



# NW Fruit

June 2020

## President's Message

A nod to the Grateful Dead, “What a long strange trip it’s been”.

I finally made it to the Fruit Garden this week (June 11), mostly to just see what’s going on. Fortunately, a few people have been volunteering in the garden at Tom’s direction while practicing social distancing and some important work continues to take place. It’s been difficult for me to focus on our needs due to the uncertainty of how our organization and our society (and in fact the world) responds and adapts to the changes brought about by first the pandemic and now the spotlight shining on racial subjugation and discrimination. I am hopeful this period of turmoil will open the door to meaningful changes and progress toward a more equitable, cooperative society and a more environmentally sustainable economic system.

What I am able to focus on for now is Oystershell Scale. In our Feb 2020 Newsletter, I observed that what was originally thought to be an isolated population of armored scale (Oystershell and possibly a little San Jose Scale), is now distributed through out the entire Fruit Garden. We are fortunate to have Dr. Beverly Gerdeman, Assistant Research Professor with WSU NWREC taking great interest in this infestation. She is in the process of creating an updated bulletin on this pest for WSU. Bev has been working closely with WWFRF Volunteer and “**Organic Management Team (OMT)**” members Colleen and Beth, to inspect and inventory the infestation. As they were conducting the inventory, they noticed an occasional anecdotal correlation between heavier scale infestations and presence of anthracnose cankers and included such



Oystershell Scale on an apple branch in the Fruit Garden.

observations in their data. I would make a very rough estimate that about 10% of our trees have a heavy infestation and about 25% had no noticeable scale. The remaining 65% had light to moderate populations.

In orchards such as ours where insecticide spraying is limited (as compared to commercial orchards) these armored scales can be difficult to maintain below damaging thresholds. We are facing a situation where we anticipate a several year commitment to dormant sprays and growing season “crawler” sprays. However, our OMT has expressed concerns about the impact scale sprays would have on their demonstration project. In the short term we have decided not to spray the four Jonagold trees that had been part of the original OMT area. The best-case scenario would be to identify trees with little or no scale, monitor them carefully, and only employ organic management tactics as needed. It remains to be seen if we have the volunteer resources to conduct adequate monitoring and if we can effectively reduce the population to non-damaging thresholds.

While researching this topic I came across the website for the Pacific Northwest Pest Management Handbooks which is home to great information about fruit pest management in the Pacific Northwest including information about these scale insects. Thirty years ago, (before Google) these softcover handbooks were the “bible” for PNW pest management. As I remember, they cost about 20 bucks each and for a while I was getting a new one every year. Now they cost \$80 each for insect, plant disease, and weed handbooks – the online version works well for me, thank you.

<https://pnwhandbooks.org/insect/tree-fruit/apple>

Nik Wiman and Heather Stoven

Revised: March 2020

<https://pnwhandbooks.org/insect/tree-fruit/apple/apple-scale>

In closing, I’d like to say that I’ve been thinking quite a bit (in an unfocused kind of way) about what our organization can do to be of greater value to our members, our volunteers, and the community. Once we are able to meet regularly again, I’d like to see us provide more opportunities for people to talk and learn about fruit growing. We have many folks with years of experience and educational study but have little opportunities for them to share that wealth. We have a wonderful display garden of woody fruiting plants, unrivaled in the region, and for the most part, this public is not aware of this resource. So I’d like YOU to think about this a bit as well. Over the next year I hope we can talk about new ways to satisfy our own interests and share the joys growing fruit with the public that is experiencing new levels of interest in where they get their food.

Bob Baines

President

Western Washington Fruit Research Foundation

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## Fun in the Fruit Garden

Fruit Garden volunteers have many learning opportunities in the Garden. **Due to Covid 19 the Fruit Garden Volunteers are working at different times in the Garden.**

If you would like to volunteer in the Fruit Garden contact Tom Wake at [info@wwfrf.org](mailto:info@wwfrf.org)

### Volunteer to help mow the Fruit Garden.

We need people to help with mowing the Fruit Garden. We have need of both riding mowing and hand mowing under trees. Contact us at [info@wwfrf.org](mailto:info@wwfrf.org) if you are interested.



