



Country Living

Provided to you by the

OSU Extension Service Columbia County

505 N. Columbia River Hwy, St. Helens OR 97051

Phone: 503.397.3462 ▪ Fax: 503.397-3467

Email: chip.bubl@oregonstate.edu

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/>

October 2016

Programs for you . . .

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

- Oct. 1.....**Scappoose Bay Watershed Council Fall River Cleanup:** 8 a.m. to 1 p.m.. *Get Dirty For Good* with Willamette Riverkeeper, the Scappoose Bay Watershed Council with a host of partners and sponsors for the 8th annual river-wide, on-the-water trash clean up. This event includes numerous paddling and land based clean up locations. Many sites will offer seats in rafts, canoes, kayaks, and on SUP boards for volunteers for free!. Following the bay cleanup-from 1-3 p.m.- you can help plant native plants at the marina campground. Gloves and equipment will be provided. RSVP by calling Amber @ 503-397-7904 or email amber@scappoosebay-wc.org
- Oct. 4.....**Scappoose Bay Watershed Council.** 7 p.m., 57420-2 Old Portland Rd., Warren
- Oct. 6.....**Demonstration Garden and other MG Extension Projects Planning Meeting.** 10 a.m., OSU Extension Classroom, St. Helens
- Oct. 6.....**Master Gardener™ Board Meeting.** 10:30 a.m., OSU Extension Classroom, St. Helens
- Oct. 11.....**Lower Columbia Watershed Council.** 7 p.m., SWCD office-35285 Millard Rd., St. Helens
- Oct. 14 & 15**Goat AI clinic in Lowell Oregon.** Contact Richard Johnson, 541-554-0650, kiko@lookoutpointranch.com. Cost is \$475, \$200 deposit to hold your spot. Price includes lunch and refreshments on both days.
- Oct. 15 & 16**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/2016-fruit-show/>
- Oct. 15.....**Native Plant Sale.** 9 a.m.-3 p.m., Scappoose Bay Watershed Native Plant Center, behind Scappoose High School. Great selection and prices, proceeds benefit local restoration efforts.
- Oct. 19.....**Soil & Water Conservation District.** 7:30 p.m., SWCD office-35285 Millard Rd., St. Helens
- Oct. 27.....**Master Gardener™ Chapter Meeting.** 6:30 p.m. Speaker will be Lynda Boyer of Heritage Seedling Co., "The value of Native Plants in the Landscape", OSU Extension Classroom, St. Helens. **The public is invited. Free.**
- Oct. 27.....**Upper Nehalem Watershed Council.** 7 p.m., Vernonia Grange, <http://nehalem.org/> 503-429-0869
- Oct. 30.....**Annual Fall Mushroom Show.** Noon-5 p.m., World Forestry Center, Portland. You can see beautifully displayed specimens from around the region and talk to mushroom experts. There will be vendors, books for sale, mushroom cooking samples, speakers and more! Open to the public. \$5 Adults, \$3 Seniors/Students, Free for Children under 12

Garden notes

Ash whiteflies irritate residents

Ash whiteflies arrived in California from Europe in 1988. From there, they spread to Florida and other southeastern states and then to Oregon in 2014. Their growth has been explosive. They breed abundantly and this time of year, fly in huge clouds that are hard not to notice if you are in their flight path. The adults are flying from deciduous trees they feed on spring through fall to broadleaf evergreen plants where they overwinter.

They have a wide host range though they do prefer ash trees, especially Oregon ash, a native species common close to the Columbia River. Ash whiteflies feed like aphids, sucking sap from undersides of leaves. Leaves distort and get covered with a sticky honeydew-like material the whiteflies leave behind. Often, a sooty mold that can turn the leaf surface black will feed on the honeydew. There is a waxiness that is present at all stages of an ash whitefly's life beyond the egg.

Apples, pears, peaches, plums, ornamental and regular quince, and star magnolia are among the targets they will visit. There are some plants like rhododendrons that they sometimes live on but not reproduce on.

Fortunately, there is a clever tiny parasitic wasp that lays its eggs in the ash white fly pupae. The larva destroy the immature whiteflies and populations have dropped 99% in some locations where they have been introduced. The wasps appear to be here and further planned rearing and releases are planned.



For home gardeners, whitefly management can be daunting since the whiteflies reproduce so exuberantly. Horticultural oils and soaps help if applied routinely like you would for aphids. But water sprays won't easily wash them off leaves. Plants cleared of whiteflies will often get re-infested from neighboring populations in short order.

