



Country Living

Provided to you by the

OSU Extension Service Columbia County

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The office will be closed Fridays from Noon to 1 p.m.

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June 2016

Programs for you . . .

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

- June 2..... **Demonstration Garden and other MG Extension Projects Planning Meeting.** 10 a.m., OSU Extension Classroom, St. Helens
- June 2..... **Master Gardener™ Board Meeting.** 10:30 a.m., OSU Extension Classroom, St. Helens
- June 4..... **Columbia River Communities Emergency Preparedness Fair.** 10 a.m.-2 p.m.. Columbia River Foursquare Church, 555 Commons Drive, St. Helens. ARE YOU READY?
- June 7..... **Scappoose Bay Watershed Council.** 7 p.m., 57420-2 Old Portland Rd., Warren
- June 14..... **Lower Columbia Watershed Council.** 7 p.m., SWCD office-35285 Millard Rd., St. Helens
- June 15..... **Soil & Water Conservation District.** 7:30 p.m., SWCD office-35285 Millard Rd., St. Helens
- June 21 **Pesticide Applicator Pre-Exam Training.** (also valid for 4 hours of "Core" credits for those with licenses). Location: Clatsop Community College, South County Campus, 1455 N Roosevelt Drive, Seaside, OR 97138. Class time: 10am - 4pm. Cost \$50. See back cover for details.
- June 22 **Introduction to Beekeeping.** OSU/Columbia County Extension Office, 505 N. Columbia River Highway, St. Helens, OR. Class time: 6:30pm-8:30 pm. See back cover for details.
- June 23 **Master Gardener™ Chapter Meeting.** 6:30 p.m. Speaker will be Linda Beutler, "Growing Clematis in Containers," OSU Extension Classroom, St. Helens. **The public is invited. Free.**
- June 23 **Upper Nehalem Watershed Council.** 7 p.m., Vernonia Grange, <http://nehalem.org/> 503-429-0869

Joy Creek Nursery Seminars

We are fortunate to have such an exceptional nursery like Joy Creek in our county. They have an outstanding series of seminars twice a month (Sundays) throughout the summer. You can visit their website www.joycreek.com for a complete list and description. The seminars (which begin at 1:00 pm and are free unless otherwise indicated) are as follows: **June 5-9:00 a.m.** - *Basic Plant Propagation Workshop* - with Leslie Gover; **June 19-1:00 p.m.** - *Choosing the Right Vine* - with Maurice Horn. To register please call us at 503-543-7474.



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

Bolting vegetables

Weather the last month or so was a mix of the hot and the cool and much in between. Some vegetable plants get very confused by this oscillation and will bolt to seed. For others, it is just part of growing up. Deb Brimacombe prepared the following summary of the bolting response of several plants that I thought was very well done:

Cilantro: Cilantro grows quickly. Both temperature and longer days hurry it toward going to seed. Harvest quickly and often. Grow it in the cooler part of the garden. Or plant it in early spring and again in late summer when days are shorter and temperatures are lower. Alternately, let it seed and collect the seeds as coriander. The insects attracted by the blooms are also a benefit to the garden.

Broccoli: Broccoli is a biannual that grows best in the 60-70 degree range. If temperatures drop below the 60s for over a week, or the weather gets too hot for an extended length of time, they will begin to bolt because they think it is time to go to seed. Ironically, the first year I grew broccoli the weather was perfect; every year since has been a learning experience. (Never begin at the top. It's hard to land without hurting yourself when you fall.) Begin your starts early and keep them in the 60 degree range until it's safe to set them out. (I almost got this right this year.)

Lettuce: Lettuce is sensitive to an accumulation of light as well as high temperatures. Each cultivar has a total amount of light it can accumulate before it bolts although high temperatures can also cause bolting. Plant slow-bolting varieties and take advantage of shade, or growing your own transplants with less accumulated light in the seedling stage. I find the

Johnny's Seed catalogue very helpful in deciding which lettuce to grow spring, summer, and fall. I let some bolt and collect the seed for next year.

Spinach: Spinach is sensitive to the length of day and temperature. Once the days are longer than approximately 13 hours and the temperatures are greater than 60 degrees, spinach bolts. That means between approximately the first week of April to the first week of September spinach will be sensitive to bolting. There are slow bolting varieties, such as Tye or Bloomsdale Longstanding. Spinach is best planted in raised beds in March before the last frost when the temperatures are in the 50-60 range and use row cover to protect them from the cooler nights.



