Summer 2016

the BeeLine

Summer 2016

Newsletter of the Western Cascade Fruit Society

Inside:

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

Washington State Fair—Sept. 2-25, 2016

Greetings all WCFS members!
Are you planning to attend the WA. State Fair in Puyallup this year? Or would you like to?
Want to park and get in FREE?
Consider helping out the Society by covering the WCFS booth!
Any questions about volunteering?
Please contact - Bill Horn, hornbill66@msn.com or Tel#253-770-0485 today!
We are calling on chapter members in the WCFS to participate in this gala event.
LOOK! It attracts over a million visitors every year.

The Fair has something for everyone: hundreds of exhibits in the Showplex building, delicious fair treats like scones and elephant ears, tons of free entertainment including racing pigs, leaping DockDogs and plenty of free music.
Personally, I'm interested in learning new gardening tips and tricks at Northwest Living & Garden.
Others go to see cars smashing at the Slamfest Demolition Derby or the stage shows.

Our WCFS tables will have several displays of interest to fruit growers and gardeners. Items on display will reflect our mission
and what we are all about as an organization.
I've listed a few of the diverse topics visitors to our booth like to talk about:
- spraying for disease prevention,
- choosing and planting appropriate bare root trees,
- effective pruning for maximum fruit production,
- apple maggot fly and codling moth; mason bees.

In retrospect, during the Spring Fair in April, we stressed how a little preventive maintenance in late winter/early spring is needed to reduce the risk of bad outcomes later.
Too many people approach our booth in September (5-months later) and want to know why they have scab (or another disease)
or what to do about wormy fruit, how to properly prune the 4' high suckers dominating their tree, etc.
Unfortunately, if their fruit is inedible, all we can suggest is sanitation - regularly rake up fallen fruit and discard (NOT in the composter).

This is an annual event and we encourage your participation. Interested in learning more about the WCFS booth? Then contact Bill today!!
He'll be able to provide addition information and maybe get you signed-up for a shift!

-Chuck Polance
Tahoma Chapter

Thank you Tahoma Chapter for maintaining the WCFS booth and organizing volunteers.
Gathering Editor Marilyn Couture

Do you have AYLS in your Kiwifruit vines?

kiwibob, Seattle Tree Fruit Society

The search for the cause of Kiwifruit AYLS (Actinidia Yellow Leaf Spot) will enter its third year in July. To date, there is no answer of what causes AYLS or what affects it has on Actinidia species other than the obvious cosmetic yellow blotches on the leaves!

AYLS can occur in any Actinidia species but is most readily visible on the hairless fruiting species. It can occur on plants in the ground, on plants in pots, and on rooted cuttings that are still in the rooting medium but is more visible on plants that are slightly stressed. AYLS may also affect other plants not related to Actinidia!

See the Blog/Site at: http://kiwifruitayls.wordpress.com for information about AYLS.

Thus far leaf samples have been tested at least three times for Bacterial & Fungal causes, and for 11 known plant Viruses. All test results have been negative and failed to indicate a pathogen as the cause. In 2015 soil and leaf samples from AYLS affected plants were tested for possible Nutrient problems. Those Nutrient tests showed nothing abnormal that might be the cause.

Two test cases of apparently "clean" Actinidia vines propagated out of state purchased in 2014 from Seattle Retail Nurseries were observed to have AYLS in July and August of 2015, indicating that AYLS is communicable and if "clean" Actinidia plants come into affected areas, they will likely get AYLS within a year or two. Nothing is known about the transmission "vector" but sucking insects are high on the suspect list.

Efforts to create a Map of AYLS Worldwide Distribution have produced very limited results due to lack of awareness among Kiwi and other fruit growers of the condition. AYLS has been documented as PRESENT in 21 of 21 locations observed or reported in the City of Seattle, two locations each on Vashon Island and in Puyallup, and one location each in Mill Creek, Edmonds, Bothell, Renton, and Tacoma. There have been one report each of ABSENT from San Juan, Skagit, Jefferson, and Kitsap Counties and two reports each from Lewis & Snohomish Counties. NO reports, either ABSENT or PRESENT have been submitted from any of the other 11 Counties in Western Washington, NO reports from anywhere in Eastern Washington, and NO reports from the vast majority of other States or Countries where Kiwifruit or its relatives are currently being grown.

