



# Country Living

Provided to you by the  
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The office will be closed Fridays from Noon to 1 p.m.  
Website: <http://extension.oregonstate.edu/columbia/>

## November 2015

### Programs for you . . .

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

- Nov. 1.....**Fall Mushroom Show.** Miller Hall, Western Forestry Center, Portland, OR, 12pm-5pm;  
<http://wildmushrooms.org/node/479>. Admission: Adults \$5; Seniors and students \$3;  
Children under 12 free. Free to OMS Members. Beautifully arranged tables display wild,  
locally foraged mushrooms of the Pacific Northwest, carefully picked, identified and  
arranged to educate the public about fungi. The number and type of mushrooms vary with  
fruiting conditions. This colorful event also features special interest tables, including  
mushroom cookery and preservation, toxic mushroom information, dyeing with mushrooms, a  
truffle exhibit, mushroom themed art, a "Kids Corner", mushroom cultivation, as well as  
books, posters, and "grow-your-own-at-home" kits for sale, and much more!! And there are  
plenty of knowledgeable OMS members on hand to answer questions, identify mushrooms  
that you bring in, and chat with about fungi.
- Nov. 3 .....**Scappoose Bay Watershed Council.** 7 p.m., 57420-2 Old Portland Rd., Warren
- Nov. 5 .....**Demonstration Garden and other MG Extension Projects Planning Meeting.** 10 a.m., OSU  
Extension Classroom, St. Helens
- Nov. 5 .....**Master Gardener™ Board Meeting.** 10:30 a.m., OSU Extension Classroom, St. Helens
- Nov. 10 .....**Lower Columbia Watershed Council.** 7 p.m., SWCD office-35285 Millard Rd., St. Helens
- Nov. 18 .....**Soil & Water Conservation District.** 7:30 p.m., SWCD office-35285 Millard Rd., St. Helens
- Nov. 26-27 .....**Thanksgiving Holiday.** Extension Service office closed



*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

### Tomato genes and flavor

It was a good tomato year. Gardeners that grew more than one or two varieties got to taste the fuller range of the tomato's potential. Yet, when we go to the grocery store this winter, we pass by the tomatoes on offer because we know they are all color and no flavor. Does it have to be that way?

Scientists at several land grant universities (U.C. Davis and the University of Florida) have been working on that problem. Several discoveries have been made that offer the promise of better winter "shipping" tomatoes.

First, it was determined that a tomato gene mutation that increased uniform fruit ripening on determinate vines had a negative effect on sugar and other tomato flavors, particularly volatile carotenoids. In addition, genes for all red fruit also lowered flavor components. But both these gene "clusters" were incorporated into breeding programs for both processing and fresh market shipping tomato cultivars. They could be harvested efficiently, shipped long distances without damage, treated with ethylene to develop the nice red color, and sold. Hence, the insipid flavor profiles of grocery store tomatoes.

Subsequent research into flavor components (sweet, sour, salty, bitter, and savory or umami) showed that our perception of tomato flavor was very complicated. For example, our perception of sweetness was somewhat different than the actual level of sugars in the fruit itself. It turns out that a good ripe tomato has a bundle of aroma volatile compounds that affect flavor perception through the nose and especially through the olfactory sensors in the back of

the mouth. Does that complicate breeding or what?

But our ability to unmask the complete genome of the tomato plant and then analyze it for correlations to desirable traits with the now cheap power of massive cloud computing will change tomato breeding for the better. Then it will be up to the industry to take a few steps outside of their comfort zone.

