Programs for you . . .

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

Dec. 3 ............ **Scappoose Bay Watershed Council**  6:30 p.m.  57420 Old Portland Road, Warren.  
Join in the annual celebration with refreshments and a social period, followed by a review of the past year's accomplishments, and a look at the projects ahead!  RSVP: (503) 397-7904.

Dec. 5 ............ **Master Gardener™ Board Meeting**  10:30 a.m.  OSU Extension Service, St. Helens.

Dec. 5 ............ **Columbia County Oregon Beekeepers**  6:00 p.m.  Columbia River PUD, 64001 Hwy 30.
Honey tasting, seed exchange and potluck. Free, open to all.

Dec. 5 ............ **Upper Nehalem Watershed Council**  5:30 p.m.  UNWC Office, 1201 Texas Ave, Vernonia

Dec. 10 .......... **Lower Columbia River Watershed Council**  7:00 p.m.  Clatskanie PUD, 495 Hwy 30.

Dec. 12 .......... **Pesticide Safety Education Recertification Course**  10 a.m. - 3:00 p.m.  Extension Service Conference Room.  $20. Pre-Registration Required.  Register online: Beav.es/Zn6

Dec. 18 .......... **Columbia Soil & Water Conservation District Meeting**  7 p.m.  35285 Millard Rd, St Helens.

Dec. 25 .......... **Office Closed**  Enjoy your Holiday!

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**Oregon State University**
**Extension Service**
**Columbia County**

Chip Bubl, OSU Extension Faculty, Agriculture

Agricultural Sciences & Natural Resources, Family and Community Health, 4-H Youth, Forestry & Natural Resources, 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

A gardener wish list

- Nice gardening gloves, especially those flexible kinds that rose thorns don't penetrate or nice-fitting leather gloves.
- Knee pads or knee benches for gardeners to make close work less of a pain.
- A well-made spading fork or shovel.
- Cast aluminum hand tools or specially designed "ergonomic" tools for less muscle strain.
- A greenhouse or a good cold frame (could be home-made).
- High quality loppers or hand pruners.
- Gift certificates to garden centers.
- A soil thermometer is very useful. So are moisture meters with ~12-inch probes.
- Q Knot reusable cable ties are handy for staking tomatoes or trellises. Get them from a local hardware store.
- Manual or electric water timer. This device can be attached to any faucet, and automatically shuts off water after a set amount of time. Get a single or dual model from a hardware store.
- Water bubbler with flow control or other interesting sprinklers.
- Corona Quick Tool Sharpener. A pocket-sized tool for sharpening pruners, shears, blades.
- Floating row covers are lightweight blankets to put over vegetables that help capture warmth and protect plants. May be available from the Extension office in February/March. Call us.
- Heavier row covers for pot protection from cold winter weather: We have some now at the Extension office at a sale price.
- A Hori Hori Knife is a transplant knife from Japan, that’s part trowel and part knife. Also, good for dispatching slugs. It is a great tool.
- Folding pruning saws are necessary for pruning also handy for camping or backpacking. Fiskers, Barnel, or Corona are good brands.
- LED headlamp is handy tool for gardening or locating slugs at night (if you are so inclined). If you have close neighbors, warn them of your new hobby. Also good for looking for carpenter ant evidence under your house.
- The market has lots of lithium battery-powered chain saws, pole pruners, and weed whackers. For casual users of these tools, they may work well and not have the challenges of a gas–fueled version.
- A good Insect, Mushroom, or Weed identification book.
- Support for our Food Bank and local efforts to help those in need.
Sweet Potatoes vs. Yams…

Not just a name, but a true botanical difference!

As the holiday season is upon us, you may find yourself browsing the supermarket for ingredients to make those favorite family recipes. Among them, many cooks enjoy preparing dishes such as Sweet Potato Pie, or Candied or Mashed Sweet Potatoes.

But, is there really a difference between Sweet Potatoes and Yams? Actually, there really is! These two tubers might be some of the most commonly confused root vegetables of all time. Though they grow similarly, often look alike, and the words “yams” and “sweet potatoes” are interchanged as a description in the grocery stores, these are really two very different veggies.

