



# Country Living

Provided to you by the  
**OSU Extension Service Columbia County**  
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Office hours: Monday-Friday, 8 a.m. to 5 p.m.  
The office will be closed Fridays from Noon to 1 p.m.  
Website: <http://extension.oregonstate.edu/columbia/>

## SEPTEMBER 2015

## Programs for you . . .

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

- Sept. 1.....Scappoose Bay Watershed Council. 7 p.m., SWCD office-35285 Millard Rd., St. Helens.  
<http://www.scappoosebay-wc.org/>
- Sept. 3.....Demonstration Garden and other MG Extension Projects Planning Meeting. 10 a.m., OSU Extension Classroom, St. Helens
- Sept. 3.....Master Gardener™ Board Meeting. 10:30 a.m., OSU Extension Classroom, St. Helens
- Sept. 7.....Labor Day Holiday - Extension Service office closed
- Sept. 8.....Lower Columbia Watershed Council. 7 p.m., SWCD office-35285 Millard Rd., St. Helens
- Sept. 8.....Preserving Fall Fruits. 3 to 5 p.m., SWCD office. \$25 fee. Call to register 503-397-3462 or online at <http://extension.oregonstate.edu/columbia>
- Sept. 12.....4<sup>th</sup> Annual Small Farm School. 8am-4:30pm, Clackamas Community College, register at website: <http://smallfarms.oregonstate.edu/node/175835> (by September 7 or until filled)
- Sept. 16.....Soil & Water Conservation District. 7:30 p.m., SWCD office-35285 Millard Rd., St. Helens
- Sept. 22.....Pressure Canning Soups. 3 to 5 p.m., SWCD office. \$25 fee. Call to register 503-397-3462 or online at <http://extension.oregonstate.edu/columbia>
- Sept. 24.....Master Gardener™ Chapter Meeting. 6:30 p.m. Speaker will be Ramona Wulzen, "Keeping Hummingbirds Happy in Your Garden," and Fruit Tasting-bring your apples and tomatoes sliced for tasting, OSU Extension Classroom, St. Helens. **The public is invited. Free.**
- Sept. 24.....Upper Nehalem Watershed Council. 7 p.m., Vernonia Grange, <http://nehalem.org/> 503-429-0869
- Oct. 17 & 18.....The All About Fruit Show. The Clackamas County Fairplex, Canby OR. 10 a.m.-4 p.m. A great opportunity to taste hundreds of apples, pears, kiwi and grapes. You can order a custom-grafted tree, made just for you, to be delivered in the spring. Great speakers, experts to answer all your questions, pie baking contest, exotic fruit sorbet to taste. The ID Team will try to identify your mystery apples.  
<http://www.homeorchardsociety.org/events/>

### FOOD SAFETY/PRESERVATION HOTLINE - July 13 through October 16, 2015

1-800-354-7319 - 9 A.M. TO 4 P.M.; MONDAY thru FRIDAY, except holidays

Certified Family Food Education volunteers and OSU Extension staff will answer your questions. You can get the OSU Extension Service publications at <http://extension.oregonstate.edu/catalog>, click on nutrition and foods for publications on canning, drying, pickling and freezing too!



*Chip Bubl*

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

### Heat unit update

As you may remember, we had accumulated 1516 degree days by 725 when the newsletter went to print. The number is now 2257 with all of September and October to go. We are now in a cooler patch so the heat units won't add up so quickly. As this is being written, the high temperature is projected to be 72 and the low at 61 for a total of 16.5 heat units (aka degree days) for 8/31  $72+61=133/2=66.5-50=16.5$ . The highest 10/31 ending total for the last five years was in 2014 at 2770. We could easily exceed that by the end of September with all of October to go.

### Insects and the summer heat

Insects have responded in unexpected ways to this summer. I have noticed several large **yellowjacket and bald faced hornet** paper nests that were full size by early June and now, the colonies seem almost



completely inactive (or dead). I looked into their biology and found that the colonies may only last for 122 days. The earlier they are started, that sooner they decline.

