



the BeeLine



Volume 31

Winter 2011

Newsletter of the Western Cascade Fruit Society

WCFS 2010 Cherry Trial Update By Judi Stewart

120 sweet cherry trees were distributed on Oct. 23rd and 24th to 30 WCFS participating members. Each participant received 4 trees. The five year trial is using 4 rootstocks with 6 sweet cherry cultivars for a total of 24 combinations.

We began with 250 grafts. Fifty of the Weiroot 158 were removed from the trial as this particular batch failed due to a virus. Approximately 25 grafts failed totally. There are 40 rootstocks as backup to be re-grafted in Feb. About 10 grafted trees have been set aside for scionwood. We tried unsuccessfully to summer bud graft the rootstocks where the initial grafts failed. We found that February's whip and tongue grafts were more successful than summer budding. We feel our initial results were very good considering that our grafters worked with some extremely thin rootstocks which ordinarily would have been grown out for an additional year or discarded entirely.

Some of the grafts had already flowered (flowers removed) this summer. We believe some of the trial trees will have fruit next year. Several grafts have fruit buds.

Further growing instructions will be emailed to participants in February. In the meantime, the trees should be planted 8' apart using no amendments. It's important that the grafts be fenced or confined in order to be protected from nibblers.

Roger Eichman is engineering a comprehensive fruit sizing cherry gauge to record accurate fruit size. We expect to distribute a gauge to all our growers. **Erik Simpson** will be responsible for charting the trial's results.

Many thanks to all of you who helped facilitate WCFS 2010 Cherry Trial.

Judi Stewart



Roger Eichman, Marrowstone Island surrounded by 250 Grafted cherry trees

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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.

'What is that Apple?' -Robert A. Norton

Every year the various chapters of WCFS put on shows displaying the hundreds of cultivars (varieties) of fruits grown by club members and friends. Most of these shows feature an ID table, at which some 'expert' or team of experts attempt to identify samples brought in by attendees. The Home Orchard Society has generously supplied some of these experts, the most recent being Shaun Shepherd from Portland. Shaun brings his computer so that he can show pictures and descriptions of the varieties he identifies.

Lori Brakken, president of the Seattle Tree Fruit Society, has stimulated an effort to computerize the identification of the 100 most common new and old varieties likely to be brought into fruit shows for identification. She has recruited a team of helpers including Erik Simpson (Sequim), Laure Jansen (Seattle), Jean Williams (Peninsula), Mike Shannon (Peninsula), Steve Butler (Peninsula), Dick and Marilyn Tilbury (Seattle), Bob Baines (Piper Orchard), and yours truly. Shaun Shepherd is also contributing. There is a computerized apple key on English varieties, called 'AppleKey' that De Arbogast has introduced us all to. There are many possibilities and we hope that everyone, including De will continue to work with us on the apple id program. We anticipate that Lori will have a first edition of the Pacific Northwest key along with pictures pulled together sometime this winter.

Some of us might like to have something that could help us ID some of the most common varieties that we might run into around the coastal Northwest region (Puget Sound). Listed below are a few 'Tricks' for identifying apples that you might run into.

Preface these statements with the words: 'If it has or is...'

1. Irregular shape, ribbed, open core, mottled color, ripe September – Gravenstein
2. Variable color, greasy, often open core, good taste – Tompkins King
3. Late ripening, yellow, conic shape, long slender stem, usually scabby, mild taste – Golden Delicious
4. Late ripening, conic, characteristic lobes on basin end, mild taste, sweet-low acid – Delicious
5. Early, yellow, tends to drop as it ripens, soft – Yellow Transparent
6. Midseason, highly aromatic, white flesh, round oblate (flattened), smooth basin – McIntosh
7. Early to midseason, conic shape, only medium size, sweet, crisp, scabby – Gala
8. Late ripening, greenish yellow, round-oblong, basin abrupt and deep, excellent flavor—Grimes Golden

9. Early ripening (with Gravenstein), round, white flesh, mild flavor, pinkish red stripes over whitish round color – Akane
10. Very late, dull dark red over green ground color, extremely firm, yellow flesh, somewhat dry, old tree-Baldwin
11. Mid season, medium size, round-ovate shape, deep red, basin deep and acuminate, subacid flavor – Jonathan
12. Mid season, large, yellow, scab resistant, mild flavor with an occasional reddish blush- Chehalis
13. Very late, green, large, round oblate, yellow flesh, rather tart – Rhode Island Greening
14. Late ripening, large size, variable red coloring depending on strain, abrupt deep basin, scab, excellent sweet-tart flavor – Jonagold
15. Mid season, large to very large, red striped fruit,, scab resistant, young trees only (new variety), crisp-Honeycrisp
16. Early, very large, yellowish, orange ground color with reddish stripes, often with bitter pit – Buckley Giant
17. Early, bright red blush, oblong-conic, medium size fruit, flesh white, tart until fully ripe – Summerred
18. Early ripening, red striped, round apple with a heavy bloom, white flesh, tart flavor usually on an old tree – Red Astrakan
19. Very late ripening, oblong conic fruit, large acute wide cavity and small deep basin, excellent flavor, old tree – Northern Spy
20. Very late, oblong, to conic shaped fruit, medium size, skin yellowish with dark red stripes, old tree – Esopus Spitzenburg
21. Late ripening, oblate to round shape, red apple, cavity obtuse, smooth basin, skin smooth, waxy – Rome Beauty
22. Late ripening, oblate shape, dull red skin, basin lobed, flesh very hard, low flavor – Melrose
23. Late ripening, oblong shape, purplish skin over greenish background, scab immune – Liberty
24. Late ripening, dark red skin, conic shape, very hard flesh, sub acid taste – Winesap
25. Late ripening, dark purplish red skin, medium size, white flesh, scab resistant, good dessert apple – Spartan

The one-page I.D. Scheme that Erik Simpson is creating is to be used in conjunction with the other systems.



STFS Fruit Show—Fruit I.D. Table Expert Team including from left:
Shaun Shepherd, HOS, Portland
Erik Simpson, OOS, Sequim
Dr. Robert A. Norton, VIFC, Vashon Island

* * * * *

Weather Forecasting by Marilyn Tilbury

Our 2010 pre Thanksgiving storm and hints of a coming cold winter have us paying more attention to weather forecasts. One website with a most informative long range forecast is provided each Monday and Friday at www.ovs.com/weather-café.htm. The forecast is provided by Rufus La Lane who is an entomologist working in agriculture, but his avocation is meteorology and he's good at it. Clicking on some of the fine print below his forecast brings up good insights into climate as well.

