



# GROWING

Extending Knowledge and Changing Lives in Linn and Benton Counties

## Oregon Sea Grant's Expansive Influence

By Mitch Lies,  
*GROWING* Editor

Six years ago, when Oregon coastal fisheries learned of growing concerns of whale entanglements in crab fishing gear they turned to Oregon Sea Grant for help.

“They wanted to have discussions, brainstorm potential solutions and come up with options,” said Amanda Gladics, an Astoria-based fisheries management specialist with Oregon Sea Grant and the OSU Extension Service. “And they asked Sea Grant to get involved.”

Gladics and a former Sea Grant colleague, Kaety Jacobson, who was based in Newport at the time and is now a Lincoln County commissioner, set up a series of meetings with federal and state regulators, conservationists, and fishermen.

“We wanted to have a structured group that was focused for what we initially thought was going to be a year, but that extended for two-and-a-half years of meeting regularly,” Gladics said.

Out of that group came the framework of the regulations that the Oregon Department of Fish and Wildlife eventually established. And, while Gladics said that it was the fishermen who did the bulk of the work and proactively addressed the issue, notably it was Oregon Sea Grant they

turned to for help.

The strategy of convening groups to address an issue collaboratively is a cornerstone of Oregon Sea Grant, a 51-year-old organization within the National Oceanic and Atmospheric Administration that addresses regional and national issues through research, outreach, and education.

“Having those conversations with the fishing community, facilitating productive discussions about science, their first-hand experience and generating solutions that filter up to the regulators is part of what we do,” said Oregon Sea Grant Director Karina Nielsen in an interview with *GROWING*. “We bring people together, to participate in conversation and they take in the available information and then act on those findings.”

With its formation in 1971, the Oregon program, based at Oregon State University, became one of the first four in the Sea Grant College Program, a collaboration between NOAA and the nation's universities that now encompasses 34 programs. Its mission is to promote discovery, understanding and resilience for Oregon coastal communities and ecosystems. Oregon Sea Grant does everything from working with seafood processors to working with communities on planning for tsunami evacuations to



Kenny Bushnell, a fisherman on the Willapa boat, talks to participants in a Shop at the Dock tour in Garibaldi in August 2019. Amanda Gladics (far left), a marine fisheries specialist with Oregon Sea Grant, led the tour.



Karina Nielsen



Dave Hansen

supporting students through fellowships and internships in the community.

Oregon Sea Grant also manages the Hatfield Marine Science Center's Visitor Center in Newport, the home base

for its staff, which conducts trainings for teachers, marine education activities for youth and engages visitors with the center's exhibits. Oregon Sea Grant also has an aquatic animal health program

through which it trains the next generation of aquarists and cares for animals at the Visitor Center.

**And Oregon Sea Grant spends significant resources on research.**

“The research we support has got to be applied research,” said Dave Hansen, who oversees Oregon Sea Grant's Extension faculty. “It has to be something out there that actually makes a difference in the real world, and we require that you have a plan to share your findings. When you get this work done, how is anybody going to know about it, because putting it in a journal doesn't do somebody in the community any good.”

One such project supported by Oregon Sea Grant helped awaken the global science community to the issue of increased ocean acidification.

“I think in the grand scheme of things, that is one of the biggest impacts we've had, partially because of the willingness of the program to invest in something nobody was talking about,” Hansen said.

The issue came to the attention of Oregon Sea Grant when a hatchery near Tillamook discovered they were having trouble keeping alive their spat, or baby oysters.

Nielsen, who was a postdoc at OSU at the time, remembers receiving a phone call from

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## Who We Are

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The Benton County office is located at 4077 SW Research Way in Corvallis. Office hours are 8 a.m. until 5 p.m. Monday through Friday. Telephone: 541-713-5000. <http://extension.oregonstate.edu/benton>.

The Linn County office is located at 33630 McFarland Rd (on the corner of Old Highway 34 and McFarland Road), in Tangent. Office hours are from 8 a.m. to 5 p.m., Monday through Friday. Phone 541-967-3871. <http://extension.oregonstate.edu/linn>.

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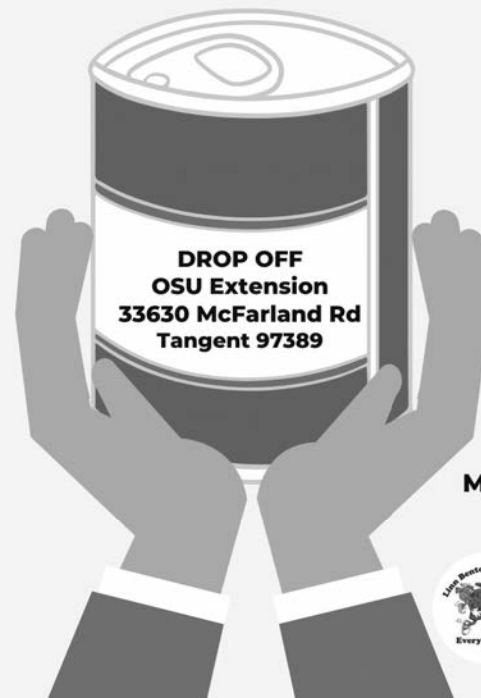


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## Bone Broth: Who needs it?

By **Annie Keene**,  
OSU dietetic intern

Hailed as a miracle food, bone broth has increased in popularity due to its protein content and rich flavor. Bone broth is a collagen-rich food made by simmering bone, skin, and connective tissues from animals - typically chicken, pork, beef, or fish in water for up to 24 hours. Vinegar is added to dissolve the bones and release collagen and minerals into the broth. You can sip it on its own, add it to soups, and sauces, or buy the powdered form.

### Do Americans get enough protein?

The 2020-2025 Dietary Guidelines for Americans, show most Americans eat enough protein, but many Americans do not meet recommendations for specific protein groups. Approximately, three-quarters of Americans meet or exceed the recommendations for meats, poultry, and eggs, 90 percent do not meet the recommendations for seafood, and more than half of Americans do not meet the recommendation

for nuts and seeds. Healthy adults should aim to get 46 grams of protein per day for women and 56 grams per day for men. Despite most Americans meeting this daily intake, people are encouraged to diversify where they are getting their protein from by eating a combination of plant and animal proteins.

### Is bone broth a good source of protein?

The appeal of bone broth comes from the protein content found in collagen. Collagen is the most abundant body protein, constituting around one-third of total protein stores. When collagen is broken down in the process of boiling and cooling bone broth, gelatin is formed. Gelatin is easily absorbed in your body and is composed of the amino acids found in bone broth. The amount of protein from gelatin varies from 5-10 grams per cup.

Studies show, bone broth is unlikely to provide a reliable source of amino acids and does not provide a significantly better source of amino acids when compared to other animal products.



This is because the number of amino acids will vary among batches of bone broth depending on the types of bones used, the length of cooking, and if the batch was processed commercially or homemade.

### Take home message

Incorporating bone broth can help you meet your daily protein intake but should not replace other protein sources. Focus on eating a variety of protein types to meet your daily needs. Good sources of protein include legumes, nuts, seeds, whole grains, Greek yogurt, eggs, soy milk, salmon, etc.

Find out how much protein you should eat here <https://www.myplate.gov/myplate-plan>.

*References upon request.*

## Food Safety During the Holidays

Are you preparing a turkey for your holiday meal? Turkey and its juice can be contaminated with germs that can make you and your family sick. Whether you're cooking a whole bird or a part of it, such as the breast, you should take special care.

Below is a list of websites and hotlines to help answer your food safety and preparation questions.

- <https://www.cdc.gov/foodsafety/communication/holiday-turkey.html>
- <https://www.fsis.usda.gov/food-safety>
- <https://extension.oregonstate.edu/food/preservation/turkey-basics-sp-50-1000>
- Butterball Let's talk turkey! Call 1-800-BUTTERBALL or text 844-877-3456 to chat with turkey experts.
- <https://www.butterball.com/online-turkey-talk-line>

The OSU Extension Food Safety/Preservation Hotline is officially closed for live answers. However, we do have volunteers Monday - Friday who will check the messages daily and respond to questions - usually within 48 hours (800-354-7319).