The queen is responsible for laying eggs that become female workers, males, and future queens. Female workers can also lay male-only eggs. It seems that when the requisite number of male and queen eggs are laid, the colony decides the end is near. There are some reports that it kills off the queen (royalty is always expensive to feed) and then maintains the male and queen eggs

until they mature to fly and mate. Then it is over for the workers and the colony. The males die after mating and the newly impregnated queens spend the winter under firewood, logs, and anywhere they can find shelter until the cycle starts anew next year.

The **spotted wing drosophila and brown marmorated stink bug** populations that we feared was building to an epidemic in late June was also laid low by the heat. However, they may still pick back up and damage late season soft berries or other fruit in the case of BMSB.

### Whitewash and sunscald

Trees can be injured by sun in either the summer or winter. Reflected sunlight off of snow onto dormant bark can cause sunburn even when air temperatures are quite low. Hot days and the direct rays of sun in the late afternoon also cause sunburn. It is more pronounced on the southwest side of a tree or bush and is especially an issue on trees with a modest leaf cover.

Farmers have painted tree trunks and lower scaffold limbs for years with a calcium mixture called whitewash. There are lots of formulas. A more modern solution is to mix exterior white latex paint 50-50 with water and paint it on the trunk. This treatment will help to protect your trees both winter and summer sunburns. It is particularly useful on young trees.

### Tomato late blight

We have had a very nice tomato season to date. As we move through August into September, the chance of rain increases. With it comes the risk of tomato late blight. The late blight fungus thrives in warm, moist conditions and can quickly ruin your tomato crop.

Weather patterns that favor late blight are three or four days of continuously moist weather. It doesn't have to rain hard. About 15 years ago, we had four days of a "coastal fog" that refused to budge. By the end of it, most of the tomato plants looked like they had been hit with a blowtorch. Leaves turn blotchy brown, stems blacken and the now inedible fruit turns a glassy olive color. There is little genetic resistance to late blight in current varieties with a few modest exceptions ("Legend" and "Peron"). But you can help to reduce the spread by doing the following:

- ❖ Never overhead (sprinkler) water at night!! It can accelerate the disease even in dry weather.
- ❖ Prune out leaves that don't look right and destroy them.
- ❖ Use a copper fungicide (generally considered to be organic) as a preventative now and again if you see a wet weather ahead.
- ❖ Clean out weeds and do some moderate pruning to improve air circulation around your plants.

None of these steps by themselves can stop the disease if conditions really favor it but, by slowing it a bit, can give you a week or two of extra harvest.

## **Oxygen and vegetable roots**

Gardeners sometimes forget how important light cultivation is to growing vegetables. Most Columbia County soils tend to seal up after initial tillage and planting unless they have had lots of organic matter added over the years. As soils seal, microbial populations shift and can change nutrient availability. In addition, roots need to be adequately supplied with oxygen to function effectively. Old research on corn shows a significant increase in yield when it is field

cultivated, even if there are no weeds present. Breaking up the crust after the plant is well established improves moisture movement upwards in the soil and allows air into the root zone.

## **Lawn renovation**

September is one of the best times to renovate an existing lawn. Much research has demonstrated that an old lawn does not have to be tilled before renovation if the surface looks good (i.e. not badly altered by moles or subsidence) and if the lawn is green enough to kill it with an herbicide. With those conditions, you can save yourself a lot of work in renovation.

The first step is to treat the lawn with glyphosate (Roundup and others) to kill it. Glyphosate leaves no active residues. It does its work by going down through leaves and into roots.

The next step, once the lawn has died, is to thatch out the old dead material, possibly plug aerate the soil, fertilize, and seed about 6 pounds of seed per 1000 square feet. Finally, water consistently as the seed is germinating and within three to four weeks, your lawn will look quite nice.

Mow grass as soon as it is ready to cut, when the grass gets to the height that you intend to maintain the lawn. Early mowing will stimulate "tillers" which will produce a thicker turf. Often in ideal conditions, this may be three weeks after planting. Stop irrigating a day or two before mowing. You don't want to create ruts.

It is generally not recommended to seed after October 15<sup>th</sup> and we generally up the pounds of seed used by about a pound for each week past mid-September.



## *That's the Way it Grows*

My summer vacation went by too fast. I can't say that I'm not ready for some cooler weather, though. And some rain!