That may not be easy. Dr. Harry Klee from the University of Florida has been working on this problem for more than twenty years. At one point, he made a cross between a commercial shipping tomato and one of the best flavored tomatoes (*Maglia Rose*) he had ever tasted. It turned out amazingly well. The tomato plant grew vigorously, ripened reasonably uniformly, shipped well, and had the taste of the *Maglia Rose*. He named it *Garden Gem*. But it was a bit smaller than



the standard supermarket tomato which made picking a little more expensive. And the supermarket produce buyers questioned whether the

superior flavor meant anything to the consumer. And they decided for the consumer that flavor wasn't a very important criterion. *Garden Gem* has yet to hit the market. You can actually get some seed for this tomato and another one by donating \$10 to Klee's tomato flavor research program at

<http://hos.ufl.edu/kleeweb/newcultivars.html> For more on this story, go to [http://www.slate.com/articles/life/food/2015/07/garden\\_gem\\_tomato\\_why\\_harry\\_klee\\_s\\_perfect\\_cultivar\\_isn\\_t\\_sold\\_in\\_supermarkets.html](http://www.slate.com/articles/life/food/2015/07/garden_gem_tomato_why_harry_klee_s_perfect_cultivar_isn_t_sold_in_supermarkets.html).

## Blueberry shock virus

Blueberry shock virus is a common disease of blueberries in northwest Oregon. Blueberry shock is transmitted from plant to plant by pollinators. All cultivars of blueberry are susceptible, but there are some ('Berkeley', 'Bluegold', 'Bluetta', 'Duke', 'Liberty', 'Aurora', 'Pemberton', 'Reka', and 'Elliot') that are particularly susceptible. The disease can spread rapidly through a field or garden-scale planting of highly susceptible cultivars.

### Symptoms:

Flowers and young vegetative leaf shoots suddenly appear to die in spring when flowers are just about to open.

Leaves and stems drop

from infected plants. The entire bush may be affected but more commonly, only a portion of the branches will show symptoms. **These symptoms represent the plant's "shock reaction" to infection.** As the season progresses, a second flush of leaves is produced. By late summer, affected plants look normal except they produce little fruit. Leaves that do not fall off in spring may show thin red ring-spots on both sides of the leaf. Plants may exhibit the shock reaction for 1 to 3 years and may be symptom-free thereafter although they still carry the virus. (from the PNW Plant Disease Handbook)

What options do you have for control? Once you have the disease, it's there forever, even if infected plants no longer show symptoms. Because of this, it's not usually practical to remove infected plants. The PNW Plant Disease Handbook



(<http://pnwhandbooks.org/plantdisease/blueberry-vaccinium-corymbosum-shock> )

provides some cultural control suggestions:

- Use certified planting stock for new plantings.
- Do not establish new field next to infected fields.
- Take good care of infected plants while they are going through seasons with the shock reaction.
- For small plantings, let the disease run its course. In larger plantings, remove plants only if infected ones are confined to a small area. Otherwise, let the disease run its course.

*Slightly adapted from an article by Cassie Bouska, Coos/Curry County Horticulture and Farm Extension Agent*

## How to use the on-line PNW Plant Disease Handbook

The PNW Plant Disease Handbook is an invaluable tool for farmers and gardeners alike. It contains detailed discussions and pictures of the most

important diseases affecting plants in Oregon along with cultural and chemical (organic and conventional) control measures. To access the web site either type in "plant disease+Oregon State University" into a search engine or go directly to <http://pnwhandbooks.org/plantdisease/>

From the home page, click on "hosts and their diseases" in the upper left hand corner. You will then get a page that gives you an alphabetical link by host name Type in a plant (for example "strawberry") into the box and click on search to get all the disease issues that could affect strawberries.

There are other articles in the handbook on plant diseases worth looking at as well.

## Biocontrol for the stink bug

The discovery in Washington State of a parasitic wasp that kills its host like a scene from the “Alien” sci-fi movie has entomologists cheering from the west coast to the east. That’s because the wasp’s victim – the brown marmorated stink bug – is far more wicked. What’s more, the wasp, which hails from Asia and is being studied under quarantine in the U.S., has been found living at a public park in Washington.



Two small clusters of *Trissolcus japonicus* were discovered in Vancouver, Wash., by a field technician with WSU’s Tree Fruit Research and Extension Center.