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# Screen time: How Much is Too Much?

By **Annie Keene**,  
OSU dietetic intern

In March 2020, the outbreak of COVID-19 promoted a global lockdown that impacted the way in which people work, travel, and spend their spare time. With stay-at-home mandates, online learning, and social distancing requirements it is no surprise that this has led to a large increase in daily screen time for adolescents and adults.

Studies show that adolescents had an average daily screen use of 7.70 hours per day, compared to pre-pandemic usage of 3.8 hours per day. Recreational screen use of adults was on average 28.5 hours per week compared to pre-pandemic usage of 25.9 hours per

week. This included time spent on school, work, gaming, texting, social media, and streaming TV and movies. As a result, sedentary behavior has increased leading to several physical and mental health risks for Americans.

Currently, 80 percent of adults are not meeting guidelines for regular physical activity due to sedentary behavior spent sitting, reclining, or lying down. Watching TV and movies, scrolling on social media, gaming, and computer use are some of the most common ways most of us are engaging in sedentary behavior. Too much time spent sitting can have major impacts on overall health including, increased risk of cardiovascular mortality,

type 2 diabetes, and poorer dietary choices. Research shows people who are using their screens four or more hours a day have increased odds of major depressive disorder, generalized anxiety disorder, and social phobia. In addition, young adults consuming large amounts of social media are exposed to more images and messages that present a risk for developing eating disorders.

## What are the limits we should consider?

The American Academy of Pediatrics recommends no screentime for children under age 2 and limiting screentime for children over age 2 to one hour per day. Adults should limit screen time outside of work to less than two hours per day.



## Tips to Reduce Sedentary Behavior and Screentime

- Replace or interrupt extended time sitting, lying, or reclining with light-intensity physical activity
- Aim for 60 to 75 minutes per day of moderate-intensity activities, or 30 to 40 minutes per day of vigorous-intensity activities
- Set Screen limits for

frequently visited apps – Use smartphone settings to lock screen usage after a designated amount of time

Learn how much physical activity you should be getting by age at this website: [https://health.gov/sites/default/files/2019-09/Physical\\_Activity\\_Guidelines\\_2nd\\_edition.pdf](https://health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf)

*References upon request.*

# What You Eat Can Change Your Immune System

By **Annie Keene**,  
OSU dietetic intern

Having a diverse gut microbiome is important when trying to prevent disease and stay healthy. With the prevalence of immune and metabolic disease increasing, many are wondering if your diet can impact the gut. The truth is, what you eat does make a difference and can change how your immune system responds to distress and disease.

## Is your gut the “gatekeeper” of your health?

Your gut microbiome is home to trillions of microorganisms in your intestinal tract.

Your intestinal tract has the largest quantity of microorganisms in your body which affects your digestion, metabolism, and immune responses. From infancy to adulthood your microbiome can change in response to diet, age, and medications.

Your immune system protects your body from bacteria, toxins, fungi, and viruses. With 70 percent of immune cells being in the gut, the intestinal tract plays a key role in responding to external threats. Having a diverse microbiome will support the function of your immune system by maintaining your gut barrier helping to fight harmful bacteria, allowing nutrients to pass through your

gastrointestinal tract, and building immune tolerance.

A healthy lifestyle and diet will support your immune system when fighting infection. Research shows, consuming a variety of foods rich in dietary fiber and nutrients will diversify the microbiome in your gut. Consuming highly processed and refined foods, will reduce the number of good bacteria in your gut and contribute to the growth of pathogens and inflammation. When the balance of the microbiome and your intestinal immune system is disturbed, the immune system can trigger the development of several diseases. Imbalance in your gut, can lead to irritable bowel syndrome, obesity,

diabetes, and autoimmune disorders.

## What foods are good for your gut?

Studies show, eating fermented foods and foods high in fiber will increase microbiome diversity and lower inflammation in the body. These types of foods are known as probiotics and prebiotics. Probiotics are foods that contain live organisms that maintain and improve good gut bacteria. These include fermented foods such as yogurt, kefir, sauerkraut, tempeh, etc. Prebiotics are fiber-rich foods that can act as food for good bacteria and stimulate the growth of more microbes. These foods include fruits, vegetables,



legumes, and whole grains. It's recommended to eat a variety of whole foods to prevent inflammation and disease in your immune system.

Remember to incorporate a balance of fiber-rich and fermented food sources to support a healthy gut and immune system. To find how much dietary fiber you need each day based on your age and sex visit: [https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary\\_Guidelines\\_for\\_Americans-2020-2025.pdf](https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf)

*References upon request.*

# Food Hero for Older Adults: Focus on Flexibility

Flexibility allows your joints to move through their full range of motion without discomfort. Stretching exercises can increase flexibility.

## Benefits of Flexibility

- Improves blood flow to your organs and body parts.
- Helps with your posture, balance, and muscle strength.
- Helps you move with ease for daily tasks and reduces chronic joint and muscle pain.
- Helps reduce your risk of strains and injuries from falls.

## Stretching exercises include:

- Daily activity
- Being physically active
- Yoga or Tai Chi
- Stretches before and after exercise
  - Dynamic stretches allow your muscles to loosen up gradually. Do a stretch for a few seconds and repeat it 8 to 12 times.
  - Static stretches allow your muscles to stretch longer. Hold a stretch for at least 30 seconds. Based on your



comfort level, choose a standing, seated or floor position.

## Stretching tips:

- Stretch gradually to let your joints and muscles adjust without pain.
- Breathe normally while stretching; avoid holding your breath.
- Stretch until you feel mild tension but not until you feel pain.
- Do not bounce while stretching because it increases your chance of injury

## Add flexibility to your meals

Enjoy being flexible with your food choices and how you prepare them. Go to [FoodHero.org](http://FoodHero.org) for easy, tasty recipes.

# Physical Activity Guidelines for Adults 65+

- Sit less and move more!
- At least 150 minutes a week of moderate intensity activity.
- At least 2 days a week of activities that strengthen muscles.
- Include activities that improve balance, such as standing on one foot.

# Oregon Sea Grant's Expansive Influence

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the hatchery. "They called me back in 2002 and said, 'We just had our babies die. Do you think there could be a connection with the low oxygen (hypoxia) event that's killing the crab?'" said Nielsen. "And it wasn't the low oxygen waters, as they were further south, but it was likely an unrecognized acidification event affecting them. But we didn't know that then."

"They figured out the chemistry was changing in the water, and we started funding a couple hundred thousand dollars for them to really study that and then to try and develop equipment to deal with that in their production," Hansen said. "And that ended up being this industry-wide conversation that is also plugged in with conversation globally about changing ocean conditions. When you hear about hypoxia in the ocean and ocean acidification, a lot of that came out of funding that we were originally a part of. And then they outgrew us. There has been a lot more money involved than we could have supported."

"It spawned a lot of important policy and management activity around this issue," Nielsen said.

More recently, Oregon Sea Grant has been working with crab fishermen on mitigating the effects of low oxygen on their industry. The research, being conducted collaboratively with crab fishermen, is developing technology that will allow the fishermen to pull their pots before low oxygen kills their catch.

"And we are also learning about why this is happening and when it is happening," Nielsen said.

Nielsen, who earned her doctorate from OSU in



A nature trail Quest at Beverly Beach State Park follows part of Spencer Creek. Oregon Sea Grant coordinates Quests, which are self-guided, clue-driven walks that teach people about outdoor spaces. Oregon Sea Grant publishes the walks in a book that people can buy. Learn more at [seagrant.oregonstate.edu/education/quests](http://seagrant.oregonstate.edu/education/quests).