A friend of mine recently bought a house and asked me about starting a vegetable garden in an area that is currently grass. Starting new beds is pretty easy, especially in fall.

First, consider what you are planting. Vegetables need a sunny location, while a perennial bed can have varied sunlight requirements.

Make sure the bed or plot is not too wide to allow you to work or harvest without stepping in the soil and compacting it. If you are leaving grass paths, make sure they are wide enough for your mower.



Next, add water. To work the soil, it should be moist—not wet, and not dry. Working the soil or tilling when the soil is wet or dry will destroy the soil texture and the air spaces that are essential for good drainage, root development and overall plant health.

If the area is grassy, then mow it as low as possible. Dig out any deep-rooted weeds, like dandelion or blackberry.

Outline the bed(s), using a garden hose or string. I like to dig a border around a new bed, to make a little moat that will help keep the grass from invading the new plot. Just throw the diggings onto the top of the bed.

At this point, since we have time on our side and don't intend to plant until spring, we don't need to go to the work of double digging or lots of tilling. We're going with the easy method, because we are busy folks, and back-breaking work is, well, back-breaking. Basically, you layer organic material on the plot and let it sit over the winter.

If your soil is on the heavy side, or compacted, then breaking up the topsoil a bit will be very beneficial before adding the mulch layers. First, check that the soil is not

waterlogged. If you can squeeze it into a ball of mud, then it's too wet to work.

When the soil is just moist, then take your spading fork or shovel and jam it into the soil to open it up some. Do this in many places all over the bed. A tiller just isn't the best tool here. This will open up air spaces and allow worms to come up and mix in your organic matter.



Next, cover the bed with 4-8 sheets of overlapping plain newspaper to smother the grass and any weeds. Top this with a layer or layers of organic matter at least two inches thick. More is better. Eight to 10 inches is ideal.

Organic matter can include “greens,” such as grass clippings, chicken litter and kitchen compost ingredients, and “browns,” such as finished compost, dry leaves, straw, aged manure, sawdust or wood chips and shredded newspaper (though the latter can turn into gummy clumps). The top layer should be a “brown” ingredient. The next part is the hardest: waiting until spring to plant.

In the spring, the mulch layer can then be tilled in, or you can simply pull it back around planting holes, mixing some of the organic matter into the holes as you plant. You will find that the worms have done quite a bit of tilling for you.

That's really all it takes to make a new planting bed. Just a little effort, and some time. Organic matter breaks down, and worms and other soil organisms mix it in for you. You can speed the process up with digging and tilling, if you like.

The same technique will improve existing garden beds as well. I plan to till in my compost and leaves in the veggie garden before I cover it for winter.

—Lisa M. Long  
Columbia County Master Gardener™  
Free gardening ebooks at:  
[Smashwords.com/profile/view/LisaMarieLong](http://Smashwords.com/profile/view/LisaMarieLong)

# SEPTEMBER

## 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

- Recycle disease-free plant material and kitchen vegetable and fruit scraps into compost. Don't compost diseased plants unless you are using the "hot compost" method (120° to 150°F).
- 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.
- Protect tomatoes and/or pick green tomatoes and ripen indoors if frost threatens.
- Reduce water on trees, shrubs, and vines east of Cascades to harden them off for winter.
- 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.
- Stop irrigating your lawn after Labor Day to suppress European crane fly populations.

### 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.oregonstate.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.
- 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





**The Grapevine**  
 News for Columbia County Master Gardeners™  
[www.columbiacountymastergardeners.org](http://www.columbiacountymastergardeners.org)  
**September 2015**



Deadline for THE GRAPEVINE - All materials will need to be into the OSU Extension office no later than the 20<sup>th</sup> of each month.

**President's Corner**

August brought us more of that hot dry weather, putting lots of plants under heat stress and requiring more watering if you wanted your plants to survive.

I was doing some transplanting at the beginning of the month and was horrified to find that in areas we had watered a lot, two inches down was bone dry. We did a lot more checking and have done additional watering.

Everything is early this year. We have been harvesting a lot of things 3 weeks to a month early and fruit has ripened at least that much earlier. We seldom have grapes till mid Sept but they are ready now!