Since 2007, the U.S. Department of Agriculture (USDA) has been directing studies of *T. japonicus* in quarantine laboratories to determine if it can be released in the wild to destroy the crop-wrecking brown marmorated stink bug. This stink bug species, which also originated in Asia, has caused millions of dollars in damage to fruit orchards in the Mid-Atlantic since it was discovered in Pennsylvania less than two decades ago. When the weather turns cold, the bugs invade warm buildings. When crushed, they emit a stench like dirty socks.

As the shield-shaped stink bug moved east to west – strengthening its grip on Washington, Oregon and parts of California – the equivalent of a SWAT team of insect experts has been searching for ways to stop it.

“Because the brown marmorated stink bug is not native to this country, it’s less likely that natural enemies exist here to destroy it,” said Elizabeth Beers, WSU’s representative on this scientist SWAT team, which is comprised of some 52 scientists from 10

institutions. “As it turns out, there’s one right under our noses.”

And that would be the tiny *T. japonicus*, found by WSU tech assistant Josh Milnes on the leaves of a maple tree in Vancouver, first on Aug. 14 and again on Sept. 23. The 20-plus wasps in each cluster had just finished destroying the brown marmorated stink bug eggs that Milnes had left at a sentinel study site. Here’s where things get “Alien”-like. The female wasps, no bigger than a typed comma, lay eggs inside clusters of stink bug eggs. After a wasp egg hatches, the larva eats the stink bug egg host, “killing it in the process and then bursting out as an adult wasp,” Beers said.

Wasp specimens were sent to a USDA research entomologist in Washington, D.C., who positively identified them as the Asian wasp species. Though several *T. japonicus* wasp clusters have been found in Maryland and Virginia during the past two years, “the fact that the wasp showed up 3,000 miles away in Washington tells us that the stink bug’s natural enemy is deployed for attack,” Beers said. The discovery also suggests the wasp was accidentally brought to this country multiple times, much like the very stink bug it destroys.

Most likely, *T. japonicus* traveled here undetected in stink bug egg masses on plant cargo shipped from Asia. It’s also possible that an adult wasp or two hitched a ride on a jet and simply deboarded with the humans.

As scientists monitor *T. japonicus* to see how much it spreads in the field, research will continue in lab settings. “We don’t want to introduce a non-native wasp that kills native stink bug species beneficial to our crops,” a scientist explained. So far, however, the research looks promising that this tiny prizefighter favors the brown marmorated variety.

Oh, and more good news: this wasp doesn’t sting. *Source: WSU Extension*



# *That's the Way it Grows*

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My obsession with growing things started with TV. Specifically, the Public television show “Victory Garden” from the eighties and nineties.

I loved the segments on vegetable gardening and even took notes. I was inspired by the wonderful gardens they toured and Roger Swain’s no-nonsense tips.

I have bought a few gardening books over the years and subscribed to gardening magazines. When the Internet came along, I found out how easy information was to get, from Extension service, seed company web sites, blogs and Google.

Now, I’ve been swept up in the newest online entity: Pinterest. I can scroll through photos from web pages, like searching with Google, only you get an image, instead of a blue link. It’s like turning pages in a gardening magazine. I can save the pictures I like by “pinning” them to my “board.”

Then, I can go to my boards later and click on any photo to read the article. Or, I can just look at them over and over, and be inspired.

I see gardens or flower beds and think of how to do something like it in my own yard. I see plants that are interesting and might want to try to find sometime. I love that rose variety. I want to lay a pathway like that. What a cool idea for a planter. What a cute puppy.

Ok, it’s easy to get distracted.

In find inspiration in shapes, like an undulating curve in a path or a boxwood hedge. I find pictures of bubbling fountains, circular gardens and little DIY pools with small fish and pebbles. There are tips for vegetable growing and watering, capturing rain water and preserving vegetables.

I am currently looking at plans for cold frames, and small greenhouses.

I know I can never achieve what some of these beautiful pictures show. For one, I don't have the same yard contours, shade or soil. But it is a lot of fun thinking about the possibilities.

Gardening about taking a little bit of nature and sculpting with it, creating an oasis in your own place with sights and smells and textures that you love.