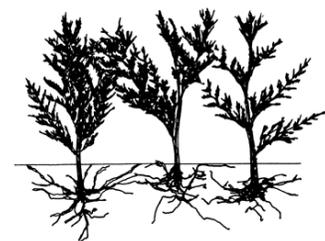
Numbers drop dramatically in winter but mild winters seem to deliver a larger population the following spring. Early spring warmth also encourages them. At 77 degrees, they can go from egg to adult in 25 days. There are several generations per year in south Columbia County. For more

information, see

http://oregonstate.edu/dept/nurspest/Ash_whitefly.html

A reading list of OSU publications

These are about plant propagation and they are all quite good and totally free for you to download:



<http://cru.cahe.wsu.edu/CEPublications/PNW152/PNW152.pdf>

<http://cru.cahe.wsu.edu/CEPublications/pnw164/PNW164.pdf>

<http://cru.cahe.wsu.edu/CEPublications/pnw0170/pnw0170.pdf>

Gritty pears

I have gotten a number of calls about gritty pears.

Both pears and quinces produce aggregations of specialized cells called sclereids, also

known as stone cells. Most of the time, these groupings are small and not too noticeable when you bite into a juicy pear.

There are several causes for more abundant and larger grit pieces in the fruit. First is the natural tendency for the grit clusters to get bigger as the fruit matures. The later a pear is picked, the grittier it may be. Since fruit ripened early this year, perhaps more of it was picked a bit late. Second, moisture stress can increase stone cells. That could also have been a contributing factor this summer. Third,

an uncommon virus sometimes infects Anjou pear trees (but not Bartletts) and can cause extensive stony cell patches under the skin. The virus dimples and distorts the surface of the fruit, often significantly. Finally, feeding by stink bugs can cause small indentations on the skin with a stony area underneath.

In my view, late harvest and/or moisture stress are the most likely causes of the larger stony bits in pear flesh this year.

In stone fruits like cherries, peaches, and plums, the sclereids grow to form the hard pit that covers the seeds. The same cells also form shells of walnuts and hazelnuts. It is a little puzzling why these gritty cells are still present in pears and quinces. Since fruit evolved to be eaten so the seeds are dispersed, the stony cells, if they slowed wild consumption, would be an evolutionary disadvantage. But I don't think they discourage feeding at all. Do they provide any benefit to the fruit consumer in nature?



Or are they a relict process that once had a function (possibly pears once had shells around their seeds) but no longer does? Sometimes these characteristics can be difficult to eliminate when breeding new varieties.

*Babycakes*TM Blackberry variety

The University of Arkansas and Fall Creek Nursery bred a new blackberry variety that they named *Babycakes*TM. Here is a news release: *Baby Cakes is a dwarf, thornless blackberry, perfect for container gardening with its compact habit. Spring and early summer bring bright white flowers. In summer, large, sweet berries present on top of the plant in a fireworks-like spray of fruit. The plant has a somewhat round shape with upright growth reaching 3-4' in height. In most regions, this blackberry will produce twice with a mid-summer floricanne crop and a mid-fall primocane crop.*

It was rated as the top new plant introduction at the 2016 Far West Nursery show held annually in Portland. We will see how the berries taste and how easy the plants are to manage. It should be available next spring.

Edamame, maybe

There has been a lot of interest from both processors and fresh market growers in raising the “vegetable” soybean known as edamame in the Pacific Northwest. Edamame is really tasty. The biggest challenge is that we aren't hot enough west of the Cascades to get most varieties to mature reliably. They need to be planted into warm soils and the soils need to stay warm. They also need considerable irrigation. But a recent OSU trial offered some hope that productive short season varieties are out there. A variety called Ajifuuka did well as did Sajamusume. For more general edamame info see <http://cru.cahe.wsu.edu/CEPublications/pnw525/pnw0525.pdf>

Native plants of the month: Elderberries – blue and red

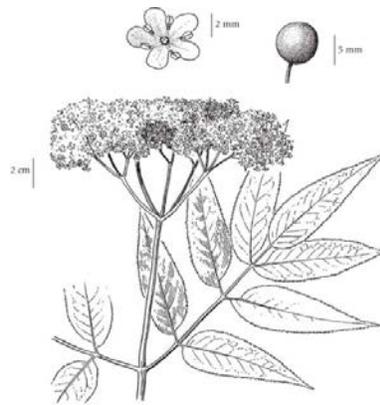
Blue elderberries (*Sambucus cerulea*) and red elderberries (*S. racemosa*) are both widely distributed in Columbia County. Blue elderberries prefer sunny, open landscapes on the edge of forests and in pastures or fencerows. They prefer deep soils but can handle shallower sites if there is enough water. Red elderberries are more common in riparian areas and can stand considerably more shade. Both plants are more common at lower elevations. At higher elevations, red elderberry is more common.