1998 and was a postdoc at the university from 2000-03, was named director of Oregon Sea Grant earlier this year. She described Oregon Sea Grant as patterned after the land grant institution concept. "It was established on that model of how can we bring the knowledge and the ideas and the information being developed in the university into action to support the needs of the coastal communities in much the same way that land grant was supporting agricultural interests."

One factor behind the Oregon program's success, Hansen said, is the small size of the Oregon coastal communities. "The Oregon coast is not like other coasts," Hansen said. "It's like a small town. It is not like California coastal cities. And so, everyone kind of knows everyone. And that helps in bringing people to the table to address issues."

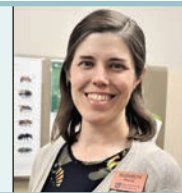
Another significant contribution that Oregon Sea Grant has facilitated on the Oregon coast is a program that today is a model for others in the

Sea Grant network. The Scientists and Fishermen Exchange, or SAFE Group, promotes cooperation among the science and fishing community in a way that serves both. The group for many years was facilitated by Flaxen Conway, a recently retired Oregon Sea Grant Extension specialist.

"What came out of that is fishermen are actively involved in research," Hansen said. "For example, they will help researchers get fish needed for studies, and they can get compensated for that. So, one hand kind of washes the other. It has really changed the dynamic between the university and the fishing community."

"It ended up being a model throughout the Sea Grant network," he said.

Hansen pointed out that Oregon Sea Grant faculty are happy to further explain their program to community organizations. Contact the program at 541-737-2714 if interested.



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## Trap Crops: what are they and how can they help control garden pests?

By **Carrie Falotico**, Master Gardener Trainee;  
With **Elizabeth Records** - OSU Extension Service

Plant pests can certainly be one of the most frustrating parts of growing your own food garden. Trap crops are part of an Integrated Pest Management plan. Here's how they work.

A Trap Crop can be defined as a sacrificial plant that draws away damaging insects from the desirable crop.

Essentially, a trap crop works as an alternative host that draws away invading insects, giving the main vegetable crop an added layer of protection. In some cases, insects have a preference for these alternative hosts, and when given the choice, will go to the trap crop first. After trap crops are infested with target insects, they can be controlled with timely insecticidal applications or mechanical removal. While trap cropping can be extremely beneficial, it is often not a complete solution.



Trap crops will not control all insects and the use of integrated pest management (IPM) is necessary. IPM practices include rotating crops, attracting beneficial insects, and prudently using organic and synthetic chemicals.

### Identification is key

You will definitely want to make sure you have correctly identified the pests causing damage to your plants. Different pests may prefer different trap crops and may require different integrative pest management (IPM) techniques. Check the resource link at the end of the story or contact your local Extension office.

Example: Flea beetles

Flea beetles (including *Epitrix* spp. and *Phyllotreta cruciferae*) are a well-known garden pest on crops like kale and broccoli. For flea beetle control, Chinese southern giant mustard (*Brassica juncea* var. *crispifolia*) is an example of a trap crop that has been used effectively in the United States to protect crucifer crops from flea beetle damage. In studies conducted at Washington State University (WSU), a diverse trap crop containing Pacific Gold mustard (*B. juncea*), Dwarf Essex rape (*B. napus*), and pac choi (*B. campestris* L. var. *chinensis*) successfully protected broccoli from the flea beetle. Diverse trap crop plantings combine plants that have different phenologies (life cycles which can be influenced by the environment, weather conditions, and nutrition), chemical profiles, and physical structures that make them more attractive to flea beetles.

It is important to note, however, that trap crops may

*Continued on Page 8*

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# Events & Classes

## Pop up plant clinics

Linn County Master Gardeners are at the Farmers Market at 4th & Ellsworth in Albany from 9am-1pm, every 3rd Saturday through November 19.

## Calendar items:

### November

- 1 Applications open for Master Gardener 2023 volunteer cohort. Grow gardens, knowledge and communities as a volunteer educator. Learn more and apply: [beav.es/U2k](http://beav.es/U2k)
- 3 Gardening in the PNW: Xeriscaping with Dan Murphy. Noon-1 p.m. Albany Library, 2450 14th Avenue SE. FREE, drop in. Save water, time, and money with beautiful and practical water-wise plants.
- 8 Growing the Good Stuff: from Sweet Potatoes to Bitter Melons with Todd Anderson. Part of the Growing Oregon Gardeners - Level Up series. Noon-1 p.m. PDT Online. Learn more and RSVP: [beav.es/5Uo](http://beav.es/5Uo)
- 17 Gardening in the PNW: Garden Planning for the Senses with Karin Magnuson. Gardening is physical, emotional, sensory, and more. This presentation touches on ways our gardens can be designed to speak to all of our senses while adding meaning and satisfaction to our lives.

### December

- 31 Deadline to apply for Master Gardener 2023 volunteer cohort. Grow gardens, knowledge, and communities as a volunteer educator. Learn more and apply: [beav.es/U2k](http://beav.es/U2k)

## Trap Crops: what are they and how can they help control garden pests?

*Continued from Page 6*

not provide complete protection, especially during heavy pest infestations. You also have to manage the pests on the trap crop by removing them by hand and killing them or using insecticide. Trap crops will be even more effective if several integrated pest management strategies are used together.

- Control weeds in and around planting sites to limit food sources for flea beetles.
- Remove old crop debris so that beetles will not be able to get protection in the winter.
- Plant crops as late as possible. Plants grow faster in warmer temperatures and are more stable to resist damage from flea beetles.
- Use row covers or other screening to keep beetles out when the seedlings are growing.
- Remove row covers before the flowers come up so pollinating insects can reach the plants.

### Explore more

If you are interested in reading more about trap crops and integrated pest management, to help your garden thrive, check out the online version of this story at [beav.es/5Jn](http://beav.es/5Jn)

I hope you find this information helpful and that these methods help you have a more enjoyable gardening experience!

# November-December Gardening Calendar for Western Oregon

Oregon State University Extension Service encourages **sustainable gardening practices**.

**Practice preventive pest management** rather than reactive pest control. Identify and monitor problems before acting, and opt for the least toxic approach. Conserve biological control agents such as predators and the parasitoids that feed on insect pests.

Use chemical controls only when necessary and only after thoroughly reading the pesticide label. First consider cultural, then physical and biological controls. Choose the least-toxic options, and use them judiciously. Some examples include insecticidal soaps, horticultural oils, botanical insecticides, and organic and synthetic pesticides.

Trade-name products and services are mentioned as illustrations only. This does not mean that the Oregon State University Extension Service endorses these products and services or intends to discriminate against products and services not mentioned.

## NOVEMBER-DECEMBER

### Planning

- Force spring bulbs for indoor blooms in December.

### Maintenance and clean up

- Service lawn mower.
- 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 mulch to prevent erosion and compaction from rain.
- To protect built-in sprinkler systems, drain the system and insulate the valve mechanisms.
- Clean and oil your lawnmower and other garden equipment and tools before storing them for winter. Drain and store hoses carefully to avoid damage from freezing. Renew mulch around perennial flowerbeds 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 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 cuttings.
- Prune roses (tea and floribunda, but NOT climbers and ramblers) to around 3 feet in height to prevent winter damage.

### Planting and propagation

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

### Pest Monitoring and Management

Use chemical controls only when necessary and only after thoroughly reading the pesticide label. First consider cultural, then physical and biological controls. Choose the least-toxic options, and use them judiciously. Some examples include insecticidal soaps, horticultural oils, botanical insecticides, and organic and synthetic pesticides.

- 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 four 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 for slugs during rainy periods. Use traps or phosphate baits, which are pet-safe.
- Monitor landscape plants for problems. Don't treat unless a problem is identified.

### Houseplants and indoor gardening

- Reduce fertilizer applications.





