



NW Fruit

February 2024

NWF Winter Field Day ♦ Saturday March 9, 2024

Western Washington Fruit Research Foundation, aka NW Fruit.org

in cooperation with

Washington State University, Northwest Washington Research and Extension Center

16650 State Route 536, Mount Vernon, WA 98273

Spring Care For Trees & Berries

- Activities**
- Registration begins at 9:30 am. Cash or check only, no credit cards. Details p. 2.
 - Sales tables open 9:45 am to 2:15 pm for scionwood, rootstocks and grafting.

Class Schedule
in the Auditorium

9:45 — Introduction

10:00 — Grafting Techniques: Scionwood and rootstock — see how to bench graft new trees and top-work existing trees.

10:50 — Growing Small Fruit In Your Garden -
Lisa deVetter, WSU Associate Professor

11:40 — Beneficial Insects, Helping Your Garden Grow -
Dr. Bob Gillespie, entomologist

12:30 — Lunchtime: Bring your lunch!

1:00 — Pruning a Fruit Tree from Whip to Renewal: Strategy changes as the tree ages - with NWF lead volunteer Bill Pierce. This class will continue outdoors in the garden at 1:45 p.m.

2:15 — Closing time: At 2:15 p.m. all indoor grafting and sales end.

Outdoors
in the Pavillion

12:45 — Annual Membership Meeting
(followed by Board Meeting to elect officers)

1:15 — Orientation for garden tours: Please dress warmly!

In the Garden

1:20 — Pruning & Caring for Blueberries with
& **1:50** NWF lead volunteer Beth Jones. Beth will repeat at 1:50 p.m.

2:00 to 3pm — Demonstrations will be ongoing at the various stations.
Visit them as you wish.

- Tour of the demonstration orchard
- Espalier pruning
- Pruning to rejuvenate older fruit trees

How To Find Your Membership Status

If the email by which you received this newsletter begins “Hello NW Fruit **Member**” then your membership is current.

If the email begins “Hello NW Fruit **Friend**” then your membership is not current at present, or will expire before March 9. Membership expires on the anniversary of the last payment.

Please Note: You can pay for membership at the event, but by paying it [here now](#) the Registration line will move more quickly.

All purchases at the event require check or cash.

No credit cards. If you don't have checks, be sure to bring cash.

- Admission:
- Registration begins at 9:30 am. All attendees register and hand stamp.
 - **Free to NWF members.** Become a member by purchasing a \$25 yearly membership, \$40 family membership, at event or preferably now on our [website](#).
 - For this event, NWF will offer a \$15 One Day Guest Pass at the event. We encourage members to bring a friend, neighbor or relative — Treat them to a One Day Pass and introduce them to the NWF garden! *Cash or check, no credit cards.*

The proceeds fund our organization's garden and events.

Weather: Rain or shine – Dress for the weather. A large portion of the day's events take place in WSU Sakuma Auditorium or under shelter right outside the building. A bit of rain won't hinder our afternoon demo's in the garden. Big wind we'll see.

Sales Tables: 9:45 am to 2:15 pm — Rootstocks, Scionwood* & Grafting Supplies for Sale

Rootstocks \$5 • Scionwood* \$3 • Custom Graft \$4

- Grafting services are provided for educational purposes and thus are limited to two at a time. Wait in line again for another two.

✱ Purchase our scionwood or bring your own. See How To Collect Scionwood on page 16.

Availability: At the field day the number of each rootstock and scionwood variety is limited but we hope to give everyone a chance to purchase a few of their favorites.

- Until noon we limit sales of rootstocks and scionwood to two of each variety.
- After noon, there will likely be more available to circle back around and make another purchase.
- If you'd like a greater quantity of rootstock, please buy them from a nursery. Possible sources are Cloud Mountain Farm Center, Raintree Nursery or One Green World Nursery.

Rootstocks Offered For Sale at Winter Field Day 2024

Apple Rootstocks

All the listed rootstocks are very hardy and are certified virus free. All the apple rootstocks are compatible with all apple varieties and produce trees that live 75 years or much longer. We are offering the newer Geneva rootstocks which are proven to induce superior productivity in commercial orchards, but may have other issues for the backyard grower.

EMLA 27 Maintain at 5 to 8 foot height and width. Great choice for containers or growing in the ground. Induces early heavy bearing. Because it's a mini dwarf, start its first branches one to two feet above the ground. Benefits from staking. Thrives on a variety of soils. Long proven and reliable. From England's East Malling and Leigh Ashton stations.

BUD 9 Maintain at 6 to 10 foot height and width. Great choice for containers or growing in the ground. Induces early heavy bearing. Used commercially for trees grown on trellises. It requires permanent staking. Thrives on a variety of soils. Long proven and reliable. Very winter hardy. Often used as an interstem with EMLA 111 to make a very well rooted but very dwarfed tree.

