



# Country Living

Provided to you by the  
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## November 2018

## Programs for you . . .

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

- Nov. 1 ..... Master Gardener™ Board Meeting Project Planning @ 10am, Board Mtg @ 10:30
- Nov. 3 ..... Volunteer Work Party @ Nob Hill Nature Park 1 pm. Half-yearly work party in St. Helens. For Info & To RSVP: SBWC at 503-397-7904 or [info@scappoosebay-wc.org](mailto:info@scappoosebay-wc.org).
- Nov. 6 ..... Scappoose Bay Watershed Council 7:00 p.m. 57420 Old Portland Rd in Warren
- Nov. 7 ..... Columbia Soil & Water Conservation District 7 pm 57420 Old Portland Rd, Warren
- Nov. 12..... Office Closed in observance of Veterans Day Thank you, Veterans!
- Nov. 13..... Lower Columbia River Watershed Council 7:00 p.m. Clatskanie PUD, 495 Hwy 30
- Nov. 19 Beekeeping Meeting 6:30 p.m. Extension Service, Recap of the OSBA Beekeeping Fall Conference. Latest research on honeybee health, nutrition, pathogens & pests
- Nov. 22-23 Office Closed - Happy Thanksgiving! Enjoy your holiday!



**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 & 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

### Feed bumble and other bees sunflower pollen

Scientists on the east coast have discovered that sunflower pollen can protect bumble and honey bees from micro-organisms. They got to this discovery by a circuitous route. They knew that some insects used “secondary” plant chemicals for protection against predators (monarchs for example, which eat milkweed) and wondered if plant compounds could have an impact on disease or parasites.



The lead scientist looked at whether plant nectar protected bees from anything but didn't find much. She then reasoned that pollen, with its dense high protein nutritional profile and complex mix of natural compounds might be worth a look. The plant wants the pollen picked up and redistributed on the female portions of the flower. The bees eat the pollen for its proteins and minerals. The greater the reward for the insect from the pollen, the better pollination the plant receives.

She infected her research bees (bumble and honey) with their respective parasites and then fed them a diet rich in buckwheat, sunflower, rapeseed or a mix of all three pollens.

The sunflower pollen was the clear winner. It knocked the infection counts down to almost non-detect.

She did note that sunflower pollen worked best for general bee health when other flowers with different nutritional profiles were available. That just

makes sense. Sunflowers, which are native to North America, evolved with bumblebees in a complex botanical landscape.

As a final note, my wife has been planting more sunflowers recently, along with a bunch of open-faced dahlias. Both attract a wide variety of bees and an army of bumblebees.

### Drought-tolerant Ceanothus makes a beautiful addition to the garden

Life is tough for plants sitting in a field without food or water. Such was the case for wild lilac (Ceanothus) when Neil Bell, a horticulturist for Oregon State University's Extension Service, decided to evaluate the evergreen shrubs. He planted 45 cultivars at The Oregon Garden in full sun and poor soil with no water or fertilizer. “We wanted to test their cold-hardiness and, to a lesser degree, the quality of their blooms and pest resistance,” said Bell of the plants he assessed from 2001 to 2005, when the shrubs were not as readily available as they are today.

As Bell took on his evaluation, the most common Ceanothus on the market were the very large C. ‘Victoria’ (syn. ‘Skylark’) that grows about 9 feet tall and 12 feet wide, and C. gloriosus, a ground cover species. Those are staples but about a dozen or so – including ‘Blue Jeans,’ ‘Marie Simon,’ ‘Dark Star,’ ‘Topaz’ and ‘Tilden Park’ – now show up in nurseries regularly.



Most, though not all, scored high in Bell's trial, proving cold-hardy in Willamette Valley's Zone 8 (10 to 15 degrees) winters. They also produced more-than-ample flowers and showed little pest or disease damage. In fact, he said, Ceanothus as a group did well, though some showed a little leaf burn after particularly cold winters or when

temperatures plummeted early in the season before plants had a chance to harden off.

“‘Blue Jeans’ is one of the best,” Bell said. “It was never winter damaged and is one of the earliest to bloom. It’s a really cool plant.”