## **Tuck in Your Veggie Garden**

It’s time to cover that vegetable garden for the winter. Ever since I starting covering mine with black plastic, I’ve been able to plant much earlier in the spring.

Covering the garden protects it from compaction from the rain. Worms and other macro organisms till the soil over the winter, where they wouldn't otherwise because the soil gets waterlogged during the rainy season.

Since the soil is kept drier, I can work it much earlier in the growing season without destroying the soil structure or having to wait for the soil to dry so seeds won't rot.

If none of that convinces you to cover your garden, here's the best reason of all: weeds will die and none will sprout.

I’ve used cardboard, straw and thick layers of compost to cover the garden, but the black plastic works the best for me. It’s cheap, eliminates sunlight so weeds die, can be simply pulled back, and diverts rain from the garden beds. Just lay it out and weight it down on the sides—2x4s work great.

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



# NOVEMBER

## 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

- 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.





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



**November 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.

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**President's Corner**

At this writing, October 13, we are still getting a nice long Indian summer. This is the longest warmest summer I can remember in this area. I think most gardeners agree.

On the last Monday in September we put the Demo Garden to bed including covering the raised beds with black plastic and new this year, tilling up and replanting a small area of grass. It is up about an inch tall today and I see some uneven coverage so more seed will likely need to be added. Mr. Mole enjoyed the newly tilled soil and made a few passes through it, too.

On October 7 I was happy to see the fall rains arrive for a few days. It reminded me of the Byrds song "Turn, turn, turn" and the line "to everything there is a season". We got about a half inch total between the 7th and 13th.

I certainly hope all the suffering trees I see, get enough rain this fall and winter to recover.

Well, folks, I hope you have a great Hallowe'en celebration.

*Life expectancy would grow by leaps and bounds if green vegetables smelled as good as bacon.* - Doug Larson

-- Wes Bevans

**Volunteer Payback**

LOG YOUR HOURS, and turn them into Extension office. Hours worked by veteran as well as new Master Gardeners™ accumulate to justify continuance of our program through OSU.

To get a form off the web:

<http://extension.oregonstate.edu/columbia/master-gardener-volunteer-program> choose

Master Gardener™ Volunteer Log Sheet – word document or PDF.

<b>Calendar: At-A-Glance</b>	
Nov. 5 .	Demonstration Garden and other MG Extension Projects Planning meeting, 10 a.m., Extension office
Nov. 5 .	Board Meeting, 10:30 a.m., Extension office
Nov. 18	New Bug Crew, 9 to Noon, Extension office
Note:	
	✓.. No Chapter meetings until January 2016



**You're Always Welcome**

Project Planning Meetings are for everyone. If you have ideas for projects or want to help make plans for current projects, such as the Demo Garden or the New Bug Crew, please plan on coming to the *Project Planning Meetings* each month on the first Thursday at 10 am.

**A Growing Competition**

For the second year in a row, the St. Helens garden takes the Scappoose garden, 3505 pounds to 2909. This year we have a third contender—the Demo garden came in with 931 pounds of produce donated to the Food Bank. There are still crops to be harvested, but we closed the competition on October 15. Even though Scappoose lost to St. Helens, that's a whopping 7,345 pound of fresh produce in addition to individual contributions donated by the Columbia County Master Gardeners to the local Food Banks and that's something we can all be proud of, no matter how much egg Scappoose might have to wear . . . temporarily.



--Deb Brimacombe

## Sugar Water for Hummingbirds and Bees

Many people make sugar-water available to hummingbirds during the year. There have been questions as to whether honey bees can use this same snack without harm. Normally honey bees do not drink from a hummingbird feeder, but they can, and because competition for the sugar-water can be high as well as predation on the bees, people are concerned.