GENEVA 41 Maintain at 7 to 10 foot height. A newer rootstock from the Cornell New York Geneva research program. The rootstock is prized for its productiveness and resistance to replant diseases. However, it has some drawbacks: It's brittle in the graft union, the wood and the roots and must be staked. Most nursery owners say it ranks among the highest in losses but growers contend that can be overcome by early trellising, careful digging and gentle handling.

EMLA 26 Maintain at 10 to 15 foot height. Makes a dwarf tree that is well anchored, reliable and productive. Note, if not maintained it can grow more than 15' tall in our area, but it is easily managed

from the ground and produces bushels of apples. It doesn't sucker and grows well on a variety of soils and usually doesn't require staking. It is reported not to perform well when replanted where an apple tree was planted before.

EMLA 7 Maintain at 13 to 18 foot height. Makes a semi dwarf tree that is well anchored, reliable and productive.

GENEVA 30 A newer rootstock from New York. Maintain at 10 to 15 foot height. It is very productive, tolerant of replant disease and resistant to root rot. It has some suckering and may need staking on some sites. Its latent buds can make it harder to successfully bench graft. All the Geneva rootstocks were developed for commercial orchards that use virus free scionwood. Most of the scions of varieties we offer are not virus free. While Geneva 30 is not among the worst Geneva selections for dying from scion induced viruses there are reports of that problem.

EMLA 111 Maintain at 16 to 20 feet in height. It has a great fibrous root system, excellent anchorage and does well on wetter soils. It makes a precocious, productive tree. The best candidate for the understock of an interstem tree. We can graft an EMLA 27 piece about six inches long on the EMLA 111 which can later be grafted to your chosen variety. This makes a dwarf tree maybe 10 feet tall, that can start bearing sooner, with the supportive roots of a much larger tree.

ANTONOVKA Makes a very winter hardy, stately full-size apple tree that will grow 25 feet tall or more in height.

Cherry Rootstock

GISELA 6 Makes An excellent semi-dwarf rootstock. These are smaller than 1/4 inch in diameter.

Plum, Apricot, Peach and Almond Rootstock

These plum rootstocks are compatible with plum, apricot and almonds but not with cherries. Peaches don't graft well and are recommended for summer bud-grafting.

KRYMSK 1 This newer rootstock from Gennady Eremin in Russia has proven reliable for stone fruit growers in the U.S. It can be maintained at 10 to 15 feet in height and is widely compatible with plums and apricots and with some peaches. It does well on a variety of soils and produces some suckers.

MARIANA 2624 An older rootstock, widely compatible with plums, apricots and most almonds, but not peaches. Makes an excellent tree in our area, best choice in wet soils. Usually more vigorous than the Krymsk 1, making a tree maintainable at 12 to 16 feet in height. Produces root suckers that need to be cut back each year.

Pear & Quince Rootstock

OLD HOME X FARMINGDALE 87 Trees can be maintained at 15 to 20 feet tall or even smaller with pruning. This is a rootstock developed in Oregon. It is compatible with European and Asian Pears. Also with Shipova and with medlars. It seems to be very productive and early bearing. It thrives on a variety of soils and does very well in our region.

PROVENCE QUINCE BA29C Trees can be maintained at 10 to 15 feet tall. Great choice for grafting Quinces. Some pears, including Comice are compatible so Comice could be used as an interstem. We don't know about the compatibility of most of our pear offerings so we recommend choosing the Old Home x Farmingdale pear rootstock for pears.



Grafting Supplies for Sale on March 9
Grafting Knives • Grafting Bands • Parafilm Rolls

Weekly Work Parties – Find Schedule at NWfruit.org

Thursdays 9 to 12
Saturdays 9 to 12, check [website](http://NWfruit.org) for Saturday dates

2024 season is just getting started, with Saturday workdays to begin soon. We will continue the extra work day opportunity for aspiring volunteers who can't come on Thursdays. Dress for the weather and bring a pair of hand pruners. Come help with seasonal pruning and fruit thinning in beautiful springtime! Park in the parking lots on the North end of the Garden. These workdays are great opportunities to learn about growing fruit, meet friends, and to contribute to caring for the Fruit Garden.

Note: NFW Membership is required for volunteering in the Fruit Garden.

Please contact Tom Wake or Colleen Sanders for details, at info@nwfruit.org.

Scionwood For Sale at Winter Field Day 2024

APPLE

Akane
Alkmene
Ananas Reinette
Arkansas black
Ashmead's Kernel
Belle de Boskoop
Ben Davis
Beni Shogun
Blue Pearmain
Braeburn
Daliest
Davis Red
Enterprise
Esophus Spitzenburg
Fall Pippin
Fameuse
Golden Russet
Gravenstein
Hewes Virginia Crab
Honeycrisp
Jonagold
Karmijn de Sonnaville
King
Liberty
Melrose
Mother
Newton Pippin
Niedzwetskyana
Northern Spy
Pristine
Roxbury Russet
Rubinette
Silken
Spartan
Tsugari Homei
Wagener
Wealthy
White Winter Pearmain
Williams' Pride
Winesap
Yellow Bellflower