Ceanothus plants start blooming early in spring – ‘Blue Jeans’ begins the first part of April – and continues until July, depending on the cultivar. ‘Julia Phelps’ and ‘Dark Star’ bloom late April through May. ‘Victoria’ comes on a bit later in May, blooming into June. The latest to bloom are the semi-deciduous types like ‘Marie Simon’, ‘Gloire de Versailles’ and ‘Topaz’, which continue to bloom into July.

“One of the things about Ceanothus,” he said, “is that it’s a reliable blue-flowered shrub. Getting blue into the landscape can be challenging. But when Ceanothus is in bloom, it’s solid, glowing blue. That’s their biggest attribute.”

Not close behind, though, is the shrub’s drought tolerance. In Bell’s evaluation, the test subjects received no water at all. In home gardens, once the plant’s roots are established after the first year, it should be treated the same. “Watering is the single worst thing you can do for these plants,” Bell cautioned.

Ceanothus demand well-drained soil, so prior to planting correct compaction issues throughout the flower bed. Incorporating 2 to 3 inches of an organic amendment will help with soil quality in the short term. After that, no amendments or fertilizer are needed. In fact, as a group Ceanothus are known for their nitrogen-fixing ability, which eliminates the need for nitrogen fertilizer and gives them an advantage in poor-quality, dry soil.

Though most commonly associated with California and often called California lilac, Ceanothus is native to the entire West Coast from

southern California up into British Columbia, as well as deciduous species in the Midwest and eastern U.S. Blue blossoms are by far the most common, but flowers also show up in white and pink.

Size and shape are variable, too. “Because of ‘Victoria,’ everyone thinks of Ceanothus as a gigantic shrub,” Bell said, “but there’s a great range of sizes, from ground covers on up.”

There are a lot of reasons to grow Ceanothus, Bell added. “They’re tolerant of poor, dry soils,” he said. “They’re evergreen for the most part. You can get a long bloom season if you choose correctly. They have extraordinary flowers that attract swarms of beneficial insects so the plant has ecological value. And now we know many of them are hardy here in the Pacific Northwest. They’re pretty extraordinary plants.”

### **Sizes and shades of commonly available Ceanothus:**

‘Blue Jeans,’ 8 feet tall and wide, violet blue (picture)

‘Dark Star,’ 8 feet tall and wide, cobalt blue

‘Julia Phelps,’ 5 feet tall and wide, dark lilac blue

‘Victoria,’ 9 feet tall and 12 feet wide, cobalt blue

C. gloriosus, 2 feet tall and 6 feet wide, light blue

‘Topaz,’ 6 feet tall and 8 feet wide, medium blue

‘Marie Simon,’ 4 feet tall and wide, pink

*Authors: Neil Bell and Kym Pokorny, Oregon State University Extension Service*

## ~ NOVEMBER ~

### Garden hints from your OSU Extension Agent

OSU Extension Service encourages sustainable gardening practices. Preventative pest management is emphasized over reactive pest control. Identify and monitor problems before acting, and opt for the least toxic approach that will remedy the problem. First consider cultural, and then physical controls. The conservation of biological control agents (predators, parasitoids) should be favored over the purchase and release of biological controls. Use chemical controls only when necessary, only after identifying a pest problem, and only after thoroughly reading the pesticide label. Least-toxic choices include insecticidal soaps, horticultural oils, botanical insecticides, organic and synthetic pesticides — when used judiciously. Recommendations in this calendar are not necessarily applicable to all areas of Oregon. For more information, contact [your local OSU Extension Service office](#).

#### Planning

- Force spring bulbs for indoor blooms in December.