## Winterizing your Water Well System

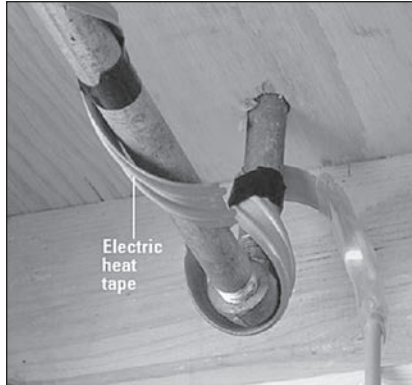
Winter is coming and you should be prepared for it to hit hard around the Willamette Valley. Freezing temperatures lasted for over a week a few years ago, and many calls came into our offices with questions about how to unfreeze pipes, deal with broken pipes, and safety of drinking water. If you haven't already, it's time to winterize your water well system to prevent frozen pumps, pipes, and stop potential damage to your water system.

### Frozen Pumps and Pipes

A frozen water pump causes more than the inconvenience of losing water for a while; it can also mean burst pipes, cracked water pumps and flooding once the frozen pipes warm up again.

The root cause of this problem is when air surrounding a water pipe drops below freezing, any heat in the water will transfer to the air and cause the water to freeze. The smaller pipes always freeze first because of the larger relative surface area. Therefore, the 1/4 inch lines to the pressure switches, which turn the pump on and off, will be the first to freeze. A frozen pressure switch will not start the pump. A small heat source, like a heat lamp or heater directed at the pressure switch will remedy this. Just remember that heat sources should be used prudently as overheated materials can ignite and start a fire. **Always follow manufacturer's instructions. Structural Protection**

Pumps that are above ground usually have a small well house built over them to protect the pump from the elements. A well-built pump house, whether built



of wood, blocks or metal should have insulation in the walls, the door and the ceiling. Seal any cracks or other openings. If your pump house has windows – add a layer of plastic inside and out. Bubble wrap can also be used as a layer of protection, lightly spray the window with water, place bubble wrap with the bubble side to the glass and it will stick until you remove it. Bubble wrap can be used with the additional plastic covers.

It is important to have some heat in the pump house such as a thermostat controlled baseboard heater, heat lamp, or other heat source. The temperature doesn't need to be super warm, but enough to hold between 35 and 42 degrees at the minimum. Make sure all openings and doors are closed properly, keeping the heat in and the wind, which wicks the heat away, out.

### Insulation for a Well House Pump and Pipes

Insulation of any type will help to slow the transfer of heat in the water to the surrounding air, but spending a little extra for thick fiberglass or foam rubber sleeves specifically designed for this purpose is worth the cost. Covering your pipes with foam

insulating sleeves will prevent freezing for a number of hours even in a power failure. Heat tapes are also available to wrap around pipes and use on the very coldest of nights to keep the pipes from freezing up.

### Tips for inside faucets

Letting a faucet drip during extreme cold weather can prevent a pipe from bursting. It's not that a small flow of water prevents freezing; this helps, but water can freeze even with a slow flow. Opening the faucet reduces pressure that builds between the faucet and an ice blockage. If there isn't excessive water pressure, the chances of the pipe breaking is reduced even if it completely freezes.

Yes, a dripping faucet wastes some water, so only pipes vulnerable to freezing (ones that run through an unheated or unprotected space) should be left with the water flowing. The drip can be very slight. Even the slowest drip at normal pressure will provide pressure relief when needed. Where both hot and cold lines serve a spigot, make sure each one contributes to the drip, since both are subjected to freezing. If the dripping stops, leave the faucet open, since a pipe may have frozen and will still need pressure relief. You can also help keep pipes from freezing by opening cabinet doors and letting warmer air into places, such as under the bathroom sink.

If you do experience a frozen pump, pipes, or faucets call a professional to help remedy the situation without damaging your water system.

## Winter Webinar Series for Domestic Well and Septic System Users

Did you know there are possible contaminants in your well water that you cannot see, taste, or smell? Nitrate, coliform bacteria, and arsenic can cause a number of health issues when not identified and treated. We encourage well owners to get their water tested regularly as part of well maintenance.

Municipal water is regulated by the EPA, so consumers can be confident that the quality of the water coming from their tap is sufficient.

However, domestic well water does not have any regulations making individuals do regular testing. Often this type of testing occurs when the well is first installed, and in Oregon, by state requirement when property ownership changes.

The Rural Living Basics webinar series is a low-cost workshop designed for rural residents to learn the basics about groundwater used for their drinking water and septic systems. Learning steps to protect the health of your family, neighbors and animals, your property investment, and the safety of groundwater resources. The series will be offered over the course of 2 weeks, with 2 time options. During registration, choose which sessions you plan to attend. \$5 per family covers your attendance in both sessions.

- **December 8th:** Living with your Domestic Well • 2-3:30 p.m. or 6-7:30 p.m.
- **December 15th:** Living with your Septic System • 2-3:30 p.m. or 6-7:30 p.m.

The class will be held as a zoom webinar. Pre-registration is required at <https://beav.es/5UA> Email [Well.Water@oregonstate.edu](mailto:Well.Water@oregonstate.edu) or call 541-713-5009 if you have any questions or need assistance registering.

A water quality educator will be available live during the webinar to answer questions about well water and septic tank issues. For additional information on well water and septic systems, free Rural Living Basics classes, and how to get your water tested for free, visit our website <https://wellwater.oregonstate.edu> or for more information call 541-713-5009

# Commercial Agriculture Small Farms

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## A Summer of Interning with the Small Farms Program

By Crystal Kelso

I am a horticulture therapy student at Oregon State University, entering my last year of the program. When I originally contacted Teagan Moran in the Small Farms Program, I was looking for a way to connect with farms run by Veterans that may be interested in having an intern on their farm. After discussing options and my goals in more detail, she invited me to apply for an internship with her helping to organize the first ever Military Veteran Farm Tour Series! This summer has been full of farm tours, county fairs, sitting in collaborative meetings to get new programs running, and countless connections into the small farm and Veteran farmer communities in the Willamette Valley (<https://extension.oregonstate.edu/smallfarms/southern-willamette-valley/willamette-womens-farmer-network>).



In addition to helping coordinate the Veteran Farm Tour Series, I've had the pleasure of attending a Medicinal Herb Farm Tour and a Dry Farm Tour, both through the Willamette Women's Farm Network that Teagan coordinates. I met amazing women who love and care for the land, was inspired to keep growing myself, made new friends, and sampled some delicious goat cheeses and rose jam made by the farmers! I experienced working the Extension booths at both the Linn and Lane County Fairs, helping community members with pest and disease questions, directed them to some of the other Extension programs, and had a good time getting to know folks through shared stories and interests.

By far my favorite project has been helping to organize the Veteran Farm Tour Series (<https://beav.es/izv>) – a summer farm tour series in the Willamette Valley for Veterans who are currently farming or hoping to. Farm hosts are all Veterans who are currently farming. The tours provided an opportunity to learn, share, and network. The connections I've made within the Veteran farming community have planted seeds of opportunities. These opportunities are aligned with my long-term goal of having a therapeutic herb farm for Veterans and their families to come together, tend to their emotional and physical wounds, and connect with others.

For as long as I can remember I've wanted to work with plants and people, to study the relationship between them, and find ways for them to interact in healing ways. There is something healing within the act of turning the soil, weeding, planting seeds, and caring for them while they grow into plants that nurture and sustain us. People are much like plants, sometimes we need to be planted in the dark, and fall apart before we can experience growth. From there, we continue to grow and produce new seeds that will hopefully one day further that cycle of growth and healing.