EUROPEAN PEAR

Comice
Concorde
Conference
Highland
Orcas
Red Clapps
Russet Comice
Spaulding
Starkrimson
Suij

ASIAN PEAR

Atago
Chojuro
Hamese
Ichiban Nashi
Mishirasu
Shinseiki

EUROPEAN PLUM

Cambridge Gage
Early Laxton
Ersinger German Prune
Jubileum Plum
Mt Royal Plum
Prune d'Ente
Seneca
Valor

JAPANESE PLUM

Methley
Shiro

CHERRY

Danube
Hartland
Kansas
Lapins
Schneider
Starletta
Surefire

PLUERRY (Plum x Cherry)

Nadia Pluerry
Candy Heart Pluerry

ALMOND

Reliable

QUINCE

Aromatnaya
Ekmek
Havran
Karp's

OTHER FRUIT

Breda Giant Medlar
Shipova (Pear x Mt. Ash)



Shiro Plum blossoms from Scott Terrell >>

Scionwood Descriptions



To help you choose among the varieties on offer on March 9, go to NWfruit.org/events. 1. Click on scionwood list, 2. Click on Apples to find more information, then 3. Back, and continue to click on each fruit group heading for further descriptions.

President's Message

Let me introduce myself, Sue Williams, member since 2009, past president and your interim president until the Membership meeting March 9th. My greatest joy has been to be in the fruit garden, learning from so many 'fruit experts' and watching the garden grow. I know many of you feel the same as I do and that's why we all need to do our part to support the mission and goals of NWFruit.

Become active, aware of the work of the organization whether weekly in the garden, or with one of the many administrative tasks. It does not matter if you live close by to the garden or farther away as I do. Consider offering your time or expertise to keep this 30-year-old organization and orchard going strong.

As the weather changes, new research and information comes forward; there is much to ponder. Read further in this newsletter about project opportunities this spring. Please share your talent; come to listen, be active, and meet friends old and new.

NW Fruit gives back! The varieties you see here, the life cycles, what to prune, pest management, and access to so much expertise. Not to mention some tasty fruit as the seasons unfold.

From the Fruit Garden in Mount Vernon I am always learning something new and valuable for what we grow in my family's home garden in Seattle. I am also involved with the St James Kitchen Garden on First Hill in downtown. The St James Kitchen grows more than 1500 pounds of food per year for sharing.

I look forward to seeing you on Saturday March 9th and speaking with you in person at the Fruit Garden.

Sue Williams, NWF Interim President

Ripe WSU blues, from Scott Terrell



Non-Profit Essential Needs

Along with the many gratifications of working in the fruit garden, to be able to continue, we are required to run a non-profit corporation. The NWF board of directors are looking for volunteers to help with a variety of tasks. Recently the board created a position, **Vice President of Business Affairs** for an individual (possibly more than one) to assume the official Washington state-required duties that Kim Siebert has taken care of for NWF. Please write to positions@nwfruit.org to offer your help for this essential role. Duties include:

- Work with NWF treasurer;
- Act as NWF registered agent for a non-profit corporation with the State of Washington;
- Maintain our memorandum of understanding (MOU) with Washington State University (WSU) Northwest Washington Research and Extension Center (NWREC) to operate the display garden on their property, maintain a working relationship with the current NWREC Director, Carol Miles, or an eventual successor;
- Be registered on the NWF bank account;
- Monitor PayPal and other software subscriptions.

Consider joining Membership Committee

From home you can help NWF with database know-how. Work with our Publicity, Events, and Education Committees -- all good teams ready to cooperate.

Membership tasks might also include assembling information to welcome new members, to promote collaborative working relationships.

Please email **Positions@nwfruit.org** to offer your help.

Facebook Page Helpers

Post updates & channel inquiries to members who can answer. To offer your help, please email **sambenowitz2@gmail.com**.

*Seen in Mount Vernon >>
Chestnut-backed chickadee from William McReynolds, Sapphire, NC*



Western Washington Fruit Research Foundation (NW Fruit)

Membership Form

Please check one box ONLY: Renewal New Member

DATE: _____

Name _____ Email address _____

Address _____ Phone # _____

City _____ State _____ Zip _____

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 at Name)

_____ \$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 (Thursdays/Saturdays, 9am to noon)

_____ BY DOING WORK I CAN DO AT HOME USING MY COMPUTER OR TELEPHONE

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

NW Fruit - WWFRF
PO Box 864
Mount Vernon, WA 98273



Rootstocks growing in our NWF nursery, April 2023. This was before the recent expansion of the nursery, the stoolbed is larger now. Laura's snapshot.

