the BeeLine

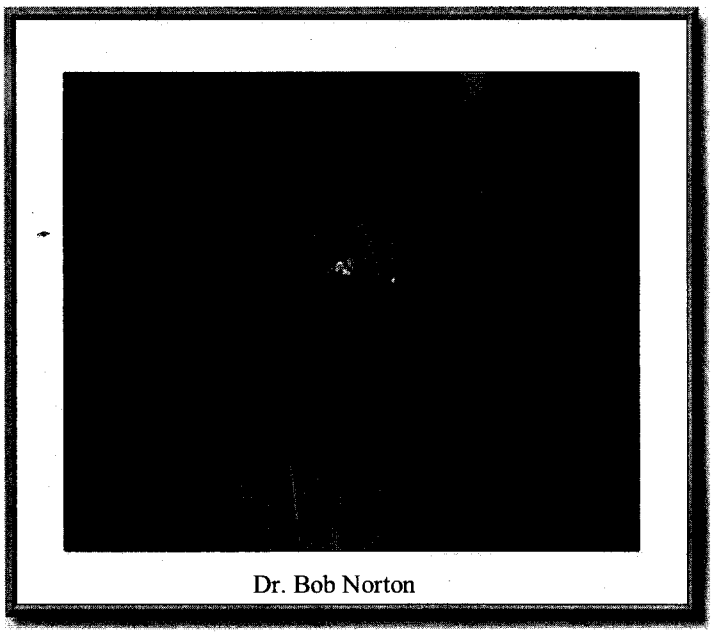
Volume 28 Winter 2008

Newsletter of the Western Cascade Fruit Society

Northern Italy Horticultural Fruit Tour
WCFS family experiences trip of a lifetime

Photos by Lorine Brakken, STFS

Dr. Bob and Carol Norton organized an experiential horticultural tour to Northern Italy with 31 WCFS members and associates. The early October itinerary included highlights of Lago Como; Lake Garda in Sirmione; Laimburg Research Center, Braun Family Orchard, Vinschgau Valley tour, Dolomite tour, San Leonardo Estate and Winery in Adige-Avio {arranged by Chris Zimmerman, of Vashon Island) all near Bolzano; Mantova in the Po River Valley, Italy's primary "breadbasket" with arrangements made by Judi Steward NOFS; Dept. of Fruit Science, University of Bologna; Consorgio Italiano Vivaisti, a nursery consortium, near Ferrara; and two nights in Venice – you can only imagine what they did there! Together with fine food, gelatos, walking tours, magnificent castles and cathedrals, glass blowers and fine lace, it was an educational introduction to the horticulture of Northern Italy that will long be remembered.



Dr. Bob Norton

WCFS tour members had a BBQ on Labor Day weekend before the tour as a chance to meet each other.

Bob and Judy Hartman; Leon and David Smith; Lois Twelves and Carl Nomura; Irene Denton and Lorine Brakken; Mark Youngs and Jack Pedigo; Judi Stewart and Wendy Wharton; Bob Norton and Harry Kirschner; Harry Miltner and Sharon Elaine; Cheryl Grunbock and Nancy Giske; Steve Vause and Carlyn Syvanen; Roger and Jean Eichman; De Arbogast and Carol Butz; Margaret and Claude Dille; Marilyn and Dick Tillbury; Lige and Kay Christian; and Lorine Brakken.

Inside:
Northern Italy Issue

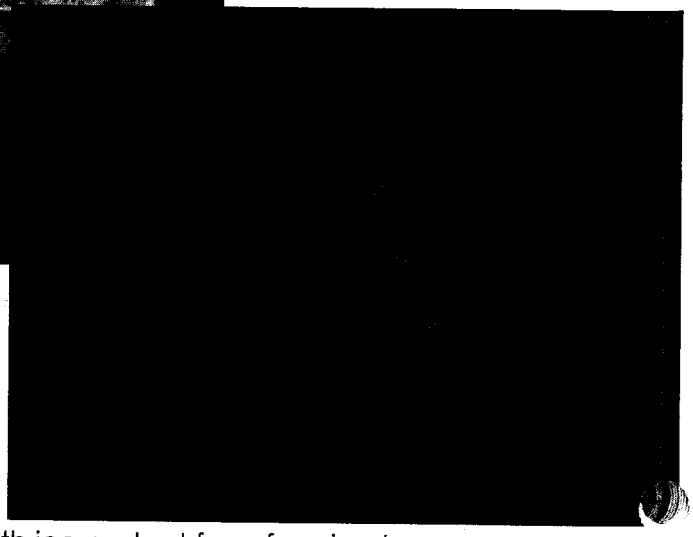
The BeeLine is a quarterly publication of Western Cascade Fruit Society, a non-profit 501(c)3 corporation in the State of Washington.

Sirmione Castle

Irene, Harry, Wendy

Roger, Lori and Marilyn

Group with Dr. Norton at Kiku Ltd.



Flower buds covered with ice protect from freezing temp.
Photo by Kurt Werth, VOG Fruit Cooperative

MESSAGE FROM OUR PRESIDENT

By Ron Weston, Vashon Island Fruit Club

This issue of The Beeline will be primarily distributed via our new and improved Western Cascade web site. Instead of sending a large cumbersome electronic file to each of our members, those who have e-mail will receive a link to our web page. For those of our members for who do not have e-mail or internet access at home, they can view and print the newsletter by visiting their local library and accessing our web site via a public computer. Some Chapters may also choose to print and distribute hard copies of The Beeline for those members without access to the internet. As I've explained in previous columns, the cost of preparing and delivering a printed newsletter to our full membership convinced the WCFS Board we needed to change to electronic distribution of The Beeline. While this is still a work in progress, I am confident that the "wrinkles" will get smoothed out. Meanwhile your patience is greatly appreciated as we climb the learning curve of how best to meet the needs of our members in a cost-effective manner.

As I write this in the waning days of the year, many of our Chapters' annual meetings are approaching with elections of new officers on their agendas. Later in the Spring, the WCFS annual meeting will also be held, with officer and director positions needing to be filled. Accordingly, the search for candidates is actively underway. The continued vitality and success of our Chapters and WCFS itself depends on the active involvement of our members in guiding our organization. The volunteers who serve on our Boards are the "energy source" that keeps us growing and improving. We are all indebted to them for stepping up and finding a way to say yes to serving. Everyone leads busy lives these days, and there are always many valid reasons to decline an invitation to serve. However, taking a more active role in your Chapter and WCFS is an immensely satisfying way to make a difference. You don't need to be a fruit-growing expert to serve on your Chapter or the WCFS Board. I hope everyone will consider becoming more directly involved in the activities of our organization, and that some of you will volunteer to become Board members.

As you read this issue of The Beeline, please take special note of the article about the recent trip to northern Italy many of our members took with Dr. Bob Norton. It is great to be able to share the highlights of their journey, and it is a reminder of what fun can be had when groups cross Chapter lines for fruit-related adventures. I am told that a trip to the 2008 apple festival on Salt Spring Island, BC is in the planning stages. While not as distant as Italy, it sounds like another wonderful opportunity to get out together and share our enthusiasm for fruit.

I hope you each have a wonderful holiday season—and may your orchards have a bountiful New Year. Thank you for your continued support.