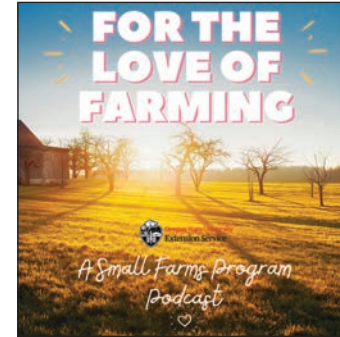
On these farm tours and through conversations with farmers in

*Continued on Page 11*

## For the Love of Farming: Latest Episodes

Check out the two latest episodes of *For the Love of Farming*, a Small Farms Program Podcast. <https://anchor.fm/fortheloveoffarming>

**Wolf Gulch Farm:** In this episode we sit down with Maud Powell of Wolf Gulch Farm in the Little Applegate Valley. Maud and her husband, Tom, have owned and operated their certified organic farm for the past 24 years. Tom works full time on the farm while Maud works part-time and also for OSU Extension, Small Farms Program. They started in diverse vegetable production and have now transitioned to exclusively growing seed. They helped to run Oregon's first CSA cooperative, the Siskiyou Sustainable Cooperative. They purchased their property knowing it was marginal farmland and were excited to implement water conservation, water catchment, and soil building strategies to make it work. While they found success



and made it work for over 20 years, climate change, specifically severe droughts in their region, meant that they lost access to water for irrigation in 2021. Faced with the inability to farm their property, they have leaned into their farming and rural community to find leased land as an option. They are uncertain how long farming will be viable in their Valley and Maud shares with us her views on adaptation. Maud is a humble community builder and talented storyteller, I am grateful for her vulnerability and willingness to talk about the hard stuff. This episode was recorded on July 19th, 2022.

**Adaptive Seeds:** In this episode we sit down with Sarah Kleeger and Andrew Still of Adaptive Seeds. A 35 acre certified organic farm based seed company near Sweet Home, Oregon. They steward rare, diverse, and resilient seed varieties for ecologically-minded farmers, gardeners and seed savers. They grow and sell seeds that are adapted to the Pacific Northwest and other short season northern climates. They sell only public domain, open pollinated (OP) seed, as well as diverse gene pool mixes. They are one of only a few seed companies in the country that produce most of the seeds they sell. As seed producers, while their farming season shares some similarities with the farmers they sell seed to – they also have a completely different set of challenges and opportunities seeing the plants through their entire life cycle. You can learn more at [adaptiveseeds.com](http://adaptiveseeds.com).

## New Publication! How much can I charge for my farm products?

Determining the “right” pricing for your products can be challenging for new and experienced farmers and ranchers. Several variables – including cost of production, competition, customer makeup and season – affect pricing. These variables change regularly. Some are

within your control, while others are not. Pricing decisions are complex. This publication outlines some key considerations that should help determine what you charge. Find the publication at: <https://catalog.extension.oregonstate.edu/em9274/html>





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## Save the date

### 2023 Winter Seed and Cereal Crop Production Meetings

- Roth's Hospitality Center – 1130 Wallace Rd, West Salem  
Tuesday, January 10, 8:30 a.m. – Noon
- Linn County Fair and Expo – 3700 Knox Butte Rd, Albany  
Tuesday, January 10, 1:30–5 p.m.
- Forest Grove Elks Lodge – 2810 Pacific Ave, Forest Grove  
Wednesday, January 11, 8:30 a.m. – Noon

### Oregon Ryegrass Growers Association annual meeting

Wednesday, January 18,

8:30 a.m – 3:30 p.m., Linn County Fair and Expo

### Field Crops Coffee Hours are back

- Join us on Zoom the third Thursday of the month at 8 a.m.
- November 17, 2022 – Kristin Trippe, USDA ARS Biological crop inputs – do they work or are they snake oil?
  - December 15, 2022 – Silvia Rondon, Oregon IPM Center Upgrading Integrated Pest Management Programs for the Grass Seed Industry Visit <https://beav.es/iz4> to register

### Other Meetings:

**Willamette Valley Ag Expo** – November 15–17, at the Linn County Fair and Expo Center. Pesticide recertification courses on Tuesday and Thursday, 4 CORE credits available. Admission is \$4. Visit [wvaexpo.com](http://wvaexpo.com) for more information.

**Oregon Seed League Annual Meeting and Trade Show** – December 5–6, 2022 at the Salem Convention Center. Pesticide recertification courses both days, 2 CORE credits each day. Visit [seedleague.org](http://seedleague.org) for more information.

## South Valley Field Crop Notes for November-December

### General Management

- Seed certification: remember to sign up new plantings within 60 days for seedling inspections or crop history.
- Slug bait timing is critical – begin as soon as weather conditions are favorable. Baiting is most effective in the evening, with night temperatures above 45°F, wind speed less than 5 mph, and in the absence of heavy rains.
- Monitor field edges for winter cutworm damage such as notched leaves or plants cut through the stem at soil level.

### Grass

- In established grass seed fields complete sequential preemergence herbicide applications by late November for maximum effectiveness on grass weeds and to ensure crop safety.
- Fall/winter herbicide application in established grass seed fields can help manage tough-to-control bluegrass species, especially roughstalk bluegrass. The best combination seems to be following the earlier pre-emergence applications with Outlook, Dual, or Fierce.
- If established grass weeds are present, glufosinate can also be added to Nov/Dec pre-emergence applications.
- Consider controlling broadleaf weeds in newly established grasses if weed pressure is high. There are numerous broadleaf herbicides that can be used at this timing.

### Wheat

- Increase seeding rates to 33 seeds/ft<sup>2</sup> (100–150 lbs/ac depending on seed size) for winter wheat plantings after Nov 1st. Complete winter wheat plantings by late Nov if possible.
- If planting wheat in Nov/Dec pick varieties that are suitable for later plantings (e.g. LCS ArtDeco, LCS Biancor, LCS Drive, Goetze, SY Assure).
- In winter wheat, use Axiom, Zidua, or Anthem Flex for control of grass and broadleaf weeds. Read labels carefully as each product has slightly different application timings for use in wheat. Ensure wheat is seeded 1–1.5” deep to ensure crop safety.
- Reduce Axiom rate to 8 oz/ac if planting winter wheat late in Nov/Dec.

### Mint

- Control grass weed patches in mint with clethodim or sethoxydim before heavy frosts set in. Watch for weed escapes and spot spray. Prepare for dormant timing herbicide applications.

### Continued from Page 10

the community, I've seen the power of planting seeds of hope and inspiration through the way they farm and share their ideas. Farm tours offer an opportunity for farmers to share that hope and inspiration with others. Some of the farmers I talked with believed they were “too small to have much to offer,” and yet they wanted to share anyway. I've seen that ALL farmers have something to offer, and in the act of sharing, they are reaching out and planting their own seeds with those they connect with. I've seen how, when farmers share with one another, it helps them and everyone around them grow as well.

By helping to bring Veterans together through the love of farming, tending to the land, and caring for the animals that live on it, connections were made that may not have happened otherwise. The Small Farms Program recognizes that

successful farms have a network of support, and that having that network of other farmers plays an important role in the health of their farm and the farmer. During my internship I took a Military Cultural Awareness & Veteran Suicide Awareness Training that enabled me to practice scenarios and understand the importance of being aware of different thought patterns and communication that may occur when working with Veterans. Both farmers and Veterans have a higher predisposition for depression and suicide. This is part of the reason we create dedicated spaces within the Small Farms Program for affinity groups, such as Veteran specific, or the women farmer networks. Not everyone is comfortable in the general small farm community, and by having these smaller subgroups, we hope that it will make a place for individuality

and community as people need. I look forward to staying on with the Extension Service as a Student Employee while I finish my BS in Horticulture/Horticulture Therapy at OSU. This internship has helped me to refine my skills while learning new ones, and I'm excited to see where it takes me next!