Like you, my priority is to keep my plants alive and producing and to get out there and harvest so I will leave off with that thought and expect you are doing the same.

*"It will never rain roses: when we want to have more roses we must plant more trees."*

*George Eliot*

*--Wes Bevans*

**Flying Jewels: Keeping Hummingbirds Happy in Your Garden**

Hummingbirds are some of the most engaging visitors to our gardens, delighting us with their beauty and behavior. If we provide them with a garden environment that meets their needs, they will return year after year to entertain, pollinate and contribute to the control of some pesky insects. Some will even spend the winter with us if given the right conditions. Join us on **September 24<sup>th</sup>** to learn which plants and combinations will keep them in your gardens. Ramona Wulzen received her love of all things wild from her mother. She has gardened both on a city lot and on three acres in the woods. She has also listened long and hard to the problems and solutions that other gardeners have experienced. The nature of her current garden has led to her passion for ground covers and container gardening. Ramona is a veteran of our retail department and now works in our landscaping department. **Fruit tasting so bring your apples and tomatoes, sliced for tasting.**



**Turn in your volunteer log sheets!**

<b>Calendar: At-A-Glance</b>	
Sept. 3.	Demonstration Garden and other MG Extension Projects Planning meeting, 10 a.m., Extension office
Sept. 3.	Board Meeting, 10:30 a.m. Extension office
Sept. 24.	Chapter Meeting, 6:30 p.m., Speaker: <i>Ramona Wulzen</i> and the <b><u>Annual Fruit Tasting Contest-bring your apples and tomatoes.</u></b> OSU Extension Classroom, St. Helens
<b>Don't forget that each Monday from 10 a.m. to Noon work is done at the Demo Garden</b>	

**Thank you**

Our second annual GardenFest and CraftFest was well attended and we are planning to keep the new tradition going. For us, the most fun was watching expressions when we let people pick their own vegetables, and particularly, when they giggled or exclaimed to see carrots lift out of the ground. It made all of our weeding worthwhile. Thank you for supporting and attending GardenFest and CraftFest. And thank you to Master Gardeners and everyone who helped make our new fence possible this year. It has made a big difference, not only in keeping deer out, but also, keeping our gardening spirits high. – Scappoose Gardeners

**2016 Election of Officers**

If you or someone you know would like to hold office, please contact: *Lavina Patterson* (contact information is in your Master Gardener roster). You must have completed your payback hours to qualify for nomination (turn those sheets into Vicki at the Extension office).

The Columbia County Master Gardeners nominating committee will present at the September meeting a list of candidates for the 2016 year. At that time nominations can also be made from the floor. You should make sure that the person you nominate would be willing to perform the duties of the office you nominate them or volunteer yourself for!

In October a ballot will be mailed out to members to vote. You will have the option to either mail in the ballot, drop it off at the Extension Office or bring it with you to the October meeting. We of course would prefer you take the time to attend the meeting and bring your ballot with you! We will count the votes at the October meeting and welcome our new officers at that time!

## The natural world

### Shade and fish predation by kingfishers

This has not been a good year for fish. Low winter rainfall and consequent meager summer groundwater flow into streams increased stream temperatures with the diminished water volume. Smolts were forced into smaller pockets that, in some parts of the state, increased disease issues. Streamside vegetative cover plays a role in moderating the impact of summer temperatures and lower water flow. The changing age structure of the forests that surround our streams may also play a role in water retention and release over the dry months.

New research indicates another role for streamside vegetation and woody debris. The volume of woody material in and directly over the stream has been shown to reduce coastal cutthroat smolt predation by kingfishers. Fish behavior was studied and it turns out that they seek out shade that is equal to or greater than their width and length. The more shade they can move between, the greater their survival. I am truly fond of kingfishers and don't begrudge them their share of smolts but trout and salmon need all the assistance they can get. Take care of your riparian zones, nurture the trees you have, and plant more native trees and tall shrubs. For more information, get in touch with your watershed council, Columbia SWCD, or call me at the Extension office for a referral.

### Weasels on my mind

Columbia County has two weasel species, the short tailed weasel and the long tailed weasel. The short tailed weasel is also called

a stoat or ermine. It is small, between 7-13 inches with 2-4 inch black-tipped tails. Most of the ones I have seen have a chocolate milk color upper body fur with a white underbelly. More alpine ermine fur turns totally white in the winter but ours do not.