Ron Weston

Until you value yourself, you won't value your time. Until you value your time, you will not do anything with it. – *M. Scott Peck*

The Winter 2008 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** or to Marilyn Couture at: **couture222@msn.com**

Northern Italy Tour Report

Oct 1-13, 2007 De Arbogast, WWFRF board member and Display Garden Manager

The most impressive part of the Italy tour (for me) was their method of tree training and pruning. The newly-grafted trees in the nursery are chemically treated to induce branching every 6 to 8 inches around the whip (this is called slender spindle design). Then the trees are closely spaced (3 ft down to 14" apart) and tied to espalier wires. This tree density is incredible! The branches are then tied down (below 90 degrees) to induce early fruiting.

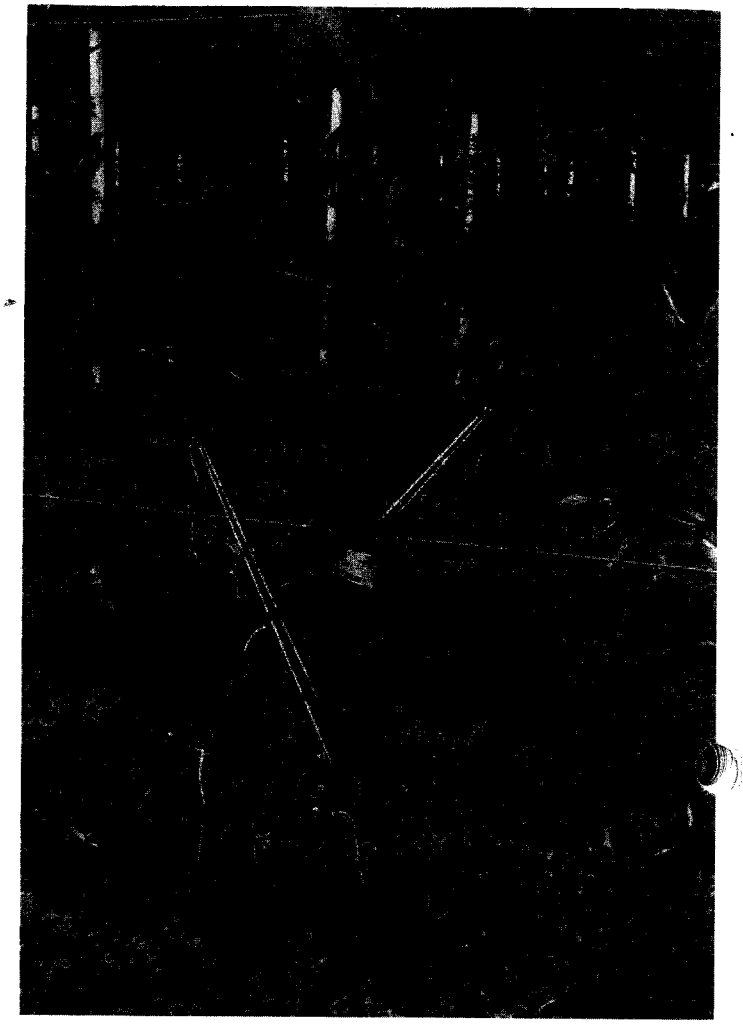
M9 is the preferred rootstock. They severely prune out all small new branches in the tree interior, encouraging fruiting only at the ends of the branches (for maximum sun exposure).

Fruit thinning is extensive (chemically at blossom and much follow-up later on). Lots of airflow, coupled with low rain and wonderful climate, produce good sized and good-colored apples. I saw no sign of scab or powdery mildew and codling moth seems well controlled. NPK fertilizer is applied as needed per soil analysis.

Most apple orchards are found in the mountainous regions of Northern Italy. There is a pocket in the middle of the Alps which provides the near perfect climate for apple growing. This area once belonged to Austria prior to World War I. The German influence is still there, with most towns named in Italian and German. Widely-spaced estates far up on the sides of mountains suggested self-sufficiency on a grand scale. Tourism supports these estates along with orchards, vineyards and dairy operations.

Top apple varieties were Golden & Red Delicious, Fuji, Pink Lady, Braeburn and Jonagold. The KIKU Fugi was the best tasting apple in my opinion.

The Laimburg Research Center (located in Vadena) was most impressive. They are part of a cooperative, closely tied to local orchard producers. Fifty percent of their funding is derived from the sale of fruit, with the remainder supplied from the Province. It's a model that really works well. The Center grows their own grapes and makes their own wine. Their wine kegs were stored under-ground in a hollowed out portion of a solid rock mountain. They use this well-appointed wine cellar as a key marketing tool in promoting the Italian wine industry.



Spindle Designed Tree

The huge sorting and packing-house operations were fully automated, requiring a minimal number of workers to function well. Efficient organization was a hallmark everywhere we visited.

The vineyard tour at San Leonardo Estate in Adige-Avio was another highlight. Their wine was excellent ($40 to $50 per bottle).

Our group was warmly received at all locations we visited. Bob & Carol Norton did a superb job organizing this tour.

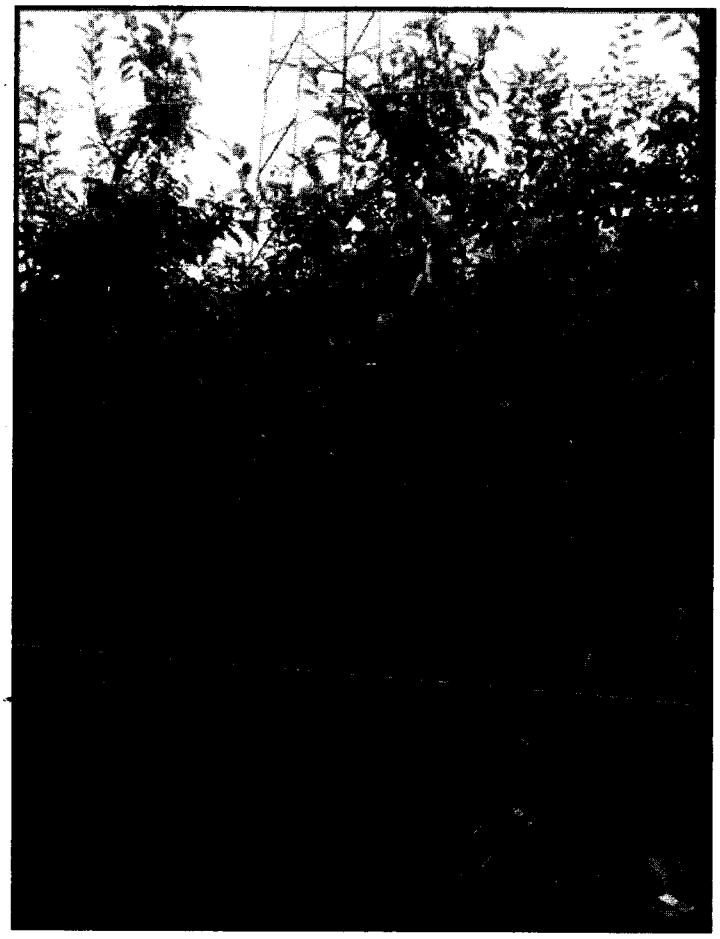
More on Spindlebush Method
By Mark Young STFS

On our October Italian horticulture tour led by Dr. Bob Norton, we were impressed that the slender spindle method is used almost exclusively for both apple and pear production. The slender spindle method, AKA Dutch spindle or spindlebush is a method that originated during the 1960s in the Netherlands. This method produces large and early yields of high quality fruit that receives maximum sunlight while being easy to care for and pick.