*For those needing support for themselves or a loved one, help is available from the National Suicide Prevention Lifeline at 1-888-273-TALK (8255) with an option to “press 1” to access the Military and Veterans Crisis Line. There is also The Farmer Resource Hotline 1800-FARM-AID (1-800-327-6243). For additional resources, visit [linesforlife.org](http://linesforlife.org), the American Farm Bureau Federation or the Western Regional Agricultural Stress Assistance Program.*



## Selecting Pollinizers for Tree Fruits and Nuts

The Willamette Valley is a great location for growing tree fruits and nuts. In order to get good fruit and nut set, pollination is required. Some tree fruit and nut crops are self-fruitful, meaning they can set fruit with pollen from the same tree, but most need to be planted with another variety of the same species for pollination to occur or produce better when pollinated by another variety. Apples, hazelnuts, pears, and plums are examples of tree crops that are grown in this region that require a pollinizer (i.e., another variety that provides the source of the pollen). (Note: If you live in an urban part of the Willamette Valley, there is a good chance you have a neighbor with an apple tree that is within a 1-mile radius that can provide pollination.)

Pollination is the transfer of pollen, whether by wind, honeybees, mason bees, or other insects, from the male part of a flower (the anther) to the female part of the flower (the stigma). For pollination to occur, the two varieties must be genetically compatible and bloom at the same time. Most European plums are self-fertile, but Japanese plum varieties need to be cross-pollinated with another Japanese plum variety. Apples can be cross-pollinated by compatible varieties of apples or crab apples that have similar



Apple blossom

bloom times. Notably, most fruit trees and apple trees are diploid (meaning two sets of chromosomes), but there are some triploid varieties (i.e., three sets of chromosomes) of apples that cannot pollinate other varieties. Hazelnuts require a pollinizer in order to set nuts.

When planting tree fruit or nut crops that require pollinizers, it is important to do a little research to ensure you are selecting a pollinizer that will be compatible. Start by selecting the main variety that you want to produce fruit or nuts (e.g., ‘Honeycrisp’ apple

or ‘Jefferson’ hazelnut), then select a compatible pollinizer. To ensure pollination, the bloom time of the pollinizer must coincide with the bloom time of the main variety. When looking at catalogs or perusing nurseries, it is common to see varieties grouped by bloom time (e.g., early season, mid-season, late season). For example, ‘Liberty’ and ‘Braeburn’ apples are both early bloomers. The ‘Jefferson’ hazelnut is a late-blooming cultivar, whereas ‘Yamhill’ and ‘McDonald’ are early-season bloomers.

The second thing to

consider when selecting pollinizers is genetic compatibility. This is where things can get complicated. In hazelnuts, the alleles (forms of a gene usually formed through mutation) determine compatibility. For pollination to occur, the alleles in the pollen must be different from the alleles in the female flowers. For example, the female flower of ‘Jefferson’ expresses S1S3 alleles, and the pollen expresses S3 allele. Any hazelnut cultivar that expresses S1 or S3 alleles in its pollen cannot be used as a pollinizer. Sweet

cherry cultivars carry two S-alleles, and each pollen grain carries one of these. As with hazelnuts, flowers cannot be pollinated by pollen that carries one of the two alleles, except for the S4 allele, which grants self-fertility and is considered a universal pollen donor. Triploid apple varieties, such as ‘Gravenstein’ and ‘Jonagold’, have sterile pollen and cannot be used as pollinizers. If you plant a triploid variety then you need to plant two other apple varieties to ensure good germination.

Selecting pollinizers may seem overwhelming, but there are lots of resources available to help guide you. If growing hazelnuts, consult OSU Extension publications EM9074 (Growing Hazelnuts in the Pacific Northwest: Pollination and Development) and EM9073 (Growing Hazelnuts in the Pacific Northwest: Hazelnut Varieties). Furthermore, most hazelnut nurseries in the Willamette Valley provide information and advice on selecting pollinizers. If growing other tree crops, start by seeking out pollination charts from reputable sources (e.g., Extension or .edu websites, or the Orange Pippin Fruit Tree Pollination Checker). As with hazelnuts, most nurseries that sell tree fruits will also recommend compatible varieties.

PHOTO CREDIT: RU HIGGINSON



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# Linn Soil and Water Conservation District

## Cover Crops for Conservation

By Kevin Seifert, Linn Soil and Water Conservation District

Cover Crops - there seems to be more interest in usage of the plants for many aspects in farming. I was looking at old papers from the Soil Conservation Service my grandfather had from the 1940s. Listed as a recommended practice was cover cropping. So, while this is not a new idea, we now have a better understanding of what to plant to address different problems in agricultural production.

Water management is a big topic of conversation in the Midwest lately. Water infiltration is improved with the use of cover crops. When a field lays fallow during the winter months in a row crop situation, the surface tends to seal, and first rains will tend to run off. Cover crops reduce sealing and allow water to infiltrate the soil profile for later use. Organic matter from the terminated cover crop can hold moisture in the soil profile for use by the following crop. Good examples of cover crops for this would be annual ryegrass, clovers, mustard, buckwheat, cereal rye, and

winter peas.

Cover crops can also add substantial amounts of available nitrogen to the soil. In organic cropping this might be your best way of getting nitrogen. In conventional crops this might save you quite a bit of money with current input cost being 300 percent higher than the ten-year average. Non-legume crops can uptake unused nitrogen from previous crops and release them during the growing season. Good examples of nitrogen fixers are clovers, hairy vetch, and winter peas.

Cover Crops are useful for added forage for livestock. Quick growing crops can add a lot of biomass or recover during the winter months in warmer climates for increased grazing potential. This helps introduce manures and beneficial microbes from animals' gut biome. There are many studies of the beneficial effects of animal saliva on plant growth. Annual ryegrass, especially varieties high in sugars, lend well to grazing. Along with Phacelia and most clovers, this should be grown in a mix to limit the chance of bloating from too many legumes in the mix.



PHOTO: GREGGIE LINN SOIL AND WATER CONSERVATION SERVICE



Cover crops can serve a dual purpose, both added forage for extra grazing while adding nitrogen to the soil. Shown top Red Clover, lower left Berseem Clover and lower right Daikon Radish

Compaction is also something cover crops can help alleviate on your fields. Aggressive root growth can penetrate certain layers of compaction and allowing for new roots to go down through these channels in the soil to find more nutrients and water. This can be beneficial in most growing situations, but

especially so in drier years. Cover crops with aggressive root development are annual ryegrass, mustard, daikon radishes, cereal rye, and Berseem clover.

Cover crops through the summer months in fallow fields can also give places for beneficial and pollinator species to thrive when other places

have matured through their growing cycle. Beneficial insects such as ladybugs, ground beetles, and pollinator species are natural predators to harmful insects. Plantings throughout the landscape can help lessen the use of insecticides on our primary crops. Flowering cover crops such as clovers, buckwheat, radish, phacelia, mustards, and hairy vetch work well for helping with biodiversity and Integrated Pest Management (IPM).

One last thing that cover crops can do during the non-growing season is help with weed suppression. Most have the ability for quick establishment that helps with soil shading. Some species also have allelopathic qualities, which naturally inhibit weed growth. Allelopathy refers to beneficial or harmful effects of one plant on another plant, both crop and weed species, through the release of chemicals from plant parts (by leaching). Cover crops that express this quality are radishes, oats, mustard, cereal rye, and some clovers.

No matter what you're looking to control or affect, there is probably a cover crop or blend that will fit your

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## Tree Seedlings and Reforestation Assistance for Landowners Affected by 2020 Wildfires

**Glenn Ahrens**, Forestry & Natural Resources Extension Agent for Clackamas, Marion, & Hood River Counties

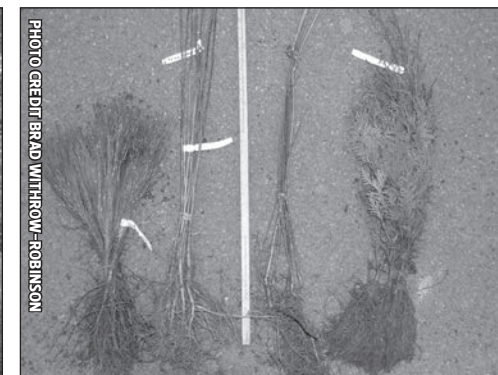
For landowners in the 2020 wildfire footprints, another batch of seedlings will be coming from the Oregon Department of Forestry (ODF) for the 2023 planting season, and they will be taking orders for 2024 as well. Note that the price for these seedlings is very low (less than 10 percent of actual cost) thanks to funding for fire victims from the State of Oregon. ODF is developing an online ordering system to handle seedling orders and payments <https://www.oregon.gov/odf/pages/seedling-acquisition-program.aspx>, and should be ready by early November. If you or someone you know are looking for a source of forest tree seedlings or other assistance with reforestation and are interested in ordering seedlings from ODF, please contact ODF ASAP to discuss



Field grown seedlings nearly ready to be lifted for out planting.