You can assist the effort to find the cause of AYLS! If you grow Actinidia vines, please take the time to look at them in July-August and report either ABSENT or PRESENT to the AYLS Blog/Site.

Even if you don't grow any of the Actinidia species, you can assist the effort to find the cause by communicating to other fruit growers Worldwide asking them to look at the AYLS Blog/Site.

Happy Growing, kiwibob, Seattle

AYLS not visible yet on potted A. arguta, May 12,2016

AYLS on the same potted A. arguta plants, July 19, 2014

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Status of E. Simpson's Nut Trees

Erik Simpson, OOS, Sequim

Erik Simpson has two Heart Nut seedlings, a Buartnut, and a Russian Carpathian Nut. His nuts trees all came from Bear Creek Nursery, were all seedling planted in 1996 and are all now producing this year. The Russian Carpathian Nut originally came to southern British Columbia with the Russian Doukhobor immigrants. Apparently Erik's seedling was a cross of a Russian parent and a larger fruited variety from the Bill Schildgen's breeding program. Schildgen, a noted fruit and nut breeder, viewed his greatest accomplishment as developing and growing nut trees near Palmer Lake, Oroville. He enjoyed creating different hybrids such as the Cascade Walnut, which is being grown all over the world. Cascade has large nuts with up to 56% kernel and is rated #1 by the North American Nut Grower's Association. William J. Schildgen, died at 94, of Oroville, WA.

Erik's Russian Carpathian nut tree finally flowered for first time this year. Although Erik relied on the descriptions from the 2000 Bear Creek Nursery catalog. Bear Creek Nursery is no longer in business. Carpathian Walnut Cultivars, cold hardy cultivars of *Juglans regia,* can be grown outside of California, in the Pacific Northwest. These Persian walnut trees grow to 40' tall and produce tasty nuts. Plant two trees or one and a grafted walnut for pollination. Trees need a well drained slightly acid soil. Seedlings usually produce well but are variable and can take seven years to start production. (Raintree Nursery)

Chestnuts – are majestic trees which live hundreds of years and each produces hundreds of pounds of nuts each year. Trees with European and American parentage may not be resistant to chestnut blight and should not be planted east of the Rocky Mountains. Only the Chinese Chestnut seedlings are reliably resistant East of the Rockies. Spreading trees grow to 35 feet tall and produce sweet nuts.

Japanese walnut, *Juglans ailantifolia*, is a species of walnut native to Japan and Sakhalin. It is a deciduous tree growing to 20 m. tall. Heartnut: Japanese walnut with a thick shelled but easily crackable, usually heart shaped nut. Sweet and mild. Trees are fast growing with huge compound leaves. Beautiful and hardy. Zones 5-9. Technically they are self fertile but they will set a larger crop if you plant 2 seedlings, 2 different grafted varieties or a seedling and a grafted tree. (Burnt Ridge Nursery)

Beginning in 1908 large tracts of land in south-eastern British Columbia were purchased for the resettlement of Doukhobors. Some 8000 Russian immigrants moved to BC lands from Saskatchewan to continue their communal way of living. In the milder climate of BC the settlers were able to plant fruit trees, and within a few years became renowned as orchardists and producers of fruit preserves.

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Russian Carpathian Nut in flower
Erik Simpson

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2016 NAFEX ANNUAL MEETING

July 28-30, 2016

Lancaster County, Pennsylvania

CALL FOR PRESENTERS: We have 20-minute and 30-minute time slots for presentations. In a survey a few years ago, many members said they desire home grower reports as well as professional. Members are looking for experienced growers of fruits and berries. Your contribution as a speaker is solicited.

Contact any of the following program co-chairs:

- Tom Knaust, Program Chair, at tknaust@gmail.com
- Justin Holt, justinveazeyholt@gmail.com
- Taylor Yowell, tyowellyo@yahoo.com
- Taylor Malone, malonets@goldmail.etsu.edu Pomona

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Chestnuts on the Olympic Peninsula

Chris Kresa, Olympic Orchard Society

Why Chestnuts?