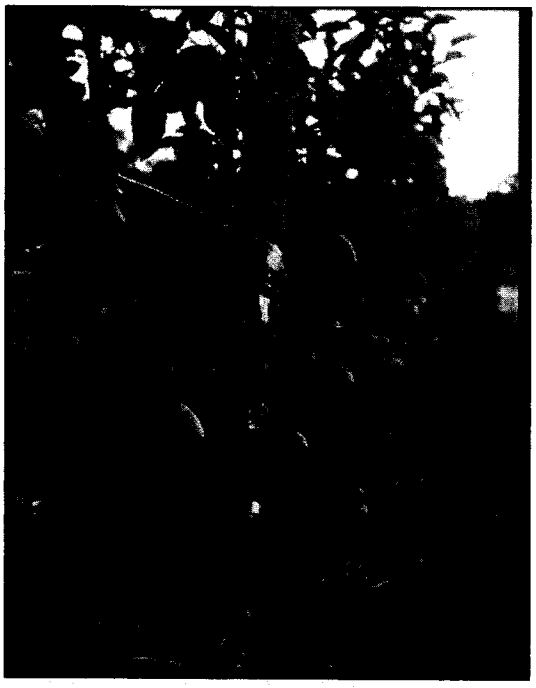
The slender spindle-type tree is a modified miniature central leader tree with many more limbs per tree. A dwarf rootstock, (M.9 T337 is preferred in Italy), is used and the central leader is maintained continuously to a maximum height of 8 to 10 feet. We saw three methods used to maintain the top, pruning, bending, and twisting. Branching begins at about two feet. All branches are tied horizontal and all lateral branches are left on the tree to optimize early production. Branches are thinned out to two permanent whorls spaced about a foot apart in the 3rd to 5th year as shading becomes a problem. Above the second whorl of branches, branches are temporary and are renewed every two to four years.

In Italy these trees are grown in trellised rows with spacing of about one meter apart. The idea is to grow small, high quality fruit producing trees, closely spaced to utilize land area. Kurt Werth, who we had the pleasure to meet with at the VOG Fruit Cooperative, says "the best way of restiricting vegetative growth is to produce apples." Therefore, it is important to encourage early cropping with this method. Another rule used is to remove branches larger than 3/4" in diameter, as large branches create large trees.

Personally, I have grown trellised trees with six to seven feet spacing for years and the idea of almost doubling the number of productive trees in the same area intrigues me. I will be experimenting with the slender spindle method in my orchard.



Spindle shaped growing technique



Spindled Kiku Apples

Italian Horticultural Labor Issues
By Jack Pedigo, STFS

One aspect of the WCFS Italy trip I wanted to focus on dealt with labor issues. At our first orchard visit I noticed a few temporary housing units and many trailers. I inquired about where the pickers came from and how was the labor issue dealt with.

According to European Union rules migrant workers must come from one of the member countries. Right now the bulk of laborers come from Rumania, Poland and Bulgaria. Most of the laborers travel to the sites (hence the large number of personal trailers), work the required period and then move on to another site or home. They are paid between 7 & 8 Euros an hour. Workers are paid hourly because the co-ops were more concerned about the quality of fruit rather than the sheer bulk. Some workers, mostly regulars and managers, are housed with the grower families. They are paid a little less to make up for room and board. I was informed getting harvesters was not a problem in this part of Europe.

Most farms in Italy are small averaging 2 Hectares (about 5 acres) and the growers usually belong to a co-op. (90%). The co-op provides services but also establish standards and rules for the growers to follow. I was told there were a small number of illegal workers mostly from N. Africa and they were used by non-co-op members. Having a force of European Union citizens meant the workers actually took part in policing out those working illegally.

At one orchard we were told the young fruit trees were heavily pruned so as to avoid labor associated with management later. At another orchard I noticed older workers picking fruit. I was told these were members of the grower's family. A lot of technology was used at the Bolzano packing plant. Trained workers operated the machines and the only unskilled labor we saw were those packing the final boxes.

In Europe, just as everywhere else, there is pressure to hire cheap, low skilled people. There is talk of getting people to do work the more affluent citizens disdain. However, there is also an understanding of what that means to the society. Since the government is more socialistic in nature taxes are higher in order to lessen the poverty level and spread the wealth. There is also a desire to bring up the economy of the poorer EU nations.

People pay a higher percentage of their income on food and so expect better quality. In some ways Europeans are more savvy about labor issues than we are. Population densities are much higher in Europe than here so additional growth issues are better understood. Also, having smaller farms helps to control migrant labor issues.

An expanded article on Italian Labor Issues was submitted by Jack Pedigo to The Urban Scion Post (Seattle Tree Fruit Chapter).

Laborers on Apple picking tractor

WCFS NEW MEMBERS

Olympic Orchard Society
Robert Veerland
Rick & Sandy Shadforth

Peninsula Fruit Club
Mike Bowlus
Lisa Gregg
Tim & Shannon Lunsford
Donald Rongholt
Ross & Sharon Smith

Seattle Tree Fruit Society
Charterrmember
Marlene Falkenbury

Mike Donahue

South Sound
Judy & Dwight Caron
Diane & Michael Froslie
Mildred Lund
Carolyn Trefts
Deb Welt

Lori Brakken, Photographer

Vashon Island Fruit Society
Gar & Nina LaSalle
Sue Ellen Staggs
Jeanne Ernst
James McBride
Nancy Miracle
Charlie Pieterick
Marcie Rubardt
Joyce Eide
Norine Grace
Bernie O'Malley
Wendy Wharton
Judy Olson
Rita Brogan
Tom Conway
Dennis Priebe
Shuqing Zhou
Richard Jones
Nancy Olszewski
Emma Newby-Letestu
Marty Liebowitz
Maggie Asplund
Barbara Wells
Gene Amondson

LETTER FROM THE EDITORS

Marilyn Couture and Carlyn Syvanen

Buon Giormo This BeeLine issue focuses on the European Tour. Most photos were taken by Lori Brakken. Co-Editor Carlyn Syvanen is wintering in Guatemala and Mexico. I am in Maui house-sitting on a twelve acre Protea, Lavender and Tree Farm. Given the focus of this issue and where we are wintering, this Issue tends to have an international flavor.

The BeeLine will be posted electronically onto our new website: http://74.86.63.134/ Note: This will soon be converted to a WCFS name instead of just a number. Site administrator Patti Gotz will be letting us know what name and password to use when we sign in as members. Chapter News will be posted on the website.

The BeeLine is our vehicle for communicating with each other. Let us keep it interesting and timely. Send in your articles and news by February 15, 2008 for the Spring edition.

Mele Kalikimaka, Feliz Navidad, and Caio, Marilyn Couture

MAD SCIENTIST

Roger Eichmann, North Olympic Fruit Society

We survived the trip to Italy despite the prices and vittals. It was educational.

Because the English "florists" are second (though they will never admit it) only to the Dutch, one would think and I was hoping, some of the European floral plant breeding would filter down to the European fruit breeding. Alas, no such luck. At the Bozano Research Station, the $8 million annual budget had $0 in it for selfing. I was even informed that due to a "S" gene, it could not be done with apples. That may be true for some apples but others are self fruitful and most are at least partly.

We later had a day at the University of Bolognia with their fruit researchers but it was just a tourism song and dance presentation about what Italy was growing. I did get in one question: Is the red color in pears a single gene trait? It seems they had just given a doctorate for a paper saying, yes. Well DUH! Any spontaneous mutation or sport almost has to be only a single gene trait. I never did get in the next question: If red is a single gene, what is two genes? Could it be purple or is it cidal or lethal? Is that worth another doctorate? Talk about a cheap doctorate!