Ermine are found in forests and areas of thick vegetation. These ermines are aggressive hunters of shrews, voles (meadow mice) and their babies, baby brush rabbits, small ground nesting birds, frogs, and possibly insects and earthworms. They bound when running, springing with their back feet. Breeding season starts in July and ends soon but their young are not born until next spring in a ground nest. Ermine predators include cats, owls, and



hawks. The ermine does not visit your poultry house.

The long-tailed weasel is a much larger at 11-22 inches with tails from 4-8 inches. Their fur is brown to yellow brown on the upper side and yellow brown to orange on the underside. While it

lives in forests and dense vegetation like the ermine, this weasel is more active around houses and barns. We had one in our garden several years ago. It looked like a prairie dog when it poked up out of a mole hole. It seemed to work the new and old mole tunnels for about a week and was often sighted in the late afternoon. Then it left, probably with a full belly. I was happy it visited but we don't have chickens. They eat mountain beaver (and use their burrows) chipmunks, gophers (which we don't have), ground squirrels, rabbits, moles, voles, and the occasional small chicken.

## Farm and livestock notes

### Fertilizing pastures in the fall

Fall fertilizer must be applied before October 15<sup>th</sup> to give the grass enough time to respond before winter cold weather starts. This won't work if fall is very dry or if your pastures have been grazed too hard. Fertilizer is best applied soon after rain or just before a good rain.

Many ranchers use a balanced fertilizer like 18-18-18 to provide all three major elements needed for pastures. Use of balanced fertilizer is important if you are working to maintain clover in your pasture. For grass response, you need to apply 40-50 pounds of "actual" nitrogen per acre. For 18-18-18, this would be 250-350 pounds per acre. For a nitrogen application alone, 100 pounds of urea (46-0-0) per acre would provide 46 pounds of actual nitrogen per acre.

Each pound of nitrogen applied to well-managed pastures in the fall will generally increase dry matter yields by 25-40 pounds per acre. Fertilizing is a good idea if you can get the right mix of rainfall and sun and you get the fertilizer on at the right time assuming you have stock to harvest the forage.

Don't let livestock lose condition in the late summer and early fall. Feed hay and/or concentrates to supplement the remaining dry pasture forage.

### Fall weed control

September and October are ideal times to control tansy ragwort, Canada thistle and blackberries. Weed control combined with fall fertilizing will strengthen the pasture and should reduce weed problems if grazed properly.

Tansy ragwort is a biennial that germinates in one summer, over-winters as a visible "rosette" and goes to seed the next summer. After it seeds, it dies. Your job is to control young plants before they flower next summer. The rosettes are very vulnerable to herbicides after the first good fall rain. We usually have plenty of nice weather after that to get spraying done. Fall is usually a much better time to spray tansy than April/May. Broadleaf herbicides are generally effective.



Tansy is a serious cumulative liver toxin for cattle, horses and hogs. Sheep and goats are basically immune. Older horses and brood cows can be killed by a persistent history of tansy ragwort consumption. Cattle and horses avoid the plant most of the year but consume it accidentally in the spring when it is mixed with lush grass or in the summer when it may be the only green thing left.

Herbicides are used to supplement the tansy control provided by insects (the cinnabar moth and tansy flea beetle) that have been established here for the last 30 years. Numbers are down this year but will recover.

Canada thistle and blackberries are also vulnerable in the fall. The sugars from the leaves are flowing down to the root systems. This improves herbicide movement into the roots and results in far better control. On a dry and brown pasture, Canada thistle and blackberries can be spot treated with Roundup-type products without damaging grass. Once you see green grass, you have to use products that won't injure grass but will control broadleaf weeds.

## E.coli 0157:H7 in the news

Cattle have been the source of most of the hemorrhagic E. coli outbreaks in the U.S. Most outbreaks have occurred on leafy greens (lettuce, spinach, etc.) though melons have also been contaminated. Proximity to cattle feeding areas is a significant risk for a vegetable grower.

Recent research looked at isolation distances between a cattle feedlot (a large point source) and vegetable plots located at varying distances (200, 400, and 600 feet) away.