Yams are native to Asia and Africa. They are related to lilies (a monocot, the classification of plants with only one embryonic leaf in the seed), and grow as roots of a flowering plant in the Dioscoreaceae family. Yams grow from a regular potato size to gigantic proportions of nearly 5 feet long! The skin of a true yam is tougher and bark like, and the flesh is white, red or purplish in color. A true yam is not common in North America, but you might find them in a specialty or international store.

Sweet Potatoes, native to Central and South America, are a member of the morning glory family (Convolvulaceae, a dicot). They have a firmer skin and can be an assortment of colors including copper, purple, white, orange or red. The color of the flesh varies as well to include orange, yellow, purple and white. Here’s the story: in the 1930’s, farmers in Louisiana developed an orange variety, and to differentiate it from the established and popular yellow variety - they called it a yam! Which is why we, mistakenly, still label one as a sweet potato and the other as a yam (in lingering confusion over labeling from a 1930’s era a marketing tactic!)

Most likely, all “yams” and sweet potatoes that you buy from your usual grocery store are just sweet potatoes. However, there is a useful distinction when it comes to choosing which ones to use in a recipe and whether you are cooking, roasting, baking, or mashing them. Often, that copper skinned sweet potato (again, referred to as a yam in stores) is the firmest of the sweet potatoes and lends itself well to casserole and pie recipes where it will bake up sweeter and creamier. The sweet potatoes with the lighter skin and drier yellow flesh are softer and better used for frying and for mashed potatoes. And, now I know why my Grandmother “scratched” their skin at the store!

Whichever color (and recipe) you prefer, our PNW climate lends itself quite well to growing sweet potatoes, with their nutritious tubers and edible leaves. Read some growing tips here: https://extension.oregonstate.edu/news/osu-master-gardener-goes-sweet-potatoes

For ideas on storing, selecting, preparing, roasting and baking with sweet potatoes, check out the OSU Food Hero monthly flyer here: https://foodhero.org/sites/default/files/monthly-magazines/sweet_potato_monthly.pdf

~ By Sonia Reagan, who enjoys writing about, growing, and eating sweet potatoes! Check out this recipe HERE!
Garden hints from your OSU Extension Agent

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. All recommendations in this calendar are not necessarily applicable to all areas of Oregon. For more information, contact your local office of the OSU Extension Service.

Maintenance and Clean Up

- Spread wood ashes evenly on vegetable garden. Use no more than 1.5 lb/100 sq ft/year. Don’t use if the soil pH is greater than 7.0 or if potassium levels are excessive.
- Protect new landscape plants from wind. Use stakes, guy wires and/or windbreaks as needed.
- Yard sanitation: rake leaves, cut and remove withered stalks of perennial flowers, mulch flowerbeds, hoe or pull winter weeds.
- Turn the compost pile and protect from heavy rains, if necessary.
- During heavy rains, watch for drainage problems in the yard. Tilling, ditching, and French drains are possible short-term solutions. Consider rain gardens and bioswales as a longer-term solution.
- Check stored flower bulbs, fresh vegetables, fruits for rot and fungus problems. Discard any showing signs of rot.
- Tie limbs of columnar evergreens to prevent snow or ice breakage.
- Do not walk on lawns until frost has melted.
- Make sure that landscape plants in protected sites receive water regularly during the winter.

Planting/Propagation

- Good time of year to plant trees, landscape shrubs.

Pest Monitoring and Management

- Monitor landscape plants for problems. Don’t treat unless a problem is identified.
- Check for rodent damage around bases of trees and large shrubs. Remove weeds to prevent rodents from using them as hiding places. Use traps and approved baits as necessary.
- Avoid mounding mulching materials around the bases of trees and shrubs. The mulch might provide cover for rodents.
- Monitor spruce trees for spruce aphids. Treat if present in large numbers. Read and follow pesticide label directions.

Houseplants and Indoor Gardening

- Protect poinsettias from cold, place in sunlight, don't let leaves touch cold windows; fertilize with houseplant fertilizer to maintain leaf color.
- Monitor houseplants for adequate water and fertilizer. Water and fertilizer requirements generally are less in winter.
The natural landscape

It’s not uncommon to find dead bees. Here’s why.