What has become an ongoing course in local meteorology is being provided by Cliff Mass, UW atmospheric scientist. He started a blog last year to promote his excellent book, The Weather of the Pacific Northwest but the man is a teacher at heart and continues to come up with weather explanations and tips. The day this is written he discussed a new wind watch website and a new weather radar site. Read about them by googling "Cliff Mass blog."

WCFS

WCFS Winter meeting was a teleconference on Saturday, December 11, 2010, 10:00am.

Spring Annual Meeting date TBA
Watch for your Local Chapter announcement

Attention WCFS Members

Don't be left out in the rain.
Join your fellow orchardists and subscribe to the Forum.

This is a benefit of membership and is closed to the general public.

Simply send an email to:

<http://lists.ibiblio.org/mailman/listinfo/wcfs>

.and follow the prompts.

Judi Stewart, Forum Administrator

MESSAGE FROM OUR PRESIDENT

By Mark Youngs, Seattle Tree Fruit Society

I'm writing this column with a heavy heart as I step down from being the WCFS President for the last three years. My life has become so busy that I am not able to perform the duties of the office to my satisfaction. Any job worth doing is worth doing to the best of my ability, which I cannot promise at this time. There are just too many irons in the fire. God willing, I will be able to serve this great organization again sometime in the future.

The other officers and board members have been awesome to work with and I will cherish all of my memories and interactions with them. A more dedicated, caring group of individuals would be hard to come by. Perhaps this is the opportunity for which you have been waiting, elections will be held at the spring meeting. Every member of WCFS is encouraged to participate in our volunteer organization.

On another sad note I have just learned that Phil Vogel passed on just after Christmas. Apparently he was needed to help tend heavenly orchards. Phil was the active President of our South Sound chapter. He was an outstanding contributor at our Board meetings and to the Beeline as well. Phil was a great man and he will be missed by many.

Now is the time to be preparing for spring activity in your gardens and orchards. Sharpen those tools and peruse those catalogs because the good weather will be here before you know it! As always, I wish you maximum enjoyment and success in all of your endeavors. Until we meet again.

Ciao!

WCFS Fall Meeting Highlights 25 Sept. 2010

Meeting was called to order by VP Ron Weston.
The Minutes from 19 June and treasurer's report were read and approved. Included in the treasurer's report was a discussion about insurance now that Safeco was sold. Hildegard will talk with the broker re: our policy.

Chapter report highlights were given.

OLD BUSINESS.

WWFRF Rep Kristan Johnson gave a presentation.

Cherry trial still going on.

Jim Simmons is the lobbyist for WWFRF.

The need for a PhD is paramount.

Emphasis is on the five-county core area.

Gary Molten is at OSU, Corvallis.

The mission of WWFRF is, Research and educational outreach.

Tree fruit is a five-year project, to look at research being conducted now Go to WSU website.

Planned endowment.

New Cider Publication.

Anthracoise update.

NEW BUSINESS.

Treasurer Hildegard needs to be aware of any donations made to WWFRF. Old policy will be continued.

WCFS Winter Teleconference meeting—Jan. 8 (Note meeting was held Dec. 11).

Meeting adjourned.

Jeb Thurow, Secretary



About WCFS

Western Cascade Fruit Society (WCFS), formerly Western Cascade Tree Fruit Association (WCTFA), was founded in 1980. It's primary objective is to bring together new and experienced fruit growers who will promote the science, cultivation and pleasure of growing fruit bearing trees, vines and berry plants in the home landscape. We provide the public with the knowledge and ability to cultivate their own fruit-bearing trees, and plants. Local chapters in geographical areas of Western Washington, disseminate information through education, fruit shows, orchard tours, meetings, workshops, publications, and give financial and other support to fruit research organizations.

As a 501(c) (3) Non-Profit organization WCFS is Parent organization to eight affiliated Chapters. WCFS provides 501(c) (3) Non-Profit status to Chapters via IRS group exemption, provides liability insurance for Chapters, maintains financial records, and makes annual reports to IRS. A Board of Officers and Directors manage WCFS.

WCFS publishes a quarterly BeeLine newsletter to inform members of events, tours, articles, and reports; a Web site — <http://wcfs.org>; and, a digest forum: <http://lists.ibiblio.org/mailman/listinfo/wcfs>. Members receive automatic membership in WCFS after joining an affiliated Chapter. A portion of chapter dues go to WCFS.

In Memory

Frances Phillip Vogel, President SSFS

June 10, 1939—December 26, 2010

Phil passed away after two months of hospice care, surrounded by loving family.

We join other members in expressing our sentiments. We are saddened to hear that Phil Vogel will not be with us in our studies of fruit. Phil was energetic about connecting our clubs on fruit related events. We loved seeing his smiling face at meetings and Fruit Shows. He was interested in learning as much as possible about a lot of fruit related topics, and in that way was an inspiration to all and brought a gentle and thoughtful spirit to whatever he did. We will miss him.

WCFS NEW MEMBERS



Seattle

Ken Bible
Reuben Burwell
Jane Grafton
Patrick Harper
Francois & Julia
Gunn Kissel
Gil Schieber
Crista Schneider
Linda Stangeland
Wendy Sundquist

Vashon Island

Kelli Brooke
Dan Carlson
Bruce & Sarah
Chapman
Mechtild & Kent
Chappelka
John Churchill Patrick
Cunningham
Stephanie & Jennifer
Gogarten
Stephanie & David
Guion
Tim Kehl
Beverly Naidus
Neil Powers
Laura & Wes Cherry
Diana & Dorreen
Higgins Crawford
Mike Kleer
Becky Bumgarner
Kathy & Doug Ostrom

Tahoma

Ken Cote
Elaine Scott
Brian Zinn

Peninsula

Steve Butler
Jim & Rosanne Carlson
Rubin & Mary Carter
Karen Derrer
Martha Helmer
Galen & Bonnie Tibbitt
Brandy Williams

PFS Deceased

Don Anderson
Art Fick
Don Lowery

North Olympic

Andy Cochrane
Evelyn Gunther
Connie Jump
James Kelly
Amy Warrick
Mary Jo MacKenzie
Kathy Meyer
Lee Miller
Nancy Nashlund
Gayle Petrick
Denise Pranger
Mary A. Pranger
Frank Samuelson
Linda Sexton
Laurel Solena
Glen Koch
Carol Sword

Olympic

Tom Guobis &
Joan McDermott
Richard &
Melanie Ross

Apple Daze by Lorine Brakken**Apple Shows 2010 by Lorine Brakken**

I had so much fun this year going to as many Fruit Shows as I possibly could. Every weekend from the middle of September up to our STFS Fruit Show on Oct 31st, I attended them all. I regretfully did miss the WWFRF show that was unfortunately at the same time as the Vashon Club's event. I had a motive too for all this madness; I am working on the Apple Identification program for our website. I wanted to see as many Apple ID'ers in action as possible so I took notes each time and collected the materials they were using to pour through between events. My head was so busy that it got sore at some points. Fortunately, I had company and support on these trips with Laure Jansen, my husband Steve, and Sandra Bowman. It helped to have other drivers and conversations – though the conversations were almost always on apples (poor Steve! He is so tolerant).

