\$ 8 million	\$ 4,078,600

**Olympic Orchard Society contributes to the Tree Fruit Industry in Clallam County** by promoting and stimulating interest in growing fruit or nut bearing trees suited to our local climate. Our education program includes the distribution of horticultural information to our members and the general public through fruit shows, orchard tours, meetings, seminars, workshops, School programs, publications and other media. OOS provides financial and other support to our area's fruit research and joins with other organizations in promoting tree fruit in the Western Cascade region.

Economic Impact of The Tree Fruit Industry in Washington State and the Northwest, William S. Jensen, Ph.D., August 2004, Study funded by the Washington State Horticultural Association and the Washington Tree Fruit Research Commission (<http://www.wahort.org/Executive%20Summary.pdf>)

# WCFS

## Board Meeting Highlights

The June 23, 2007 board meeting was held at Tri-Cities CommunityCenter in Chimacum.

President Ron brought the meeting to order at 10 am.

Board members present were: Olympic Orchard Society, Steve Vause, Erik Simpson, Del Simpson, Marilyn Couture, Carlyn Syvanen; North Olympic Fruit Club, Dan Ackerman; Seattle Tree Fruit Society, Hildegard Hendrickson; Tahoma Fruit Club, Bill Horn; Vashon Island Fruit Club, Ron Weston; Peninsula Fruit Club, Jean Williams, Bob Ferguson, George Moergeli; and South Sound Fruit Society, Loretta Murphy.

Guests in attendance were Judi Stewart and Lyle Knudson of NOFC also Francesca Kitson of SSFS.

Treasurer Hildegard reported that check for \$2000 from STFS was sent to Mt. Vernon, and the Good Fruit Grower is now \$20. It is important to keep up our tax free status.

### Old Business

Ron complimented both the STFS and NOFC for their contributions to the Research Station.

Beeline: Because we were not able to post the BeeLine on a website, each chapter should check with individual members to see if they had gotten the emailed PDF version. Marilyn gave a report on her attempt to get a website and the number of contacts that she had made. The editors believed

that posting the BeeLine and our archives of past issues to our website was the preferred solution. Concerns over the limits of Geocities may require a new website. Then the problem of setting up a new one and the lead time required, plus getting a webmaster was discussed. The possibility of paying the webmaster was mentioned.

A lack of information led to no final conclusion, but several members will look into the associated costs of archiving and posting the current BeeLines. They will report back within the next two weeks.

Ron reported that Kinkos charge about one dollar per page to scan back issues into an electronic PDF format; although he has solicited volunteers, no members have come forward to do it

Ron will ask David about adding the magazine to their Urban Scion post mailing. [Note: many more comments and questions were made by Board members and both guests]

Ron brought up fruit research. A lively discussion of supporting fruit research followed. President Ron will request a representative from WWFRF to speak at our next Board meeting.

### Election of Officers

Patti Gotz[Seattle] will fill the three year term and Al Watts[Vashon] will complete the remainder of a term.

The next meeting will be held at the Kitsap Fire Station on September 22.

Respectfully submitted,

George Moergeli, secretary



The WCFS Forum is a private email list for members only. Find out about a certain cherry, ask how to spray or prune, offer scionwood or come by and pick up a bag of apples. Send me an email and I'll add your name to the WCFS Forum.

Judi Stewart [js@olympus.net](mailto:js@olympus.net)



An apple is an excellent thing -- until you have tried a peach."

-George du Maurier (1834-1896)



## MAD SCIENTIST UNDERSTANDING UNDERUSED UNDERSTOCK

By Roger Eichmann, North Olympic Fruit Society

The use of native rootstock has always intrigued me. For the most part, a native plant that is acclimated to a region and is established has many advantages over an unknown rootstock. I have never understood why one should rip out a good plant, then pay to replace it with a lesser established or unknown rootstock. For instance, Mt. Ash, Hawthorn, and Bitter Cherry all are easy to grow, well acclimated, and more dear to my heart, free on the property. So why rip them out to be replaced by another of lesser merit or understanding? Thus I've added more grafts to the *C. douglasii* or Black Hawthorn.