Oregonians care about their bees, both unmanaged wild bees, like bumblebees, and those we manage, which include mason bees, alkali bees, alfalfa leafcutter bees, and the European honeybee. High profile bee kills resulting from pesticide applications in 2013 and 2014 have heightened the public's bee awareness, resulting in more frequent reporting of incidents and concern when numerous dead bees are found in a single location. However, dead bees can be found near or under plants for a variety of reasons, and determining the true cause often requires some detective work.

When large numbers of dead bees are found within a small area, the following have historically been the usual suspects: natural causes, such as old age and predation; toxic plant metabolites; pesticides; chemical deception; and starvation. Some recent scientific studies are helping shed light on the variety of reasons large numbers of dead bees may be found.

Old Age & Predation. When bees congregate in large numbers on bee-attractive plants, such as linden trees, it is expected that bees who have died of old age will be found within a small area. Also, despite warning colorations and the possibility of the bees having stingers, large congregations of bees are likely to attract bee predators. If the dead bees you encounter look ragged or look like they’ve been gnawed on, it is possible that they died of old age or were killed by predators. However, some researchers have documented that only a small portion of dead bees found under bee-attractive plants likely died of these causes. It is also possible that bees were chewed on after they died of some other cause.

Toxic Plant Metabolites: In linden trees, it had been thought that the presence of the sugar mannose in the nectar can lead to detrimental effects in bees. However, earlier methods used to detect whether mannose was present in linden tree nectar did not provide definitive evidence, while more recent studies using more precise detection methods did not find mannose in the nectar analyzed from several different linden species. It is possible that other plants do produce bee-toxic metabolites that can affect large numbers of bees. But based on current evidence, this is not likely to be the case with linden trees.

Pesticides: Of all suspects, large bee kills caused by pesticides, insecticides specifically, are the most straightforward to confirm because laboratory testing can detect whether pesticide residues are present. The largest documented bee kills within the last decade have been linked to insecticide applications—specifically, neonicotinoid insecticides. On the other hand, there are many instances in which large numbers of dead bees have been found, with no link to pesticide exposure.

Chemical Deception: Bee-plant relationships are commonly viewed as symbiotic - a mutually beneficial relationship, where bees get food from the plant in exchange for pollination services. However, there are instances in which one party in the relationship does not fulfill its end of the bargain. For example, some plants are able to produce chemical compounds that are
“cheaper” to produce than nectar, but that fool bees into continuing to visit those flowers. Compounds such as caffeine or other volatiles that mimic bee pheromones may continue to attract bees to flowers that actually have little to no nectar available to them, potentially leading to starvation, even when other plants in the surrounding area are still in bloom. More studies are needed to better understand how often and with which plants this may happen.

**Starvation**: Linden trees seem to be implicated in bee kills more often than other plants. This has sparked several studies exploring the possible causes outlined above, and the indication is that several of those factors may contribute and ultimately lead to starvation.

Bees, being cold blooded and relatively small, are susceptible to changes in the surrounding air temperature. In order to maintain a high enough body temperature on cold days, bees need to keep flying—their muscles produce the heat they need to stay warm, and all that flying requires a lot of energy. Some plants and trees associated with bee kills have dense inflorescences, with flowers being so close to each other that bees end up walking from flower to flower, rather than flying. On warm days when there is still plenty of nectar to go around, this does not pose a problem to bees. However, when nectar production is low and the temperature is cool, bees end up falling to the ground. With the low temperatures and depleted energy reserves, the fallen bees are unable to fly to other resources and crawl on the ground and starve. This may happen even if there are other options for bees to forage on, due to the chemical deception that keeps bees loyal to a resource, even though nectar production has decreased. Bees in this situation will appear lethargic—crawling and moving slowly on the ground. *Article by Gilbert Uribe, Oregon Department of Agriculture.*

### Black locusts are a nightmare

There are a number of black locust trees (*Robinia pseudoacacia*) in Columbia County. They have a fragrant bloom and attractive leaflets, but they are not at all nice. They spread abundantly by root suckers and seed. Their young suckers and tree shoots have vicious spines up to an inch long.