Volunteer in the Nursery

Last summer the NWF nursery was enlarged and fenced, with enhanced irrigation and protection against voles. The nursery provides space for up to fifty juvenile trees, potted trees and the stoolbed for growing rootstocks. All these, in time will supply the Fruit Garden as we maintain the varieties and replace diseased cultivars. **So important and what a great place to learn!**

Volunteer Ned Garvey and other experienced nursery people will work with and train the new volunteers as they learn. **Please tell Garden Manager Tom Wake that you are interested.**

Grafting Classes, Spring '24

To enroll in these classes, look for the sign-up sheets at the March 9th Field Day or if you miss that, email to info@nwfruit.org with Subject: *Grafting Class*. While our Winter Field Day provides an introduction to grafting, NWF members have requested follow-up classes where they can have hands-on experience. To respond to this request, NWF has planned the following classes.

March 14 >> Bench Grafting, Thurs. Date Is Set:

In the Discovery Garden pavilion next to the Fruit Garden, experienced grafters will teach whip grafting. Attendees can bring scionwood and rootstock they have or that they purchased at the March 9th Field Day. **Note:** Practice wood will be on hand as will some rootstocks.

April 20 >>Top Working, Sat. Date is Set:

Grafting onto existing fruit trees is a technique using bark or cleft grafts to create a tree with multiple varieties. Since the mature host tree is already producing, the new grafts will become ready to produce fruit in [two to three years rather than the five to six years] if you plant a new young tree. April and May are the months for grafting dormant scionwood onto a tree that is ready to begin spring growth. Our lead grafter Larry Crum, who has top worked many trees in our garden, will take the time to help you learn topworking successfully.

August >>Bud grafting: A summer technique, using rootstocks grown in our NWF nursery stoolbed. We will use summer scionwood, and remove the leaves before putting a single bud in the rootstock bark. The bud stays dormant until the following spring. At that point the rootstock is cut back, just above the bud so that bud grows to become the new tree. We will show both T budding and chip budding.

Sam Benowitz, Fruit Garden Committee Co-Chair

Fruit Garden Report ♦ *Spring 2024*

There has been a great deal of planning and work to implement the Garden Plan for 2024, approved by the Fruit Garden Committee and our Board of Directors.

The Garden Plan took a comprehensive view of the trees and shrubs in the garden and recommended the removal and replanting of 14 separate items. New trees have been ordered and will be shipped to us soon. The scionwood from trees in the garden has been collected and will be used both to sell at the upcoming Winter Field Day and to graft new, replacement trees. We plan to graft new Gravenstein and Karmijn de Sonneville apple trees and eventually to replace some of the trees in the garden that are not doing well. We will be grafting five new replacements for trees located in the inner oval; the newly grafted trees will be protected in the expanded nursery, to be planted out into the garden as they grow and mature.

A new row of figs is to be planted with a support structure to allow the figs to be covered and better protected in the winter. A new row of a variety of Ribes (currants and gooseberries) will be planted using a mulch material and a structure to support netting, allowing us to better control pests. We are working with WSU's Small Fruit Specialist, Dr. Lisa DeWetter, to control both sawfly and cane borer, pests that have decimated our Ribes plants. A new row of a variety of elderberries is going to be planted and there is a good deal of interest

among our volunteers in growing these plants. We will be planting a yellow Cornus mas tree (Cornellian cherry), another two mulberry trees, an American persimmon, Asian persimmon, and top working a number of trees in the garden with new varieties.

We had a fun and interesting meeting of the volunteers in December, using the big auditorium at WSU. It was a great opportunity to talk with our guest, a local fruit grower, about the trials and tribulations of growing healthy fruit in our area. This was our second December event and we hope to continue doing them annually.

Sam took over the tree label project and prepared a new batch of replacement labels that have just arrived. Volunteers will help put these new or replacement labels on the trees and Sam will continue on with another batch of labels as he has time. Having accurate, attractive labels in the garden is a necessity. This project has been budgeted for a number of years and we hope to complete it this year. As well, updated signage in the garden is also in the planning. Information on apple varieties grown in the Fruit Garden has been updated using the QR codes linked to our website.

We had four trees DNA tested last year; we plan to continue with that budgeted project. We hope to test several more mystery trees. See Sam's article in this newsletter reporting the results of the DNA tests so far.

Mulching will continue with the 2 West rows of blueberries. In the past couple of years all mulch materials have been donated and we hope to continue to benefit from the generosity of North Hill Resources.

The war with the voles continues. We are using traps in the nursery and will continue with mowing and trimming under the trees. All efforts seem to be labor intensive and marginally effective but we will stay on it.

With all the new plantings and projects that are planned for this season we welcome all our volunteers, especially new members interested in maintaining the Fruit Garden. We hope to see you at the garden.

Colleen Sanders, Fruit Garden Committee Co-Chair



Gooseberries • Photo from Creative Commons

Benefits of Membership

Western Washington Fruit Research Foundation (WWFRF), aka NW Fruit is a 501(c) non-profit organization created thirty years ago. Your annual membership dues support the foundation that maintains the six-acre Fruit Garden, a collection of hundreds of varieties of fruit. It offers members and the community hands-on opportunities to learn about fruit growing in our region through advocacy, education and demonstration.