One hawthorn now has quince, flowering quince, pears, medlar and an apple grafted on to it. Yes, the apple is growing, albeit slowly. I thought this would be a unique graft to report on but alas, I just got a new book from Timber Press, *Hawthorns and Medlars*. It is reported "*C. pinnatifida* is used as an understock for apples in Shandong Province, China" (p. 34). It is not easy to do that which is truly different or new.

I do recommend this book on hawthorns and medlars, as it is very informative and well written. It even has the chromosome numbers listed. The

front cover has a nice picture of *Crataegus succulents*. I think this is the plant that is growing around the Costco parking lot in Silverdale. It does graft readily onto the wild *Crataegus douglasii*.

Last year I grafted a medlar onto a hawthorn and this year it is bearing three fruit.

What this all means is, that the local, wild hawthorns can be used as an understock for quince, pear, apple or medlar and they can be used all on the same tree. It will act as a semi-dwarfing, non-suckering, very tough and acclimated root stock. If the understock thrives, then whatever it carries has a good chance of growing. A healthy rootstock is 80% of getting a healthy plant.

While in Ireland a few years ago, Jean and I took a taxi around some back roads to look at the country. All of the roads were lined with hawthorns but there were few apples and no pears or other fruits. The driver informed me, they would not grow there because they had never been grown in Ireland. How sad, tradition for the sake of tradition can be a heavy burden. If

hawthorns will grow, then pears should grow on them. One need only to ignore tradition or, that can't be because it just can't be.



## TOO HOT FOR BUNNIES TABASCO CROPS

Dutch farmers have devised a hot and spicy way to stop rabbits and rodents from munching their lettuce, carrots, wheat and other crops. Spraying fields with the American Tabasco sauce sends the rabbits "three feet in the air" with shock and running for cover, said a spokesman for a local agriculture cooperative.

The Dutch animal protection society is happy with the spicy repellent, unworried by the possibility of burned bunny mouths. "Preventive measures are exactly what we want. It's better

than going into the fields with a shotgun," said animal welfare spokesman Niels Doorlandt.

The farmers will now try to make Tabasco an officially recognized pesticide for subsidized use on a larger scale. At least five small supermarket-sized bottles of the spicy sauce are needed for spraying 2.5 acres of crops.

Although rain washes the Tabasco off, the crops are only sprayed in the first phases of growth to spare the taste buds of human consumers. Source: Yahoo News

**LETTER FROM THE EDITORS**

Marilyn Couture and Carlyn Syvanen

This issue of the BeeLine is a bit slimmer than previous issues. Harvest time is one of the busiest times of the year for all of us and we would prefer to be gathering and storing produce more than sitting at the computer but we need to keep those articles coming in. We suggest each club assign one member to get the club news in for the issue so that it need not fall on the shoulders of the presidents.

One of the features we have enjoyed reading in the BeeLine are the recipes. We have a lot of good cooks out there and we would like to have a volunteer to gather a few recipes of seasonal dishes for each issue.

The BeeLine is our vehicle for communicating with each other. Let us keep it interesting and timely. Send in your articles and news by December 15, 2007 for the winter edition.

**GREEN TOMATO MINCEMEAT**

Marilyn Couture, Olympic Orchard Society

2 quarts chopped tomatoes  
1 Tbs. Salt  
1 orange  
2 ½ quarts chopped apples  
1 lb seeded raisins  
3 ½ C brown sugar  
2 tsp. Cinnamon  
1 tsp. Cloves  
½ tsp. Ginger  
1 tsp. Nutmeg  
½ C vinegar

Wash and drain tomatoes, orange and apples. Core, chop, measure and sprinkle tomatoes with salt. Let stand 1 hour. Drain tomatoes, then cover with boiling water and let stand 5 minutes. Drain well. Grate rind and chop pulp of orange. Core, pare, chop and measure apples. Mix all ingredients and boil slowly until tomatoes and apples are tender. Pour, boiling hot, into hot Ball Jar; seal at once.

Note: 1 ½ C chopped suet may be added to the above recipe. If suet is used, cook mincemeat only until boiling hot. Pack, and process pints and quarts 25 minutes at 10 pounds steam pressure.