## Sample the Apple and Pear Harvest Day

In our September newsletter we will notify members whether we will be able to have our October Sample the Apple and Pear Harvest Day. We will also post it on our website at [NWfruit.org](http://NWfruit.org).

## Board Meeting

Our next Board Meeting will be on Jun 27<sup>th</sup> at 11 am by video meeting.

**PLEASE SEND YOUR DONATION ALONG WITH THIS FORM**

Enclosed is my gift of:

\$5000  \$1000  \$500  \$100  \$50  \$25 \$\_\_\_\_\_ (Make check payable to WWFRF)

**To make a donation by credit card go to: [NWfruit.org](http://NWfruit.org) and click on support.**

Please designate my monetary gift toward:  Where it is needed most!  
 Fruit Garden

I would like to volunteer!  In the Fruit Garden  
 At the Winter Field Day  
 On sampling days  
 By doing work that can be done from my home

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Email address \_\_\_\_\_ Phone # \_\_\_\_\_

Please make my gift:  In Honor of:  In Memory of:  
(Name of person) \_\_\_\_\_  
Address of person or person’s family (So we can notify them)

Thank you.

Please send to: NW Fruit  
C/O Kim Siebert, Recording Secretary  
7904 56<sup>th</sup> DR NE  
Marysville, WA 98270

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# Apple Anthracnose

*By Sam Benowitz*

This article presents information taken from scientific studies on apple anthracnose my own professional observations.

A primary article I will be reviewing is one recently published by WSU, [“Efficacy of Fungicide Treatments for Control of Anthracnose Canker in Young Cider Apple Trees in Western Washington”](#) by Whitney J. Garton, Mark Mazzola, Travis R. Alexander and Carol A. Miles. It was research conducted in the cider apple test orchards in Mount Vernon, evaluating control of apple anthracnose canker disease.

In areas west of the Cascade Mountains, apple anthracnose canker disease is caused by the fungus *Neofabraea malicorticis* (synonyms *Pezicula malicorticis*, *Cryptosporiopsis curvispora*.) Apple anthracnose canker disease in the short term reduces productivity and in the long term an orchard’s

economic lifespan. Although it occurs in other parts of North America and in Australia, Africa and Europe, anthracnose canker is a bigger problem here in the Pacific Northwest because we have moderate temperatures, copious rain, and high humidity which makes the perfect climate for the disease to thrive. Because anthracnose canker is a more serious disease in our area, there have not been many studies done elsewhere and the Mount Vernon study is cited as the first done on the effectiveness of fungicides against anthracnose canker in an orchard and not just in vitro.

WWFRF and the Vashon chapter of WCFS contributed \$3,000 for a study at WSU by Dr. Chang-Lin Xiou and others in 2007 that explored which strains of the fungus were causing anthracnose canker disease in three Skagit Valley and four Bellingham area orchards. It was discovered that of 146 samples cultured, the species *N. malicortisis* was most prominent, however four samples also had *N. alba* or *N. nova*.

The recently published two year study by Garton et. al., was done in 2016 and 2017, which were deemed to be fairly normal growing seasons in the Pacific Northwest. It evaluated the use of zinc, copper sulfate, captan and several systemic fungicides applied at 3 week intervals in 2016 from March through October and in 2017 from February through and April. They were used in many combinations and many efforts were made to control spray drift and use careful spray procedures to be very careful that the study was accurately measuring the results. WWFRF does not make any recommendations about which, if any, fungicides should be used by fruit growers, and many fungicides are labeled for commercial production but not for home gardening.

Of all the fungicides in the trial, "no fungicides used showed consistent efficacy in controlling *N. malicortisis* (anthracnose) infections on apple trees. Each fungicide showed only modest efficacy towards either limiting canker expansion and/ or preventing development of new infections." The authors also noted that when the same fungicide was repeatedly used, a resistance to the anthracnose pathogen may occur, and so alternating fungicides and using in combination is recommended.

The study explains that "asexual fruiting bodies form mature cankers in midsummer to late autumn that cause new infections in autumn and winter during mild moist weather. Sexual fruiting bodies may then develop on overwintering cankers." Byther and Davidson in 1992 reported, "Canker progression is slow or ceases in winter and is more rapid in the spring and by early summer cankers are fully developed." Byther has also explained that the disease is also spread from tree to tree by birds and then rain can spread it down the trunk. Also, since older trees can live with anthracnose without major branches being girdled, it spreads from older trees to young trees, where the smaller trunks and branches are more easily girdled and may cause the tree to die.