9/18 Sa- STFS meeting at Friends Of Piper Orchard's Fall Festival of Fruit, Carkeek Park.

This event was unusual and interesting in that it has the heritage orchard on site. The apple varieties are Wealthy, King, Northern Spy, Golden Russet, Alexander, Gravenstein, Dutch Mignonne, Early Harvest, Yellow Transparent, Dolgo Crabapple, Red Astrachan, Tolman Sweet, Yellow Belltower, Lubsk Queen, Esopus Spitzenburg, Dutchess of Oldenburg, Belmont, Rhode Island Greening, Arctic, Wagener, Hawkeye, Yellow Newtown, Bietigheimer, Wolf River, & Swaar – an incredible wealth of heritage apples (and they need volunteers for work parties!). Bob Norton did the Apple ID and was our speaker on 'Cider'. I was full of questions and he is so patient with it all. The pie contest proved fruitful for our entries. Laure Jansen received the 2 Best of Show Ribbons!

10/2 Sa- Cloud Mountain's Fall Fruit Festival, near Everson, WA (out the Mt Baker Hwy).

Cloud Mt is a Farm/Nursery so you have the opportunity to see the fruit tree growing and purchase it. They have close to 200 varieties of common and uncommon fruits to taste, cider, nuts,

new taste treat with the Mediterranean Quince Salsa – Excellent! I want the recipe. Laure Jansen showed me the way to Festival, along with her sister Jessica & Jessica's husband, Don. Fun group to travel with as they had been many times and went straight for the purchasing of their favorite apples you can only get there at Cloud Mt. I tasted the 'Lynden Blue' locally originated grape that is a concord type and sweetened up this year like no others at their tasting table. That is on my list to get a hold of this year too. No Apple ID going on but lots of FUN. On the way home we sampled cider at Drew Zimmerman's Red Barn Cider. What a fun day.

10/9 Sa- Vashon Island Fruit Club's Ciderfest, located at the Village Green Farmer's Market.

I was up early, making 2 apple crisps that VIFC sells at the show. Laure & sister Jessica were my escorts for the ferry and the Vashon events. They know the island so well, I could relax and enjoy the trip. It poured rain that day! The VIFC members were set up under tents at the Farmer's Market. Cider pressing, apple displays, hot apple crisp & cider to enjoy, and Bob Norton with the Apple ID. I had a good time there observing the process with Jean Williams. It was the first that I really got to go through that wonderful binder she has made full of apple varieties and photos. We finished our day at the Cider event tasting many, many ciders. Had a Blast! But wow, did it rain.

10/10 Su- Home Orchard Society's 'All About Fruit Show', Hillsboro, Oregon

My husband, Steve did the driving for this one. We picked up Laure very early and hit the road for Portland. When we arrived we were met by STFS member Mark Lee, who had been there volunteering the day before also. The HOS sets up at the Fairgrounds in one of the buildings convenient to parking. Upon entering, the fragrance of quince, which I adore, hit me. They have many varieties and it is a feast for the eyes. Fruit! I set up at the Apple ID table with Shaun Shepherd and others. They have 2-3 people there at the Apple ID table all the time. The ID team there is impressive with their skills and practice.



Apple Daze cont.

10/16 Sa –Univ of British Columbia’s ‘Apple Fest’, Vancouver, BC

I was up early with my passport and off with Laure to meet the BC Fruit Explorers that identify apples up at this event. We noticed frost along the way. We waited in a long line to pay to get in and found that once you were in the event, it took another ticket to taste the apples (only for 30 minutes). People pay to get in to purchase around 40 varieties of apples from all over Western Canada. So we paid to taste for 30 minutes. There were around 150 people per shift in the tasting tent. It was very crowded and possibly around 200 varieties of apples to taste. Another building held the apple displays and Apple ID. The BC Fruit Tasters meet all year, regularly to build up their identification skills. They’d like to have more involvement with Apple ID’ers in our area. Long day but well worth it.

10/17 Su- Peninsula Fruit Club’s ‘Fall Fruit Show’, Silverdale, WA

First Frost for my garden. Steve drove this time and we were like clockwork getting over to the show. Real nice venue they have now for their events. Lectures were easy to access and there was a nice display of Jean Williams’ Apple Identification information. I saw so many ‘fruit’ friends there I talked the entire time. Very fun. Bob Norton was the expert on the ID table and he sat in on the lectures. Mike Shannon had a very informative grafting display and the PFC is very active at teaching the local High School students the art of grafting. It’s quite an impressive program. I learned to graft in High School. The PFC is doing a great job of educating on fruit growing for the Puget Sound area.

10/23 Sa- North Olympic Fruit Club’s Fall Fruit Show, Pt Townsend, WA

Steve, Sandra Bowman, and myself set out to Port Townsend. Along the way we picked up the spring grafted cherry trees for member Keith Ruckstuhl who is participating in the Cherry Trials that Judi Stewart is leading WCFS participants in. Again, I ‘m seeing so many ‘fruit’ friends that the whole event is a real social experience and very fun. What I

the tables to show off what they are producing in their gardens. This was very educational in that you could almost picture their orchard and talk with each person about it and about growing those varieties specifically. In another room there were a lot of grafted/propagated fruit plants for sale. My friend, Irene Denton, had her ‘One Green Pear Quilt’ in the Silent Auction and I did not get it – the only sad part. Someone’s happy.

10/31 Sun- STFS Fall Fruit Show – What fun! I think our Fall Fruit Show was the best show yet. I am so happy with how it all turned out. The Seattle Times ran an article about our show the very next morning. The fruit collection at our show, by Laure Jansen was amazing. She started in Sept. with Piper Orchard’s apple varieties—then to the Mt. Vernon research station’s orchard for collection. Then onward to assorted friends and relations’ trees and the HOS’s All About Fruit Show where STFS member Mark Lee was able to get more samples for our tasting tables. Hildegard brought in her kiwi varieties for tasting and display. I had a favorite—Ken’s Red Kiwi. I must have one now. Mike Ewanciw organized our show lectures this year. Thank you to Jackie King for her discussion on ‘Unusual Fruits for the Pacific Northwest’. New plant for me is the Honeyberry. So many people participated and assisted. Thank you to Dr. Bob Norton (WCFS/VFC) and to Shaun Shepherd (HOS) who shared with us the methods they use when identifying unknown apples. We are grateful that these knowledgeable people come to our show and share



with us.