The sugar water fed to hummingbirds is not necessarily harmful to bees but can be depending on what was put into it and how it was prepared. If cane or beet sugar is used check to see if anything has been added to the mix or if it is pure granulated sugar. The major culprit is fructose which starts to caramelize at 230 degrees Fahrenheit (90 degrees lower than sucrose or glucose). When sugar caramelizes it forms a molecule called HMF which when ingested by honey bees causes their gut to ulcerate and they die. To caramelize sugar-water it needs to be heated as a sugar/water mix. The longer the sugar-water is heated more of the HMF is created. Small amounts of HMF do not seem to pose a problem in bees as natural honey contains some.

For hummingbirds there doesn't seem to be any problem, but who knows, if you go too far with cooking their sugar water they may not care for caramel tasting water. It doesn't appear harmful, though.

High fructose corn syrup is used by some commercial bee keepers as their supplemental feed for bees but it has been found to produce HMF at only 120 degrees and has been counted as one factor in the colony collapse that has occurred around the world.

When making your sugar-water mix, if you feel the sugar has a high proportion of



fructose then I would suggest you boil the water first and not boil the mixture. Sugar-water boils at a higher temperature than pure water, though 230 degrees, which is the boiling point of fructose, can be reached quickly if allowed to continue to heat. Boiling the water before adding the sugar is never a problem for HMF formation because it is only formed in a sugar-water mixture.

If you feel you must boil the sugar-water mix keep the boil to a minimum. I would suggest just bringing it to a boil, but do not maintain the boil. Remember that the HMF will continue to be produced as long as there is sufficient temperature even if it is no longer boiling.

--Chuck Petersen

### Election Results - 2016 Officers:

President – **Chuck Petersen**; Vice-President – **Linda Bainbridge**; Treasurer – **Kathy Johnson**; Secretary – **Angela Sorensen**; Historian – **Lavina Patterson**; State OMGA Rep – **Pat LaPointe**; and Alt. State OMGA Rep – **Jon Bainbridge**.  
Thank You All!



### Master Gardeners Contacts Officers for 2015

<u>Title</u>	<u>Name</u>
President .....	Wes Bevans
Vice President .....	Joe Crisp
Past President.....	Dennis Snyder
Secretary .....	Susan Snyder
Treasurer .....	Peg Crisp
Historian .....	Lavina Patterson
OMGA Rep.....	Chuck Petersen
OMGA Alt. Rep. ....	Deb Broberg
Demo Garden.....	Linda Bainbridge
.....	Mary Newell-Dickenson
Spring Fair .....	Kathy Johnson
<b>CCMG website:</b>	<a href="http://www.columbiacountymastergardeners.org">www.columbiacountymastergardeners.org</a>
Webmaster .....	Larry Byrum
<b>OSU Extension Service:</b>	
Extension Faculty .....	Chip Bubl
Secretary .....	Vicki Krenz
<b>Guide to Plant Disease Control:</b>	
OSU .....	<a href="http://plant-disease.ippc.orst.edu">http://plant-disease.ippc.orst.edu</a>

## English and their ivy

English ivy (*Hedera helix*) was introduced to North America by European settlers in the 1600s on the east coast. It was a bit of home we could now do without. I was recently asked what kept English ivy at bay in its native landscape. I did some research and it is apparent that *Hedera helix* is not really checked by natural predators or other plants in England. In fact it was noted by one scientist that “as it grows, ivy often continues to maintain its own company [*such classic British understatement*], and many stems, often of different ages, may be seen climbing walls and trees. In woodland habitats, ivy frequently forms a dense ground cover occupying large areas and made up of many individuals.”



It is being described in Britain as a serious native plant “thug” that is disrupting the species diversity common in most native plant communities on a broad scale. It appears to be getting worse, just like here. The English are pulling ivy off of trees while at the same time despairing of ever rolling the tide of ivy back.

Certain physical and biological constraints present in England may operate here as well to limit ivy distribution, at least for now. Ivy seems to do best below about 6-800 feet elevation. It is felt that really cold weather may not kill it but makes it a slower vegetative grower (perhaps less competitive) and less likely to produce seed. Ivy is actually quite drought tolerant though it prefers deep clay-rich forest soils that hold more water in the summer and does not do as well on sandy, well-drained soils.