Elderberries are deciduous small trees or big shrubs, depending on how many stems they have developed, where they are growing, and how they have been pruned. The red elderberry can get to 15 feet or more while the blue species is usually 12 feet or less. The twigs of elderberries are fairly large and very pithy. They have opposite, pinnate leaves with the blue elder leaves slightly more elongated than the red ones. Elderberries, as a group, are not long lived (which can be improved by renewal pruning) and are somewhat fragile under a load of wet snow. Both species can develop larger clumps over time if left undisturbed. Individual blue elderberry stems can sometimes develop considerable thickness with one reported to be over two feet in diameter.

Both produce dense clusters of white/creamy flowers in the spring with the blue elderberry floral cluster a flat-topped umbel while the red elderberry develops a more conical floral array. With at least the blue elderberry, there are a mix of perfect flowers (male and female floral parts in the same flower) and separate male and female

flowers, all in the same floral head. Here, red elder berries tend to bloom earlier by several weeks than the blue elderberry. If you are in a stand of flowering elderberries, the fragrance can be quite intense.

There is no confusion after flowering. Red elder produces dense masses of bright red berries and the blue elder has a flattened “plate” of blue berries with a white, waxy bluish.



Sambucus cerulea var. *cerulea*

Red elderberries are not considered good food although, when cooked (this is important), they are considered harmless. They were an important food for the indigenous populations in Washington and British Columbia but are rarely consumed now. Blue elderberries are commonly made

into excellent jams, syrups, and jellies. They need to be cooked and the seeds strained out of the final product. Raw blue elderberries may cause nausea in some people. The leaves, stems, and flowers of both species contain cyanide glycosides and can be fatal if consumed raw.

Wood of elder bushes was used for arrows and whistles. Flutes were made out of large green stems cut in the spring and allowed to dry. The pithy center was removed and holes were made in the stem with a hot stick. No flutes were exactly alike and the music was individualized (or so Peattie reports).

Both red and blue elder berries are important feed for birds, especially grouse, flickers, pigeons, and waxwings.. Chipmunks eat the berries. Deer and elk eat the foliage (that is a problem in establishment). A wide variety of insects will visit the flowers (personal observations), though I couldn't find any lists of the ones that were the most dependent on these plants. They are good plants to consider including in a pollinator hedgerow.



That's the Way it Grows

Yay Fall!

Summer is winding up, and fall is fast on its heels. The cycle of the seasons continues, changing everything before our eyes. Grass is greening up and flowering plants are starting to close up shop. Soon leaves will start to brown and fall.

I'm happy. For a little while there, I was getting sick of watering every day. Now I am loving the occasional chill in the air, and the longer shadows. And yes, even the rain a little bit. We really do need it.

The onset of fall means switching gears. Instead of deadheading them, I'm pulling out the spent annuals. My focus is now on winding up my garden and perennial beds and preparing everything for winter.

I always cover my vegetable garden for the winter to protect it from rain compaction and over-saturation. Before I cover it though, I want to try squeezing out a couple more crops. It's been another disappointing summer garden, due to the deer. They snacked on the tomatoes, which delayed flowers by a couple of weeks. They ate the cucumbers to the ground. They stripped the leaves from the green beans—one of my must-have crops—leaving a feeble amount of greenery to produce only a few beans.

I will have to protect them from the deer better. The flashing tape is not working, as I'm still finding deer tracks in the garden. I guess it's time to start thinking about a deer fence.

Lawn renovation is on the fall chore list. Right now is the best time to plant or re-seed a lawn. It will have good root growth by the time hot weather rolls around next year. We need to re-seed our lawn, but the soil is pretty compacted. To break up the soil surface so water and roots can filter down, every few years we run the tiller across the lawn area. Not tilling exactly, but walking it across, so the tines bite into the soil, but don't rip up the grass already growing there.



Brugmansia

Then we can spread seed.