"Chestnuts Roasting on an Open Fire..", we've all heard The Christmas Song that stirs nostalgia for a nut that many Americans have never actually tasted. Let's explore this amazing tree and it's delicious, nutritious bounty. Many regions of the US have a temperate climate favorable to chestnut production, yet we import millions of pounds of nuts every year, mostly from Italy.

Who Buys These Nuts?

Past generations of Americans thrived on the tasty chestnut and many adults who grew up near New York City have fond memories of the family buying freshly roasted chestnuts from street vendor roasting carts during the holidays. Those of us who grew up with these fond memories form one segment of the chestnut market, as do health conscious persons; chefs who use chestnuts in soups, desserts and entrees; and consumers of gluten-free fare. Cultures from many European and Asian countries incorporate chestnuts into recipes and holiday festivals.

Chestnut Production History in a Nutshell

For generations, chestnut trees fed countless animals and humans. Sadly, at the turn of the 20^{th}century, chestnut blight (the fungus, *Cryphonectria parasitica*) was inadvertently imported into the US from China and quickly spread, wiping out vast forests of American chestnut trees (*Castanea dentata*) along the East coast. The blight causes the tree to die back to the roots and re-sprout, only to be infected again. Currently, efforts are underway to develop an American chestnut with a genetic modification that eliminates the susceptibility to blight. Chinese chestnuts (*Castanea mollissima*) are immune, and orchards in the Midwest and east coast are growing them successfully. However, these nuts are typically smaller and less productive than the European hybrids we grow here.

Chestnut Production Here and Now

Are chestnuts a viable crop for the Olympic Peninsula? We think so. Our climate is similar to regions in France and Italy where Castanea sativa thrives. We enjoy warm, dry summers here in Sequim and blight requires hot, humid weather to spread. Also, access to a reliable source of irrigation water has been critical for young tree establishment and will increase nut size prior to harvest. Chestnuts require acidic, well-drained soil in full sun.

At Dungeness Chestnuts, we grow European (*sativa*) x Japanese (*crenata*) hybrids. These hybrids produce a nut that is sweet, large and easy to peel. Specifically we grow the following grafted cultivars: Marival, Belle Epine, Bouche de Betizac, Marissard, Precoce Migoule and Bisalta #3. We selected these varieties for the orchard plan because they are disease resistant, highly productive of large nuts, precocious, and with the exception of Bouche de Betizac and Marissard, good pollen producers. The orchard is laid out in a 20' x 20' grid. This fairly tight spacing improves pollination and increases early productivity. Each tree is on drip irrigation and receives 8-12 gallons of water every 2-3 days depending on weather. The trees are protected from rodents and deer with rodent/line trimmer guards and 5' tall deer cages. We use no pesticides or herbicides in the orchard. A soil test revealed a nitrogen deficiency, so each tree was fertilized with .5 lb. of ammonium nitrate at bud break and will receive another .25 lb. after flowering in late June. We planted about 220 grafted 2-year old trees on 2.50 acres and expect production to begin in two to four years. After ten years, the orchard is slated to produce about 2,000 lbs. of nuts per acre.

Check out our web site below and stay tuned for more articles including:
* Site selection and orchard planning
* Cultivar selection
* Pollination
* Marron or Chataigne?
* Value-added products
* Intercropping
* Harvesting and processing
* Orchard maintenance

Chris Kresa, Dungeness Chestnuts
Email: DungenessChestnuts@gmail.com
Web site: www.DungenessChestnuts.com

For more information on growing chestnuts, visit Chestnut Growers of America at: http://www.chestnutgrowers.org

Precoce Migoule with artichokes inter-planted

Safe mushrooming 101

Washington State Magazine, summer 2016

Basic tips:
*Learn the rules & regulations for your area
*Learn to recognize the common edible mushrooms AND poisonous mushrooms
*Eat mushrooms in moderation even when you are confident of identification
Always cook mushrooms thoroughly before eating
When in doubt, throw it out.