English ivy appears to have few diseases or insects in its native British range that do much

damage. English deer will eat ivy, one all year round and the other species only in the winter. Sheep do eat ivy and, of course, so do goats.

There is some thought that repeated grazing by deer may be the most important biological restraint on ivy in England and Wales.

It is quite possible that we are in for persistently warmer winters. This could well accelerate the spread of English ivy into higher elevation forests in Columbia County. Oddly, one long study of some English oak trees that had ivy colonization showed no ill effects in comparison to those adjacent oaks that had their ivy repeatedly cut back. But those are oaks and that was England. Big leaf maples, especially in any shade, don't do well here with ivy at all.

We do need a biological control for this plant, as soon as possible. There are some chemical options but they are not perfect or easy.

## Woodland pond guide published

Steve Bowers, an OSU Extension Forester in southern Oregon has just completed a field guide to woodland ponds. This field guide describes in detail the steps woodland landowners would take to build a large pond on their properties. The guide describes the planning, permitting and construction of the pond, and includes sections on maintaining and repairing woodland ponds. It also describes the aesthetic values and benefits to wildlife of woodland ponds. It will be a truly useful book for anyone interested in ponds on their land. Its OSU catalog number is EM 9104.

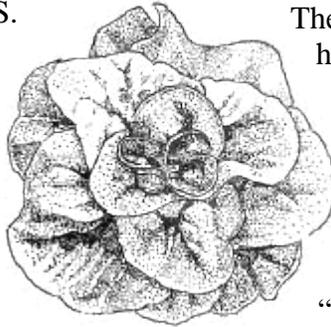
It is available for \$12.00 from OSU at <https://catalog.extension.oregonstate.edu/em9104>

Steve also published another very useful book on building and maintaining forest roads in 2013, also for sale for \$11.

# Farm and livestock notes

## Agricultural productivity growth

Agricultural production has doubled in the period from 1948 until now. This has been achieved on a smaller land base with less labor. Inputs that have driven the increase are more efficient use of energy, fertilizers and crop protection products along with greater mechanization in all aspects of farm production. During this time, the U.S. population (and demand for food) doubled and US exports of farm products like grain and meat have also increased substantially. U.S. imports of foods have also increased, mainly in fresh fruits and vegetables.



In the period from 1960 to the present, Oregon had the highest productivity gains in the U.S. averaging 2.58% per year and is now 15<sup>th</sup> in overall productivity. This is most likely due to the increase in high-value food and crop production (berries, specialty seed, nursery crops, etc.) and a decrease in land devoted to livestock. Can this continue? Oregon is still very suited to high value crops and consumers value what we produce. Capital costs are lower now but it isn't clear how long that will continue. Land suitable for high-value crops is still disappearing due to development, and water resources are stretched. But Oregon farmers are innovative and willing to experiment with new crops and growing techniques. And we are close to Asian markets. All this bodes well for our future.

## Irrigation or rain and food safety

Several research teams have looked at the timing of fresh produce harvest after overhead irrigation and/or rain relative to crop contamination with the human pathogen, *Listeria monocytogenes*. Results were pretty clear. Waiting 24 hours after rain or overhead

irrigation was sufficient to push *Listeria* counts to background level. Drip irrigation generally won't increase *Listeria* counts in the same way as rain or overhead watering.

Managing harvests around a wait period could be difficult, especially when rainfall can be unpredictable. But it could turn out to be an important management tool in food safety for fresh market foods that aren't cooked before consumption.