The study found that both pathogenic E. coli and non-pathogenic forms were recovered at 200 and 400 feet on leafy greens and non-pathogenic forms were recovered from air samples at all three distances. Total E. coli concentrations on greens decreased from 3.5% to 1.8% as the distance increased from 200 to 400 feet.

Wind is the most common carrier of manure dust. Ways to reduce wind flow from a cattle feeding area towards a commercial vegetable operation would probably be of benefit. Increased distance also helps though the safe distance is yet to be established. Management of the manure residues on the feeding area has the potential to increase or decrease airborne E.coli depending on the operational protocols.

Another piece of research indicated that lettuce infected with downy mildew was more likely to support E.coli multiplication on leaves. A lettuce variety resistant to downy mildew was far less susceptible to E. coli colonization. The mechanism of the impact of downy mildew on E. coli growth isn't clear.



## Removing field heat from produce

Most fresh vegetables start to lose quality the minute they are harvested. To maintain them in the best condition possible, it is important to get them cooled as quickly as you can. Refrigerated storage is important after the produce is cooled but it a slow way to initially lower temperatures.

Most growers have some system using cool or cold water to get rid of the field heat. Dunk tanks are common. So are spraying systems. The most effective are hydro-coolers but these are somewhat complex to set up.

Whatever system you use, it is crucial that your cooling water supply be tested periodically for bacterial contamination. If contamination is found, the water supply must be changed or pre-treated before use in cleaning vegetables. Quick pre-rinsing or brushing vegetables before they go into a dunk tank can be helpful in making best use of the dunk tank.

In addition, dunk tank systems should have a sanitizer like sodium hypochlorite or other products added to the dunk water. To be effective in reducing the potential for cross contamination of your vegetables, the tank water should be maintained at the correct pH for the material you are using, the sanitizer concentration at the recommended amount on the container, and the tank water emptied when there is any significant buildup of soil or organic debris. Soil and/or debris will tie up the sanitizer and render it less effective. For more information, see:

<https://www.uvm.edu/~susagctr/whatwedo/reducesafety/GAPsResources/UMassWasherSanitizer.pdf>



**4<sup>th</sup> Annual Small Farm School**  
**September 12, 2015 from 8 a.m. – 4:30 p.m.**  
**Clackamas Community College in Oregon City**

**Registration is open.** The program and complete registration information are available at: <http://smallfarms.oregonstate.edu/node/175835> Cost: \$75 (adult); \$50 (youth 13-18 with adult). Small Farm School is an all-day event for beginning farmers and small acreage landowners. Field and classroom workshops will address small farm topics such as crop and livestock production, direct marketing, small-scale equipment, and soil and water conservation. Experienced farmers, Extension agents, Conservationists, and other agricultural professionals will teach the workshops. We'd love to see you there, please pass the word along to anyone you think would be interested. Check out the flyer on the website. *Small Farm School is presented by OSU Extension in cooperation with Clackamas County Soil and Water Conservation District and Clackamas Community College.*

**Canning Information/Publications**



Are you planning to preserve food from your garden or fishing expeditions this summer? If so, call or visit the OSU Extension Service office BEFORE you start canning, freezing or drying. Costly and potentially harmful mistakes can be made as a result of using outdated canning recipes and instructions. Come by the office and talk with Jenny Rudolph you can also bring your lid to your pressure canner to have the gauge tested – free of charge – what a deal! There are a number of publications from OSU Extension Service that can help you safely process your garden fruits and vegetables. Listed below are publications you can either pick up at Extension office or download online:

<http://extension.oregonstate.edu/catalog/details.php?search=canning&submit.x=0&submit.y=0>  
 or <http://extension.oregonstate.edu/fch/food-preservation>

Canning Vegetables (PNW 172), Canning Fruit (PNW 199), Canning Seafood (PNW 194), Canning Tomatoes and Tomato Products (PNW 300), Salsa Recipes for Canning (PNW 395), Freezing Fruits and Vegetables (PNW 214), Canning Meat, Poultry, and Game (PNW 361), Using and Caring for Your Pressure Canner (PNW 421), Home Canning Smoked Fish (PNW 450)

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