A good guidebook is essential
A mushroom guide should be:
Easy to use, with lots of color pictures
Accurate & up to date
Relevant to the area in which you are collecting
It also helps to attend mushroom classes, shows, and clubs

Mushroom Poisoning
Children, adults and dogs can be poisoned
Most common poisonings are gastrointestinal problems and are not reported
Some types of mushrooms contain enough toxins to kill
If you suspect mushroom poisoning, contact a physician or your local poison control center
Save a sample of the mushroom consumed

Books and links
Trudell & Ammirati. 2009. Mushrooms of the Pacific Northwest. Timber Press.
Arora. 1986. Mushrooms Demystified. Ten Speed Press.
Arora. 1991. All That the Rain Promises and More: A Hip Pocket Guide to Western Mushrooms. Ten Speed Press.
Muchael Kuo's MuchroomExpert.com
Pacific Northwest Key Council's Keys to Mushrooms of the Pacific Northwest
North American Mycological Association (NAMA)
Morel Mushroom Hunting Club

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Attention WCFS Members

Want to know instantly what's happening in the organization?
Subscribe to the WCFS Forum. It's a benefit of membership. The Forum is private and closed to the public. It keeps us together and on top of what's happening in our chapters. Click on this link and follow the prompts:
http://lists.ibiblio.org/mailman/listinfo/wcfs

Judi Stewart, Forum Administrator

Apple Problems: Bitter Pit

Joanie Cooper, HOS Pres., Pome News, Summer 2016

As apple harvest time comes and you get the chance to sink your teeth into a home-ripened fruit, you may find some brown spots in the fruit. This condition, known as bitter pit, results from a calcium shortage in the tree. The low level of calcium may result from competition for calcium between the fruit and the shoots, and it may be aggravated by weather conditions. Hot, dry weather in July and August tends to increase the incidence of bitter pit in apples.
Some varieties are more susceptible than others. Northern Spy, Grimes Golden and Baldwin are very susceptible. Golden Delicious is moderately susceptible, while Red Delicious and Winesap seldom show the problem.
Bitter pit is first seen as circular and slightly depressed spots on the fruit skins. Beneath these spots are brownish or streaked areas. The pits will generally be more numerous on the blossom end of the fruit.
To attempt control of bitter pit, prune affected trees only lightly (the harder you prune a tree the more shoots it grows and the more it competes for the calcium available). During periods of hot dry weather, keep the tree supplied with water by regular and deep irrigation. Applying lime or other calcium containing amendments to the soil around the tree may help. Foliar application of calcium carbonate in early summer can also help mitigate the problem.

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The Summer 2016 BeeLine was produced by
Gathering Editor Marilyn Couture,
with input from membership.
Please contribute your articles for our next Fall issue!

Issue Deadlines:
Winter December 15;
Spring February 15;
Summer May 15;
Fall August 30

Email your articles to: **couture222@msn.com**

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The Benefits of Pruning Apple and Pear Trees in Summer

By Helen Gazeley, June 2013

https://www.growveg.com/guides/the-benefits-of-pruning-apple-and-pear-in-summer/

Summer pruning has always been carried out on trained apples and pears-those in the form of cordons or espaliers. Summer pruning is less common on untrained trees, but as garden apples and pears are now almost always grown on dwarfing stock (tall, standard trees are not pruned in summer), its not only possible, but they'll be much easier to control and you'll gain a deeper understanding of how your trees work.

Two caveats. First, you may have a tip-bearing tree, which means its fruit forms at the tips of branches instead of on short "spurs" along the branches, and these need pruning with more caution. Here, I'm writing about spur-bearing trees, which are far more common, especially among more modern varieties.

Second, if your tree seems to be a bit of a weakling, put the pruners away. When you're cutting away foliage you're reducing the tree's food factory, and this will contribute to its weakness. Chances are, though, that you have a mature spur-bearer that positively bristles with foliage.

Where last year's pruning resulted in fruit formation this year

The two reasons for summer pruning are to improve the harvest next year and to improve this year's crop. Fruit is going to mature better without the shade. Allowing more air and sunshine to reach the fruit will increase size and sweetness, improve its color, allow for easier picking and reduce the chance of pests and disease taking hold.