I was and am interested in induced tetraploidy and as we were leaving, the head of the division told me in absolute and no uncertain terms to "forget it". "It is a total waste of time as they had done it once ONCE and the plant was no good". That is similar to planting one seed and never doing it again because it didn't grow into ones dreams. Follow that and one would never have a child. Another way to say it is; they can't so it can't be done and they don't want any one to show them up. Guess they never ran into an Eichman before.

What I did learn is that no one is doing fruit breeding the way florists breed flowers or by developing homozygous traits nor are they doing any of the more simple genetic engineering and forced breeding or crossings. In a way it is sad but in another, it is just what I wanted to learn.

ANYTHING I do is an open field with no competition! The "Big Boys" don't seem to know what they are doing nor will they teach proper breeding, so if you will just plant selfed seeds, you should be able to dance circles around them. That will free me up to develop crosses such as a cherry X peach, etc.

The new catalogs are arriving and there is a Kreibich Nectarine that looks very interesting. It is resistant to peach leaf curl so it should work in this area. Both Burnt Ridge and One Green World list it, as will as several other varieties of curl resistant peaches.

Burnt Ridge	One Green World
432 Burnt Ridge Rd.	28696 S. Cramer Rd.
Onalaska, Wa.	Molalla, Or.
98570	97038
Ph # 360-985-2873	Ph. # 877-353-4028

Dr Roger Eichman

AIM FOR BIG CTOP IN THE SECOND LEAF

Geraldine Warner, Good Fruit Grower, March 15, 2005, Edited by Marilyn Couture OOS

WSU recommends Italian Growers' formula:

Apple growers should raise their expectations of how big a crop they can get in the second leaf, per WSU horticulturist, Dr. Bruce Barritt.

He conducted a global apple study with agricultural economist Jim DuBruille that showed that apple growers in Italy get higher early yields, which improves their overall profitability. Typically, their cumulative yields during a planting's first five years are 50 bins higher than from new orchards in Washington State.

One way to accomplish this is by planting a higher quality nursery tree. Italian growers plant two-year-old knip trees with 10-15 branches, wheras most Washington growers plant one-year-old trees with 5 to 8 feathers.

A knip tree starts out as a bench graft or sleeping eye planted in the nursery in the spring. After one growing season in the nursery, the trees are cut back to about 2 to 2.5 feet above the ground. The top shoot is encouraged to grow, and the other shoots are removed during the following season. All branches are produced on the new shoot.

A one-year-old tree starts out as a rootstock that is budded in the nursery with the scion in the summer. The tree is dug the following year. Branches tend to be lower to the ground and might have to be cut off after the tree is planted.

There has been dramatic change in growers' practices from 25 years ago. Growers were planting large, freestanding trees on semivigorous rootstocks at densities of around 415 trees per acre, and were doing extensive pruning and training. Today they are growing smaller trees on Malling 9 or M.26 rootstocks. The trees are supported and are planted at densities of up to 1,000 trees per acre. Growers are doing less pruning.

In the South Tyrol in 1980, growers were growing small, slender spindle trees on M.9 rootstocks, at a density of about 838 trees per acre and were doing extensive pruning and training. The trees were about seven feet tall.

Today, they are planting 1,500 trees per acre and letting the trees grow 11 feet tall. They do minimal pruning, but extensive training. The trees have open tops and a sawtooth profile that allows good light distribution all the way down to the bottom of the tree. Their average yield is 17 bins per acre in the second leaf and 56 bins from year four onwards. Second-leaf yields in Washington are only typically 6 bins per acre, the global apple study showed.

An orchard system is made up of several components: tree arrangement, tree support, rootstock, tree quality, tree density, and tree training and pruning.

Five principles used to select the components:

**Greater light interception results in higher yields.*

**Improved light distribution results in better fruit quality.*

**Pruning delays and reduces fruiting and increases tree growth.*

**Training limbs below horizontal reduces growth and might increase fruiting.*

**Reducing apical dominance leads to branching.*

Higher yields in Italian orchards can only partly be explained by higher tree density. Higher quality trees result in higher yields. When Italian growers purchase trees they demand that they be large, well-branched trees. They have a high expectation of the quality of the tree. When they plant it, they want to take the vigor out of it right away, and they tie all the branches down in the year of planting. At the end of the first growing season, all of the branches are tied down. There's no extension growth and lots of fruiting spurs.

Pear Butter By Del Simpson, OOS

2.5 pounds whole pears makes 6 cups chopped peeled pears
3/4 Cups Sugar
1-1/2 Tsp. Ground Cardamom
2 Tsp. Minced Peeled Fresh Ginger
3 Tsp. Fresh Lemon Juice
1/2 Tsp. Salt
Blend pears in a food processor until smooth. Combine ingredients in a sauce pan over med. heat. Cook 3 hours or until mixture is thick. Yields 2 cups. (Serving size 1 Tbs.)

Western Cascade Fruit Society's 2007 Gelato Tour on DVD

Tour northern Italy with members and friends of WCFS. Send for your narrated, full-color 60-minute DVD audio tour and relive the trip.

Follow the full tour as Dr. Bob Norton leads the group through the orchards and vineyards of Italy's fruit growing region.

Send a check for $13 for the first DVD and $11 for any additional copies. These make great gifts for friends and family. Mail your check to:

Judi Stewart, 1170 Beckett Point, Port Townsend, WA 98368

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

Varroa mite arrives in Hawaii

Edited by Marilyn Couture, Olympic Orchard Society

Dr. Michael Kliks, medical entomologist and author of dozens of authoritative publications in entomology, founded the Manoa Honey Co. 17 years ago. His products include Beekeeper's Reserve, dark and packed with antioxidants, and collateral operations of breeding bees and selling hives. His enterprise is projected to have gross sales of $200,000 in 2007.

Kliks' own colonies contain an estimated 60 million bees and are spread out all over Oahu. On a maintenance visit April 6, Kliks discovered the Hawaii arrival of a honey bee's deadly enemy, the Varroa mite. He found it on a pupa in the hive and immediately notified the state Department of Agriculture.

First documented in Japan and Russia in the 1960s, Varroa mites feed on the blood of honey bees and cause deformities in emerging bees. They can also be carriers of Israeli acute paralysis virus now believed to have caused the Colony Collapse Disorder (CCD) that has destroyed most of the wild beehives on the mainland.

Since that first identification, Hawaii Beekeepers' Assn. has identified mites in most hives in three areas of Oahu, including the acreage that Kliks leases. "Those Nanikuli colonies are all dead. All the lease rent, money on treatments, labor, transportation, building the colonies, hardware and software – a total loss," says Kliks.

Kliks began working on a plan for Varroa control immediately after finding the first mite. He collected and distributed masses of supportive research and data to the apiarian and agricultural communities. One of his most impressive documents is a 10-page overview of his estimates of the costs of "living with Varroa." Direct and indirect costs, he says, will run $200-$300 million in the first decade of the mites' spread through Hawaii. Kliks is a strong advocate of containment and even eradication -- encouraging the governor to declare an emergency and to mobilize the National Guard as a means to destroy infected hives.