- Field Days and Workshops are free to members.
- Apple & Pear Sample-the-Harvest Day, second Saturday in October, offers garden tours and lectures on growing and harvesting fruit. Members are offered samples of apples, pears, grapes, and sometimes cider, to take home. Crop quantities vary from year to year.
- Winter Field Day, second Saturday in March, offers tours, lectures on fruit growing, grafting demonstrations, plus sale of scionwood and rootstocks for grafting apple, pear and other fruit trees.
- Workshops are held in Spring and Summer on learning to prune apple, pear, plum, and cherry trees, as well as blueberry bushes, grape and kiwi vines.
- As a member you may volunteer to work in the Fruit Garden on designated days. Members receive instructions on maintaining the trees, safety, and growing conditions in the local climate. Membership is required for all volunteers to work in the garden.



- A picnic for volunteers is held in the summer.
- Members receive the NW Fruit newsletter three times a year with current information about the organization's activities and fruit growing.
- Membership ensures your inclusion in occasional emails about Field Days, special events and workshops that occur through the year.
- Membership helps NWF pay expenses for:
 - Events: auditorium, speakers & publicity
 - Garden Maintenance: tools & equipment
- Members may attend board meetings, join committees and participate in committee planning.



Blueberry blossom with visitor • from Scott Terrell

Thank You to North Hill Resources

4600 651 N. Hill Blvd, Burlington 98233
360-757-1866 • NorthHillResources.com

**For landscaping materials and
continuing support**

◆ *DNA Results Are In* ◆

Our NW Fruit garden volunteers are excited to be working with Dr. Cameron Peace, WSU's director of DNA fruit testing, headquartered in Pullman. Dr. Peace has been working with orchardists and fruit enthusiasts in Eastern Washington to test the DNA of old, promising fruit trees, to establish the identity of each tree. Many old apple trees are either of an unknown variety or possibly misidentified.

Dr. Peace subjects leaf samples, submitted from these varieties of interest, to DNA analysis by comparing each sample to more than three thousand varieties in the database.

Last fall we sent leaf samples from four trees in our fruit garden to Dr. Peace and got the results back last month. Seth Brawner of the WSU Mount Vernon station also sent in leaf samples from cider apples from the station's trials. Each sample costs \$50 to test.

In December our NWF group sent a letter of support for Dr. Peace's germ plasm projects. He has asked us to become involved in identifying old time apples growing in Western Washington. This year we are considering what our NW Fruit group can do to identify and promote heritage apple varieties in our region. Dr. Peace will explore our group's work on heritage apple cultivars when he comes to talk at our Fall Field Day on October 12th.

Following the lead of our volunteers Bill Davis and Larry Crum, we are working on the garden's inner oval, made up of heritage apple varieties on M111 rootstock. Each of the trees is getting a new label that states the historic origin of its variety. In addition, a broader description of the variety will appear on our website with links from QR code signs in the garden. By this means, people touring the garden will have access to more detail about each tree as they tour our garden.

We will be sending another group of leaf samples to Dr. Peace this summer for identification.

Local Color

Just a few years ago, our renowned volunteer Bill Davis found on a *Karmijn de Sonnaville* tree, a variety known for its dark red-russeted fruit, a

branch that had large, bright red apples. Seeing no obvious graft, Bill knew that sometimes a natural mutation of a bud on a tree called a "sport" can produce a new variety.

We were all excited about this "new" variety that was of fine quality while distinctly different from the Karmijns. We wanted to name it *Davis Red* in honor of Bill Davis. So we sent in leaf samples, from the Karmijn tree and from the branch we identified as *Davis Red*.

DNA Results Can Surprise

The Karmijn sample indeed was a Karmijn. However the mystery branch was identified as — a *Jonagold*.

Elsewhere in the garden, we have fifteen Gravensteins on a trellis; each is reputed to be a unique Gravenstein type. One of them was labeled *Fall Pippin Gravenstein* but its DNA sample reveals it is a different apple variety, a *Twenty Ounce*! So now our trellis has fourteen types of Gravensteins. If we venture to test them we may find others among them that aren't true Gravensteins.

We also tested an apple we thought was from an original line planted by Johnny Appleseed. It is from a graft on one of our multi-grafted apple trees. DNA test reveals it is *Stark Earliest*, from parents *Jefferis* and *Red Astrachan*. It is possible we mixed up varieties after we grafted it, so we might go back and re-test that tree.

Working with Dr. Peace and the DNA testing project has been very interesting for our volunteers and we look forward to continuing it.

Sam Benowitz, Fruit Garden Committee Co-Chair



From Scott Terrell • Karmijn and 'Davis Red' >



The McIntosh Family Tree at the Fruit Garden

The McIntosh Family Tree at the NWF Fruit Garden - From Larry Crum

The McIntosh apple is one of the most popular apples in the US and is the National Apple of Canada, although it is practically, unknown outside of North America. The McIntosh style is typified by attractive dark red or crimson colors, and a crunchy bite, often with bright white flesh. The flavor is simple and direct, generally sweet but with refreshing acidity, and usually a "vinous" hint of wine.