Black locust is native to the southern Appalachians, the Ozarks, and other portions of the mid-south but is considered an invasive species in the prairie and savanna regions of the Midwest. It was planted here because Southerners that moved here in the 1930's Depression missed it. But additionally, it does produce wood for fence posts that is very decay resistant. So people planted them for fencing. If you hike into areas that haven’t been converted to Douglas fir, you may find thickets of black locust.

It shows up in gardens and public spaces from seed, grows quickly into a small tree before it is really noticed and then starts suckering. It is a public health risk from those ugly spines. Treating with an herbicide is really the only way to get rid of black locust.

Honey locusts, which is also a legume but in a completely different genus, also has sharp thorns but in a different pattern and is not a common escapee here.
Farm and livestock notes

When an animal goes off feed

Cattle, sheep, goats, yaks, and all the other ruminants have a valued place in the world’s food economy because they can take relatively indigestible feeds and turn them into meat (when was the last time you tried to eat grass!) Livestock need the millions of microorganisms that inhabit their rumens to break down fiber into useable protein and energy.

When an animal gets sick, there will usually be a fever and/or signs of an internal parasite problem. These events start a cascade of events that can have serious consequences. A sick animal will not want to eat. Yet a fever or parasite burden increases the body’s need for energy. A severe fever may more than double the energy requirement. An animal that is not eating but needs more energy than normal will start getting listless and losing weight.

In the rumen, the microorganisms need a certain amount of the food that comes in for their own growth and reproduction. As the food intake decreases, the microorganisms start dying. The animal is then in a difficult situation. First, a healthy rumen is the key to converting hay and other feeds into useable food products. When the rumen bacteria start dying, that process slows down. Second, the rumen bacteria produce the B vitamins that the animals need. As the bacterial numbers decrease, the available B vitamins decrease as well. Finally, not all of the rumen bacteria die at the same rate. There are population shifts in the rumen and some of the more friendly bacteria die first and other more disruptive bacteria such as E. coli (which causes scours) take over.

What should the manager do?

- Observe your animals each day and evening. Winter is tough since it is dark when you go to work and dark when you get back. But take the time to look. An early response to a problem will keep that problem small. Keep in touch with your vet to decide on appropriate treatments.

- Supplement with B vitamins, liquids and electrolytes if there has been scouring, and possibly antacids.

- Feed good quality hay to reestablish rumen function. Grain based feed can add to digestive problems if fed without a sufficient “buffer” of nice hay.

Horse impactions

There are a lot more horse fecal impactions during the winter. If horses don’t drink enough water, impactions can develop. Check water lines and troughs during freezing weather. In addition, some horses self-limit water intake as the weather chills. See that they have ample fresh water and encourage them to drink.

A heavy internal parasite burden can also cause impactions. Get veterinary care quickly since untreated, impactions can be fatal.
Guide to Agriculture and Natural Resource Organizations for Columbia County

**Oregon State University Extension Service/Columbia County**: 505 N. Columbia River Highway, St. Helens, OR 97051. 503 397-3462. Hours: 8am- 5pm M-F. Agriculture, Weeds, Natural Resources, and Home Gardening: Chip Bubl and Sonia Reagan; Forestry: Amy Grotta; Food Safety and Preservation: Jenny Rudolph and Lily Joslin; 4-H and Youth: Woody Davis and Kara Orr. They deliver programs on a wide variety of ag/gardening/natural resources, food preservation, and forestry topics. Provide free technical consults, and offer a wealth of printed materials. Two newsletters on Ag/Gardening (monthly) and Forestry (quarterly) available free by signing up. OSU Master Gardener™ training offered each spring. Web site: https://extension.oregonstate.edu/columbia