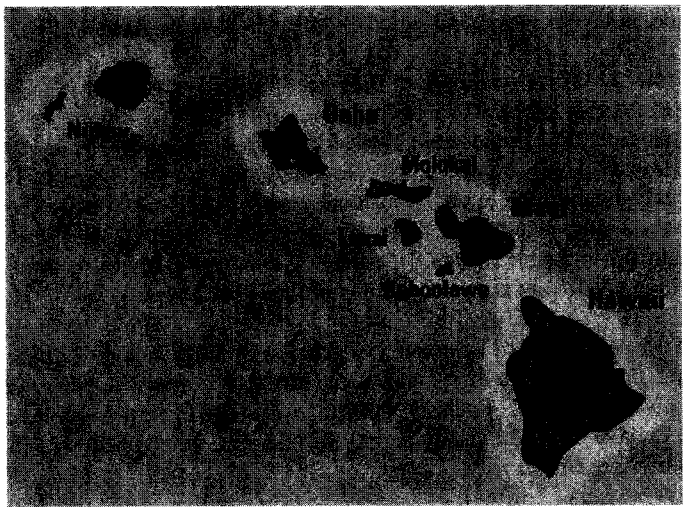
He has made the Varroa mite his foe in a desperate battle. As Oahu's feral colonies continue to disappear,

He has made the Varroa mite his foe in a desperate battle. As Oahu's feral colonies continue to disappear, Kliks believes there simply won't be enough bees to pollinate crops on the island. He projects that around April or May next year, Oahu's big farmers will rush to the beekeepers for pollination services. With 2000 acres of pollinator-dependent agriculture on Oahu, they will need an average two hives per acre: 4,000 strong colonies to replace the 10,000 feral colonies that have died. "I don't think anybody, other than a few of us beekeepers, has any idea how expensive and difficult it will be to go from 350 to 4,000 colonies in six months."

Importing bees from the mainland is prohibited by law; not even used equipment may be shipped to Hawaii. Klicks is doing everything he can to pump up his own bees, but he knows it won't be enough. Managing 4,000 colonies is a job for at least 15 trained beekeepers, he says. "We have five."

On September 11, the USDA announced a $4 million allocation in the 2008 budget for a four-year project to research the health and protection of honey bees. Nine days later, Hawaii's congressional delegation sent a letter to Churck Conner, the USDA's acting Secretary of Agriculture, asking for urgent action to address the Varroa mite in the islands.

Article based on Meet a true bee-liever by Caroline Wright, Agriculture Hawaii, Oct.-Dec, 2007.



How to choose a fertilizer—Feed the soil not the plant

by Debbie Natelson

Accompanying the recent boom in demand for organic food is the increased interest in organic fertilizer. All organic fertilizers are not created equal. So let's look at some of the differences are and what they mean to your plants? In order to understand and appreciate some of these differences, we first need to pose the question, why do we fertilize? If you think about the name "fertilizer," it will give you more of a clue about what the fertilizer should be doing and how it accomplishes these goals.

Probably the biggest confusion about fertilizers concerns what it is we are trying to make more fertile? Surprisingly, it's not the plants. We leave that to the birds and the bees. Instead, at least if we want to create a more effective and sustainable system, we fertilize in order to improve the SOIL. And thereby give credence to the adage, *Feed the Soil, not the plant.*

Soil Fertility defined
According to Wikipedia, (oracle of our new web-based century).
Fertility is defined as soil

- rich in nutrients and "in balance"
- containing sufficient trace minerals
- with a good compliment of microorganisms – biology
- at a moderate pH between 5.5 - 7

high in organic matter

What is unique about these 5 distinct qualities, is the inter-relationship and interdependence between them. Each element is greatly affected by the other and all heavily influenced by the fertilizer applied. When you have the right fertilizer, it addresses all of these needs. Conversely, the wrong fertilizer will greatly limit these qualities and thus the taste and productivity of your fruit crops.

Plant Nutrition through Soil Nutrients: Sustainability and Bioavailability

Chemical quick-release can give a nutritional boost, but a short lived one that must be constantly replenished. The right fertilizer choice will continually sustain plants by encouraging soil life and decomposition that constantly provide food sources. We call this nutrient cycling— an important benefit of a good organic fertilizer.

How do plants get the food they need? There are many nutrients that exist in the soil, but they are not in a form readily available. The availability of nutrients to plants, (bio-availability) is in fact, brokered largely by the micro-organisms that live in the soil. The more soil life, the more options there are for feeding. Plants swap the starches and sugars that they produce through photosynthesis with the minerals and nutrients the soil microbes produce though decomposition of organic matter and nitrogen-fixation .

Nitrogen, regarded as one of the greatest limiting factors for plants is actually not a mineral but a nutrient that is made available by microbial actions. To sustain plants, especially fruit, it is important to have a slow and steady supply of nitrogen, as opposed to a fast burning source.

Too much fertilizer, or in particular too much nitrogen results in excessive vegetative growth and reduces reproductive growth, which is what you need to maintain large fruit yields. Too much nitrogen also affects the quality of the fruit. For example, in apples, too much nitrogen will result in soft fruit; in grapes, it will delay ripening.

One of the greatest differences between organic fertilizers is based on the source of nitrogen. The cheapest most readily available organic fertilizers are those that are chicken-litter based manure. As far as organic slow release fertilizers go, it is the fastest burning and results in more spikes. Conversely, it is slower to adhere to plant surfaces and may wash off more easily.

Feather Meal

In contrast, Hendrikus Organics fertilizers use feather meal as their main source of slow release nitrogen. Feather meal is approximately 12% nitrogen, derived from a protein called keratin, which occurs in hair, hoofs, horns and feathers. It does not break down easily, and is therefore an **excellent long-term, slow release source of nitrogen**. In addition to supplying nitrogen, feather meal **promotes decomposition in the soil, helps the soil to form colloids, and structures soils by the production of glues.**

Feather meal however, is much more expensive to produce. There is only one plant on the west coast that can properly pelletize and granulate the feather meal so it can be easily mixed and applied. Furthermore, due to increased prices of corn meal which could be used for fuel production, feather meal is now being considered as an alternative feed stock, thus increasing demand and price competition for this ingredient.

Trace minerals

Plants cannot thrive on NPK alone. They need a whole slew of micro and macro nutrients such as Calcium, Magnesium, Manganese, Boron, Copper, Chlorine, and Sulfur. These nutrients play a very specific function in metabolism and plant health. While your plants may only need a small or "trace" amount of these nutrients, getting access to them is the difference between just growing fruit and having fruit that is nutritionally balanced and full of flavor. Calcium is essential to all plants and in particular, acid loving fruits such as blueberries. The importance of calcium to fruit production can not be overestimated. Bruising in apples will be affected by lack of calcium.

Fish Bone Meal

All water soluble nutrients in the soil eventually end up in the sea. Consequently, the salt water fish that live in this enriched environment become a repository of many of the macro and micro-nutrients needed by plants. Meal made from fish bones provides a steady source of nitrogen, as well as a highly available form of phosphorous and trace minerals such as calcium.

Because the nutrients are derived from the bones (and not meat

waste), **fish bone meal provides one of the highest sources of calcium.** Soils in the Pacific NW are typically low in calcium due to the leaching effects of heavy rainfall so fish bone meal provides an excellent source to replenish this vital trace mineral.