However, magically, removing those shoots should also result in a larger harvest next year. This is because, while the tree produces fruiting spurs naturally, summer pruning persuades it to produce even more. Removing most of a shoot of this year's growth encourages the buds which are left behind to become fruit buds instead of leaf buds.

Summer pruning mainly takes place in mid summer (July and August in the northern hemisphere). Look at this year's growth. While it's still growing, the shoot will terminate in a growing point carrying a small, lighter green leaf. You need to wait until the growing point is set. This really won't be difficult to spot because, instead of that small, light-colored leaf, the shoot will carry all adult leaves. At the same time, the wood at the bottom of the shoot, where it joins the trunk or branch, will have become stiff and woody (that's "lignified"-scientific terminology). This usually happens at any length over 9 inches. Pruning wood that hasn't hardened will just result in new leafy shoots. Any shoots under 9 inches long can be ignored. This is because this shorter growth is likely to carry fruit buds naturally. Shoots are pruned back to a stub around 3 inches in length. It'll be carrying 2 to 3 buds, and you should make the cut just above a bud or leaf.

What you should cut right back to the branch are the water shoots, which tend to form after a hard winter prune. These are very vigorous, grow straight up into the air from the main branches, and draw lots of energy from the tree. As not all terminal buds set at once, it's generally recommended that you carry it out when around three-quarters of the buds are set. For the home gardener, the lovely thing is that this is a gardening job that doesn't have to be done all at once. Instead, you can take your time and attend to the shoots as they mature.

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Cherry Fruit Bud Hardiness

Lynn Long, Extension Horticulturist,
Oregon State U., Wasco County Extension

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

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

What happens though if the temperature drops below -6° F? Are the buds automatically killed? Not necessarily. Tree fruit buds have an ability to become more resistant to cold over a period of time. Cold days, when temperatures remain below freezing, cause the bud hardiness to drop. As long as the florets around the buds remain frozen, bud hardiness in cherries will drop about 4 degrees per day. This will continue until the buds reach a hardiness level of about -30° F. If temperatures drop faster than the buds can adjust, then some or all of the flower buds may be killed. At this point the super-cooled liquid freezes with the resultant crystals rupturing the cell walls. On the other hand, if temperatures rise above freezing, the buds quickly lose their added hardiness and return to a hardiness level of about -6° F.

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

Healthier trees seem to have a somewhat greater capacity to endure cold temperatures. Therefore proper irrigation, nutrition and pruning during the growing season can affect cold tolerance the following winter. With cherry trees, over-watering is probably as serious a concern and a greater problem than under-watering. Likewise, too much fertilizer can cause rampant growth and weak buds. Finally, healthy buds must have light to survive. A good annual pruning is necessary to maintain leaf and flower bud development in the tree center.

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

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Hardiness of Sour Cherry Research

Dr. James Nugent, Michigan State Umiversity,
(awarded the 2006 Cherry person of the year)

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

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

Our next cherry rootstock test planting at our cherry research station will include some new rootstocks brought in from Russia, so I expect they may exhibit superior cold hardiness.

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Fresh /Cherry Crisp Recipe

Directions:
Preheat oven to 375 degrees F.
In a large bowl combine cherries, 1 ½ cups white sugar, and 4 tablespoons flour. Pour into 9x13 inch baking dish.
In a medium bowl, combine 1 ½ cups flour, oats, and brown sugar and sprinkle onto the cherry mix.
Bake in preheated oven for 45 to 50 minutes, or until topping is golden brown. Allrecipes.com

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High-Tunnel Peaches in the North

Jesse Downs, Down Home Farm,
Readstown, WI 54652
USDA hardiness zone 4

In the spring of 2011 I began working at a local farm that included a high tunnel of thornless blackberries hardy to zone 6 and grown on a trellis. The tunnel is heated to keep winter temperatures from dropping below 10° F.

This got me thinking that such a method could be used with other tender fruits and the wheels started turning. I have always wanted to grow peaches but in my climate they are marginally hardy—the hardiest varieties in the best locations give a crop maybe 2 out of 5 years and die every ten years or so. I thought high tunnel culture might be a solution to the climate issue.