**National Resource Conservation Service (NRCS) and Columbia Soil and Water Conservation District (Columbia SWCD)** are housed together at 35285 Millard Road, St. Helens, Oregon 97051. 503 397-4555 (NRCS) or 503 433-3205 (SWCD). Don Mehlhoff, District Conservationist; Nathan Herr (farm assistance and interim SWCD Director) and Crystalyn Bush, (natural resources and invasive weeds). The NRCS/SWCD team can provide free farm and forestry plans, technical agriculture and natural resource help and cost-share funds for certain types of projects. SWCD web site: http://www.columbiaswcd.com/

**Oregon Department of Forestry/Columbia County**: 405 E. Street, Columbia City, Oregon 97018; 503 397-2636. Enforces Forest Practice rules on timber harvest, road construction, slash burning, and subsequent re-planting. Provides technical assistance on general woodland management, wildfire risk reduction, harvest planning, and tree planting.

**Farm Service Agency/ Washington County**: Serves Columbia County as well. 1080 SW Baseline, Suite B2, Hillsboro, Oregon 97123. 503 648-3174. An agency of the U.S. Department of Agriculture, FSA provides support to farm operations including loans (some minority and beginning farmer loans), commodity price supports, conservation payments, and disaster assistance. Acting Director: Janelle Huserik  janelle.huserik@usda.gov

**Columbia County Beekeepers**. Meet the first Thursday of the month, 6:00pm, at the Columbia River PUD building at 64001 Highway 30 on the edge of Deer Island. Contact Linda Zahl  lindazahl2@gmail.com for more information and to get on their email list.


**Oregon Small Woodlands Association/Columbia County**: https://www.oswa.org/blog/columbia/ Non-industrial owners of timberland that meet for education, story-telling, and local tours with a goal to protect and manage this most important resource in Columbia County.
Watershed Councils: There are three watershed councils in Columbia County. They are


All three do projects to improve salmon recovery and enhance other watershed resource values. The organizations are private and volunteer led with some paid staff. Get active and join the one near you!

Oregon Farm Bureau/Columbia County. The most influential farm organization in the United States. For more information on the Columbia County FB see https://oregonfb.org/about/county-farm-bureaus/columbia-county-farm-bureau/

Local Granges in Columbia County. The Grange was an inspirational force to improve agriculture and the quality of rural life. While some Granges in Columbia County have closed, a number are still active. For more information, see http://orgrange.org/find-a-grange/#Columbia

Friends of Fox Creek: A group with a mission to protect and enhance Fox and Nice Creeks which flow through Rainier to the Columbia River. https://www.friendsoffoxcreek.org/


Home Orchard Society: Based in Clackamas County but with members all over the Pacific Northwest. https://www.homeorchardsociety.org/

Oregon Mycological Society: All about mushrooms and other fungi. An excellent organization. https://www.wildmushrooms.org/

Xerces Society: All about invertebrate conservation and support. International organization based in Portland, Oregon. See their website for an outstanding set of downloadable publications on pollinators, butterflies, and other insects and invertebrates. https://xerces.org/

The OSU Master Gardener™ Volunteer Training will be offered in St. Helens this next year, with 10 weeks of classes Wednesday evenings AND every other Saturday, beginning February 5th 2020. Topics include: vegetable gardening, insect identification, botany for gardeners, plant problem diagnosis, growing fruits & berries, lawn management, weed identification and management, pesticides safety, and plant propagation. Students completing the class will be expected to repay about 40 hours on community horticultural projects. Cost of the class is $100 and there are a few scholarships available. Registration is online again this year, at: https://tinyurl.com/ColumbiaMG2020.

For questions about the program, please call the OSU Extension office in St. Helens at (503) 397-3462 or email either Chip.Bubl@oregonstate.edu or Sonia.Reagan@oregonstate.edu.

The PSEP delivers high quality educational programs on the proper use of pesticides, which also includes Integrated Pest Management (IPM). Continued use of pesticides requires annual recertification and training on how to use pesticides safely. Our expert led, in-person licensed Pesticide Applicator Recertification Courses are a great way to gain essential training and complete your recertification. This statewide CORE Video Conference Course will be held at our local OSU Extension Office on December 12th. Register online and view the agenda at: Beav.es/Zn6 Cost: $20.00. For questions and concerns, call the Pesticide Safety Education Program (PSEP) at (541) 737-6257.

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