Steamed Bone Meal

Bone meal is the bones of cattle that have been steamed for hours to remove the fat and protein. It is an excellent source of **phosphorous and calcium.** Bone meal also helps **reduce leaching of fertilizers in soils** and is very environmentally friendly with its **extremely low level of heavy metals.**

Soil Biology and maintaining pH

One of the biggest problems with synthetic quick-release fertilizer is how it affects soil biology, mainly through changes in soil chemistry. Synthetic fertilizers derive their nitrogen through either ammonium sulfate or ammonium nitrate. These are known chemically as salts (acid-base salts, not sodium type salts). As these salts build up in your soil, they decrease soil pH which means the soil has been acidified. Soil microbes have a narrow band where they like to live. If the soil becomes too acidic, it drives the life out of the soil. Without sufficient soil life, soil lacks the ability to provide nutrients to plants and to maintain porosity and soil structure. **Your choice in fertilizer will have a big impact on soil chemistry**. Lowering the pH will increase aluminum ions, which can be toxic to grapevines and stunts the roots.

Alfalfa Meal

The Alfalfa meal in our product has a very high nutritional quality: It is 16% to 25% crude protein. Alfalfa Meal is not only a good source of nitrogen that is nicely balanced with phosphorous and potassium, its carbohydrates, protein, vitamins, minerals, enzymes, amino acids and growth hormone make it an excellent soil conditioner that encourages and supports microbial activity in the soil that in turn provide essential nutrients to plant materials.

minerals: Nitrogen, Phosphorus, Potassium, Calcium, Magnesium, Sulphur, Manganese, Iron, Boron, Copper, Zinc, Sodium, Chlorine Cobalt, Molybdenum

trace elements: Nickel, Lead, Strontium and Palladium.

Enzymes: lipase, amylase, coagulase, emulsion, invertase, pectinase and protease, and 18 amino acids.

growth hormone: Triacontanol

Cottonseed Meal (in the OrganoBloom for acid-loving plants) is a superior source of nitrogen, phosphorus, potash and many minor plant food elements. It is a natural source of protein (41% protein level). Its high content of organic matter improves soil texture by loosening tight heavy soils, and reduces water costs by helping light sandy soils hold moisture and nutrients. It is safe to use in liberal amounts without danger of burning plant materials. We include many beneficial microbes (in spore form) in our fertilizer blends. The following are some examples of what these microbes do...

Soil Microbes

Under natural conditions, a tablespoon of soil can contain over a billion micro-organisms, most of which are beneficial. However, the soil found in most residential landscapes is devoid of any soil life. This is due to a combination of construction and cultural practices such as compaction, chemical treatment with pesticides and synthetic fertilizers, and the fanatical removal of any organic matter such as leaves and grass clippings. Lifeless soil can not support healthy plants. Beneficial soil microbes are comprised of bacteria, myccorhizae, and other fungi. They perform vital functions that help nourish plants, fight pests and diseases; resist environmental stresses such as drought, and increase soil tilth. Our fertilizers contain a great number and diversity of beneficial microbes.

For example, the Azerbacters are capable of pulling Nitrogen out of the air and fixing it to a form usable by plants. Others such as Streptomyces assist in breakdown of micro-organisms which then provides a source of energy, food, and protein

Mycorrhizae, the King Daddy of beneficial microorganisms assists in making more nutrients available and reducing the need for more water. It develops strands of filaments – hyphae—with increase in surface area, greatly maximize root surface area sites for feeding and miles of area to take up water. Mycorrhizae also decrease transplant shock and drought stress.

Fungi such as Trichoderma decrease the presence of soil pathogens, thereby decreasing the need for fungicides and pesticides.

While organic slow-release fertilizer is intended to increase soil tilth and fertility, is ultimately has many benefits for your plants. Consider what should your fertilizer should do for your plants? At a very minimum, it should

- Increase size and vigor
- Increase resistance to pests and diseases
- Increase crop yields
- Increase flavor
- Decrease need for water [supplemental irrigation]
- Decrease the need for pesticides

Decrease bruising of fruit

If you are not currently getting these results, it time to switch to another product.

Desert King Fig with Hendrikus Organic Fertilizer

Note: Debbie Natelson of Hendrikus Organic Fertilizer was invited and encouraged to write an article on this product after speaking to OOS membership at the invitation of Erik Simpson. OOS members have been using this product with incredibly positive results in only one season. Wanda Horst, OOS, is the Sequim distributor. For information contact: earthcpr@olypen.com

Marilyn Couture, Co-Editor

Owens Square Graft
Erik Simpson, OOS

About five years ago Mike Owens, who was an active member with our OOS, shared his square graft with us which he successfully developed using an inexpensive anvil or rose pruner. The simplicity of the Owens Square Graft made it successfully in our school grafting program and can be learned by almost anyone with little or no experience grafting. Also there is less of chance of getting cut.

The Owens Square Graft
By Erik Simpson

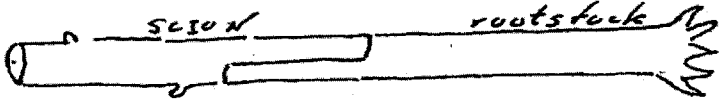
The advantage to this grafting technique is: (1) It can be done with an inexpensive rose anvil pruner, (2) It can be learned with only a few practice grafts, (3) It can be done in the classroom where knives are not allowed, and (4) There is less chance of getting cut.

This graft is similar to the whip graft only with a longer square cut. The Owens square graft can be attached to a rootstock or used for top working. Note: The scion and rootstock should ideally both be about ¼ inch in diameter.

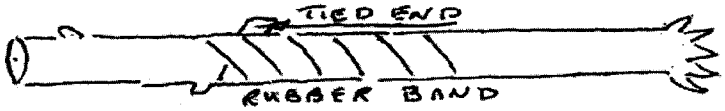
Step 1. Cut rootstock with a square pattern with 1"to 2" between nodes. Then mark and cut the scion in a matching square pattern as shown. Longer cuts are not always straight.

Note: You can cut a smaller cross section if the scion and rootstock are different sizes.

Step 2. Fit the two pieces tightly together and alien the cambium on both sides as shown.

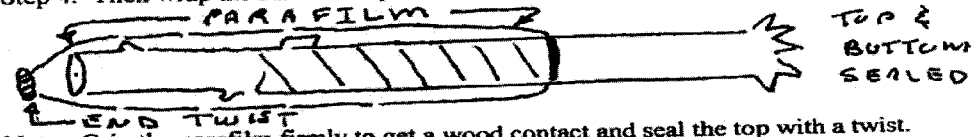


Step 3. Tightly wrap with a wide rubber band and seal the top with a twist as shown.



Note: Can use a clothespin to hold the two wood pieces together when wrapping.

Step 4. Then wrap the scion with parafilm that is first stretched as shown.



Note: Grip the parafilm firmly to get a wood contact and seal the top with a twist.

Step 5. If possible, put in a moist plastic bag and keep in a warm location of 70 to 80 F. for 7 to 10 days. Then plant and put in a sunny window until the bud leaves are out. Then put outside if the day temperatures are above 50 F. and not freezing at night.

WCFS

Board Meeting Highlights

The September 15, 2007 board meeting was held at Silverdale Fire Station

President Ron brought the meeting to order at 10:10 am.

Board members present were: Olympic Orchard Society, Steve Vause, Erik Simpson, Del Simpson, Marilyn Couture, Carlyn Syvanen, Patti Gotz; North Olympic Fruit Club, Dan Ackermanl, Roger Eichman, Bob Hickman; Seattle Tree Fruit Society, Patti Gotz; Tahoma Fruit Club, Bill Horn; Vashon Island Fruit Club, Ron Weston, Ron Watts; Peninsula Fruit Club, Jean Williams, Mike Shannon, George Moergeli; and South Sound Fruit Society, Loretta Murphy, Philip Vogel.

