



# Country Living

Provided to you by the

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## September 2023

### Programs for you . . .

Listen to the Gardening Spot on KOHI (1600 am) radio - Every Saturday, 8:05 to 8:15 a.m.

**September 7<sup>th</sup>:** **Columbia County Beekeepers Monthly meeting.** They will discuss important things to do for the apiary as honey collection trends downward. Thursday, September 7th at 7pm meeting at the Saint Helens Extension Office or by Zoom. Please email for the zoom link. All are welcome. [Columbiacountyoregonbeekeepers@gmail.com](mailto:Columbiacountyoregonbeekeepers@gmail.com)

**September 13<sup>th</sup>:** **[Small Farm School](#)** – Clackamas Community College in Oregon City  
Registration open through August 30 (\$80) after August 30 (\$100)  
Scholarships available to BIPOC farmers, Veteran Farmers, and students  
26 class offerings on production, marketing, and sustainable practices  
<https://blogs.oregonstate.edu/smallfarmschool/>  
For more information, check out this article from Clackamas SWCD: <https://conservationdistrict.org/.../small-farm-school...>

**September 19<sup>th</sup>:** ***Chat with Chip.*** A roughly one-and-a-half-hour interactive Zoom program on garden and related topics with Chip Bubl. Tuesday, September 19th from 6:30 – 8pm. You are invited to attend! Reserve a place: <https://beav.es/STR>



**Oregon State University**  
Extension Service  
Columbia County

*Chip Bubl*

Chip Bubl, OSU Extension Faculty, Agriculture

Agricultural Sciences & Natural Resources, Family and Community Health, 4-H Youth, Forestry, and Extension Sea Grant programs. Oregon State University, United States Department of Agriculture, and Columbia county cooperating. The Extension Service offers its programs and materials equally to all people.

## In the garden

### Can we really grow olives?

There is some significant research going forward on olive production in western Oregon. In addition, there are several commercial orchards and lots of homeowners who have planted olive trees.

Historic olive production has been between the 30<sup>th</sup> and 45 parallels in the northern hemisphere. In Oregon, we cross the 45<sup>th</sup> parallel just north of Salem on I-5. Locations within that grid have been thought to need a climate hardiness zone of 9 to 11. And that is the kicker. The Willamette valley is now Zone 8a to 8b, up from zone 7b due to climate change. What the hardiness zone rating is all about is how cold a given winter might get. The lower the number, the colder the winter extremes. Duluth, Minnesota is Zone 3. Miami, Florida, about 11.

Olives were first cultivated in what is now Syria, moved into Turkey and then all across the Mediterranean. Within the genetics of the olive family were varieties that could tolerate colder temperatures. That is where hope for Oregon olives lie.

The olive variety trial is in its third year at the OSU North Willamette Research and Extension Center in Aurora. It is too early to declare winners and losers. The primary data needed is what winter temperatures can a given variety stand, is our spring weather suitable for serious pollination, and is our growing season long enough to mature olives.



Secondary concerns include soil types (olives are said to be quite tolerant of everything but very wet soils), disease and insect issues, and proper training for this climate.

Currently, their varieties with the best fruit set among the group they are testing are ‘Arbequina’, ‘Arbosana’, ‘Balady’, ‘Black Pearl’, ‘Chemlali’, ‘Chemlali de Stax’, ‘Cordovil’, ‘Koroneiki’, and ‘Mixan’.

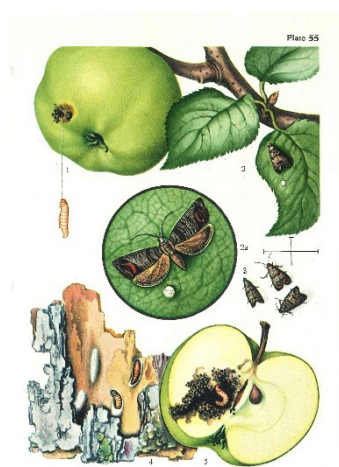
Several companies are selling varieties that could do well here. They do need full sun and good air circulation.