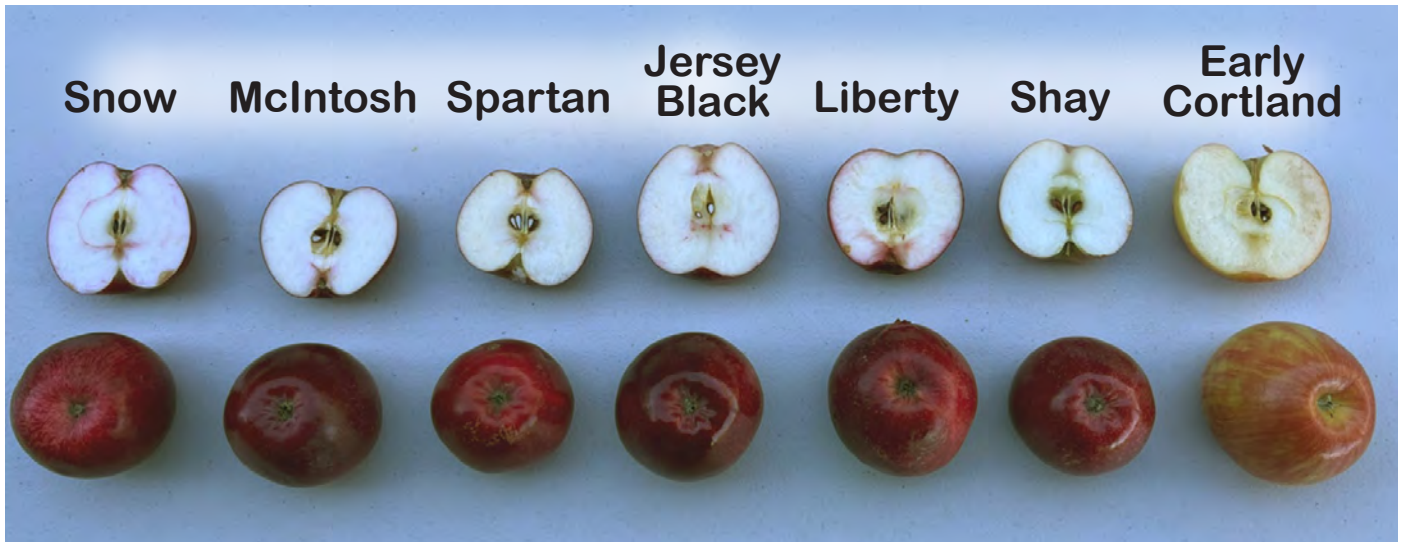
These characteristics—the crimson color, white flesh, and vinous flavor (which fades in storage) are invariably apparent in its numerous offspring, making this one of the easiest apple *styles* to identify in taste tests.

Telling the *offspring* apart is a not as easy. McIntosh appears to have very strong genes because its offspring are invariably crimson colored with bright white flesh. Indeed, regardless of the nature of the other parent, the distinctive Mac flavor and general characteristics tend to prevail.

Bill Davis and I have long been intrigued that the McIntosh apple has such a variety of offspring which is attributable to the fact that the parent of McIntosh, **Snow** (also known as **Fameuse**) was discovered in 1739. From three centuries of tinkering there are now indeed many offspring from which to choose. To get up-close and familiar with this well known family of apples, we decided to make a McIntosh Family Tree.

The McIntosh Family Tree, continued

In about 2019 we chose a healthy **McIntosh Marshall** tree on M9 rootstock, that had been growing in the Fruit Garden about ten years. Onto it we grafted the McIntosh parent, **Snow**, and also grafted several other descendent varieties: **Macoun** (McIntosh x Jersey Black), **Empire** (McIntosh x Red Delicious), **Paula Red** (McIntosh x Cortland), **Melba** (McIntosh x Liveland Raspberry), **Early Cortland** (McIntosh x Ben Davis), **Jersey Black** (McIntosh x Macoun), **Spartan** (McIntosh x Newtown Pippin), **Liberty** (Macoun x Purdue 54-12), and **Shay** (unknown). Shown on page 16 is a photograph of this tree; note that all the apples are about the same size and the same color. Shown below are a few examples from its apples.



A variety of McIntosh Family apples

Note the deep red color on most of the apples and the bright white flesh. It can be seen that although McIntosh is only one parent, essentially all the apples that share McIntosh or one of its daughters, as a parent, all have dark red crimson colors and bright white flesh. These are the strong genetic characteristics of McIntosh. It is unusual for a family group (varieties with common ancestors) to have such strong similarities between the various members of the family.