Guests in attendance were Judi Stewart NOFC who was given the proxy from Pres. Paul Donaldson, Piper Orchards; Kristan Johnson, WWFRF; Mel Armstrong, Linda Macreag, Ray Etheridge, and Sharon Etheridge, Peninsula; John Reardon and Linda Sartnurak, STFS.

President Ron gave a summary of the financial report submitted by Hildegard.

New Website and BeeLine

After research, analysis, and Board discussion it was proposed and accepted to select Carolyn E. Cooper Communications to develop the new WCFS website. Erik moved and Bob seconded that a $500 ceiling be approved for the work done by Carolyn. Patti Gotz volunteered to be the web administrator. The Geocities website will remain in place concurrently for awhile. The new site will contain Chapter News and Members Only section that is password protected with a single username and password. The BeeLine will be accessed by Members Only. Each chapter is responsible for getting the BeeLine to its members who do not have a computer or who want the hard copy.

Kristan Johnson, President of Western Washington Fruit Research Foundation (WFRF), was invited to speak on the foundation. He distributed a pamphlet entitled "Fruit Research Support". Kristan explained that fruit research donations sent via WWFRF all goe to fruit research without any loss to "overhead" expenses. In fact, donations are typically doubled (or more) due to the additions of matching funds from organizations like National Agricultural Research Forum (NARF).

Kristan explained that Gary Moulton and Jack King, Mt. Vernon Research and Extension Un prepare a "wish list" of projects along with the anticipated costs. This list is referred to a board c review and based on last year's income the boar comes up with a final figure. He pointed out thc the area of fruit tree cultivation at Mt. Vernon hc been reduced from seven and half to two and hc acres. Right now hey are looking at a shortfall thc could mean Jackie King's position will lose suppor WWFRF now has a professional money raiser to hel obtain funds from various sources.

Judi will discuss the Ron Schaevitz memori project (Piper Chapter) with the Seattle Parl Foundation.

Ron said that IRS rules for non-profits relating t the supervision of subordinate groups applies to th relationship between WCFS and its chapters. Apa from the requirement that each chapter submit c audit of their annual finances, there should b some minimum requirements specified. It wc proposed that WCFS have on file a current set c By-Laws for each chapter. Erik suggested thc each chapter should have a set of By-Law consistent with WCFS By-Laws. Ron will outlin some guidelines for the Chapters.

The next meeting will be Sat. Jan. 12, from 10an 12 noon at the organic farm on Evergreen Stat College, 2712 Lewis Road, Olympia. Loretta hc arranged this meeting. George Moergeli, Secty.

Judi tastes wine at San Leonardo Estate and Winery

WCFS

CHAPTER NEWS

Olympic Orchard Society - October Fruit Tasting Event was a success, thanks to **Erik Simpson's** efforts. A "Fruit Tasting and Quality Evaluation" rating sheet enabled tasters to judge the fruit on a scale of 1-5 (5 = best) on the basis of Judge Scale, Variety/Rootstock, Taste, Texture, Colors, and Appearance. The "Best" were Goodland, Early McIntosh, and Mollies Delicious. Those rated "Very Good" included Ginger Gold, Melrose, Spokane Beauty, Tompkin's King and Orcas Pear. "Good" were Akane, Black Amish, Cortland, Early Fuji, Liberty, Red Belle de Boskoop, Red Jonagold, Red Rome, Royal Gala, Spencer, Wynoochie Early, and 20th Century Pear.

In November member, **Lowell Wickersham** spoke on wine production using grapes, fruits and other plants. His overview also spoke to the fact that "growing degree days" (wherein the average daily temperature is above 50 degrees persists during critical growth periods) are lacking and pose the biggest challenge for ripening grapes on the Olympic Peninsula. Grapes did not ripen this year in our area! Weather turned cool too early.

The annual potluck Christmas Party was held at St. Andrews Episcopal Church in Port Angeles. Turkey and Ham were donated by members. There were door prizes and a raffle on items and plants donated by Club members.

We have a Refreshment Coordinator, **Martha Bell,** to remind members who sign up for refreshments. She's the custodian of the coffee maker and supply box. Thank you Martha.

The OOS Club Library is up and functioning with books, card catalog and guidelines for easy check out.

Peninsula Fruit Club had a fun and very busy quarter. We had our annual picnic on September 16 on the beach at **Carol Michel's** enchanting old homestead. The rain stopped just as we arrived, and we enjoyed a tour of the old farmhouse complete with it's own hydroelectric plant and also a tour of the dozens of fruit and nut trees that Carol's father-in-law planted many years ago.

On October 6, two carloads of us attended Sample the Harvest Day and the Espalier Symposium in Mt. Vernon. We came home with loads of good information on espaliers and bags and bags of fruit.

The very next day Peninsula had a booth at the Bainbridge Harvest Fair. It rained, but we had fun answering lots of fruit questions and chatting with the fair .

Several of us attended the Home Orchard Society All About Fruit Show October 13. Portland was plagued with poor weather this summer too, so there was less fruit on display than last year. However, there were still hundreds of varieties to taste.

October 14, we held our own Fall Fruit Show with good displays from our own members and a few fruits from Mt. Vernon. On October 27, Peninsula helped out at Vashon Island Fruit Club's Fall Fruit Show by setting up a table with lots of information about pests and diseases. We enjoyed getting to know more of their members and, of course, answering questions.

At our November meeting, **Bob Hartman** of Hartman's Fruit Tree Nursery gave a great presentation on selecting fruit trees for backyard growers with tips on rootstock and variety selection, pollination, planting, and pruning. We are looking forward to next year and our grafting classes in the schools and Spring Grafting Show.

The Vashon Island Fruit Club had a mini fruit show at its September 18th Quarterly meeting. Early ripening fruits were brought in by members for exhibit, discussion, and tasting. **Dr. Bob Norton** demonstrated how to determine apple ripeness using such techniques as an iodine solution to show starch content and a refractometer to measure sugar content. A New Zealand Jazz apple from the local grocery store was tested for firmness, sugar content, juiciness, and taste.

The club held its annual Fall Fruit Festival, open to the public, on October 27th. This year, it was held at the Firefighters' Association Building close to the center of downtown Vashon, which helped attract people who might otherwise have missed the event. Despite it being a poor year across the island for crop yield, members were still able to bring in dozens of samples of local apples, pears, and other fruit for examination and later tasting. The show included a fruit identification table (manned by **Bob Norton** and **Al Watts**), an exhibit on Mason bees (**Harry Kirschner**), and a pest/disease control table (volunteers from the Penisula Fruit Club). Delicious

(Club News continued from page 16)

baked goods, such as apple crisp, and some fruit (the excellent Italian Fetel pear) were on sale, and Diana and Fred Constant of Vashon's Sleeping Eye Nursery were on hand to answer questions about their stock and sell trees.

Club members also hosted two fall cider pressings, one on September 16th at **Bob Norton's** home and another on October 13th at **Jeff and Claire Bronson's** home. These events allowed members to turn a part of their apple crop that might otherwise have been wasted into tasty cider.

November 10th, the club held a workshop on pollination. Our local expert, **Dr. Elizabeth Vogt**, gave us a primer on insects to help sort out the characteristics of all those crawly, buzzy things working hard in our orchards and gardens. Then **Harry Kirschner** focused on the care and habits of mason bees. He ended by graciously donating a dozen or so wooden blocks already stocked with mason bees to members of the audience.