More than 30 years ago, I bought two olive trees and planted them in the garden. It was the wrong time to do so. They grew beautifully but that first winter it got down to 3 degrees above zero! The olive trees died to ground level but both came back the next year. I was relieved. I shouldn’t have been. The following winter was another below 5 degree cold event. They were toast. But, with climate change and our zone hardiness rating may go up soon, I might try again. *Picture: Heather Stoven, OSU Extension*

### Apple insects and the sweet juice in “watercore” apples

So far, gardeners with apple trees are reporting far less apple damage due to apple maggots and the codling moth. Both lay eggs of larvae that burrow into apple flesh. The codling moth caterpillar makes a big tunnel to the core, then exits, after all that damage, out the bottom end of the fruit.

Apple maggots are much smaller and spend their adolescence burrowing through apple flesh, leaving lots of tiny tunnels.



So if the maggot and the codling moth appear to have taken a year off, why did it happen? There are at least two possible reasons. First, spring of 2022 was cold and wet with very few apples set. If there was no place for codling moth and apple maggot females to lay their eggs, this year's numbers should be lower. Another factor is that this

year, there is a superabundant



crop of apples, a case of so much fruit, so few "mothers". Basically, it may be year of "solution by dilution". But there still is time for a late crop of both insect larvae to find their way to the later maturing fruit.

The heavy fruit load is causing apple limbs to bend, leading to less leaf cover over the fruit, which leads to more sunburned fruit. Sunburn is mostly on fruit on the south and west sides of trees which get the direct sun at the hottest time of the day.



What is watercore in apples? First, you rarely see it in store bought apples for reasons that will become clear. Second, it looks like it is almost frozen with a water-soaked

appearance. One bite will tell you how juicy and sweet watercore flesh is. It is a physiological condition that is common to some varieties but rarely found in others. Cool, clear nights and bright sunny days are part of the picture. A calcium deficiency and/or low soil moisture can be a part of the picture. Over-mature fruit can also show it so pick when ripe.

The most common variety I know that shows it is *Tompkins King* (aka just *King*). It can also be found in *Gravenstein*, *Red Delicious*, and others.

While they are great for fresh eating, **watercore apples store very poorly**. So perhaps making some cider would be a good use of these unique apples. *Picture: Mich. State. U.*

## A heavy crop of acorns

Readers in the St. Helens/Scappoose area have noticed that this is also a very heavy acorn year for our abundant Oregon white oaks (*Quercus garryana*). This is consistent with many studies of this species in its native range from British Columbia into northern California.

It is clear that Oregon white oaks do not bear acorns consistently. Some years, there are big crops; others none, especially following a big crop; and some years have small crops.

Weather pattern of recent years plays a role in acorn crops as does shading versus full sun. This



is especially noticed when Douglas fir, which outcompete the oaks for sun, are removed.

Oaks, like hazelnuts, have male and female flowers on the same plant. Catkins are the

male flowers which shed the pollen and small female flowers, usually at the tip end of new growth, receive the pollen and produce acorns.



Acorns are fed on by Steller's and Scrub jays, Douglas squirrels, ground squirrels, dusky-footed wood rat, deer, and possibly deer mice. All except deer and deer mice bury intact acorns for later use. That is a significant part of Oregon white oaks' regeneration cycle since many of the acorn nuts are never eaten and will sprout the next spring. Squirrels move them about 50 feet or so for eating and storage. The jays may fly the acorns 300 to 1,000 feet for the same outcome.



One bit of a mystery is what happens to the big oak-eating bird and mammal population build-up that follows a heavy nut crop. These oak trees seem to have the habit of very small to non-existent crops after a big one. Do the birds and squirrels just die, go somewhere else, or what? It is not really clear. Populations of some species may take a tumble. Was the tree calling the shots by not having good years in succession? Was balance restored? Were lots of nut planted? Squirrels actually do quite a bit of damage to oaks in some years but generally, not enough to kill the oaks.