Protecting fruit from birds

Birds love the ripening blueberries, cherries, gooseberries and the other luscious fruits in our gardens. Convincing birds that the fruit wasn't grown expressly for their meals isn't an easy task. Robins consume a lot of fruit. The steady increase in starlings makes matters much worse. Management tactics aim to do one of three things:

1. **Physically exclude the birds.** This is an expensive technique and often difficult to do on cherry trees and other larger fruiting plants. It is also the most secure. Permanent houses for blueberries and other small fruits can be set up using hardware cloth. Temporary netting can be put up each year.
2. **Startle the birds.** Starlings have a well-honed startle reflex. If you can constantly invoke that reflex, the starlings may decide the fruit isn't worth the effort. However, birds do adjust, so constant changes in the

environment will help. What can you use to startle? Years ago, people hung pie plates in the trees. The plates moved and reflected the sun. A modern variation is using computer cds. They have a shiny side that can be very effective when hung on the branches. Mylar shiny ribbon has also been effective. The stuff needs to be put out there before the birds start to gorge. Also, no guarantees.



3. **Startle the birds with hawks.** Put up hawk perches and if hawks use them, they will send the robins and starlings down the road. Not useful if you are feeding birds or chickens.

4. **Taste repellents.** This is a tough one. Few options are available. There is evidence that a sugar solution sprayed on near-ripe blueberries will deter robins. The formula is ten pounds of sugar dissolved in one gallon of water. This will make about two gallons of solution. It needs to be reapplied fairly often as the fruit ripens. However, it may draw yellowjackets. Clearly a mixed blessing. This is an area ripe for experimentation, possibly with some flavor compatible essential oils.

Thin, thin, thin

Gardeners hate to thin. Your precious seeds have struggled to the surface and now you are asked to rip them out. You feel their pain. You won't do it.

You must. Most vegetables and flowers will not develop normally unless they have room to grow. If plants are crowded they won't produce a vigorous canopy

In the plant world, whoever gets to the light wins. Adequate light will produce healthy leaves and vigorous roots. Weeds compete for light. That is why early weeding is crucial. It is also why vegetables need to be thinned.

Carrots need to be well-spaced. Allowed to develop too close together, no one carrot can grow enough leaf area to capture enough sunlight to build that wonderful root we all like to eat. Instead, you get runty little excuses for carrots. So thin, thin, thin.

Corn is seeded with an ultimate "between" row and "within" row spacing in mind. A common practice is to seed the rows 30" apart and to thin within the row to 9-12" between plants. If you have a 36" row spacing, you might be able to thin down to a plant every 6". It is all about each plant getting enough "sunspace". I have seen corn seeded in rows 12" apart. The corn may grow tall but only the plants on the outside of the corn plot get enough sun to produce ears. So put enough seed in the row (since all of them won't come up) and thin, thin, thin.

It is worth noting that you will always have to thin beets and chard. Their seed is "compound", meaning that there is more than one seed in each seed.

Sometimes, the thinned plants can be eaten, as in the leafy greens. Thinned corn can be transplanted to give a later crop since it will be set back a bit by the transplant process.

Read the seed packages for instructions on thinning. As a last resort, therapy for shy thinners may be available.

Tree care publication

The Oregon Department of Forestry has produced an excellent bulletin on home landscape tree care entitled *An Oregon Homeowner's Guide to Tree Care*. We have some copies in the office and it is also available free on-line at:

<https://www.oregon.gov/ODF/Documents/ForestBenefits/HomeownersGuidetoTreeCare.pdf>

There is a lot of information packed into a very compact form. It is worth the read.

Garden topics

A month ago, I would have predicted relatively scab-free apples. **Apple scab** fungi make little progress in dry weather. Then the rain began. The scab potential is definitely higher. Let's hope that we get a little drying soon to limit the disease. Summer rate dilutions of lime sulfur may still help.

Codling moth adults have emerged. If you don't want their larvae in your apples (the "worm") you need to start control measures. Insecticides with spinosad are probably the best option for home gardeners. They need to be applied several times. *Surround* is a kaolin clay that when sprayed on the fruit and leaves a film on that the moths don't seem to like so they go somewhere else. Again, this needs to be re-applied periodically. Results have been mixed.