I bought a Brugmansia-Angel's Trumpet-this year, and will bring it inside to overwinter before freezing temperatures. I don't normally buy anything so fussy, but I had to have this slightly strange, tropical plant. The flower buds look like light green cucumbers hanging from the stem, and then huge, gorgeous trumpets unfurl and perfume the night air. I can simply bring the deciduous plant into the garage and water it sparingly.

My amaryllis bulbs also can sit in the garage over the winter. I don't bother forcing them to bloom early any more. I just start watering the pots in early spring and set them outside when it warms. I let them bloom on their regular schedule, and they look better, I think, because they have more foliage.

I have a few plants outside in nursery pots. To protect them from the cold, I place them in a larger pot with an insulating layer of leaves or straw under and around the plant's pot. Then I place them next to the house in the back, where they are more protected from desiccating winds and heavy rain.

After I go behind the chickens and replant all the iris divisions they dig up, I will do some hoeing mulching. And then I will add a larger coop with a chicken yard to the honey-do list.

It's been a great summer season. My perennials are bigger and better than ever, the annuals bloomed like mad and the fruit trees produced well, thanks to my little mason bees. Those little ladies did an amazing job pollinating this spring. The cocoons containing their offspring are safely tucked away in a back room. Soon, I will open the nesting trays and remove the cocoons to overwinter them in the refrigerator. In early spring, I can take them out of the fridge and watch them hatch. Thus, the cycle will start over.

—Lisa M. Long

Columbia County Master Gardener™
Compost, rock and bark dust delivered; 397-2989

OCTOBER

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.

Planning

- If needed, improve soil drainage needs of lawns before rain begins.

Maintenance and Clean Up

- Drain or blow out your irrigation system, insulate valve mechanisms, in preparation of winter.
- 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).
- Use newspaper or cardboard covered by mulch to discourage winter and spring annual weeds or remove a lawn area for conversion to garden beds. For conversion, work in the paper and mulch as organic matter once the lawn grass has died.
- Clean and paint greenhouses and cold frames for plant storage and winter growth.
- Harvest sunflower heads; use seed for birdseed or roast for personal use.
- Dig and store potatoes; keep in darkness, moderate humidity, temperature about 40°F. Discard unused potatoes if they sprout. Don't use as seed potatoes for next year.
- Harvest and immediately dry filberts and walnuts; dry at 95° to 100°F.
- Ripen green tomatoes indoors. Check often and discard rotting fruit.
- Harvest and store apples; keep at about 40°F, moderate humidity.
- Place mulch over roots of roses, azaleas, rhododendrons and berries for winter protection.
- Trim or stake bushy herbaceous perennials to prevent wind damage.
- To suppress future pest problems, clean up annual flower beds by removing diseased plant materials, overwintering areas for insect pests; mulch with manure or garden compost to feed the soil and suppress weeds.
- Cover asparagus and rhubarb beds with a mulch of manure or compost.
- Clean, sharpen and oil tools and equipment before storing for winter.
- Store garden supplies and fertilizers in a safe, dry place out of reach of children.
- Prune out dead fruiting canes in raspberry -Train and prune primocanes of raspberry
- Harvest squash and pumpkins; keep in dry area at 55° to 60°F.
- If necessary (as indicated by soil test results) and if weather permits, spade organic material and lime into garden soil.

Planting/Propagation

- Dig and divide rhubarb. (Should be done about every 4 years.)
- Plant garlic for harvesting next summer.
- Propagate chrysanthemums, fuchsias, geraniums by stem cuttings.
- Save seeds from the vegetable and flower garden. Dry, date, label, and store in a cool and dry location.
- Plant ground covers and shrubs.
- Dig and store geraniums, tuberous begonias, dahlias, gladiolas.
- Pot and store tulips and daffodils to force into early bloom, indoors, in December and January.

Pest Monitoring and Management

- Monitor landscape plants for problems. Don't treat unless a problem is identified.
- Remove and dispose of windfall apples that might be harboring apple maggot or codling moth larvae.
- Rake and destroy diseased leaves (apple, cherry, rose, etc.), or hot compost diseased leaves.
- Spray apple and stone fruit trees at leaf fall to prevent various fungal and bacterial diseases. Obtain a copy of "Managing Diseases and Insects in Home" (EC 631) from your local Extension office.
- Control lawn weeds while they are small. Hand weeding and weeding tools are particularly effective at this stage.
- If moles and gophers are a problem, consider traps.

Houseplants and Indoor Gardening

- Early October: Reduce water, place in cool area (50-55°F) and increase time in shade or darkness (12-14 hours) to force Christmas cactus to bloom in late December.
- Place hanging pots of fuchsias where they won't freeze. Don't cut back until spring.
- Check/treat houseplants for disease and insects before bringing indoors.