How to Save Apple Scion Wood

Extension Consumer Horticulturist Purdue University

The success of apple grafting depends first on working with vigorous scions--cuttings taken from apples of the desired cultivar and put in cold storage until needed. Healthy apple scions store as long as three months at the right temperature and moisture level. Any variations from that critical balance of temperature and humidity could cause freeze damage, dehydration or infection with mold.

Collect apple scions in late winter when trees are still fully dormant. Best weather conditions include temperatures slightly above freezing, after several days of below-freezing conditions.

Clean pruning tools thoroughly by rinsing in a bucket of water containing 1 tbsp. chlorox per gallon of clean water. Rinse tools before and after collecting wood from any individual tree. Unsterilized tools spread infections through the orchard and may pass fungi or bacteria to the scions.

Choose healthy shoots from outer and upper branches or sucker shoots growing from above the graft junction on the apple tree's trunk. Scion wood should be last year's growth--the newest wood on the tree. Cut shoots from 1/4 inch to 3/8 inch in diameter, clipping the wood off at the branch collar, the swelling at the junction with the main branch.

Divide scion stock into sections short enough to fit into large ziptop plastic bags. Gather a small bundle of scions in one hand and wrap the ends of the cuttings in a damp paper towel. Roll the bundled scions in a sheet of newspaper and place the entire bundle in a ziptop bag. Seal the bag.

Refrigerate the sealed bags at just above 32 degrees Fahrenheit until needed for grafting. Storing in the freezer compartment could kill the scions. Storing in the same refrigerator as fruit and vegetables could abort the buds on the scions, ruining any chances of successful grafting. Higher temperatures reduce the useful lifetime of the scions.

Scion Tips and Warnings

Don't take scions from low branches. Lower branches often show the least vigor, and only the fastest growing wood provides good scion stock. Don't collect scion wood from suckers growing below the graft junction or from suckers sprouting from roots. Only wood from the grafted portion will bear fruit of the same type and quality as the parent tree.

Things You'll Need

- Limb lopper
- Pole trimmer
- Pruning shears
- Bucket
- Chlorox
- Tablespoon measure
- Water
- Paper towels
- Newspaper
- Ziptop bags
- Refrigeration

Be sure to label the scion!





Olympic Orchard Society

Formal Tasting Program

Held 11/9/2010

Evaluation scores for Apple Varieties Included

Variety	Appearance	Color	Texture	Flavor	Balance	Overall Taste*
Jonagold	4.7	4.5	4.5	4.5	4.6	4.5
Sandow	4.4	4.1	3.9	4.4	4.4	4.2
Fiesta	4.0	4.1	4.1	4.0	4.1	4.1
Ashmead's Kernel	3.4	3.6	3.6	4.0	4.1	3.9
Dr. Matthews	4.1	3.9	3.8	4.1	3.4	3.8
Jazz	4.3	4.0	4.7	2.7	3.7	3.7
Opalescent	4.7	4.3	3.8	3.0	3.6	3.4
Belle de Boskoop	4.0	3.6	3.6	3.2	3.3	3.3
Blue Pearmain	3.6	3.6	3.0	2.7	2.9	2.9
Tompkins King	3.8	3.5	2.6	2.9	2.6	2.7

* Score for Overall Taste is the average of Texture, Flavor and Balance scores

Note – these results should not be construed as a rigorous tasting test, nor as an endorsement of any given apple variety. It is just an interesting compilation of data, a snapshot in time and condition of varieties harvested in 2010 from member’s fruit trees in Sequim, WA (except for Jazz, which was obtained at a local grocery store). “Formal” in the program name simply means the varieties tasted were limited to a short list of pre-selected varieties. These were researched before the program, allowing horticultural and historical information on each to be presented while they were being tasted.

Background on results: there were 24 attendees, but only 10 evaluation forms were turned in. On some forms not every category was scored – and only 3 attendees scored the variety Jazz, which as a surprise addition required a “write-in” entry on the form provided (the remaining varieties were pre-printed).

Scores ranged from 1 to 5 (1 being worst, 5 being best) for each of the categories: Appearance, Color, Texture, Flavor, and Balance. The numbers shown in the table above for the respective categories are just the averages from submitted evaluation forms.

Submitted by Pat Volk, President, OOS

The Winter 2011 BeeLine was produced by Editor Marilyn Couture , with input from membership.

Please contribute
your articles for our next Spring issue!

Issue Deadlines:

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

Email your articles to:

Marilyn Couture: couture222@msn.com

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Anthracnose Control (Bull's Eye Rot)

WSU WWFRF

Apple anthracnose is a common canker disease of apple trees in western Washington and in other wet coastal regions of the Pacific Northwest. Damage to the limbs is the most serious result of the disease.

Infection generally occurs during fall rains but can take place throughout the winter and early spring during mild, wet weather. Spores of the fungus, *Pezizoma malicorticis* (*Crytosporiopsis curviospora*), formed on the dead bark of older cankers, are splashed to other twigs and branches and infect through wounds or natural openings in the bark. These infection areas appear as small, circular, reddish brown spots on the bark in late fall. The discoloration extends into the tissue as far as the sapwood. Canker growth is very limited during the winter, but they begin enlarging rapidly in the spring.

The cankers usually form on young branches, and are generally less than 2 inches in diameter, but some may develop on larger branches or young tree trunks. By June, the cankers have grown to full size and subsequent branch growth results in formation of a crack around the canker. Fullgrown cankers are elongate, from 1-10 inches in length, and up to several inches wide but most are 2-5 inches long. There may be one or many on a single branch. Girdling of smaller branches frequently occurs.

By midsummer, the canker surface is sunken, and as the summer progresses, some of the dead bark in the canker falls out. A callus layer forms and produces a ridge around the canker. By fall, the canker generally has many lengthwise slits, the shredded bark sometimes having the appearance of many guitar strings. Larger cankers on main branches or trunks may not have this latter appearance.

In the fall, one year following infection, the fungus forms spores on the dead bark, and these spores cause new infections. Though the canker has attained full size, the fungus can live for several years in the bark producing spores each fall for new infections.