I did some research online but could find nobody else growing peaches in protected cultivation in the US. I did find a power point by peach researcher Dr. Desmond Layne, then of Clemson, concerning high tunnel peach growing in China. Approximately 18,000 acres of peaches are grown in this manner in China in order to get a premium price for early fruit. I figured that a similar strategy could be used in cold climates.

I applied for and obtained a High Tunnel grant in spring of 2012 and embarked on my grand experiment. I planted 60 trees on a spacing of 4.5' by 7' in a 30' x 72' Polytex gothic high tunnel. I installed a 4 wire trellis and trained the trees by the upright fruiting offshoot or UFO method: trees planted at 45° angle, stem trained to horizontal, with upright stems pruned using a branch renewal system. This was sort of a guess on my part, but it is commonly used in trellised sweet cherries.

I planted Red Haven, Madison, Flaming Fury PF 1, and Arctic Glo and Hardired nectarines. Initially, I planted strawberries between the rows. These were eventually replaced by white plastic mulch to reflect light up into the canopy. Moisture is supplied by drip irrigation. Several farmers and fruit researchers assured me that I would fail. Fortunately, however, my correspondence with Dr. Layne gave me good advice and reason to hope.

The biggest risk with growing peaches in high tunnels is not cold but heat—risk of the trees breaking dormancy and wanting to grow too early in the spring. I combatted this by planting in a location with winter shade/summer sun, on the south side of an east/west-oriented valley. The same could be achieved by planting next to a treeline to the south. The biggest thing I did to keep trees dormant is leave the sides and ends of the tunnel open at all times except when heating. I use a propane convection heater to keep the tunnel from going below 0° F; the buds could probably go a bit lower, but I figured I should stay on the safe side. I also have the opportunity to close and heat the tunnel in spring if temperatures drop too low after bud-break. As of writing this article in late February, I have burned ~ 100 gallons of propane per winter. Not bad, at current prices. After the first year, I netted the openings of the tunnel to keep out insects. Betwween this and the lack of rain on the fruit I have managed to keep spraying to a minimum. My only insect problems have been scale and spider mites, which I have kept under control by bringing in beneficial insects. Pollination is done by bringing in captive bumblebees.

So, how'd it go? Well, here are my approximate yields:

- 250 lb. 2013
- 750 lb. 2014
- 1500 lb. 2015

I am able to sell fruit at farmers' market for $4.00/lb. I have no other competition from local peaches, except a family that trucks them up from South Carolina. I estimate that 85% of my fruit rate as #1's, as I have very little pest and disease pressure.

A few things I have learned:

1. Heavy pruning is key. I prune in winter and then twice in summer, removing basically all non-fruiting wood after fruit set.
2. Thinning is key to get large, well-flavored fruit.
3. Removing leaves shading individual fruits helps with coloring. The high tunnel plastic cuts down light by ~ 10%, so color isn't quite as high as outdoor-ripened fruit.

The tunnel cost about $7000, not accounting for labor, and the trees, rrigation, trellis, etc. added about another $1000. Thankfully, Uncle Sam subsidize this research by reimbursing me for the tunnel. Even so, I would have it just about paid off by the third year. It has been a fun learning experience and successful enough that we put in another tunnel in spring of 2015. The new tunnel also has a row of sweet cherries and a few apricots to try, plus a few of my favorite peach, Faye Elberta. These varieties are timed to ripen in the gaps between varieties in the first tunnel. I have a feeling that peaches and other similarly tender fruits could be grown in this manner at least up into zone 3, especially in areas without much fluctuation in winter temps. Also, how about figs, pomegranates, etc. in zones 5-6? Further research needed. This is just an overview. If anybody has questions or wants more technical information they can contact me at downs.jesse@gmail.com.

http://www.nafex.org/members/pomona/spr2016/spr2016.pdf

A Growing Buzz – Beekeeping is Taking Off

Subaru Drive Magazine, Summer, 2016

"The interest in backyard beekeeping has really exploded," says Bill Catherall, president of Portland Urban Beekeepers in Oregon. "I imagine, and I hope, this is just the beginning. Beekeeping and gardening go hand in hand. Both are seeing a big boom as more people want to take charge of their own food source."