Honeycrisp Patented As McIntosh Descendent

Since its introduction in the 1990's, the HoneyCrisp apple has become one of the most popular apples in the US. The University of Minnesota developed and patented the Honeycrisp, and required a licensing fee from nurseries that sold the tree. The patent specified that its parents were Honeygold and Macoun, implying its ancestry reached back to the historic McIntosh. But in 2007 the Honeycrisp DNA was tested and revealed that its actual parents were Keepsake and an unnamed variety MN1627, both 20th century apples developed at U Minnesota. Bill and I raised an eyebrow, all those nurseries were paying a licensing fee for something that wasn't legally binding.

NWFruit is always innovating and attempting to demonstrate to its members the remarkably diverse characteristics of the fruit we cultivate in the Fruit Garden. Please join us on our Thursday workdays and participate in our effort to grow great fruit.



Sept '23 fruit from the NWF McIntosh Family Tree

Puzzled About Pollination - from Laura W. Wilson

In conversations about cross-breeding and cross-pollination I felt driven to learn where and when the DNA of an apple would be affected. For example: How does the *Grand Alexander* tree produce *Grand Alexander* apples each year even though it's surely pollinated by its neighbors, *Arkansas Black*, *Melrose*, *Spartan* and others at the Fruit Garden? Here is a condensed script of what I learned, some vocabulary and an illustration to show where the chromosome splitting and combining take place.

Bloom to Fruit

in the most common apple scenario.

1) The apple blossom prepares:
Meiosis occurs in the Androecium to produce pollen, and in the Gynoecium to produce egg cells. Pollen & egg are haploid cells, each having a single unpaired set of chromosomes.

2) By cross-pollination, "other" pollen enters the Stigma to unite with egg cells, producing zygotes, fertilized eggs.

3) Fertilization - The new DNA mix, within the zygote, develops as embryo, inside the seed. The seed protects the embryo.

4) Hypanthium - The tissue that once held the sepals, petals and stamens together, enlarges to become the part we eat.

5) The fruit protects the seeds, but the DNA of the fruit is that of the blossom and the tree where it grows, the "mother" tree.

Heterozygous - Many seeds, many DNA combinations.

Underlying illustration from Creative Commons

Cross-Breeding Is A Years-Long Process

Take pollen (male haploid gamete) from flowers on one desired-trait parent: Breeders first harvest the apple-blossoms in the balloon stage, not yet open for bee traffic, and bring the blooms into the lab. Open the flower and scrape the pollen, to be used to combine with the other desired-trait parent, the "mother".

Deliberate Cross-pollinating: On the female flower in the field, growing on the tree, the pollen will be applied. But first the breeder alters the flower to discourage bee traffic from interfering, by removing petals and pollen-bearing anthers, leaving only the stigma. Breeder applies the chosen pollen from the lab to the stigma, from there the pollen moves down to the egg cells, the ovules, which become fertilized seeds. The objective is to plant the new seeds to generate a new tree or trees with the desired traits.

This in contrast to **"wild" pollination** where we focus on the flavorful fruit of the "mother" tree. In both scenarios pollination is necessary for the hormonal changes that kick into gear to develop the fruit and seeds, but the edible fruit has the genetic traits of the flowering tree.

Find Your Bliss!

NW Fruit volunteers engage in interest groups to manage specific projects. Some administrative tasks could benefit from modernization. Your skills are welcome. We use the Work Group model to keep track of seasonal projects, and to coordinate with Garden Manager Tom Wake and Garden Committee Co-Chair Colleen Sanders. These work groups offer experience accordingly:

In the Garden

- Blueberries, Cherries, Kiwi, Pears, Heritage Apples, Elderberries, Peaches, Persimmons & more
- Pollinator friendly plantings
- Espalier training
- Construction projects, Irrigation, Organic Growing

Or Administrative Support

- Website & Media Updates
- Volunteer Coordinating
- Membership/Mailing
- Communications
- Event Planning
- Publicity

Western Washington Fruit Research Foundation (NW Fruit)

Donor Form

To make a donation by credit card go to: NWfruit.org and click on Support.

Enclosed is my gift of: \$5000 \$1000 \$500 \$100 \$50 \$25 \$ _____

Please designate my monetary gift toward: Where it is needed most! Our Fruit Garden
 WSU sponsored research Field Days and other events

I would like to volunteer! In the Display Garden On Field Days and events
 By doing work that can be done from my home

Name _____ Email address _____

Address _____ Phone # _____

City _____ State _____ Zip _____

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) _____

**Please make check payable to WWFRF
and mail your donation
along with this form to:**

NW Fruit - WWFRF
P.O. Box 864
Mount Vernon, WA 98273

Your gift is tax-deductible to the fullest extent allowed by law. Please consult your tax accountant for details.

Thank you!

Read About Kristin Johnson

1953 - 2020

Landscape architect and permaculture designer of the Fruit Garden at NWREC, Kristin played a foundational role for over 25 years in creating the garden we enjoy today, and inspiring its volunteers. At NWFruit.org go to About Us - Our Fruit Garden - Fruit Garden Designer. And don't miss the linked article there, "Well Bred Fruit for the Maritime Climate" for Kristin's own descriptions of design concepts.