Additional Homeowner Resources:

Hortsense Home Gardener Fact Sheets (<http://pep.wsu.edu/hortsense/>)

Home sections of the PNW Disease Management Handbook (<http://plant-disease.ippc.orst.edu>)

Recommended 3 way to control Anthracnose:

1. Cut out the cankers, removing entire branches.
2. Torch the cankers to kill the anthracnose.
3. Protect the tree by applying fungicide or protect a small tree from rain by putting a plastic tent over it during the rainy fall and spring months when temperatures are above 40 degrees.

A spore producing canker showing guitar string symptoms.



Based on research and report funded by WWFRF to Dr. Chang-Lin Xiao, WSU TFREC, Wenatchee, WA for Anthracnose research in 2008 to investigate if there is a new strain of Anthracnose in western Washington. Dr. Chang found that the anthracnose *Neofabraea malicorticis* was the most prevalent (97.3%) in the Bellingham and Mt. Vernon area. Historically this organism is considered to be responsible for anthracnose canker in the US Pacific Northwest. The fungus also causes bull's eye rot on apple fruit in storage. The fruit or bull's-eye rot phase of the disease shows first as brown, depressed, circular spots in storage. As a spot extends, fungus fruiting bodies develop in its center, often in concentric rings, which gives the name "bull's-eye" to the rot..

A DVD featuring Dr. Ralph Byther shows canker torching, excise cutting, pruning, and fungicides. This DVD is available for \$10 at events from WWFRF.



WCFS Winter Meeting Highlights 11 December 2010

The Teleconference meeting was called to order by Treas. Hildegard Hendrickson. Minutes of Sept. 25 were approved, and Treasurer's financial report will be sent after the meeting, whereupon it will be approved at the next meeting.

Review of Chapter Reports

Old Business

Judi Stewart reported that the Western Cascade Fruit Society Cherry trials has 30 members participating, each received four trees. See this BeeLine for report.

New business.

Pat Volk made a motion that \$600 from the Western Cascade Fruit Society be made available to chapters for extra ordinary programs to be applied for by a grant to the Western Cascade Fruit Society board. For an initial period of one year starting on March 2011 motion made and seconded motion passed.

There was a discussion that the Western cascade Fruit Society needs to explore new possibilities for fruit research, and for projects. Hildegard Hendrickson appointed Judi Stewart as the chair of the committee with Elizabeth Vogt, Jeb Thurow and Erik Simpson volunteering to be on the committee.

Question was asked of treasure, can we charge admission to shows and still keep coverage with the insurance that we have, The treasure will insure that this is the case.

Annual meeting is set for March—Date and Time TBA given that STFS may not have a Spring Show.

Jeb Thurow, Secretary.

* * * * *

Don't Top that Tree

Vern Nelson, HOS, Oregonian 2-25-10

Tree topping is not a remedy for trees that are too big. For one thing, it doesn't work: The tree will quickly regain its former size. Plus, topping will give it new problems:

Shape—Topping a tree destroys its natural shape and it will look awful.

Growth Gone Wild—Topping a tree cuts off the apical meristems at each shoot's tips. The apical meristems produce a growth-suppressing hormone, so without them, shoot growth goes wild. Once topped, a tree will need heavy, regular pruning to remove the witches'-brooms that result.

Rot—Tree topping causes trees to rot or become unstable because it creates large wounds that take a long time to heal. In the meantime, rain and windborne disease can begin the rotting process.

Large wounds - take an immense amount of plant energy to try to heal. Couple that with the explosion of new growth mentioned above, and you further stress the tree by burning up its reserves of stored energy.

Instability—Topped trees are more easily blown over because the huge number of new shoots can make the tree too heavy at the top. Many of these shoots will be poorly attached and very vulnerable to wind and snow loads. Thinning such shoots removes valuable leaves as well, weakening or starving the tree because the leaves produce food for the tree. A starving tree is more vulnerable to pests, and diseases such as root rot.

Fruit trees are at risk because creating fruit is a huge drain on a healthy tree's reserves so it must be pruned properly.

A better course—Rather than planting a tree that will someday be too tall, plant one that will mature to an appropriate manageable size for your garden and intended use.

Attend your local WCFS Chapter spring events or Home Orchard Society's Fruit Propagation Fair for expert advice on manageable, appropriate combinations of fruit and dwarfing rootstock.

More on Spotted Winged Drosophila

Marilyn Tilbury, Contributor, STFS

The previous three issues of the BeeLine have contained information about the new pest vinegar fly, Spotted Wing Drosophila (SWD). Here is perspective gained from dealing with it at our SE Seattle location for the last two years.

In July 2009 we had a moderate infestation in raspberries and Marionberries. Little white larvae would emerge from fruit refrigerated overnight. Some unpicked ripe raspberries liquefied and drooped, then dried on the vine. Cherry tomatoes left on the vine too long developed a soft, yellowish area on the fruit and larvae were inside.

Would SWD be a problem in 2010? When would they show up? What damage would they cause? How could we mitigate it? What's a good trap to use? What's a good bait? The answers are now in.

SWD were caught the first day traps were set out, March 15, 2010, and they've been caught every time since except during the pre Thanksgiving Day storm and several days after. As this is written, in December, they are still being trapped in high numbers at temps in the mid forties, the literature suggests they become inactive below 48.4°F. (So much for lab data.) There are several other species of vinegar flies out there, but SWD appear to be the hardest and are the most numerous by far.

In spite of trapping huge numbers of SWD in 2010, which proved the numbers in our environment were likewise huge, damage was minimal, with one exception. Berries were picked daily and very few were infested. We also took a bucket out every day to pick bad fruit and any drops. This fruit was shallowly buried. A few of the cherry tomatoes that managed to ripen were lightly hit. We did get blind sided on pie cherries: just as soon as the fruit transitioned from straw color to pink in late June, SWD hit hard. Our response was to strip the tree of all fruit. Oddly, no pie cherries were infested in 2009.

How was SWD damage kept so low? We took the advice of the Oregon State U folks (google "OSU SWD") and got plenty of traps in crops we were trying to protect *before* the fruit started to ripen and were diligent about good sanitation practices.

Any clear plastic bottle including the ubiquitous 500 ml plastic water bottle makes a great trap. Screw a cup hook into the cap and put a dab of epoxy glue on the underside if needed. Then cut a U-shaped window so that the flap forms a rain shield

We spaced bottles every 3 feet in the berry trellis and hoisted half-gallon plastic milk jugs into the upper canopy of fruit trees. Surprisingly, those tree traps catch far more SWD than the bottles in the berry trellis.