Western tent caterpillars have begun to emerge in scattered parts of the county. After the rascals are done eating (usually by the middle of June) they wander off the tree, pupate, and emerge as the adult moth in late July or August. The moths then fly vigorously and mate. The female lays her eggs on tree or shrub branches, generally less than .75 inches thick. The eggs hatch inside the egg case in several weeks but don't emerge from the egg until next spring. Tent caterpillars rarely do lasting damage to trees.

In another 60 days, we will be seeing the **fall webworm**, which has a similar life cycle.

I have had several people bring samples of the **maple blister mite**. This mite causes reddish bumps on the upper surface of maple leaves. The mite causes more cosmetic than actual damage. If you wish to

control them, the buds need to be sprayed in late February or early March.

Grapes have a very similar problem caused by an **erineum mite**. The symptoms are white, felty and distorted patches on the underside of the leaves. In commercial vineyards, this is becoming an increasing problem in Oregon. Most of the time, home gardeners probably don't need to be concerned. For those that wish to spray, wettable sulfur, often used for powdery mildew control on grapes, will provide some measure of erineum mite control as well.

Horsetail or equisetum is a gardener's nightmare. The plant emerges from the ground looking something like asparagus. It spreads from underground roots and from spores released as the plant matures. Sadly, it is the worst of all weeds, an herbaceous perennial. It gives every indication of dying in the fall, but that is a ruse. It returns from

the root system next year and for every year thereafter unless you make it miserable.

Equally sadly, it is very hard to make horsetail miserable. Continuous pulling may reduce its vigor. Planting with a heavy sod tends to reduce its vigor as well. Herbicide treatments options except in exclusively woody landscape beds are almost non-existent.

Much horsetail comes from imported topsoil. Look at the topsoil on site before you buy.

Look very carefully for horsetail. If it is there, don't buy it.

Keep new trees and shrubs watered throughout the first growing summer. The evidence is very convincing that trees properly watered and mulched will out-perform and out survive trees that weren't.





That's the Way it Grows

Pass The Peas-Some Stakes, Please

I started several flats of vegetable seeds a month or so ago, so I didn't have to wait for the rains to stop and the garden soil to dry. I'd have to wait until August for that..

I have most of my baby plants in the garden now, and they are doing well. But my poor little peas are just sitting there with nothing to grow up. They cling to each other as if on a life raft, awaiting rescue. What they need are the A-frame ladders we made a couple of years ago.



But, the broken dowels need replacing.

The peas are wrapping tendrils around each other, hugging each other as if cold or

frightened. Once I get the support ladders in place, they will wrap their tendrils around them and grow tall. If I simply jam a stick into the ground, they will wrap around that and grow taller. Why do they do that?

Some plants respond to touch by changing their direction of growth or wrapping tendrils around vertical support. This response is called *thigmotropism*. Plants use this response to reach higher, thus gathering more sunlight, without expending energy building a strong stem. Why not use your neighbor's? I imagine this evolved in woodland areas, where reaching toward the sunlight was very beneficial.

When the stem or tendril of some plants touches something solid, it will curl toward the site of contact, exhibiting a

thigmotropic response. The plant does this using a process called *differential growth*.

Using this process, the cells on the non-contact side of the stem or tendril actually grow faster than those of the contact side, causing the stem to bend toward the object, resulting in the coiling effect. Sometimes, the cells on the contact side actually compress, speeding the process.

As gardeners, we take advantage of the vining qualities of some plants to make harvesting much easier, such as tying or staking bean, peas and cucumbers.

Roots also exhibit a thigmotropic response. When a root touches an object in the soil, it grows away from it, finding the path of least resistance. Therefore, roots have a *negative* thigmotropic response. Roots also are affected by gravity—a *gravitropic* response. When faced with a hard object, the root will grow downward, rather than up or sideways.

When I get my bean ladders in place, I am using my new gardening tool to capture thigmotropism in action. I recently bought a Plant Cam from Territorial Seed Co. It is a time-lapse camera in a weather-proof case. I can attach it to a stake and take photos at differing intervals, then convert them to a movie on my computer. Ok, not so much a tool as a toy, but how cool is that? Keep gardening fun!