Say Hello to friends at

a WA nonprofit in Bellingham, WA



NWFruitRescue.org

Steve Gaber, Director • 360-927-1768

"Fight Hunger and put surplus tree fruit to good use."

Similar name but not affiliated with NWfruit.org

Heritage Orchard Conference

Volunteers Simone Spiess and Gary Jones *both* wrote to me about U. Idaho's Heritage Orchard Conference Webinars. Here is a link plus contact information for its program manager, so you can explore this *free monthly webinar* series. (Past events available, on conference page see box on right, "Webinar Series Recordings.") Notice WSU Cameron Peace will be speaking on April 17.

<https://www.uidaho.edu/cals/sandpoint-organic-agriculture-center/conference>

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KYLE NAGY, M.S. - Superintendent & Orchard Operations Manager
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✪ Collecting Scionwood ✪

Collect scionwood during winter dormancy. Select only new, one year growth that will be at the end of branches. Cut each growth stalk into about 10" to 12" lengths for useable scionwood. Try for pencil size wood to match the diameter of typical rootstocks.

Label the scionwood so you know the variety. It is good practise to seal both ends with parafin or other tree seal. Place in a plastic bag with a wet, wrung out, paper towel in the bag and seal it.

If you aren't ready to graft, store it in the refrigerator. Make sure fruit is not in the refrigerator because fruit gives off ethylene gas, which makes the scionwood come out of dormancy. Your scionwood can be kept dormant for a few weeks until you are ready to graft.

Further Notes About Winter Field Day Activities:

The varieties of scionwood we offer have been visually inspected to be free of diseases. They are to the best of our knowledge true to name. However we make no guarantees about their pedigree, moreover the rootstock or scionwood cannot be guaranteed to grow. Also, we cannot guarantee that every variety of scionwood and rootstock listed here will be available at the field day, though we make a big effort!

- ◆ Grafting can be dangerous; people who choose to do it, do so at their own risk.



*Les Price of Jones Creek Farms with NWF volunteers
Photo and article from Scott Terrell*

December Thank You Event

Northwest Fruit members and Fruit Garden volunteers attended a Dec. 14 educational event at the Washington State University NWREC that featured a presentation by fruit grower Les Price. A crowd of over 50 people filled the station's auditorium to listen, learn and share pot-luck food and treats. This festive gathering was conceived as Thank You to our volunteers who so often miss the Field Event lectures because they are servicing the events.

Price spoke of his expertise with growing fruit at his Hamilton, Washington, area orchard, Jones Creek Farms. Topics included his battle against voles (rodents that attack the root growth of trees), which fruit varieties grow best in the Lyman-Hamilton area's microclimate and techniques for dealing with fruit tree diseases, including apple anthracnose.

Anthracnose, Price said, especially hits varieties of apples that have the Cox lineage. He took a few hearty souls for a walk into the NWFruit's orchard at the research station to look at evidence of anthracnose in some of the larger Karmijn de Sonnaville apple trees. There was some evidence of infection, which Price said was something that is best pruned out after January, since the fall rains help spread the disease.

According to its website, Jones Creek Farms grows fruit, including dozens of apple varieties, pears, plums, quince and figs. They are also known for their garlic. The farm offers a U-pick experience to visitors. Price worked with the Mount Vernon WSU fruit program alongside Gary Moulton before establishing Jones Creek Farms on the property of a former dairy.

The December 2023 event was the second of its kind. In December 2022, NWFruit hosted member and fruit garden committee co-chair Sam Benowitz, who gave a presentation on plums. His topics included the best varieties to grow, pests and diseases of plums, which rootstocks to use for plums and stone fruit and products that can be made from them. "The December event has been a great learning experience where experts share their years of hands-on experience with our members," Benowitz said.

Upcoming Events



2023 trees were prolific, we made cider on two days. • Photo from Todd Board

- Winter Field Day -- 9:30 a.m. to 3 p.m., March 9, 2024 at WWREC, 16650 State Route 536. Free admission with up-to-date membership.
- 9 to Noon Workdays — Fun and educational Thursday Work Days every week. Plus later in spring, Saturday work days, for willing volunteers who can't come on Thursdays. Learn more about all that's going on, and new ideas being proposed, by joining us. For more information contact Garden Manager Tom Wake or Garden Committee Co-Chair Colleen Sanders, info@NWfruit.org
- Annual Membership Meeting - March 9, 2024
- Several workshop days are offered each year, sometimes with fruit sampling, depending on the season. Free to Members.
- Apple and Pear Sample the Harvest Day second Saturday in October. This event centers around the harvest with educational classes on related garden techniques and information. Members are allowed to keep a portion of the harvested fruit. Details in September Newsletter.
- Cider Making - on one or two Thursday's after Apple and Pear Day in the fall.
- December Celebration with cookies and end-of-season farewells. Program may include informative classes to answer home gardeners' questions. Free to Members.

NW Fruit Thanks Raintree Nursery

Morton, WA

800-391-8892 • raintree nursery.com

For continuing support