There is a learning curve of beekeeping. While the thrill of a first taste of beekeeping is certainly intoxicating – from sighting and catching a wild swarm, to carefully driving home from the post office with a mail-order package of live bees – there is definitely a learning curve to the practice. As with the responsible raising of any creature, it's primarily about communication. "I think the biggest lesson we learn early on is that we really aren't in control. Beekeeping is less about manipulation and more about learning to read the seasons, the bloom, and how all this affects the bees. Then our job is about anticipating the needs of the bees, how to time things right, and use their natural behavior to our advantage," says Catherall. "The learning curve isn't too steep; it's constant though, and that's what I love about it. I've spoken with people who have 40 years of experience and they agree. The bees are the best teachers; you just have to listen carefully."

Most communities have local bee associations. These clubs provide a wealth of knowledge for any new apiarist looking to start their first hives. Here is a list of resources in the WCFS area.

Northwest District Beekeepers Association

Our mission is to promote interest in honey bees and beekeeping throughout the northwest district of western Washington, and, in particular, Snohomish County. Contact: 1305 Pine Avenue, Snohomish, WA. info@nwdba.org

Puget Sound Beekeepers Association

PSBA meetings are held on the fourth Tuesday of each month, excluding July, Nov. and Dec. A beekeeper lesson is offered at 6:30 and main presentation starts at 7:30pm. Meetings are at the Graham Visitors Center at the Washington Park Arboretum.

North Olympic Peninsula Beekeepers' Association

NOPBA, P.O. Box 3036, Sequim, WA, 98382.
Email: info@nopba.org

Seattle Bee Works, LLC

Seattle Bee Works has a hive sharing program and internships. Seattle Bee Works is available to give educational presentations on bees and beekeeping to schools, garden clubs, or anyone who cares about bees. Fee negotiable.
Email: krista@seattlebeeworks.com

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Nine Favorite Garden Plants that Repel Bugs

KTVB, Boise, ID, Summer, 2016

You can plant herbs and flowers that repel bugs including mosquitoes, and add a touch of beauty to your backyard. Some critters eat at your fruits and vegetables while others, such as flies and mosquitoes, eat at your patience. Some plants have strong scents that bugs don't like, making them good insect repellents.

1. Marigolds. These flowers are colorful additions to landscaping, but they have a distinctive smell that repels mosquitoes and other garden pests, including squash bugs and tomato worms. Marigolds contain a natural compound used in many insect repellents.

Plant some marigolds in the garden among your squash, melons and tomatoes or near open windows and doorways where mosquitoes might be tempted to enter.

2. Lavender. About the only insects you see around lavender are bees. They love the flowers, but other bugs stay away. Lavender has a pleasant scent that comes from the essential oils in the leaves of the plant, but the bugs hate it.

3. Lemon grass. Lemon grass can grow up to 4 feet tall, but the best thing about this decorative grass is that it contains citronella, a common natural ingredient in many mosquito repellents. Lemon grass tolerates heat and drought but not frost. So in most areas, it's best planted in a pot that can be moved indoors in winter.

4. Garlic. This herb has long been regarded as a deterrent to blood-sucking vampires and werewolves, but it really deters buzzing blood-sucking mosquitoes.

5. Rosemary. Though you'll want to plant an herb garden for cooking, rosemary repels flies and mosquitoes. It also has a pungent scent that drives away other bugs, including cabbage moths.

6. Basil. This herb also tastes great in your favorite dishes but doubles as a bug repellent. Basil's strong smell keeps mosquitoes away.

7. Catnip. Many cats love catnip, but mosquitoes won't come near it. In fact, some studies show that catnip is 10 times more effective than DEET, the chemical formally known as N,N-diethyl-meta-toluamide and found in most commercial insect repellents.

8. Petunias. These annuals add a bright splash of color to any landscape, but the funnel-shaped blossoms also have a licorice-like scent that repels many insect pests, including aphids, tomato hornworms and squash bugs.