What is clear is that the indigenous population also gathered acorns. They shelled them and placed nuts in huge woven baskets that were placed where winter-rain would leach out their tannins. They used sub-surface basket leaching methods on Sauvie Island. For more

information, see <https://directives.sc.egov.usda.gov/OpenNonWebContent.aspx?content=25907.wba>

*Pictures: Catkins and flowers OSU; Acorn: I Naturalist*

## Late blight fungus management on tomatoes and potatoes

As I write this, there are some hints of a day or several that could drizzle in the coming week.

For those of us growing tomatoes, this is not what we need to hear! If the drizzle persists more than a whole day (or two at most), tomatoes and potatoes are at risk for late blight infections. Peppers are less affected. A full-blown infection can make plants look like they have been blow-torched and all the fruit is ruined. Potatoes developing in the ground can also be infected. For tomatoes, the season is over. There are very few varieties that have decent resistance to late blight.

So if a drizzle or rain forecast looks more likely, consider spraying your tomatoes and potatoes with a copper fungicide (most are considered "organic")

**before rain sets in.**

These products are generally available at garden centers

and the garden sections of hardware stores.

Always read and follow all label instructions.

Best source of long-term weather is

<https://www.weather.gov/pqr/> Click on "Forecasts", then "Local Area", and then "ZFP" for northwest Oregon. It is broken down by areas. You can also click on the "forecast discussion" for a longer, though technical, look.



## September Garden Hints from OSU Extension

### Maintenance and Clean Up

- Recycle disease-free plant material and kitchen vegetable and fruit scraps into compost.
- Harvest winter squash when the "ground spot" changes from white to a cream or gold color.
- Pick and store winter squash; mulch carrot, parsnip, and beets for winter harvesting, assuming you don't have field mice (voles).
- Protect tomatoes and/or pick green tomatoes and ripen indoors if frost threatens.
- Stake tall flowers to keep them from blowing over in fall winds.
- Dig, clean, and store tuberous begonias if frost threatens.
- Harvest potatoes when the tops die down. Store them in a dark location.
- Optimal time for establishing a new lawn is August through Mid-September.
- Aerate lawns.
- (Early-September): Apply 1 lb. nitrogen per 1,000 sq.ft. to lawns. Reduce risks of run-off into local waterways by not fertilizing just prior to rain, and not over-irrigating so that water runs off of lawn and onto sidewalk or street.

### Planting/Propagation

- Divide peonies and iris.
- Plant garden cover crops as garden is harvested. Spread manure or compost over unplanted garden areas.
- Plant or transplant woody ornamentals and mature herbaceous perennials. Fall planting of trees, shrubs and perennials can encourage healthy root growth over the winter.
- Plant daffodils, tulips, and crocus for spring bloom. Work calcium and phosphorus into the soil below the bulbs at planting time. Remember when purchasing bulbs, the size of the bulb is directly

correlated to the size of the flower yet to come in spring.

- Plant winter cover of annual rye or winter peas in vegetable garden.

### Pest Monitoring and Management

- Continue monitoring late-season soft fruits and berries for Spotted Wing Drosophila (SWD). If SWD are present, use an integrated and least toxic approach to manage the pests. To learn how to monitor for SWD flies and larval infestations in fruit, visit <http://swd.hort.oregon-state.edu/gardeners>.
- Apply parasitic nematodes to moist soil beneath rhododendrons and azaleas that show root weevil damage (notched leaves).
- Bait for slugs with traps or iron phosphate products that are safe for use around pets.
- Monitor trailing berries for leaf and cane spot. Treat if necessary. Remove old canes and tie up new ones if you haven't already.
- As necessary, apply copper spray for peach and cherry trees.
- Spray for juniper twig blight, as necessary, after pruning away dead and infected twigs.
- Spray susceptible varieties of potatoes and tomatoes for early and late blight.

### Houseplants and Indoor Gardening

Clean houseplants, check for insects, and repot and fertilize if necessary; then bring them indoors.