Several recommended baits were compared: apple cider vinegar, red jug wine, white jug wine with a bit of sugar, lees from beer brewing and a mix of 1 ½ cups water, 4 teaspoons white sugar and one packet yeast (2 ¼ teaspoons). Vinegar was the most attractive in early spring under uniform cool and wet conditions. However since mid May the yeast mix has been by far the best. It is also the cheapest. One can keep it going, like sourdough starter, by adding more water and sugar in proportion.

Twice a week we sieved out the flies and returned the bait to the bottles to keep them going for a month. One yeast bait was never replaced, just water and sugar added from time to time. That bait outdid the others most of the season.

Will this invasive be here to stay, like apple maggot, or fade into the background like the European crane fly did after damaging lawns in the '80s? We don't know but numbers in California were down in 2010 tho SWD is a perennial pest in Japan. Hummingbirds are an unusual ally. Small insects form 25% of their diet and they prefer vinegar flies. No wonder more Anna's hummers are over wintering.

In conclusion, SWD were here in high numbers in 2010. They can devastate many fruits. Even so, we can mount a successful defense by installing

Can You See It Now?

Last summer a lot of us were looking very closely at vinegar flies. Did any have spotted wings? An easy way to identify the new pest, spotted wing *Drosophila*, is with a dissecting scope. We purchased the "20x i-explore" stereo microscope from Amazon for under \$100 delivered. Not only do the optics provide a flat field, but a perfectly adequate light is built in powered by two AA batteries. The fixed 20 power magnification is a good compromise for looking at insects. You can easily see the black spot at the wing tip of the SWD males and see the impressive, uniform serrations on the female's ovipositor. This little scope is lightweight, compact and easily transported in its box for use in the field.

By Marilyn Tilbury



What Are These Red Bumps?

Jean Williams, Peninsula Fruit Club

Ever wonder what these little red bumps are on the stem at the base of a cherry leaf?

They are called “extrafloral nectaries” (EFN’s) and have been identified on over 2000 plant species. They can vary in size and shape and can be located on stems, leaves, flower bracts, fruit, and several other places. Pictures of different EFN’s are available here: <http://edis.ifas.ufl.edu/in175> All secrete some form of nectar, which is about 95% sugar and 5% amino acids and other nutrients. The size, shape, and placement of nectaries and type of nectar vary with the type of plant. The nectar is slightly different from what is produced in the flowers.

The nectar in floral nectaries attracts and feeds pollinators, but the nectar in the EFN’s does not attract pollinators. It seems instead to attract and feed the insects that help provide antiherbivore protection for the plants.

There are a couple of hypotheses about why plants produce these extrafloral nectaries: (1) they may be excretory organs for plant metabolic waste, or (2) the nectar may be an attractant for beneficial insects. Most of the EFN’s that have been studied seem to fall into the category of helping to attract beneficials. For example, ants are very attracted to the EFN’s on cherry trees (located both on the petioles and leaf margins). They furiously defend leaves against leaf-eating caterpillars. Many experiments have shown that plants defended by ants sustain less damage from foraging leaf-eaters. Ladybeetles, lacewing larvae, spiders, parasitic wasps, and other important beneficials feed on extrafloral nectaries too.

Dr. Clarissa Mathews (University of Maryland) wrote a very interesting dissertation entitled “Role of Peach Extrafloral Nectaries in Mediating Natural Enemy-Herbivore Interactions.” <http://drum.lib.umd.edu/bitstream/1903/2066/1/umi-umd-2028.pdf> Her research revealed that in general peach trees with EFN’s have higher numbers of parasitic wasps, ants, spiders, and other predators and parasitoids associated with them. She showed that damage to peach fruits from Oriental Fruit Moth was 5 times greater if ants were excluded from trees that had

EFN’s. Peach trees that did not produce EFN’s had statistically less vigor and more leaf damage. Parasitoids that are able to eat from EFN’s also tend to live longer than those that can’t. The relationship between ants and other predators and parasitoids is complex, but the extrafloral nectaries help attract them all.

According to an article in Biology Letters <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1833973/pdf/rsbl20060527.pdf>, research has revealed that plants produce more nectar and/or more extrafloral nectaries in response to leaf damage. However, plants in nutrient-poor soils do not appear to increase production--another good reason to be sure your plants have enough nutrients available.

Don’t pick off extrafloral nectaries thinking they are possibly some kind of scale insect or disease process, and enjoy the extra protection they help provide your plants by attracting and feeding predatory beneficial insects.



Extrafloral Nectaries
EFN’s

2011 Spring Fruit Events**Jacky King announces Cider manual PNW
621 Hard Cider Production available**

PNW 621 Hard Cider Production and Orchard Management in the Pacific Northwest, is being printed and is available for purchase. Great reading for aspiring and experienced cider makers.

Manual provides basic information on the many considerations that go into the reliable production of high quality cider for market, including choosing among cider apple categories, laboratory juice analysis, fermentation procedures, maturation, pasteurizing, product evaluation, and rootstock selection, pest management, harvest, etc.

Department(s): Agriculture Pages: 48
Publication Date: 2010-11-01

You can buy a copy here for \$8.00:
[https://pubs.wsu.edu/ItemDetail.aspx?
ReturnTo=0&ProductID=15402](https://pubs.wsu.edu/ItemDetail.aspx?ReturnTo=0&ProductID=15402)

Lyle Knudson, WCFS Life Member, Finally
Graduates
Port Townsend Leader
Submitted by Judi Stewart

Knudson, age 94 and a resident of Marrowstone Island, finally received his degree from U. Wisconsin. Knudson was a Master Gardener of rhododendrons and fruit trees through WSU. Knudson later taught classes on apples at the Center for Urban Horticulture at the University of Washington.

Knudson was called to duty as a naval aviator and missed two final exams in his senior year of 1941. The Navy would not wait. He left college early and never received credit for the two classes tied to those exams. That cost him a Wisconsin degree.

Thanks to the efforts of a friend who assisted in an appeal, Knudson finally received his degree 69 years later.

OOS Jan 11 Rootstock

Erik Simpson orchards@olympen.com

STFS Jan 15 (repeat Jan. 29)**Winter Fruit Tree Care**

ljanzen@ix.netcom.com

STFS Jan 22 Fruit Tree Grafting

Sky Nursery 206-546-4851

STFS Jan 23 Fly Trap Making

206-527-4035

STFS Jan 29 Mason Bees

ljanzen@ix.netcom.com

SSFS Feb 1 Grafting Talk

ritsonf@hotmail.com

STFS Feb 12 Grafting Member Meeting

Lori RSVP 206-715-4149

NW Flower & Garden Show Feb 23-27

STFS will share space with WWFRF
seattletreefruitsociety@hotmail.com

WWFRF Winter Field Day March 5**Vashon March 12 Grafting Workshop****OOS March 12 Grafting Workshop/scion**

exchange 9-11 at McComb Gardens Edu. Center

HOS March 19 Spring Show

Clackamas County Fairgrounds 11-5

Raintree March 19 Big Education Event

Onalaska, 9-5.