9. Mint. It's a beautiful plant that smells and tastes great to people, but ants and mice absolutely hate it. It can spread quickly in the garden and is hard to remove, so you might want to keep it in a pot. Put some containers of mint around your patio or garden, and it will ward off other insects, including mosquitoes.

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Chapter News

WCFS

Olympic Orchard Society

OOS recently had a program on WSU Food Preservation with speaker Betsy Wharton. A potluck barbecue picnic will be hosted by OOS member Tom Sutton July 23. Jim House and Erik Simpson will demonstrate chip grafting on peaches and plums Aug. 9. A joint OOS-VIFC field trip Sept. 10 to Vashon Island is being coordinated by Charon Scott and M. Couture.
Marilyn Couture, OOS Secretary

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WCFS NEW MEMBERS

OOS

Kris Kresa
Felicia Mueller
Philip Roe
Randy Larson
Roberta Boone

BIFC

Joe Alonso
Kate and Michael Gormley
Maia and Eric Ostrom
Sarah Upsall
Christina Wakefield

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WCFS OFFICERS AND BOARD MEMBERS

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Vice President	Vacant
Secretary	Kari Murphy karimurphy@msn.com
Treasurer	Jerry Gehrke bercogehrke@comcast.net

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2018	Steve Vause Svause@teleport.com Elizabeth Vogt eavogt@comcast.net Vacant
2019	Jackie Furrey Jackie_furrey1@yahoo.com Randy Lee randyrlee3@yahoo.com Vacant

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South Sound	Ian Stoner ianstoner2@gmail.com
Tahoma	Terry Tomlinson terryatmarys@comcast.net
Vashon Island	Charon Scott-Goldman charon@centurytel.net

Links
Here is a list of sites on the web that may be of interest to you.

Related Organizations
Backyard Fruit Growers
www.sas.upenn.edu/~dailey/byfg.html
California Rare Fruit Growers
www.crfg.org
East of England Apples and Orchards Project
www.applesandorchards.org.uk
Indiana Nut Growers Association
www.nutgrowers.org
Midwest Fruit Explorers
www.midfex.org
North American Fruit Explorers
www.nafex.org
Northern Nut Growers Association
www.northernnutgrowers.org
Oregon Sustainable Agriculture Land Trust
www.osalt.org
Western Cascade Fruit Society
www.wcfs.org
Western Washington Fruit Research Foundation
www.wwfrf.org
Home Orchard Society
www.homeorchardsociety.org/
Seattle Tree Fruit Society
www.seattletreefruitsociety.com/
Seattle Tree Fruit Society—Apple ID program
www.seattletreefruitsociety.com/appleid.php

Fruit Research
National Clonal Germplasm Repository
www.ars-grin.gov/cor
Tree Fruit Research and Extension Center, Washington State.
www.tfrec.wsu.edu
Northwest Berry and Grape Infonet.
berrygrape.oregonstate.edu
Pedigree: A Genetic Resource Inventory System
www.pgris.com

Oregon Department of Agriculture
www.oda.state.or.us

Goverment Sites
US Dept. of Agriculture
www.usda.gov
USDA Agricultural Research Service
www.ars.usda.gov

Helpful Sites
Orange Pippin
www.orangepippin.com
Kiyokawa Family Orchards
www.mthoodfruit.com
Red Pig Tools
www.redpigtools.com
Friends of Trees
www.friendsoftrees.org
Cornell Gardening Resources
www.gardening.cornell.edu
http://www.fruit.cornell.edu/tree_fruit/GPGeneral.html
The National Arbor Day Foundation
www.arborday.org
UBC Botanical Garden
www.ubcbotanicalgarden.org
The Reckless Gardener
www.recklessgardener.co.uk
Farm & Garden
www.farm-garden.com
SeeMeGarden.com
www.seemegarden.com
GardenGuides.com
www.gardenguides.com
VitiSearch: Helpful Resources about Grapes
www.vitisearch.com
Avant-Gardening: Creative Organic Gardening
www.avant-gardening.com
The Hardy Plant Society of Oregon
www.hardyplantsociety.org
Ask the Berry Man
www.asktheberryman.com
BackyardGardener.com
www.backyardgardener.com
Tom Brown's website
www.applesearch.org

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