From Ball Canning Book, 1950s

**MINCEMEAT**

Marilyn Couture, Olympic Orchard Society

2 lbs. Lean beef or venison roast  
1 lb. Suet  
4 lbs apples  
2 oranges  
2 lbs currants  
1 lb. light raisins  
2 lbs. dark raisins  
6 C brown sugar  
2 tsp. Nutmeg  
1 Tbs. Allspice  
1 Tbs. Cinnamon  
¼ tsp. Ginger  
1 tsp. Cloves  
1 Tbs salt  
4 Tbs. Lemon juice  
4 C apple cider



Cook beef until done. Wash, core, pare and chop apples. Finely chop peel of orange and pulp of 2. Mix all ingredients. Simmer 1 hour. Pack, hot, into hot Ball Jars. Process pints and quarts 20 minutes at 10 lbs. pressure, or 1 ½ hours in boiling-water bath.

Note: Couture prefers substituting venison roast for lean beef, and also freezes it in 3 Cup quantities, sufficient for making mincemeat pie.

From Ball Canning Book, 1950s



# WCFS

## CHAPTER NEWS

**Olympic Orchard Society** monthly meetings hosted OOS member Harley Oien on honey bees, equipment, and organic care; Debbie Natelson of Hendrikus Organics (OOS member Wanda Horst is the local distributor of this soil enrichment product); and, Neil Burkhardt of McComb Nursery who spoke on integrated pest management and new organic products including Moisturin and Imunox, a fungicide that is good on apple scab.



Steve Joynson demonstrates pruning at the OOS picnic on Oien's farm.

Members participated in a tour of Heaton's Blueberry farm (see page 8). Our annual summer picnic was hosted by Harley

and Maria Oien. Some attended the NOFC picnic at Dan Ackerman's place in Brinnon.



Del and Erik Simpson at OOS booth at Clallam County Fair.

Our club had a booth at the Clallam County Fair, Aug. 16-19. Members shared their knowledge on grafting, bud grafting, pruning, tool use, Mason bees, and apple maggot control. The booth featured grafted rootstock, baskets of labeled fruit, fruit and club photos, an instructional video by OSU on grafting and budding, and informational handouts. The most popular of which was "Erik's Favorite Apples" by Erik Simpson. Erik demonstrated the Owen's Square Graft and Budding. OOS won the Clallam Fair Agriculture Division Superintendent's Award.

**Peninsula Fruit Club** has been busy as Mason bees this summer. In July we participated in Bainbridge in Bloom on Bainbridge Island. It was a two-day event. Several members of our club answered many fruit questions. We had

displays of footies on an apple tree, and Surround was sprayed on some apples too. It was a fun event and we plan to do it again next year.

Dr. Bob Norton headed a tour in August where we visited John Meyer's orchard in Bremerton. John has a well-kept orchard of apples, peaches, and pears. John also has blueberries and raspberries. Darren Murphy's orchard was our next place to visit on Bainbridge Island. Darren and his family have fruit trees, vegetables, and flower gardens that caught the eye of everyone on the tour. We ate our sack lunches at Darren's and then headed for the Bainbridge Winery. We all learned a lot about growing wine grapes thanks to the wonderful lecture and tour of the grape fields.

Mid-August our club spent 5 Days at the Kitsap County Fair. The fairgoers kept our booth busy every day of the fair. We had a game where everyone had a chance to win an apple tree. We gave away 2 apple trees each day. We displayed varieties of apples, pears, peaches, nuts, and a creepy crawling codling moth worm we found coming out of one of the apples which was on display. We also had diseased fruit and a couple of branches which a sapsucker had pulverized with holes. We even had a picture of the sapsucker doing his damage to the tree.

We will have our summer potluck picnic at Carol Michel's house in Seabeck this year.

Our Fall Fruit Show will be on the 14th of October at the Bremerton Parks and Recreation Center, 680 Lebo Blvd. and Clare Ave., from 11:00 AM - 3:00 PM. We should have a good selection of fruit this year and will also have some fruit trees for sale.

**Vashon Island Fruit Club** held an orchard tour on Saturday, June 16th, that featured the care and maintenance of various fruit trees and berries. We toured grounds of the Branches and the Nortons on Maury Island. Various diseases and problems and their solutions were discussed as they were spotted in the field. The tour concluded with scrumptious helpings of blackberry cobbler and strawberry shortcake, including lots of Bob Norton's

(Club News continued from page 16)

favorite strawberry, the Shuksan.

July was packed with events, including the club's booth in the Strawberry Festival. Members manned the booth throughout the weekend, answering questions about the club and various fruits grown on Vashon and enrolling new members.