*Oregon State University Extension Service encourages sustainable gardening practices. Always identify and monitor problems before acting. First consider cultural controls; then physical, biological, and chemical controls (which include insecticidal soaps, horticultural oils, botanical insecticides, organic and synthetic pesticides). Always consider the least toxic approach first.*

## Farm and livestock notes

### Heirlooms & hybrids & GEs, oh my!

Several people asked me to put together something on the difference between heirloom, conventionally bred, hybrid, and genetically engineered vegetable crops. This is not a simple topic but I hope that this piece clarifies at least some of the science embedded in these terms.

Agriculture started ~10,000 years ago in several locations around the world. The first farmers began selecting plants that produced the type and volume of harvest that they wanted. That continuous selection of the “best plants” started changing the genetic profiles of what were, up to that point, native plants. Some genes from the original wild stock were favored in the new farming world and others were not.

For thousands of years, straight selection of seed from the best plants was the only way to improve crops. The selection process was tied to improvements in farming techniques including tillage tools, irrigation methods, and harvest aids. Plants were successively “bent” to perform in these evolving, human-driven systems.

In time (roughly the last 2-300 years), it became clear that it was possible to crossbreed two distinct varieties of a crop and get some plants that were better than the sum of their two parents. Often a high yielding variety of good eating characteristics was crossed in the field with a variety of lesser characteristics but good disease resistance.

This process was then followed by “line-breeding” the best plants to stabilize the desired characteristics into the new variety. Off-type plants were rogued out and their seed discarded. This created new varieties faster and a bit more intentionally.

The Bohemian monk, Gregor Mendel put mathematics in the mix when he noticed that certain pea crosses produced predictable ratios of externally visible characteristics like seed coat color and smoothness. He noted recessive or dominant traits and tracked their appearance in successive crosses. His research, when it finally became known, revolutionized plant breeding. The deeper understanding of genetic inheritance allowed for much more rigorous selection methods and accelerated breeding for specific locations and needs.



All these early varieties are now classed as heirlooms in that they were bred conventionally and have a long (50+years) culinary and cultural history. They are all open-pollinated varieties (some need to be isolated to

be kept for seed). It isn't clear how long a variety needs to be around to become an “heirloom”. And some heirlooms do not do as well as more recent varieties in a number of traits.

In the animal world, it had long been known that when two purebred beef breeds were crossed (like Angus with Herefords), the calves showed “hybrid vigor” also called “heterosis”. They grew faster with less feed and were more disease resistant.

Did this happen in plants as well? There was good evidence it did. This insight led to the

development of F1 hybrids. But it wasn't easy with plants.

You needed two inbred lines, one of which would be the male parent (provide the pollen) and one line the female parent (produce the seed). This worked if you could easily remove the pollen shedding part from the female parent. Corn was a classic subject of the first hybrid crops. The female parent had its pollen producing tassels hand removed (so it couldn't pollinate itself) and the pollen from the male line fertilized the female parent. The female line seeds were



harvested as the F1 hybrid and the male line seeds were fed to the hogs. De-tasseling is not done by hand now but the concept is still the same.

It was easy to make corn hybrids but a lot harder for other vegetables that weren't pollen self-incompatible. In some, like squash and cucumbers, you have to destroy the "male flower" of the female line and destroy the fruit (or female flowers) produced on the male line. Some vegetables with small flowers had their pollen anthers plucked with tweezers from the female line, a very arduous process.

This led to incorporating a gene for cytoplasmic male sterility in the female line (a genetic mutation that is not uncommon in plants) which eased the need to remove anthers or tassels. But this is still conventional breeding, albeit with some significant twists thrown in.

Hybrids can't be reproduced without having both pure lines to start with. If you save seeds from plants grown from F1 hybrid seed, they will show a mix of characteristics from the two parents, but not the full hybrid traits.



Hybrid seed has been very important in getting more vigorous and disease resistant vegetable varieties.