Farm and livestock notes

Fall livestock calendar

Provide ewes extra feed prior to breeding. This is called “flushing” and it encourages twin lambs next spring. Feed the ram to get him in good condition for breeding. Consider shearing ewes by mid-November to allow them to shake water off easier and make the udders easier for the new lambs to find

Talk to your vet about internal parasite management if you are not on a regular program.

Treat tansy ragwort (the plants that will bloom next summer), blackberries, Scotch broom, and Canada thistle during our dry fall days. If you have new weeds that concern you, bring some in to the Extension office for identification and options.

Cull cows that were open, that gave birth but didn't wean a calf, that are unsound, that produced a poor quality calf, and/or ones that are very difficult to manage.

Make sure you have enough hay for a 125-150-day feeding period. Consider getting the hay tested to see if you need to provide supplemental protein. Save the best hay for the 30-60 days before calving or lambing.

Learn to condition score your animals to see if some animals are losing significant weight. Provide extra feed and care for those animals.

Have enough bunk feeding space so that all the animals get a chance to eat their fill. Shy animals can be bossed around so much that

they decline in condition. Slant opening feed bunks that you can build or retrofit help. They also reduce hay waste.

Vaccinate and wean calves (gently, with fence-line weaning methods if possible). Try to get dehorning and castrating done several weeks before weaning. Get the cows up-to-date on their vaccinations.

Try to reduce the mud around your winter feeding areas by guttering your barn to move roof water away from livestock traffic. Consider building a drier feeding area with geotextile fabrics, rock, and gravel.

Build a good “working chute” in case your animals need veterinary care. Many vets won't work on livestock if animals can't be reasonably immobilized while they are examining them or giving them treatments.



Give your pastures time to rest before next spring. Continuous grazing will profoundly restrict the potential of your grass to start growing early next spring and to produce what it could.

Treat for cattle grubs before October 15th.

Start feeding magnesium in December to prevent grass tetany in the spring. Talk to your vet about a method that fits your operation.

Watch out for respiratory issues that are more common when we have warm days and colder nights. Look at your livestock every day. Isolate animals that may have problems, give them good feed, and call for vet assistance if they don't quickly respond.

Watch for signs of lice or coccidiosis as animals become more confined in the winter.

Vegetative filter strips

I have long felt that fairly modest vegetative buffers strips in agricultural land can play an important role in keeping soil sediment, manure, fertilizer, and other potential contaminants from drainage ditches and ultimately streams and rivers. There has been a lot of recent OSU and NRCS research about these strips to try to answer questions about their performance. Most of the work was done in grass seed fields. Farmers were concerned whether the strips would become a weed seed bank that would contaminate their crops or that they would be expensive to install and maintain or that they wouldn't really work.



The evidence is just the opposite. Filter strips have been shown to effectively capture sediments, surface water, and manure and accompanying bacteria. In addition, if properly contoured and/or graded they will dramatically reduce field erosion along ditch edges during high rainfall events.

Most of the strips were designed around a base matrix of creeping red fescue, sometimes planted with a nurse crop to aid in establishment. More complex mixes were tried including adding lotus (trefoil), red clover, or other species but the straight creeping red fescue performed extremely well. There is a suggestion that if the filter strip will be directly abutting an active ditch, native species that are tolerant of a lot of water saturation (which creeping red fescue is not) be planted at the lower edge of the strip. The strips were generally maintained by mowing after establishment. Most of the farms on which the filter strips were tested were not raising livestock but were growing seed and/or grain crops. Those that brought in sheep for winter grazing generally used

hot wire as temporary fencing to keep them out of the strips. Filter strips of 8-12 feet in width seemed most appropriate on the farms and small ditches or seasonal streams that they were tested on.

Filter strips would be useful for small farms as well. Any barrier between the farmyard and fields and the road or field ditching will reduce the farm's impact on our streams and rivers. New sod doesn't have to be planted as in the creeping red fescue examples noted above. A simple hot wire that allows the vegetation to grow thick enough to capture the sediment, surface water, and manure will be sufficient. I still think that the 8-12 foot width established by a poly-wire hot fence is pretty important. The strip should be maintained by high mowing in the late spring or early summer for weed control and grass stand thickening. It probably could be lightly rotationally grazed a few times in mid-summer and still perform well.