Other species of *Neofabraea* besides *N. malicortisis* are also implicated namely *alba* and *kienholzii*. in causing "bull's eye rot on apple fruit". Bull's Eye Rot is the infection on the skin of the apple fruit. Often the infected fruit will appear okay at harvest, but the bulls eye shaped lesions will appear in storage.

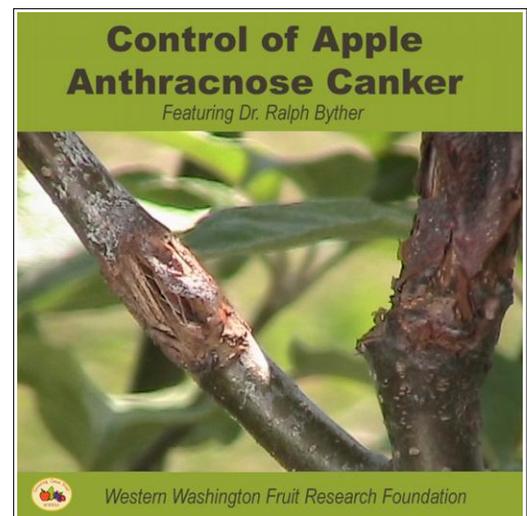
The researchers also explained that in the second year of the Garton study, trees were sourced from outside of the PNW due to observations of infection on trees obtained from a local nursery in the first year. Second year trees were established in a screen house rather than in the field to avoid infection before the experiment started.

The paper recommends that a study be done to evaluate if there is any cultivar or rootstock tolerance or susceptibility. I have not been able to find any such studies. About 30 years ago Raintree Nursery supplied WSU plant pathologist Dr. Ralph Byther with six trees each of five apple varieties, Mutsu, Melrose, Chehalis, Akane and Jonagold, to study anthracnose. I believe, though I no longer have a copy of the study, that Dr. Byther inoculated each tree and then grew them measuring the number and size of the cankers. As I remember it, the varieties were on M26 rootstock. The Mutsu, which is a probably the most vigorous grower and the most susceptible to apple scab, showed a little less anthracnose, and the Akane and Chehalis, the most scab resistant, were shown to be somewhat more susceptible to anthracnose. This was a very small study and Dr. Byther cautioned that more rigorous work needed to be done to draw accurate conclusions. This limited study *did* not show that the varieties that were resistant to apple scab were also resistant to anthracnose.

I note that there have been numerous trials and studies showing varietal variability for apple scab, mildew, cedar apple rust and fireblight. I don't know of replicated varietal trials for anthracnose.

At Raintree we observed that some varieties in our nursery rows had much more anthracnose than others. However, we found that pruning practices are a major source of the spread of anthracnose, so it is critically important for those who are pruning not to spread the disease. We noticed that after we stopped spreading the anthracnose with our pruning, we no longer saw varietal differences in anthracnose in our nursery rows.

At Raintree we used denatured alcohol in spray bottles to spray our lopper blades frequently when we were pruning, especially when we knew anthracnose was near. (*Editor's note: See this [article from WSU about sanitizing clippers](#), which talks about the relative merits of various substances and methods used.*) We also only pruned on dry days and threw out any trees in the nursery rows with visible cankers and removed badly infected mother trees. We also did some cutting out of cankers. Please look at the excellent WWFRF video by Kristan Johnson and Ralph Byther on the subject of anthracnose control. (Available from Raintree Nursery or at our events.) The video shows how to cut out cankers without spreading the anthracnose. The torching shown in the video is no longer recommended by WSU.



The WSU researchers, as always, were very careful to eliminate all other variables when doing their study. I suggest that there are so many variables, many of which I have enumerated, at work in our Fruit Garden to make it impossible to draw any conclusions about variability of anthracnose susceptibility of cultivars or rootstocks in our orchard and that to do so without a (very expensive) controlled study done together with WSU, would only spread misinformation. Also, from the limited Byther study and the recent WSU fungicide study, there is no indication that any of our existing varieties have a strong resistance to anthracnose. Because of this, volunteers working in our Fruit Garden need to be careful not to draw conclusions about varietal resistance to anthracnose when they observe the anthracnose cankers on different cultivars in the orchard.