—Lisa M. Long
Columbia County Master Gardener™

JUNE

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

- Construct trellises for tomatoes, cucumbers, pole beans, and vining ornamentals.

Maintenance and Clean Up

- Prune lilacs, forsythia, rhododendrons, and azaleas after blooming.
- Fertilize vegetable garden 1 month after plants emerge by side dressing alongside rows.
- Harvest thinnings from new plantings of lettuce, onion, and chard.
- Pick ripe strawberries regularly to avoid fruit-rotting diseases.
- Use organic mulches to conserve soil moisture in ornamental beds. An inch or two of sawdust, barkdust, or composted leaves will minimize loss of water through evaporation.
- Blossoms on squash and cucumbers begin to drop: this is nothing to worry about. Cherries may also drop fruit: this is not a major concern.
- After normal fruit drop of apples, pears and peaches in June, consider thinning the remainder to produce a larger crop of fruit.
- Make sure raised beds receive enough water for plants to avoid drought stress. If a green lawn is desired, make sure lawn areas are receiving adequate water (approximately 0.5 to 1.5 inches per week from June through August). Deep watering less often is more effective than frequent shallow watering. Measure your water use by placing an empty tuna can where your irrigation water lands.
- If green lawns are being maintained through the summer, apply 1 lb. nitrogen per 1,000 sq.ft. to lawns.

Planting/Propagation

- Plant dahlias and gladioli.

Pest Monitoring and Management

- Continue monitoring blueberry, strawberry, cherry and other plants that produce 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 and manage SWD, visit <http://swd.hort.oregonstate.edu/gardeners>.
- First week: spray cherry trees for cherry fruit fly, as necessary, if fruit is ripening.
- First week: spray for codling moth in apple and pear trees, as necessary. Continue use of pheromone traps for insect pest detection.
- Learn to identify beneficial insects and plant some insectary plants (e.g. Alyssum, Phacelia, coriander, candytuft, sunflower, yarrow, dill) to attract them to your garden. Check with local nurseries for best selections. See PNW550 (Encouraging Beneficial Insects in Your Garden) for more information.
- Monitor azaleas, primroses and other broadleaf ornamentals for adult root weevils. Look for fresh evidence of feeding (notching at leaf edges). Try sticky trap products on plant trunks to trap adult weevils. Protect against damaging the bark by applying the sticky material on a 4-inch wide band of poly sheeting or burlap wrapped around the trunk. Mark plants now and manage root weevils with beneficial nematodes when soil temperatures are above 55°F. If root weevils are a consistent problem, consider removing plants and choosing resistant varieties (See <http://bit.ly/oDOScK> for a list of rhododendrons exhibiting resistance to adult root weevil feeding.)
- Control garden weeds by pulling, hoeing, or mulching.
- Control aphids on vegetables as needed by hosing off with water or by using insecticidal soap or a registered insecticide.
- Watch for 12-spotted beetles on beans and lettuce and cabbage worms or flea beetles in cole crops (cabbage, broccoli, brussel sprouts). Remove the pests by hand or treat with registered pesticides.
- Spray peas as first pods form, if necessary, to control weevils.
- Birch trees dripping a sticky fluid from their leaves means that aphids are present. Control as needed.
- Use yellow sticky traps to monitor for cherry fruit fly. About 1 week after the first fly is caught, spray cherries at appropriate intervals.
- Last week: second spray for codling moth in apple and pear trees, as necessary.

Houseplants and Indoor Gardening

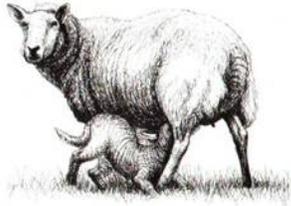
- Move houseplants outdoors for cleaning, grooming, repotting and summer growth.



Farm and livestock notes

10 grazing management tips

One of the simplest, yet more informative talks I attended was by Dr. Tim Steffens, a rangeland professor at Texas A&M. His talk focused on the importance of keeping the basics of grazing management in mind when considering various grazing 'systems'. Focusing only on the system and forgetting the fundamental truths of grazing will break any grazing strategy. Dr. Steffens presented his thoughts in ten general points that I'll summarize here. Regardless of where you are in the world, these principles hold true.