PFC March 26 Spring Grafting Show**Salt Spring Island's Apple Festival**

Oct. 2, 2011

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



Pimiento de Padrone pepper— a delightful appetizer

From Galicia, Spain, these little sweet chili size peppers are often fried whole. Horned shaped about the size of a habanero pepper they are an heirloom pepper of Spain and very relished there. Every 10th or so will be extremely hot making for a fun game of culinary roulette. If left to ripen red they will be quite spicy, but they are most often used green. To get them just right pick when they are about the size of large olives. Toss the peppers, seeds, stems and all, into a hot skillet with olive oil. The tiny peppers are blistered first on one side, then the other, before being salted and plated for serving. Provides a very spicy and wonderful paprika if ripened and dried.

Seed is available through Gourmetseed.com



WSU Workshops

WSU Snohomish County Extension is presenting three workshops on Westside fruit tree care.

Jan. 22—Fruit tree basics

Feb. 26—Dormant pruning

April 16—Grafting

All workshops include box lunch, Ed's Apples, 13420 339th Ave SE in Sultan just off SR 2.

C-360.794.6081

W-425.357.6024

khalstead@wsu.edu

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South Sound	Phil Vogel, dcd Dec. 26, 2010
Tahoma	Henri Carnay hcarnay@comcast.net
Vashon Island	Elizabeth Vogt eavogt@comcast.net

STFS Activities

We have enjoyed the summer with member Garden Tours that took us to north, south, east, and west Seattle areas. It's fascinating seeing how our members garden at home. Check out our website or email for more info closer to the event. Website: <http://www.seattletreefruitsociety.com/calendar>

Email: seattletreefruitsociety@hotmail.com

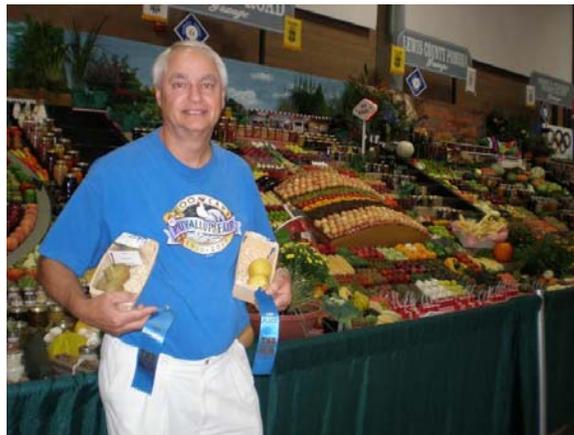
Lori Brakken, President STFS

Peninsula Fruit Club Dec. 18, 2010,

We started our fall season off listening to a great talk about the many ways to safely preserve our harvests from Shannon Harkness with the Kitsap County Extension Office. Then we prepared for what turned out to be a great Fall Fruit Show on Oct. 17, which was a big success. It was nice to see members from various other WCFS clubs visiting our show. Some of our members went to visit the NOFC's Fall show and listened to a very informative talk about growing cherries. They also stopped to pick up the cherry trees for 7 of our members who are participating in the WCFS Cherry Trials. Jean Williams participated in Vashon's Fall show by presenting information about insects that are of interest to fruit growers. At our November meeting we discussed the problems and successes we had growing fruit this year after such a difficult spring. In December we had a board meeting to discuss and plan volunteering in the local high schools to teach them how to graft apples and pears. We also planned out what the club will be doing for most of the next year. We are looking forward to organizing a visit to a few Olympic Orchard Society's member's orchard and having them visit a few of our member's orchards.

Sally Loree, President PFC

Tahoma Chapter Chuck Polance won 5-blue ribbons at Western WA State Fair fruit growers competition. Way to go Chuck!



Chapter News

Olympic Orchard Society

Fall activity included manning a booth co-sponsored by McComb Gardens at the Incredible Edible Festival (a new festival promoting and celebrating 'local food'), held Sept 25th in Sequim. We also had well received programs, in Sept by Master Gardener Jeanette Stehr-Green on Growing Raspberries and Blackberries, and in Oct by Master Gardener Bob Cain on High Density gardening. In lieu of a Fall Fruit show we experimented with a Formal Fruit tasting, where Pat Volk presented researched pictures, information and history about 9 selected varieties while samples of each were tasted and evaluated by all attendees. This November event was quite successful, and benefited greatly from historically interesting varieties available locally from member's orchards – thanks especially to Eric Simpson and Steve Vause, and also to Steve Schuenemann and Marilyn Couture for their contributions. Spoiler: the majority favored Johnagold by a hair. An informal tasting followed, providing access to varieties not selected for the Formal presentation, but in future we will focus on just one or the other approach to tasting per event. We ended our year with an excellent potluck dinner in December. Coming activities include a rootstock review program in January, a pruning program and workshop in February, and March will be all about propagation: a Grafting Workshop and Scion exchange for members and the public, work parties to graft and prepare trees for fall sales, and a Grafting Program for students at Sequim High School.
Pat Volk, President OOS



Fertigation for Apple Trees In the Pacific Northwest

Denise Neilsen & Gerry Neilsen, Pacific Agri-Food Research, Summerland, BC, Canada

This paper was presented at the 2009 New York Cornell In-depth Fruit School on Mineral Nutrition.

Fertigation is the application of nutrients through irrigation lines, during watering. In general, it is more readily adapted for use in micro-irrigation systems such as micro-sprinkler, microjet and drip than to more extensive systems such as sprinkler or furrow. It has the advantage of allowing flexibility in the timing of nutrient additions, and under micro-irrigation, targeting the nutrients into the tree root zone with higher precision than possible with highpressure irrigation or rain-fed watering. It is particularly well suited to high-density production systems.

Nutrient uptake by trees is determined by the availability of nutrients in the soil, interception of nutrients by the roots and by tree demand. Delivery of nutrients to the tree is affected by nutrient mobility. Mobile nutrients such as nitrogen and boron are dissolved in soil

solution and move easily to roots. Less mobile nutrients such as calcium, magnesium, sodium and potassium are somewhat soluble but are also easily detached from soil particles. In some soils, potassium also falls into the class of immobile nutrients, which includes, phosphorus and zinc. The immobile nutrients are fixed onto soil particles, have low soil solution concentrations and tend to move slowly to the root by diffusion. Apple trees also have sparse roots and so cannot easily intercept immobile nutrients. A final factor

is retention in the root zone. For mobile nutrients, movement of nutrients out of the root zone with water prevents interception; for immobile nutrients the issue is retaining the nutrient in solution long enough for root interception and uptake to occur.