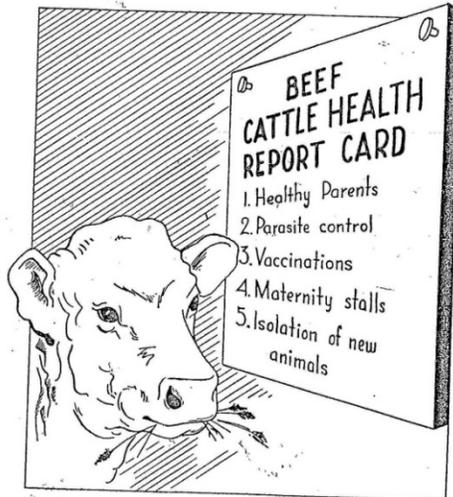
There are a number of compounds that have been approved for use in equipment disinfection and crop sanitation in organic production systems. These include chlorine, ozone, and peroxyacetic acid. For a complete discussion of these compounds, search on-line for "Approved Chemicals for Use in Organic Postharvest Systems". If you are an organic grower, contact your certifying agency for their information and requirements.

## Craft beer increases barley use

It should come as no surprise that craft brewers love barley. It forms, as malt and malt products, the flavor base from which many craft beer brewers start. They then add varying amounts of hops and other natural flavors to get the products that have revolutionized beer consumption in the United States. U.S. craft brewers use, on average, about 70 pounds of base malt and specialty malt per barrel in comparison to the paltry 17 or so pounds of malt used by the more industrial brands. Farmers are starting to work directly with microbrew companies to provide them with the grains that fit their vision of a great beer.

## Spotting the sick animal

You alone are responsible for the health of your livestock. Feeding program, housing conditions, vaccinations, genetics, and other health management efforts all affect disease control. But sooner or later you will have a sick animal. Often the first signs of disease are slight and can go undetected. That can lead to far worse illness and ultimate fate of the animal. Winter is a particular challenge when it is dark when you leave and dark when you get back from work. It is hard to take the time to really look at your animals. But you must do so. And with a little study you will be much more equipped to spot a sick animal.



If you think an animal is sick, take its temperature. Normal temperatures are listed below. Body temperatures will show some variation based on physical activity, outside temperatures and conditions, and stage of pregnancy. Lack of an abnormal temperature does not confirm that an animal is ok. Your instincts are probably pretty good if you know your herd.

Determine respiration rates by counting breaths per minute. At the same time, look for nasal discharges, foul odors, coughing, sneezing, or wheezing.

Check for body condition. Is she thin? If so, is there a reason for this (calf only recently weaned) or not? Are all the animals eating and drinking? Any behavior changes like anxiety, aggression, sluggishness, or licking and chewing? Look at a potentially sick animal for signs of swellings, lumps, injuries, or other external signs.

The earlier you detect a problem, the faster it can be cured. Skin problems or mild lameness are generally not of the same level of immediate concern as a fevered animal, one that is bloated, or one experiencing a difficult birth. Veterinarians, who have years of specialized training and experience are there to help. Their greatest ally in a successful outcome is time and only you can decide how much to give them.

The best way to handle disease is to have a well thought out feed and management program, safe facilities, and a good vaccination schedule. Isolation of new stock can also be very important. So is the relationship that you develop with your veterinarian. Get to know them before you need them and have working facilities that maximize their ability to get to work healing your livestock.

Vital signs:

<u>Animal</u>	<u>Temperature</u>	<u>Breaths/minute</u>
Horse	99.5-101.5	12
Cattle	100.5-102.5	30
Sheep	102-104	19
Goats	101-103	20
Swine	101-103	18
Rabbits	101.5-103.5	39

*Adapted from an article by Gary Fredricks, WSU Extension Agent, Cowlitz County*

## 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.

## Master Gardener™ classes to be offered in St. Helens Starting February 1<sup>st</sup>, 2016



The OSU Master Gardener™ class will be offered in St. Helens on Mondays, starting February 1 and will meet every Monday for 10-11 weeks. The classes will meet from 9:30 a.m. until 4:00 p.m. with a break for lunch. The programs will be held at the OSU Extension Service class room in St. Helens. 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 60-66 hours on community horticultural projects. For more information or to register, contact the OSU Extension Office in St. Helens at 503 397-3462 or email either Chip Bubl ([chip.bubl@oregonstate.edu](mailto:chip.bubl@oregonstate.edu)) or Vicki Krenz at ([vicki.krenz@oregonstate.edu](mailto:vicki.krenz@oregonstate.edu)).



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