#### Maintenance and Clean Up

- All of Oregon: Service lawn mower prior to winter.
- Check potatoes in storage and remove any going bad.
- Place a portable cold frame over rows of winter vegetables.
- Place mulch around berries for winter protection.
- Cover rhubarb and asparagus beds with composted manure and straw.
- Rake and compost leaves that are free of diseases and insects. Use mulches to prevent erosion and compaction from rain.
- Protect built-in sprinkler systems: Drain the system, insulate the valve mechanisms.
- Clean and oil lawnmower, other garden equipment and tools before storing for winter. Drain and store hoses carefully to avoid damage from freezing. Renew mulch around perennial flower beds after removing weeds.
- Protect tender evergreens from drying wind.
- Tie limbs of upright evergreens to prevent breakage by snow or ice.
- Trim chrysanthemums to 4 to 6 inches after they finish blooming.
- Leave ornamental grasses up in winter to provide winter texture in the landscape. Cut them back a few inches above the ground in early spring.
- Last chance to plant cover crops for soil building. You can also use a 3- to 4-inch layer of leaves, spread over the garden plot, to eliminate winter weeds, suppress early spring weeds and prevent soil compaction by rain.
- Watch for wet soil and drainage problems in yard during heavy rains. Tiling, ditching, and French drains are possible solutions. Consider rain gardens and bioswales as a long term solution.
- Take cuttings of rhododendrons and camellias for propagation; propagate begonias from leaf cutting
- Prune roses to "knee-high" to prevent winter wind damage.

#### Planting/Propagation

- Plant window garden of lettuce, chives, parsley.
- Good time to plant trees and shrubs. Consider planting shrubs and trees that supply food and shelter to birds; e.g., sumac, elderberry, flowering currant, and mock orange.
- Still time to plant spring-flowering bulbs, such as tulips, daffodils, hyacinths, crocuses. Don't delay.
- Good time to plant garlic for harvest next summer, and to transplant landscape trees and shrubs.

#### Pest Monitoring and Management

- Monitor landscape plants for problems. Don't treat unless a problem is identified.
- Rake and destroy leaves from fruit trees that were diseased this year. Remove and discard mummified fruit.
- Check firewood for insect infestations. Burn affected wood first and don't store inside.
- Treat peaches 4 weeks after leaf fall spray for peach leaf curl and shothole diseases.
- Moss appearing in lawn may mean too much shade or poor drainage. Correct site conditions if moss is bothersome.
- Bait garden, flower beds for slugs during rainy periods. Use traps or new phosphate baits, which are pet-safe.

#### Houseplants and Indoor Gardening

- Reduce fertilizer applications to houseplants.

# Spotlight on Insects

## Biomimicry: industrial applications

Since ancient times, we have marveled at the efficiency, social organization and handiwork of the honeybee, including the geometric wonder of the hexagonal honeycomb! Even the ancient Greeks recognized the efficient use of space and

building materials in the honeycomb design (as in Rome's Pantheon.) From fashion, to architecture, and even to aircraft, the perfection of economy and strength can be found in this design. What else? Well, maybe vehicles that can't get a flat tire! That's



right. Prototypes for honeycomb airless tires are currently in development.

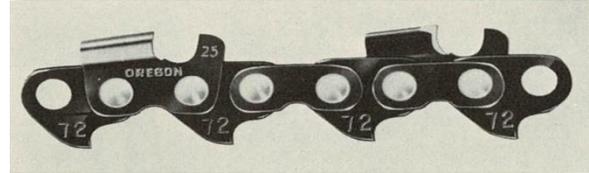
What other industrial applications are based on unassuming insects?

Here's one: In Zimbabwe, an architecturally-marvelous building remains temperature regulated without conventional cooling or heating after being modeled on the venting system in a

mound built by a humble, industrious termite colony (thankfully, NOT a local species!) By constantly opening and closing a series of vents, both the insect abode and the massive building are kept at a constant temperature and humidity, and are ventilated with fresh air. Besides the energy saving nature of the design, the cost savings trickle down to the tenants whose rent is considerably cheaper than their neighbors! (Human neighbors, that is!)



Here's an example more relevant to Oregon: have you heard how a Timber Beetle larva revolutionized the chainsaw chain? Yep. Logger Joe Cox is credited with inventing the C-shaped chipper chain after observing the giant grub



*Saw Image: Omark Industries*

chewing its way through a tree stump both with AND against the wood grain! In 1946, he duplicated the alternating C-shaped jaws in steel, and contributed to a major influence in the history of timber harvesting.

Want to learn more? Check out these other fascinating examples of biomimicry:

- A tablet screen called "The Mirasol" mimics the structure of butterfly wings to make the display easier to see while using less power.
- Ornilux glass is embedded with a spiderweb-inspired pattern which helps birds see the solid surface and avoid collisions.
- The Dew Bank, a drinking vessel which collects and stores condensation, was inspired by the darkling beetle.

Who would have guessed that the replication of insect innovations could provide for greener, more cost-effective solutions for humans to function in an otherwise challenging context?