The Club will hold its annual meeting on January 15th at Courthouse Square on Vashon to elect new officers and consider changes to its By Laws. The evening's Program will also include a discussion of winter orchard tasks presented by **Dr. Bob Norton**. On January 19th our first workshop of the year will be a session on winter pruning of older trees. Members of other Western Cascade Chapters are always welcome at our events. If interested in attending, please contact **Ms. Mary Ornstead** at 206-463-0565.

PEACH-HUCKLEBERRY LATTICE Pie Del Simpson OOS

5 Cups 1-inch slices peaches (about 5 medium peaches)
½ cup huckleberries
¾ cup sugar
4 tablespoons all-purpose flour
½ teaspoon ground cinnamon
Pastry for double-crust pie

Prepare and roll out pie crust. Heat the oven to 400 degrees F. Line a 9-inch pie plate with half of the pastry. Trim to ½ inch beyond edge of pie plate. Cut remaining pastry into ½ inch wide strips. Set aside. Toss the peaches, huckleberries, sugar, flour, and cinnamon together in a large bowl. Pour the filling into the prepared pie pan. Turn fruit filling into pastry-lined pie plate. Cut remaining pastry into ½ inch wide strips. Weave strips atop filling to make lattice crust; flute edge. Fold the bottom crust over the lattice strips and crimp together. Chill for 10 minutes. Bake until fruit is bubbling and crust is golden brown – 50 to 55 minutes. Blueberries can be substituted for the huckleberries by adding a little less sugar.

WCFS OFFICERS AND BOARD MEMBERS

Officers

President	Ron Weston ronweston@centurytel.net
Vice President	Bob Ferguson fergusonbh@msn.com
Secretary	George Moergeli magicoho@centruytel.net
Treasurer	Hildegard Hendrickson hildegar@seattleu.edu

Directors

2008	Carolina Nurik carolinanurik@comcast.net
	Del Simpson orchards@olypen.com
	Al Watts appleydfrm@aol.com
2009	Roger Eichman eichmanrogerdr@webtv.net
	Jean Williams fhe@hurricane.net
	Phil Vogel vogwest@comcast.net
2010	Erik Simpson orchards@olypen.com
	Bob Hickman hickmans@tscnet.com
	Patty Gotz plsgotz@comcast.net

Chapter Presidents

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

BILBERRY – BLUEBERRY – HUCKLEBERRY WHORTLEBERRY – HURTLEBERRY – FARKLEBERRY ?

David A. Conley, Anacortes, WCFS

There is much confusion and sometimes argument about the application of the common names listed above. Here in the Pacific Northwest we have been told that the wild Blue Berries that grow in the hills and Mountains are Huckleberries and not related to Blueberries. The Wild Plant Books, written by experts say that all the wild Berries in this area, that we call Huckleberries are of the same Genus as the Blueberries. Even the red berries that we call Red Huckleberries belong to the *vaccinium* family. Cranberries and Lingonberries are also *vaccinium.*

The Bilberry that grows in northern Europe, *vaccinium myrtillus* is a wild Blueberry. It has the highest amount of Antioxidants of any Blueberry.

The Lingonberry, or Mountain Cranberry is *vaccinium vitis-idaea*

Most commercial and home grown Blueberries are either *vaccinium ashei* (Rabbit Eye) or *vaccinium corymbosum* (High Bush) or are hybrids of these. The latter is native to Quebec to Nova Scotia, south to Georgia, west to Alabama, north to Wisconsin.

FUNK AND WAGALLS Dictionary defines the following:

BILBERRY, the European Whortleberry

WHORTLEBERRY, A European variety of Blueberry, *(vacciniun myrtillus)*

BLUEBERRY, A many seeded, edible, blue or black American berry of the genus *vaccinium.*

HUCKLEBERRY, The edible, black or dark blue species heath genus *gaylussacia,* often Confused with the Blueberry.

HURTLEBERRY, Huckleberry.

FARKLEBERRY, *vaccinium arborem,* A tree sized Blueberry native to the southeastern North American sand hills and woodlands. It can grow 10 to 20 feet tall with non juicy blueberries, (ref: Forest Farm Catalog)

WEBSTER'S NINTH, NEW COLLEGIATE DICTIONARY (1988) defines:

BILBERRY: of Scandinavian origin, any of several plants of the genus *vaccinium* that differ from the blueberries in having their flowers arise solitary or in small clusters From auxiliary buds. The name also applies to its sweet, edible fruit.

The Book, PLANTS OF THE PACIFIC NORTHWEST COAST, (Pojar & Mackinnon) 1994, lists and describes 10 varieties of the genus *vaccinium.* 3 have red berries and 7 have blue and/or black berries. There is no listing of, or reference to the genus *gaylusasia* (true huckleberry)

Some of the *vaccinium* varieties listed do go by the common name of HUCKLBERRY.

Vaccinium caespitosum, common name DWARF BILBERRY or DWARF BLUEBERRY, is native to the coast of Oregon, Washington, Canada and Alaska. In low elevation bogs, wet meadows, moist, rocky ridges and alpine tundra.

I have picked the berries of this variety on the sub-alpine meadows of Mt. Baker. I saw at least 5 varieties growing in a 50 radius from where I was standing.

Vaccinium deliciosum, Blue Leafed or Cascade Huckleberry also grows in sub-alpine and alpine areas.

I visited Finland in 1994 and stayed in the homes of some friends, my wife and I were there for a month. The Grocery Markets sold the Juice of the Bilberry along with the Dairy products in the same kind of containers that the milk was sold in. They called the Bilberry Juice MUSTIKA. It was sweet and very good. The Finnish people poured the MUSTIKA over the Barley Porridge in the Morning for Breakfast. The porridge is made by slow cooking Pearled Barley adding milk while it is cooking. It was very, very good, HYYVA!

Elemental sulphur and/or Ammonium Sulphate for Blueberries and acid-loving plants

Marilyn Couture, OOS

If you have a visual deficiency in plants it can be corrected by broadcasting ammonium sulphate. Elemental sulphur must be oxidized by soil microbes to SO4-S before it is available to crops. Thus, it takes considerably more time for S° to become available compared to soluble sulphate forms of fertilizer.

Plants take up sulphur in the sulphate (SO4) form. The sulphate form is water soluble, and being an anion, is readily leachable. The elemental form of sulphur needs to be broken down into the sulphate form before becoming available to the plant. This is achieved by a bacteria (thiobacillus) which digests the sulphur and excretes sulphate. All soils contain this bacteria. It takes about two weeks for elemental sulphur to start breaking down, so it should be used before a plant deficiency can be seen.

Pros and Cons of the two sulphur sources:

Sulphate Sulphur

Immediately available to the plant, Water soluble, Quick acting, Leachable, Can be lost with one heavy rainfall event

Elemental Sulphur

Slow to break down, Not suitable to correct a visual deficiency in plants, Sustained Release, Not lost by leaching

More available when maximum plant growth occurs in spring, Will build up a sulphur "bank"

It looks like elemental sulphur is the way to go, but have some ammonium sulphate on hand for a quick fix.

Save the Day –
Sunday, September 28th, 2008

10th Annual Salt Spring Island Apple Festival –
Excursion to Salt Spring Island, B. C.
Celebrating Red-Fleshed Apples
Sponsored by North Olympic Fruit Club
*Registration packet in the 2008 Spring BeeLine

Captain Apple