Finally, there are genetically engineered (GE or sometimes called genetically modified GM) crops. Gene sequences are inserted into plant chromosomes to get a specific result (herbicide tolerance and/or insect resistance,

mostly). There are no GE vegetable varieties available to home gardeners and few to farmers. They are expensive to make and don't fit the vegetable world very well with its constantly changing variety preferences. There is lots of GE field corn, soybeans, cotton, and other large scale crops. The GE world is complicated and is about to get more so with the development of tools to turn genes on or off to create a specific plant response. No new genetics are added and the genes naturally exist in either state (on/off). It has revolutionized plant breeding and management of human disease.

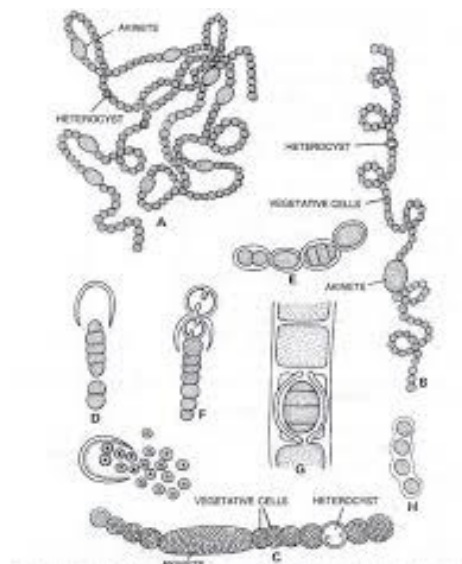
For a fuller discussion of heirlooms versus hybrids see <https://ucanr.edu/blogs/blog-core/postdetail.cfm?postnum=56338#:~:text=Such%20controlled%20cross%2Dpollination%20producing,vigorous%20and%20more%20genetically%20variable>. and <https://today.oregon-state.edu/news/learn-terms-seed-packets-make-right-selection-1>

## Cyanobacteria, ponds, and livestock poisoning

Cyanobacteria are ancient bacteria capable of photosynthesizing sugars from sunlight. They are incorrectly called blue-green algae. There are many genera and species and they play an important role in carbon capture, oxygen release, and food in a number of settings. Individually, they are microscopic, often aggregated in long chains.

A number of species are found in Oregon. Several species are common in stagnant fresh water and can cover a pond with green to tan “slime”. **But within the common pond/slough species are several that produce serious toxins. If humans or livestock and other animals, wild or domestic, drink toxin-infused water, they may die.** The following is from a North Dakota State University Extension publication:

*Toxic cyanobacterial blooms occur because of favorable conditions, including hot, sunny days and warm, nutrient-rich water. The blooms commonly occur in late summer and early autumn. Under favorable conditions, bacterial numbers multiply rapidly, doubling in one day or less. Blooms usually do not last long. Rain, heavy winds or cooler temperatures often inhibit growth or break up the blooms, mixing the bacteria into the water body within a few days. However, under continuing favorable conditions, blooms may last for several weeks. Cyanobacteria can survive under ice and throughout winter*



*conditions. Signs of neurotoxin poisoning usually appear within 20 minutes of ingestion. In animals, symptoms include weakness, staggering, difficulty in breathing, convulsions and, ultimately, death. Animals affected by liver toxins may exhibit weakness, pale-colored mucous membranes, mental derangement, bloody diarrhea and, ultimately, death. Typically, livestock are found dead before producers observe symptoms.*

*Livestock that do survive cyanobacterial poisoning may lose weight and, in some cases, develop photosensitivity. Livestock that develop photosensitivity are prone to sunburns affecting lighter areas of skin, including the muzzle, udder, vulva/anus and areas with white hide. Affected skin will dry out, turn black and peel, exposing fresh, new skin.*

*No known antidotes are available for poisoning resulting from cyanobacteria. The best solution is to be aware of conditions that spawn cyanobacterial blooms. Under those conditions, keep cattle from drinking in areas having accumulated bacterial concentrations.*

Here are some complicating factors:

There is no visual way to tell if a bloom is toxic. Tests by a water lab are needed. But that takes time and the water may be safe (or not) by the time the test results are back. **Best advice is to keep humans and livestock out of ponds in the summer, especially if you see lots of “pond scum”.**

A new method of analyzing the aerial release of a particular compound by the algae may have promise for future quick estimation of toxicity but the OSU research needs more fine-tuning before it is useable.