Just ask the bees, termites and beetle grubs - they've known about it for thousands of years!

~ Sonia Reagan, OSU Extension Staff

## Weed of the month: Pokeweed

Pokeweed (*Phytolacca americana*) is often found in isolation, a plant here, a plant there. It is rather gangly with one to several stout red/purple stems and large alternately-arranged leaves. But it can grow tall, up to 10 feet in full sun. From late June through the rest of the summer, pokeweed produces spectacular elongated clusters of deep-purple berries from small green/white flowers. This really gets your attention. The plant is striking and quite attractive. But be warned, those berries and the rest of the plant are poisonous!

Those berries are beloved by birds, who are immune to the poison. The seeds inside the berries are deposited with starter fertilizer hither and yon. If they meet up to chat while digesting, they can put a lot of seeds in a small area, leading to a big patch of pokeweed seedlings next year. Raccoons, opossums, and deer mice also eat the berries and move pokeweed seed.

Pokeweed is an herbaceous perennial. The stems and leaves die back in the fall to the crown but return with renewed vigor the following spring. It can start single stemmed and become a mass of stems in a few years. The underground crown/root will (if undisturbed for years) become a massive taproot with the diameter of a bowling ball.

Those of you from the East Coast know pokeweed. In fact, it is native to the eastern seaboard and throughout the South. It is not clear how it got to Columbia County but one can speculate that some of the Southerners that moved here in the 1930s for lumber mill jobs

might have brought some with them, to remind them of home. It is considered both a decent landscape plant and a food (keep reading) in the South.

I have seen isolated plants for many of the 40 or so years I have been here. Most were in random places and not cared for (not that they need much help to grow) but a few had ardent admirers that consciously spread them around their homestead.



COMMON POKEBERRY  
*Phytolacca americana* L.  
POKEBERRY FAMILY

All parts of the plants are poisonous with the root more toxic than the stalk and the stalk more than the leaves. The berries are also poisonous. The first response may be burning of the mouth followed by violent vomiting, possibly convulsions, and sometimes death. Children are the most often poisoned after eating the fruit.

Southerners eat the leaves as a cooked green (“Poke sallet”) but **only after boiling them in water three times and throwing out the water after each boil.**

The berries can cause dermatitis. The roots kill hogs that dig and eat them. There is no way to make the roots edible. Pokeweed was at one time used as a weight loss drug probably because the patient was throwing up their dinners after treatment. The Native American population made a red dye/ink from the juice of the berries. There are lots of strange, intriguing compounds in this unusual plant but, so far, there is no modern medical use for any of them.

Should you control it? From my perspective, yes. It is hard to dig out but is easily killed by several herbicides. Glyphosate-based products like Roundup™ and others are very effective in mid-summer on until the leaves start to drop.

## Farm and livestock notes

### Correction

Last month I had an article about the process to lower your property tax on non-EFU land that you farm. I referred to the program as a “deferral” but it is actually a “special assessment” as per the language in the legislation. I strive to be accurate in what I write and appreciate all comments.

### Publications of interest:

#### The Western Oregon and Washington Pasture Calendar

This great publication describes—by climatic zone—perennial pasture plant growth and how management actions can affect growth, both positively and negatively. Optimal management of forages by season is the basis for the Pasture Calendar. Since pasture forage is the cheapest feed we use, it is so important to know how to manage it. Really, you aren’t ranchers but forage farmers that use livestock to turn forage into money and/or family meat.

PNW 699 Published December 2017, 50 pages  
<https://catalog.extension.oregonstate.edu/pnw699>

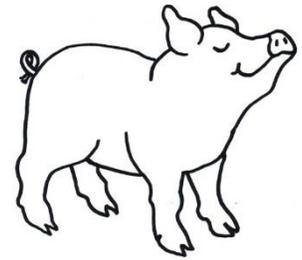
#### Beef Production for Small Farms: An Overview

Covers three general types of small-scale cattle enterprises: (1) cow-calf breeding herds, (2) growing and feeding operations, and (3) backgrounding operations. The publication also covers topics such as feeding and keeping cattle healthy, marketing your product, understanding beef grading, and keeping financial records. It concludes with a list of additional resources and a glossary of terms.