WWFRF has supported cultivar trials through WSU Mount Vernon over many years, which while not fully replicated, did provide important information about best varieties, at least for the home gardener. However, I believe that anthracnose canker cultivar variations present too many variables to make simple varietal observation useful. Of course my conclusion is based on anecdotal information too.

In conclusion, anthracnose continues to be a problem for apple growers in our region. Cultural practices are nearly as effective as fungicides at limiting the number of new cankers.

[See this study](#) about different methods of treating anthracnose canker for more information.

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## In Memoriam: Floyd Zaiger

*By Sam Benowitz*

Plant breeder Floyd Zaiger has died at age 94. Floyd has given us many wonderful fruits that grow well in western Washington including cherry x plums called pluerrys and other plum crosses including Pluots which are plum x apricots. We appreciate the fantastic lifelong contribution Floyd and the Zaiger family has made for all us fruit growers.

[More about Floyd Zaiger here.](#)



Photo courtesy of David Eddy,  
*Western Fruit Grower* magazine

# Fruit Garden Report

Hello everyone,

Even though we've all had to make many adjustments during this time, work on the Fruit Garden has continued using safe protocols. A special thank you to our manager Tom Wake for coordinating these efforts by ensuring safe distancing and staggering the days during which Volunteers are active in the Fruit Garden.

We've had a good fruit set and are now thinning for a more balanced production. If you'd like to help, please contact Tom Wake at [info@wwfrf.org](mailto:info@wwfrf.org) to schedule an appropriate time.

Due to Covid 19, we canceled our Winter Field Day in the beginning of March. To help make up for that cancellation I was working on developing a special "Peach Day" to celebrate the beginning of fruit production on our 13 young Peach Leaf Curl Resistant peach trees. We had planned various demonstrations and our first comparative peach tasting in August, but between the poor flowering and unknowns about the Covid 19 we are going to put that off for another year.

On a brighter note, Richard Fairfield and Larry Hedgpeth have organized and directed the replacement of the extensive blueberry bird netting structure (it will now resemble the Kiwi trellis that got replaced last year). The plan is for the entirety of the blueberries to be managed organically. Thank you to all that are helping in this endeavor!

With the help of NWECC's entomologist Beverly Gerdeman, we have identified some oyster scale infestation in part of garden, so we are aggressively tending to that issue. This has led us to shift the organic section (referred to as OMT in Bob's President's letter above) to the Northwest section of the Fruit Garden (pending Fruit Garden Committee approval). The crew that is tending to that area have taken on the weeding and maintenance of all of the blueberries, by laying down another layer of cardboard sheet-mulch with wood chips on top.

We have planted the Cosmic Crisp espalier using very dwarf rootstocks (M-27 and Bud 9) so that we can evaluate how it performs while allowing us to easily apply bee-netting to deter apple maggot and codling moth.

Dennis Davenport has been organizing more helpers to mow the lawn this year, if you are interested, please email us at [info@wwfrf.org](mailto:info@wwfrf.org).

Hope to see you sometime soon,

Kristan Johnson

# Lifetime membership awarded to Kristan Johnson



Transplanting the shipova into the Fruit Garden



Installing the supports for the Welcome espalier.

A big thank you to Kristan Johnson for all the work he has done for NW Fruit. Kristan is the designer of the Fruit Garden (and designer of the general layout of the entire Volunteer Display gardens which includes our Fruit Garden, the Discovery Garden and the Native Plant Garden). He was president of WWFRF from 2004 to 2012 and still continues his work as the Fruit Garden Committee Chairperson. The Board of Directors awarded a lifetime membership to Kristan at our February 2020 meeting.