If you are interested in a detailed discussion of the Willamette valley work, go to the OSU Extension publication on line at

<https://catalog.extension.oregonstate.edu/site/s/catalog/files/project/pdf/em8876.pdf>

A shift in where beef is sold

During the 1980s, about 70% of total beef sales took place at retail supermarkets. Recent data would indicate that this percentage has declined to 50%, which illustrates the dramatic growth in beef sales at foodservice outlets and restaurants. U.S. consumers have reduced at-home per capita servings of beef, while increasing per capita servings at restaurants by about the same amount. This may be the reason that the demand for USDA Choice and higher quality grades of beef is increasing.

Bot flies

This week, I got a call a Rainier resident concerned about a large maggot that emerged from a chipmunk's skin that her cat caught. The chipmunk was carrying a bot fly larva.

Bot flies are large and somewhat hairy and vaguely resemble bumblebees. One writer described the adult fly as living only to mate and lay eggs and then die within two weeks of emerging. Apparently they don't even eat as an adult. There are a number of species in the large bot fly family including some that infest horses, cattle, and sheep. Others go after deer and elk. In tropical regions, there are species that infest humans.

The most common bot flies in Columbia County are species that use bushytailed woodrats, rabbits, and especially deer mice as their larval hosts. Their eggs are deposited near burrow entrances or directly in nests if they are accessible. The eggs hatch when they sense the body heat of their host. The tiny maggot (at this stage) creeps through the mouth or nose. Sometimes, the animal brushes against the egg which sticks to hair near the nose/mouth and then hatches. Once inside the animal, they grow large, fed by blood-borne nutrients.

They ultimately move to a preferred launch point, often under the skin near the abdomen or neck. They can punch a breathing hole through the skin. A large swelling forms around the maggot as it grows (these are called warbles). The warble finally bursts and the maggot exits, burrows into the



ground, and forms a pupal case. The larva is bigger than the fly it will become. The pupae transform into a fly in as short as a month in the summer but can overwinter in the soil and emerge as a fly the following spring as well.

The full life cycle of a larva from egg to exit is 3-5 weeks in deer mice, chipmunks, and other small rodents. It is longer for rabbits and quite long

for cattle and other large animals.

We had one elderly cat that had a large warble. Perhaps a fly laid an egg on its fur and he licked it in. Or perhaps, he either ate a rodent with immature maggots or eggs or inhaled some eggs or even small maggots while prowling mice and chipmunk runs. This is more common than you might think with cats and sometimes dogs. Usually, damage to the pet (or even the rodent) is minor unless there is a secondary infection.

Rarely, humans can become infested getting an egg in their mouth in some way. This is rare in N. America and usually isn't a serious medical situation. Not so in the tropics.

It is a different story with livestock. Cattle grubs (which aren't native to N. America but then, neither are cattle) wander into the esophagus and then into spinal cord region. There, they can cause some real damage. They also make holes in the hide which lowers its value. These bots are best controlled now before spinal migration takes place. Fortunately, modern systemic products like ivermectin have broken the life cycle of many of these flies and they are less common in livestock now.

Photos from BugGuide

2017 OSU Master Gardener™ class will be held in Vernonia



The Columbia County/OSU Master Gardener™ training will be held in Vernonia on ten consecutive Tuesdays from about 9:30 am to 3:30 pm starting on **February 21, 2017**.

If you think you might be interested, call the OSU Extension office in St. Helens at 503 397-3462 or email either myself (chip.bubl@oregonstate.edu) or Vicki Krenz (vicki.krenz@oregonstate.edu) to get on a mailing list for the classes. The informational packets will be available soon (enrollment will be online this year).

The class will be held at Vernonia's new health building and space is limited to 20 people. Cost of the class is \$80; there are a few scholarships available.



Oregon State University Extension Service offers educational programs, activities, and materials without discrimination based on age, color, disability, gender identity or expression, genetic information, marital status, national origin, race, religion, sex, sexual orientation, or veteran's status. Oregon State University Extension Service is an Equal Opportunity Employer. OSU Extension programs will provide reasonable accommodation to persons with physical or mental disabilities. Contact the Columbia County Extension office at 503.397.3462 to request reasonable accommodation. This publication will be made available in accessible formats upon request. Please call for information.

Presorted Non Profit
Bulk Rate
U.S. Postage
PAID
St. Helens, OR
Permit #002

Oregon State University
Columbia County OSU Extension Service
505 N. Columbia River Highway
St. Helens, OR 97051
Return Service Requested