EC1514 Revised March 2018, 17 pages  
<https://catalog.extension.oregonstate.edu/ec1514>

Note: Gene Pirelli, Regional OSU Livestock Agent and State Swine specialist, had a major role in both of these excellent publications.

Gene retired at the end of October. He has been a great colleague to work with and is deeply appreciated by his clientele throughout Oregon. I learned a tremendous amount from Gene. If you run into him, wish him well and thank him for all that he has done. He is a gem. ~ CB



### What are meat and milk?

Technology has changed the way we interact and the way we work. It has changed, to some extent, the way we eat but that is about to get a lot more interesting. There are a lot of people, who for either health, ethical, and/or environmental reasons want to eat a lot more plant protein and a lot less meat and milk protein. This has led to a lot of innovation in food products. It has also led to a lot of actual or pending litigation.

Currently, the Food and Drug Administration (FDA) is being asked to determine what can be labeled “milk”. You might think that would be obvious (it must come from a mammal) but there is a long history of “coconut milk” and more recently “almond milk” and other plant-based “milk” products. The dairy industry wants to own “milk” for understandable reasons. The plant-based “milk” companies say that the public isn’t stupid and that they know that almond milk doesn’t have dairy in it, so there is no need to stop them from using the term “milk”. The FDA is taking input now and is expected to issue a decision sometime next year.

Plant-based imitation meat (mostly soy and/or pea based) have been around for centuries. A lot of research has been done to improve the flavor and texture. These products are well established in grocery stores and currently aren’t generating

much controversy. Their market share of the protein part of people's diets is small but increasing.

A major developing controversy, and a potential threat to the meat industry, is the emerging technology that allows the creation of structured "meat" from cultured meat cells grown in large vats. Recently, hamburgers cost > \$3,000 each to produce by this technique. But the price is dropping rapidly and there are predictions that it will cost about the same per pound as high-end meat within two to three years! The product is said to have the same flavor and texture of "real" meat and that it can be cooked in the same way.



There may be vegetarians that don't want to kill animals for food but would migrate to this product for its nutritional/culinary values. That has the livestock industry really worried. With so few people actually cooking and most buying ready-to-heat food, it could easily jump into the American food culture. But, back to the FDA milk decision mentioned above, can it be called "meat"? My guess is that it could be, because it is composed entirely of beef, pork, or chicken cells. However one state, Missouri, has passed a law that "meat" has to come from animal flesh. Would there have to be a descriptor like "cultured" or "lab-grown"? Quite possibly, though it isn't clear who would determine the name. A lot of dollars are riding on that decision. Probably couldn't be called grain or grass-fed, though.

For some context, the average American will consume ~ 215 pounds of meat (beef, poultry, lamb, pork, etc.) per person each year. Meanwhile, the plant-based meat industry has over \$4.2 billion in annual sales and is also growing fast. We are a protein hungry lot!

## Winter feeding

Several factors affect the nutritional demands of your livestock as you start winter feeding:

What condition are they in coming into late fall? Learn to body condition score your animals. There are many resources on line. Just type in "body condition scoring + cattle + university" and you will some good info. You can substitute sheep for cattle.

What is the weather like? Wet weather takes a tremendous toll on livestock outside. Rain reduces the insulation value of hair or wool, forcing the cows and ewes to burn more calories to maintain body heat. A dry place to feed and rest is very important.

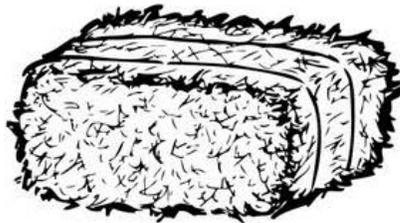
What is the quality of your feed? This can be a bit tricky. Most people don't test their hay nor do the sellers. Hay that is leafy and green will probably have a crude protein (CP) content of ~7% and a "total digestible nutrients" or TDN of ~55%. Over-mature hay can be dramatically lower in both CP and TDN. More on that in a minute.

What do your animals need over the winter feeding months? An 1100-pound cow will need 1.4 pounds of crude protein and 9.7 pounds of TDN per day now in this stage of gestation.

In the late gestation stage or in very adverse weather conditions, the demand goes up to 2.9 pounds of CP per day and 16.8 pounds of TDN per day.