On July 17th, the Club's quarterly meeting focused on summer pruning of fruit trees, complete with demonstrations using example branches from a variety of trees.

The Club had scheduled a picnic at the home of Doug Tuma for July 20th, but was postponed for a week because of rain. Good food was abundant with many deserts and tasty treats made with our own island-grown fruit.

On July 28th, a grafting workshop was held at the Sleeping Eye Nursery of Fred Constant and Diana Drayton on Vashon. Members were able to do their own bud grafts to available root stock for apple, pear, plum, and apricot, which, among other factors, is helping to reinvigorate many of the old varieties on Vashon.

On Saturday, August 18th, Bob Norton led a tour to Kitsap Peninsula and Bainbridge Island, which included members from the Peninsula Fruit Club and Seattle Tree Fruit Society. The group toured John Meyers' intensive backyard apple orchard and then visited a truly amazing collection of fruits and flowers on a suburban-sized lot belonging to Darren and Kari Murphy. After lunching amidst the wide variety of grafted trees in the Murphy's yard, we moved on to the Bainbridge Island Winery, established by Gerard and Jo Ann Bentryn and the only self-sustaining winery in Western Washington. We toured their facilities and learned about the differences in growing techniques necessary in our maritime climate. Then we enjoyed tasting their incredible wines. Rounding out a very full day, we visited the upscale Bainbridge Gardens nursery, which is owned by the son of Vashon member Al Watts. Our tired, but happy, members returned home inspired by what they'd seen and carrying a variety of bottles of the Bentryn's wine.

## WCFS OFFICERS AND BOARD MEMBERS

### Officers

President	Ron Weston <a href="mailto:ronweston@centurytel.net">ronweston@centurytel.net</a>
Vice President	Bob Ferguson <a href="mailto:fergusonbh@msn.com">fergusonbh@msn.com</a>
Secretary	George Moergeli <a href="mailto:magicoho@centruytel.net">magicoho@centruytel.net</a>
Treasurer	Hildegard Hendrickson <a href="mailto:hildegard@seattleu.edu">hildegard@seattleu.edu</a>

### Directors

2008	Carolina Nurik <a href="mailto:carolinanurik@comcast.net">carolinanurik@comcast.net</a> Del Simpson <a href="mailto:orchards@olypen.com">orchards@olypen.com</a> Al Watts <a href="mailto:appleydfm@aol.com">appleydfm@aol.com</a>
2009	Roger Eichman <a href="mailto:eichmanrogerdr@webtv.net">eichmanrogerdr@webtv.net</a> Jean Williams <a href="mailto:fhe@hurricane.net">fhe@hurricane.net</a> Phil Vogel <a href="mailto:vogwest@comcast.net">vogwest@comcast.net</a>
2010	Erik Simpson <a href="mailto:orchards@olypen.com">orchards@olypen.com</a> Bob Hickman <a href="mailto:hickmans@tscnet.com">hickmans@tscnet.com</a> Patty Gotz <a href="mailto:plsgotz@comcast.net">plsgotz@comcast.net</a>

### Chapter Presidents

Olympic Orchard	Steve Vause <a href="mailto:svause@teleport.com">svause@teleport.com</a>
North Olympic	Dan Ackerman <a href="mailto:ackermanwoodturner@hotmail.com">ackermanwoodturner@hotmail.com</a>
Peninsula	Mike Shannon <a href="mailto:PeninsulaFruitClub@comcast.net">PeninsulaFruitClub@comcast.net</a>
Piper Orchard	Paul Donaldson <a href="mailto:pdpiper@aol.com">pdpiper@aol.com</a>
Seattle Tree Fruit	David Conners <a href="mailto:applesandmore@hotmail.com">applesandmore@hotmail.com</a>
South Sound	Loretta Murphey <a href="mailto:lojodc@yahoo.com">lojodc@yahoo.com</a>
Tahoma	Bill Horn <a href="mailto:hornbill66@msn.com">hornbill66@msn.com</a>
Vashon Island	Ron Weston

The best way to garden is to put on a wide brimmed straw hat and some old clothes. And with a hoe in one hand and a cold drink in the other, tell somebody else where to dig.

David Hobson, [www.gardenhumour.com](http://www.gardenhumour.com)