Toxicity ebbs and flows in unpredictable ways.

Treatment with pond-labeled copper materials in the early summer can reduce potential blooms but there are some issues with the use of those materials on certain fish. Barley straw applied early in May can also help.

Western Oregon does get toxic blooms as do eastern and southern Oregon. Currently, there are three advisories in western Oregon, one each in Clatsop, Douglas and Coos Counties. These are for public recreation areas only. Drinking water for cities is sampled separately but local ponds, not at all.

Climate change may increase the number of days and/or amount of toxin in ponds.

I believe there have been several cattle cases in Columbia County over the years but no confirmatory testing was done. Here are some links for more information:

<https://www.oregon.gov/oha/PH/HEALTHY-ENVIRONMENTS/RECREATION/HARMFULALGAEBLOOMS/Pages/faqs.aspx>

<https://www.oregon.gov/oha/PH/HEALTHY-ENVIRONMENTS/RECREATION/HARMFULALGAEBLOOMS/Pages/Blue-GreenAlgaeAdvisories.aspx> This link has the current large scale outbreaks. **It does not cover small, individual ponds or backwater sloughs that livestock may have access to.**

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<https://www.ag.ndsu.edu/publications/live-stock/cyanobacteria-poisoning-blue-green-algae>

## Meadow knapweed in pastures

Meadow knapweed (*Centaurea debeauxii*) is a plant created in North America from two knapweed species brought to North America from Europe. It was not intentional. The two species that met here were both used as ornamental flowers so love could have bloomed in the garden. Anyway, the seeds can move by water, livestock, or vehicles. It can also be increased by crown and root pieces that have been dug and strewn around.

It is a husky, semi-woody (crown and roots) perennial. It can get started where there is bare ground or a pasture with a somewhat weak stand

of grass. It prefers fields

where the soil is deep and in a relatively high winter rainfall like



we have. Unlike other knapweeds, it has narrow leaves without much lobes, just some gentle bends of the six-inch long and 1.5 inches wide leaf edges. It is very deep rooted and, for that reason, is hard to pull unless it is just getting started. The flowers range from pink to purple somewhat branched stems.

Most outbreaks in Columbia County pastures seem to have started from contaminated hay. It is not poisonous to livestock and even somewhat palatable to cattle, goats, and sheep. That said, a pasture is much better without it. Control of an early invasion is important as more isn't merrier.

There are some pasture herbicides that can be effectively used on this plant. For more information, give me a call or email.

## Food Preservation

### Master Food Preserver program

The Oregon State University Extension Service in Columbia County welcomes the public to apply to become a Master Food Preserver volunteer.

Do you have a desire to promote food security within your community? Do you want to empower individuals to make good use of available food resources, reduce food waste, and safely preserve seasonal and culturally important foods?

OSU Extension is now accepting applications for the Master Food Preserver (MFP) volunteer program!



Learn more at : <https://extension.oregonstate.edu/mfp/master-food-preserver-training-courses>

Questions? Reach out to Jenny Rudolph at [jenny.rudolph@oregonstate.edu](mailto:jenny.rudolph@oregonstate.edu) or 503-397-3462.

# Good Food is Worth Preserving

Help share the bounty with all Oregonians.  
Become a Master Food Preserver volunteer.

Do you want to empower individuals to make good use of available food resources, reduce food waste, and safely preserve seasonal and culturally important foods? The OSU Master Food Preserver program is currently training new volunteers.

Master Food Preservers (MFP) support their communities with timely and relevant information about food access, food safety and food preservation. In addition to the required training course, MFPs complete 20–40 hours of service annually through community education, outreach and organizing.

Apply to be a volunteer: <https://beav.es/TmH>  
Applications due by Sept. 18, 2023.

*Find out more about the OSU Extension's  
Master Food Preserver Program!*



Join the virtual  
orientation session to  
learn more  
**September 19, 6-8 p.m.**