So can your hay alone meet this demand? In other words, how much hay can they consume/day and will that amount give them what they need through calving? Cattle can only consume 1.5 percent of body weight (BW) of **low quality** forage per day, 2.5 percent of their BW of medium quality forage per day, and 3+ percent of their BW of high quality forage per day.

Why can't they consume as much low quality hay? Because the protein in the hay feeds the rumen microorganisms that do the real work of digesting forage. Low protein = low rumen bacteria counts = slow digestion. Cows and ewes can starve to death on free choice, all you can eat low protein forage.



For an 1100-pound cow being fed 7% CP and 55% TDN hay, she will be eating about 26 pounds per day (28-30 pounds of actual hay to account for moisture in the hay and some bunk loss). So how much CP and TDN is in 26 pounds of that hay?  $CP = 26 \times .07 = 1.82$ ;  $TDN = 28 \times .55 = 14.30$ . So at this gestation stage and in good weather conditions, both the CP and TDN needs are being met. But if weather and/or barn conditions really get bad or we get into late gestation, **this amount of hay will not cover her needs!**

So can you just feed more hay? It won't work because she literally can't eat anymore hay unless you improve the protein and TDN through supplements. That is why many livestock raisers feed 2/3 local hay and 1/3 alfalfa each day. That would be, for the cow, ~20 pounds of local hay and 8 pounds of alfalfa per day. Others will feed about 6 pounds of a supplement containing 16% or more protein and adequate TDN with 22-5 pounds of hay. **People with sheep and goats should not use the 16% cattle supplement feed because it contains too much copper and could be toxic.**

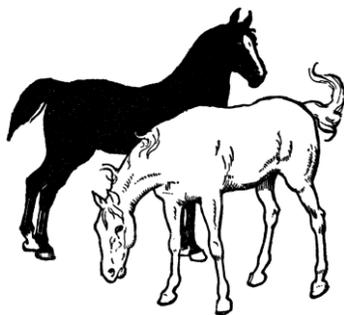
The crude protein (CP) rule of thumb for mature cows is 7-9-11. Cows need 7 percent CP feed during mid-gestation, 9 percent during late

gestation and 11 percent during lactation. The total digestible nutrients rule is 55-60-65 for the same periods.

I hope this helps you to plan your feeding program. People raising sheep can use the 1100 pounds and divide it by the weight of your ewes (say, 150 pounds each) to get the amount each ewe should get per day.

### Gentle starts at birth

Animals imprint on whatever they see immediately after birth, as long as it moves. Usually this is the mother, though there are often comic situations where ducklings imprint on dogs, chicks with cats, and the like. The stock raiser can use this to their advantage. Clear evidence shows that if there is human/newborn contact, the animal will be much more responsive to humans as it grows up. This early contact will not damage the cow, ewe, or mare's mothering instinct or the offspring's bonding to them. Rather, it simply adds the human into the mix of objects that are important to that young animal.



The key to proper imprint training is not just being there visually but handling the animal with slow, repeated motions. The process consists of three per day one-hour sessions, repeated the first three days of the animal's life. This is said to desensitize the animal to the handling it will later receive. Horse owners/trainers are especially interested in imprinting.

### Prepare for wintering livestock

- Have enough hay and high quality supplements on hand. Feed appropriately.
- Divert rain from feeding areas.
- Observe your stock carefully once a day – respond to problems.



## 2019 OSU Master Gardener™ class will be held in St. Helens

The OSU Master Gardener™ class will be offered in St. Helens again this next year, and we will host our first hybrid schedule with classes Monday evenings AND Saturday mornings, beginning February 4<sup>th</sup> and meeting for 10 weeks (two 3-hour classes weekly). The programs will be held at the OSU Extension Service class room in St. Helens, with a few hand-on classes in other nearby locations. Topics to be covered will include vegetable gardening, insect identification, botany for gardeners, plant problem diagnosis, growing fruits and berries, lawn management, weed identification and management, pesticides safety, and plant propagation. Students completing the class will be expected to pay back about 60 hours on community horticultural projects. Cost of the class is \$100; there are a few scholarships available.



Registration is online again this year, at: <https://tinyurl.com/ColumbiaMG2019>.

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



**Oregon State University**  
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