This landing edge is great pollinator habitat.



Some nice conifer and hardwood bare root nursery stock.

your seedling needs and to get on the list for placing a seedling order.

- Seedlings for 2023 will be prioritized for landowners who have previously requested seedlings with ODF Stewardship Foresters or OSU Extension.
- Seedlings for 2023 may be available for people who have not previously requested seedlings. After accounting for all earlier orders, we expect there

may be additional ODF seedlings for 2023.

- Seedlings for 2024 - If you are looking for seedlings to plant in 2024, ODF wants to make an order with nurseries ASAP. If you anticipate needing seedlings for 2024, let us know ASAP.

There are, of course, other sources of tree seedlings that may be available to any landowner – those affected

by the fires or not. These include:

- Local chapters of the Oregon Small Woodlands Association (OSWA)
- Your local Soil and Water Conservation District
- Your local Watershed Council
- Direct orders from forest seedling nurseries. A good list of these are provided in Sources of Native Forest Nursery Seedlings starting on page 19 of the following

link: <https://www.oregon.gov/odf/Documents/work-ingforests/seedling-catalog.pdf>

- Direct orders from nurseries listed under the Oregon Association of Nurseries <https://nurseryguide.com/>

**\*Note: that Weyerhaeuser Company will not be offering a public seedling sale at their Aurora nursery in 2023.**

## Videos Explore Native Pollinator Habitat in Woodlands

**Brad Withrow-Robinson**, Forestry & Natural Resources Extension for Benton, Linn and Polk Counties

Last spring, I wrote an article in GROWING pointing out that many local forest and woodland properties provide excellent habitat for pollinators, including our many native bees. Areas such as open woodlands and meadows, recently harvested

or other disturbed areas, or old landings can provide both the flowering and nesting resources needed to support many of our native bees.

There are many opportunities for a landowner to maintain or improve pollinator habitats on the property, not unlike things many people do to provide better deer and elk or bird habitats. The key to having good habitat is to be

aware of what a particular animal needs, think about how management can affect that, and then choose or modify your management activities, when possible, to have better habitat conditions as one of the outcomes.

There is a new resource to help landowners interested in helping increase pollinator habitat. The Bees in the Woods video series gives practical information to

help landowners recognize pollinator habitat as well as some simple ways to protect or improve it.

These short videos cover the basics about what bee habitat is, and practical steps to improve it. Approaches discussed include managing landing areas for abundant and long-lasting flower resources, and adjusting your weed control practices to keep more flowering plants while still meeting your

reforestation obligation. We have finished a series focusing on our moist habitat of NW Oregon, as well as another short series in the works with tips for people living in drier parts of the state.

Explore the videos and other resources at the Bees in the Woods website, hosted by my colleague Lauren Grand in Lane County. <https://extension.oregonstate.edu/collection/bees-woods>



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Abby Johnson  
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# Linn County 4-H Youth Development

## 4H Interview Questions (Adrienne Lulay)

By Jody Hill, OSU Linn County Extension 4-H staff

**4-H Extension:** What volunteer work do you do for 4-H?

**Adrienne:** I am the Superintendent for the Linn County “very small” animal barn that houses the 4-H and FFA Rabbits, Cavies, Chickens, Ducks, Turkeys and Pigeons. As well as some fun exotics!

**4-H Extension:** How did you become involved in 4-H?

**Adrienne:** I started in dog 4-H when I was in 6th grade, and had begged my parents relentlessly for a dog. The deal was that I would do obedience with him so that he would be a good citizen and I would stay involved with him. 4-H was the perfect organization for that!

When we moved to a farm, I got started showing llamas, horses, and Suffolk sheep. Luckily, in Clackamas County, Horse Fair was its own week, so I only had to run back and forth between two species shows during fair week!

After I graduated from high school, I stayed involved with the llama 4-H program because my mom was a leader and the Superintendent of the Clackamas llama program. I was a co-leader and Assistant Super and then I took over as Superintendent for many years, all the way ‘til my second son was born! I took a fairly brief hiatus from 4-H, but my oldest started into Cloverbuds with chickens. So here we are!

**4-H Extension:** What makes you passionate about 4-H?

**Adrienne:** I am passionate about 4-H because of the community it builds, not just for the kids

but for the parents, too. Relationships that last a lifetime

are made at fair! I can attest to that!

Plus, I believe in service to my community and helping kids work towards goals, like so many adults helped me when I was a kid.

**4-H Extension:** What does a small animal superintendent do?

**Adrienne:** During the “rest of the year” when we are not at fair, I am prepping for fair! Helping with learning workshops, finding cool prizes, and procuring donations from the community. I also answer a lot of questions about how to get ready for fair and when to start small animal projects. When I am at fair, I set up the shows each day and wrangle kids and their parents! I may be a novice in the small animal world, but I know how to wrangle kids!

**4-H Extension:** Is there an anecdote from fair this year you would like to share?

**Adrienne:** Early one morning at fair this year, I came into the barn to open the doors and get some cool air flowing. I was walking towards the rabbit section when a rabbit came hopping out from underneath the rabbit tables! I froze and stared at it for a minute and realized “that was our rabbit!!” I walked towards her to catch her, but Captain Twayblade had other plans! She was having the time of her life! She ran up and down the shavings underneath the tables. Meanwhile I was crawling around on my hands and knees trying to catch her! Finally, when she zipped past for the 10th time, I smooshed her down in the shavings and then hauled her back to her cage! She was not apologetic

at all! I was just thankful there weren’t tons of people in the barn when this was all happening!

**4-H Extension:**

You volunteer in the Shamrock Shenanigans club. What drives you to work directly with a club?

**Adrienne:** Well, my boys of course! I never showed chickens or rabbits when I was a 4-Her.

But as a parent you want to support your kids where their interests lie. And we needed a group that had small animal know how! So, thank goodness we found the Shenanigans! My role in that club is “mom” and decorations organizer.

**4-H Extension:** The 4-H Program strives to promote leadership and community involvement in our members. In what ways do you facilitate this goal?

**Adrienne:** The 4-H program gently introduces kids to organization management and volunteerism in a fun way. I believe that going through 4-H builds real world skills like learning how a meeting runs, how to make a “pitch” to a stranger, and how to “champion” your peers while also striving to be your best self.

**4-H Extension:** Would you recommend becoming a volunteer to others? Why or why not?

**Adrienne:** I absolutely recommend becoming a volunteer with 4-H! Even if you weren’t in 4-H as a kid it’s not too late! It’s such a fun inclusive organization that will help you learn even as an adult. There is a place for everyone and their skills in 4-H!



OSU EXTENSION SERVICE | LINN COUNTY

## LINN COUNTY 4-H 2022-2023 WORKSHOP SERIES

Join us monthly as we learn about different 4-H projects and develop new skills. Open to all enrolled 4-H members.

RSVP is required to attend. Links will be provided ahead of event to sign up.