With Dr. Bob Norton  
*Photo by Bob Baines*



## Western Washington Fruit Research Foundation Membership Form

DATE: \_\_\_\_\_  
NAME: \_\_\_\_\_ EMAIL ADDRESS: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_  
CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ 9-DIGIT ZIP: \_\_\_\_\_  
TELEPHONE: (\_\_\_\_) \_\_\_\_\_

Please check all applicable lines to designate type of membership and/or extra donation:

- \_\_\_\_\_ **\$25** FOR ANNUAL **INDIVIDUAL** MEMBERSHIP *(One person only)*  
\_\_\_\_\_ **\$40** FOR ANNUAL **FAMILY** MEMBERSHIP *(Parents with their minor children)*  
\_\_\_\_\_ \$ \_\_\_\_\_ FOR **GIFT** MEMBERSHIP FOR: *(Please note for Whom Above)*  
\_\_\_\_\_ **\$60** FOR ANNUAL **SUSTAINING** MEMBERSHIP *(Individual or family membership with higher level of financial support)*  
\_\_\_\_\_ **\$125** FOR ANNUAL **COMMERCIAL (List Only)** MEMBERSHIP *(Includes 3 people, and also includes business name on our website)*  
\_\_\_\_\_ **\$200** FOR ANNUAL **COMMERCIAL (Full)** MEMBERSHIP  
*(Includes 3 people, and also includes a link from our website to the commercial members' website)*  
\_\_\_\_\_ AN **EXTRA DONATION** of \$ \_\_\_\_\_ FOR **GENERAL FUND** **FRUIT GARDEN**

I would like to volunteer to help as follows (please check all applicable lines):

- \_\_\_\_\_ **FIELD WORK IN THE WWFRF FRUIT DISPLAY GARDEN** *(usually held every Thursday from 9am-12noon; March-Nov.)*  
\_\_\_\_\_ **HELP AT THE WINTER FIELD DAY** *(1st Saturday in March)*  
\_\_\_\_\_ **NORTHWEST FLOWER & GARDEN SHOW** *in Seattle (usually held in February every year)*  
\_\_\_\_\_ **BY DOING WORK I CAN DO IN MY OWN HOME USING MY COMPUTER OR TELEPHONE**

**Please make your check payable to: WWFRF and MAIL your completed membership form and check to:**

**WWFRF  
C/O Joanne Hilgart, Membership  
6160 Everson Goshen Rd  
Everson, WA 98247-9766**

# General Membership Meeting

Each year we normally have our General Membership Meeting followed by the Annual Board meeting after lunch at the Winter Field Day. Due to Covid 19 our Winter Field Day was canceled this year. The most important agenda item at our General Membership Meeting is the vote for board members. Since we have a 2 year term about half of the members are voted on each year.

This year we may be able to have our General Membership Meeting at the Sample the Apple & Pear Harvest Day in October but at this time we don't know whether we will be having this event or not. Look for more information in our September newsletter.

| WWFRF 2020 Financials : 06/15/2020       |              |                     |
|--|--------------|---------------------|
|  |              | <u>Year-to-Date</u> |
|  |              | <u>6/15/2020</u>    |
| <b>Beginning Cash Balance (1/1/2020)</b> |              | <b>\$44,825.33</b>  |
|  | General Fund | \$19,360.21         |
|  | Fruit Garden | \$25,465.12         |
| <b>Revenue</b>                           |              |                     |
|  | General Fund | \$1,258.94          |
|  | Fruit Garden | \$126.50            |
|  |              | <b>\$1,385.44</b>   |
| <b>Expenses</b>                          |              |                     |
|  | General Fund | \$2,058.20          |
|  | Fruit Garden | \$4,760.67          |
|  |              | <b>\$6,818.87</b>   |
| <b>Net Cash Change</b>                   |              | <b>-\$5,433.43</b>  |
| <b>Ending Cash Balance</b>               |              | <b>\$39,391.90</b>  |
|  | General Fund | \$18,560.95         |
|  | Fruit Garden | \$20,830.95         |

Please note that revenue is down  
this year due to the cancellation of the Winter Field Day



## In This Issue

**Apple Anthracnose!**  
**Fruit Garden Update!**  
**Oystershell Scale in the Fruit Garden!**

**Website: [NWfruit.org](http://NWfruit.org)**

**Mission: WWFRF exists to advance fruit horticultural programs for our unique Western Washington maritime climate through advocacy, research, education, and demonstration for the benefit of the general public and the small farmer.**