1. Severe defoliation impacts plants. If too severe, too continuous, or too repetitive, a plant's root system will suffer. Plants need time to recover from grazing.
2. Stocking rate determines grazing impact. Even if the grazing manager understands the concept of take ½, leave ½, the grazing animal does not. Animals will impact more or less than 50% in individual pastures and individual plants depending on many factors. So it is up to the manager to manage the grazing, not the animal.
3. Timing of grazing is important. The worst timing or impact to the plant is removing the growth point. With timing of grazing, one must consider adequate plant recovery time as well.
4. Recovery time after grazing is important. Length of the necessary recovery period is dependent on timing and severity of the defoliation that occurred. Simply stated, a plant that is grazed closer to the

ground needs more recovery time than a plant that is lightly grazed.

5. Erratic periods of growth due to environmental conditions can cause plants to recover at variable rates. Recovery may be slower during periods of drought or extreme heat and faster during periods of adequate precipitation and mild temperatures.
6. Grazing animals do not use landscapes evenly. A 'landscape' can be a large or small pasture and animals will change their grazing habits based on exposure to heat, cold, wind, vegetation, topography, water, minerals, and other factors available in the pasture. These factors will impact how and when an animal grazes.
7. To change an animal's grazing behavior, the manager must understand how the animal uses the pasture. In simple terms, the manager must manage barriers (such as fences, steep topography, etc.) or opportunities (such as desirable forage, water, shade, etc.), or both to achieve the desired outcome or grazing impact.
8. The ability of the grazing animal to meet its nutritional requirements depends on both the quantity and quality of the forage.
9. Grazing intensity is a function of the interaction of available land, herd size, available forage, and grazing duration. A high density of animals on small paddocks doesn't necessarily equate to more 'intensity' as the impact is dependent on grazing duration. A smaller herd on larger pastures over long periods can equate to more 'intense' grazing than a larger herd on a small

pasture for a short period if the forage base of the large pasture is poor; even if the duration of grazing is relatively short.

10. If the manager can achieve a state where the grazing animals utilize more of the land area or more of the vegetation, stocking rates can be increased. Higher stock densities can encourage more uniform use in some situations. Too high a stock density can negatively impact vegetation, hurting both total production and recovery time.



The bottom line of Dr. Steffens talk was that grazing ‘systems’ thinking can lead one down the road of a fixed-practice approach to grazing management. Rather, he encouraged producers to think about a system of ‘intensive management’ where the manager makes informed decisions based on the current conditions including grazing duration, necessary recovery, and desired outcomes. Dr. Steffens encouraged producers to avoid ‘intensive grazing systems’ decisions that are driven by the calendar or a fixed schedule of grazing and recovery, regardless of environmental conditions at the time. *From Pete Bauman, South Dakota State University Extension*

USDA Produce Handling and Storage Facility loans

USDA has expanded financing options for storage and handling facility loans, making these options more useful for small to medium size farms, especially the new “microloan” option. Producers can invest in conveyors, scales, and/or storage refrigeration units and truck designed to keep produce and other farm products in top condition. Producers do not need to demonstrate an inability to access

commercial credit to apply for this program. For more information, go to the USDA website:

<https://www.fsa.usda.gov/programs-and-services/price-support/facility-loans/farm-storage/index> or call our local FSA office in Hillsboro at 503 648-3174.

ODA announces funding to help organic producers and handlers offset certification costs

The Oregon Department of Agriculture announces the availability of cost share rebate funds for certified organic farmers and producers. The funds, made available through the National Organic Certification Cost Share Program from the U.S. Department of Agriculture’s (USDA) Agricultural Marketing Service (AMS), will reimburse up to 75 percent of certification costs, or up to \$750 per year per certification category. The rebates are available to cover certification expenses incurred between October 1, 2015 and September 30, 2016.

An estimated 770 certified organic growers, processors, and handlers in Oregon are potentially eligible for partial reimbursement. The cost-share program makes it easier for organic businesses throughout the supply chain achieve USDA organic certification, helping them meet growing consumer demand in the domestic and international marketplace.