Mobile Nutrients

Nitrogen (N). Careful management of water and nitrogen is important because fruit trees are very inefficient in their use of nitrogen. Soil solution concentrations of nitrate nitrogen quickly declined when the fertilizer was broadcast and sprinkler irrigation was used. In contrast, an almost constant concentration in the root zone was maintained when nitrogen was supplied daily through fertigation at different times. As nitrate is highly mobile, irrigation management is key to the retention of nitrate in the

root zone and hence to nitrate availability to the tree. Several strategies can be employed to reduce the over application of water which leads to losses of both water and nitrogen beneath the tree root zone. These include the use of conservative micro-irrigation systems to reduce total water inputs, the use of irrigation scheduling techniques to match water supply to demand and mulching to reduce water losses from the soil surface through evaporation. Water and nitrate-nitrogen losses were greater beneath the root zone of trees receiving a fixed irrigation rate than for those receiving irrigation scheduled to meet evaporative demand.

It has been well documented for apple trees that N is withdrawn from foliage prior to leaf fall, stored in woody tissues and roots and that in spring N is remobilised from storage to support new growth. For apple trees, development of the spur leaf canopy is largely dependent on remobilised N. Both remobilisation and current season uptake supply N for shoot leaf canopy growth and high root uptake commences around bloom. Fruit N requirements are met mainly by remobilisation during cell division, but mainly by root uptake during cell expansion. Thus application of fertilizer N can be timed to match maximum demand for shoot leaf canopy development, that is, during the six weeks after bloom, without necessarily having a potential negative impact on fruit quality by elevating fruit N concentration.

Less Mobile Nutrients

Potassium (K). The mobility of K in soil is generally reduced compared to N but greater than P. The mobility of surface applied K is highest in sandy soils, reduced for soils with high exchange capacity (higher clay and organic matter content) and very limited for soils known to fix K. Potassium deficiency can be increased in drip-irrigated orchards on sandy soils where root distribution can be restricted by poor lateral spread of applied water. Deficiency symptoms appear first in spur leaves adjacent to fruit. These leaves develop an irregular chlorotic leaf surface during midsummer which progresses into interveinal browning and marginal leaf scorch by fruit harvest. However, soil K status at the main rooting depth can be altered by daily fertigation of K from mid-June to mid-August. See complete article for application rates. These application rates were sufficient to

Cont. Fertigation**Immobile Nutrients**

Phosphorus (P). Poor downward movement of surface applied P-fertilizer into the root zone of many orchard soils has long been recognized. The mobility of P through soil can be further reduced in finer-textured and other soils with a high P-sorption capacity.

This is illustrated from field studies in Washington State and British Columbia which measured changes in soil P values with depth after surface fertilizer application. To move P-fertilizers distances as short as six inches requires the application of large quantities of water, particularly for calcareous fine textured soils. Around 30 times the amount of water was required to move P using daily fertigation or a broadcast application compared with a single fertigated dose. The single fertigated application temporarily saturates the P fixing sites in the soil allowing more downward movement of P. Similar responses occur with high rates of monoammonium phosphate-fertilizer mixed in the planting hole,

especially on fumigated, replanted orchard sites or in orchards with low available P. Fertigation of P in first year results in the same beneficial effects associated with planting hole P applications, namely increased leaf P concentration and improved tree establishment and initial fruiting. A single annual pulse application of fertilizer P to five different apple cultivars (Gala, Fuji, Cameo, Ambrosia, Silken) planted on M.9 rootstock at high densities (3 foot by 10 foot spacing) improved cumulative yield performance of these cultivars during the first five growing seasons. The experiment tested a range of fertigation treatments. The treatment involving high early N plus a pulse of P (4.6 oz/tree of ammonium polyphosphate (10-34-0)) in the week immediately following bloom has produced the most fruit over all cultivars.

Zinc (Zn). Zinc deficiency is a common problem in apple. Symptoms of Zn deficiency are most usually observed in the spring and include chlorosis (yellowing) of the youngest shoot leaves that are often somewhat undersized and narrower than normal (referred to as little leaf). The deficiency may also result in blind bud and rosetting (small basal leaves which form on shortened terminals and lateral shoots of current year's growth). Zinc occurs in the soil in relatively insoluble forms and is easily precipitated on solid surfaces of carbonates and iron and manganese oxides. As a result, it is considered relatively immobile in the soil and a large fraction of Zn applied to the soil is absorbed by soil particles unless extremely high

Effects Of Fertigation On Soil pH

Fertigating ammoniacal forms of N and P can affect the base status of soils as transformation of ammonium to nitrate is an acidifying process, which may also accelerate leaching. The widespread nature of this problem was indicated in a survey of 20 commercial orchards on coarse textured soils which had undergone three to five yrs. Of NP-fertigation in British Columbia. It was recommended that soils with a low acidification resistance index be fertigated with NO₃ –based rather than NH₄ –based fertilizers.

Denise Neilsen is a research scientist at the Pacific Agri-Food Research Centre of Ag Canada in Summerland British Columbia who specializes in orchard nutrient management.

**12 NEW YORK STATE HORTICULTURAL SOCIETY
NEW YORK FRUIT QUARTERLY . VOLUME 17 .
NUMBER 4 . WINTER 2009 1314 NEW YORK STATE
HORTICULTURAL SOCIETY**

MYCORRHIZAE I have been using a product that consists of 9 components, that is dusted onto the roots when planted.

<http://www.bio-organics.com/index.html>

At \$90 for a three pound jar, it sounds expensive, but it does about 500 young trees and it will pay for itself many times over in healthy trees and healthy apples.

Mycorrhizae is a fungal feeder root system that exists in all forests and is the main nutrient recycle in the forests, since Mycorrhizae can break down wood products. Over millions of years, mycorrhizal fungi and plants have formed a mutual dependence. The fungi are nourished by root exudates and in return bring great amounts of soil nutrients and moisture to their host plants. A mycorrhizal plant can uptake 100 times or more nutrients than one without the beneficial fungi. It is valuable in fruit trees at keeping them extra healthy, so we are now adding a Mycorrhizal inoculant onto the roots of all the trees we plant. I am in no way connected to this product, other than being a happy customer.

Harry Burton burton@saltspring.com

Need Pruning?

Fifteen years experience with fruit trees including fig and medlar.

David Johnson, TCC student, formerly with NOFC, available to talk about grapes and breeding. 253-310-1456