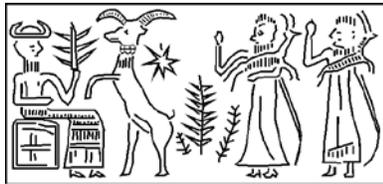
The application for the cost share rebate, as well as other information about the program is available on ODA’s website at <http://go.usa.gov/cuePJ>. Reimbursements will be on a first-come, first-served basis, based on receipt of the completed application packet, until available funding is exhausted. All applications must be received no later than October 31, 2016.

Questions regarding cost share funds for organic certification may be directed to

ODA's Marketing Program at (503) 872-6600 or <agmarket@oda.state.or.us>.

Where Do Grazing Livestock Fit?

There is a lot of speculation that diet of the future will have little meat and dairy protein and will instead be dominated by vegetables, grains, and beans. It is true that it now is relatively energy inefficient to produce beef. There is a lot of speculation that the next real run-up in energy prices will start to price red-meat protein out of the market. This underestimates the inventiveness of the farmer and misunderstands the role that



beef, goats, and sheep have in the agricultural world.

The best use of grazing animals is on land that is not well suited for more intensive agricultural production. Most of the hill lands in Columbia County are either good timber ground or decent pasture land. As you look around the U.S., there is a lot of land that fits that description. Much of it is not being used to its potential, in part due to the relatively low costs of feed grains.

As energy costs rise, I believe there will be a transition to more intensively managed grasslands and less grain-fed finishing. Further benefits of more grass-fed animals include healthier meat and carbon sequestration in grass pastures (which reduces the greenhouse gas driven climate change that is going on). A well-managed pasture can also enhance water retention in what may be a cycle of more extreme winter rain events in the Pacific Northwest west of the Cascades. Fibrous grass roots add organic matter that slows and buffers the discharge of rain water after a storm.

The ability of beef, sheep, and goats to convert "rough" forage into protein will

ensure them of a significant role in the diet of Americans well into the future.

New OSU/Regional publications

EC 1529, What Can I Do With My Small Farm? Selecting an enterprise for small acreage

Covers the many factors involved in making decisions related to the use of small-farm property. Discusses the small farm as a hobby, an agricultural tax deferral, and a family income. Explains how to match crop choices to the farm's physical resources, such as soil type, irrigation potential, and climate, and how to choose a production technique, select traditional or specialty crops, and market crops. Emphasizes the importance of considering the family's financial resources, credit options, strengths, and goals. Includes lists of additional resources.

Available free on-line at:

<https://catalog.extension.oregonstate.edu/ec1529>

PNW 670: Mineral Supplementation of Beef Cattle in the Pacific Northwest

This bulletin will help ranchers to assess the mineral needs of their beef cattle and to start thinking about where to invest money on mineral programs and where to save a few dollars without diminishing animal performance. Topic covered include determining deficiencies, antagonists, mineral interactions, symptoms of deficiency or toxicity for various macro and micro minerals, organic vs. inorganic minerals, and supplementation frequency. Minerals discussed include calcium, phosphorus, magnesium, potassium, sodium, sulfur, iron, selenium iodine, cobalt, molybdenum, copper, zinc, and manganese.

Available free on-line at

<http://www.cals.uidaho.edu/edcomm/pdf/PNW/PNW670.pdf>

Pesticide Applicator Pre-Exam Training - June 21st, 2016

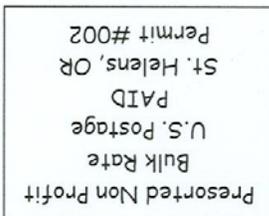
Held at the Clatsop Community College, South County Campus, 1455 N Roosevelt Drive, Seaside, OR 97138, 10 a.m. to 4 p.m. Cost \$50. (Also valid for 4 hours of "Core" credits for those with licenses) To register or for more information contact Lindsay Davis, 503 325-8573 or Email her at lindsay.davis@oregonstate.edu The class will cover laws and regulations, pesticide application concepts, understanding the label, pesticide safety and personal protection, and other topics relevant to passing the pesticide license exam.

Introduction to Beekeeping - June 22nd, 2016

Held at the OSU Columbia County Extension Service office, 505 N. Columbia River Highway, St. Helens, OR. 6:30 p.m. to 8:30 p.m. This program is designed for anyone interested in learning how to raise bees and will cover basic honeybee management, tools and equipment, and potential problems. Class is free and open to the public. For more information, call 503 397-3462.



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