**Tuesday, November 29, 5:30-7:00pm**  
Educational Display Workshop

**Thursday, January 26, 5:30-7:00pm**  
Cupcake Wars Workshop

**Tuesday, February 14, 5:30-7:00pm**  
Photography Workshop

**Thursday, March 2, 5:30-7:00pm**  
Record Book Workshop

**Thursday, March 16, 5:30-7:00pm**  
Food Prep Workshop

**Thursday, April 13, 5:30-7:00pm**  
Communications Workshop

**Monday, May 22, 5:30-7:00pm**  
Flower Arranging Workshop





Oregon State University 

## 4-H Ambassadors Off to a Great Start

The Linn County 4-H Ambassador team had their first meeting of the year in October, and is already starting off strong with 18 youth participating. Last year, seven youth participated in the meetings regularly, and seeing such a large number to start the year is very exciting for the growth of the program. Ambassadors are 7th-12th grade 4-H members that have at least one year of 4-H experience. To become an Ambassador, teens need to attend meetings regularly and participate in county programs. These youth should be exemplary members of the 4-H program. As an Ambassador, teen 4-H members will serve as leaders in the program, as well as facilitate programs throughout the year.

Ambassadors meet monthly on the second Sunday from 3:30-5:00 p.m., at the OSU Extension office. Meetings will include leadership development activities, team building, and communication skill building. For questions, please reach out to Abby Johnson at [abby.johnson@oregonstate.edu](mailto:abby.johnson@oregonstate.edu)

# Cloverbud Explorers Returns



Cloverbuds at a meeting last year.

Linn County 4-H is excited to have Cloverbud Explorers return for the 2022-2023 4-H year! Cloverbud Explorers started in fall, 2021 when there were not enough Cloverbud 4-H clubs or leaders available in the county to serve the number of youth interested. This group is facilitated by 4-H staff, and serves as both a 4-H club and an enrichment activity for Cloverbuds already involved in the program.

The October session of Cloverbud Explorers saw more than 40 youth sign up to participate, which prompted the addition of another session of the workshop. Going forward, Cloverbud Explorers will be operating two sessions a month to have enough capacity to

reach every youth member interested. Activities in Cloverbud Explorers has included coding using Ozobots, healthy eating, cookie decorating, sewing, knitting, animal science exploration, crafts, and more! Cloverbud Explorers is open to all youth ages 5-8. All participants will enroll as a 4-H member. Registration is required in advance of each Cloverbud Explorer session. To register, watch for links at the beginning of each month posted on our Facebook page and in the Linn County 4-H E-News.

Please reach out to Abby Johnson at [abby.johnson@oregonstate.edu](mailto:abby.johnson@oregonstate.edu) with any questions about this program.



# EMBRYOLOGY IN THE CLASSROOM

22-23 Teacher Training!

Over a 21 day period your classroom can incubate and hatch chicken eggs! This program allows youth of all ages to investigate the life cycle of a chicken and participate in hands-on learning on topics including animal needs, genetics, technology, physiology, record keeping, and much more!

This program aligns with both Next Generation Science Standards and Common Core standards. Additionally, we have successfully adapted this program for classes ranging from K - 12th, and would love to bring it to your school!



## What You Receive:

For a \$25 fee your classroom will receive the following for the duration of this project:

- Incubator, automatic egg turner, related supplies
- Fertile chicken eggs
- Educational materials and lesson plans
- Record keeping supplies
- Support throughout the incubation and hatching

## REGISTER TODAY:

- Saturday, November 5 at 9:00am over Zoom: <https://beav.es/5UJ>
- Tuesday, November 8 at 4:00pm over Zoom: <https://beav.es/5U3>



Contact your local 4-H office for information:  
Linn --- [Abby.Johnson@oregonstate.edu](mailto:Abby.Johnson@oregonstate.edu)  
Marion --- [Kelly.Noack@oregonstate.edu](mailto:Kelly.Noack@oregonstate.edu)

OSU EXTENSION SERVICE  
PROHIBITS DISCRIMINATION  
IN ALL ITS PROGRAMS,  
SERVICES, ACTIVITIES, AND  
MATERIALS.



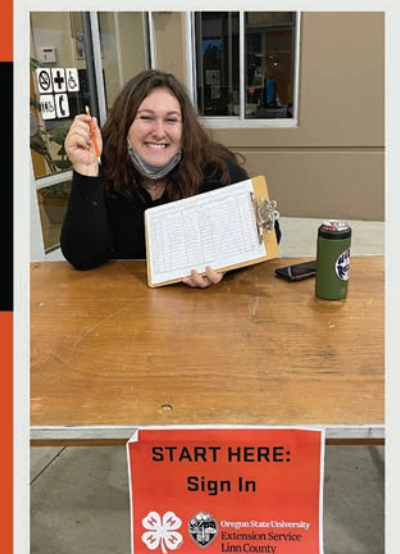
Elementary school children learn how eggs hatch through the embryology program. It takes about 21 days for the eggs to hatch. Then the chicks spend a week to 10 days in the classroom. The brooder is sized so that young children can easily see inside and view the process. The baby chicks are placed with local poultry club participants or families that already have chickens.

## 4-H Volunteers Needed

Do you have a passion and a willingness to share it?

Adults with all interests are needed to help mentor youth. This is an exciting opportunity to help young people learn and grow.

Contact: [jody.hill@oregonstate.edu](mailto:jody.hill@oregonstate.edu)



START HERE:  
Sign In





# Linn County had a Great Showing at Oregon State 4-H Fair

Linn County members represented the county 4-H program very well during the 2022 Oregon State Fair. We had members competing in multiple project areas including static, presentations contest, mini meal contest, horses, sheep, swine, and beef cattle. State fair is always a fun event to culminate the 4-H year and show off projects to others in the state. Below is a list of special award winners.

## Horses:

- Kailee Pepple medallion in 2 barrel Flag
- Rylee Prettyman medallion in Key Race and NSCA Flag Race

## Livestock:

- Dallas Headley received numerous awards in Swine including Reserve Champion Intermediate Showman
- Rayanna Morris received Reserve Champion in Senior Swine Showmanship
- Brylee Hanson received numerous awards in swine including Senior Champion Showman
- Faith Webb received awards in the sheep division including in Intermediate Showmanship
- Laney Klampe exhibited the reserve Champion Market Steer

## Static Area Exceptional Award Winners:

- Marie Guthrie, Digital Art, Houseplant, and Photography
- Ruby Richardson, Entomology and Forestry
- Emily Kinkade, Forestry
- Conner Tye, Forestry
- Kaden Holt, Entomology
- Ben Bjornstedt, Geology
- Xavier Macedo, Entomology and Forestry
- Brennan Steinke, Geology
- Ignacio Macedo, Forestry
- Phoebe Miller, Multiple Media
- Katie Fortner, Entomology
- Haley Tye, Entomology and Forestry
- Trysten Reid, Geology

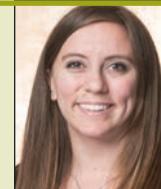
## Static Area Medallion Award Winners:

- Conner Tye, Entomology
- Elizabeth KinKade, Forestry
- Kourtney Hayes, Phototgraphy



# Benton County 4-H Youth Development

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Carolyn Ashton  
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## What is 4-H?

4-H is America's largest youth development organization—empowering nearly six million young people with the skills to lead for a lifetime. 4-H is delivered by Cooperative Extension—a community of more than 100 public universities across the nation that provides experiences where young people learn by doing. Oregon State University is the land grant institution that is home to Extension and the Oregon 4-H Program. For more than 100 years, 4-H has welcomed young people of all beliefs and backgrounds, giving kids a voice to express who they are and how they make their lives and communities better.

### In 4-H, we believe in:

- all young people's potential;
- developing young people who are empowered, confident, hard-working, determined, responsible and compassionate—seeing a world beyond themselves so that they have the life-long skills to succeed in college and career,
- ensuring access and equity for all,
- the power of America's leading public universities,
- the practice of positive youth development (PYD)\* by

- creating positive learning experiences,
- caring and trusted adult mentors who cultivate positive relationships with youth,
- creating safe, diverse and inclusive environments, and
- meeting young people wherever they are.

### 4 H Grows True Leaders

4 H empowers young people to be true leaders. True leaders are young people who have confidence; know how to work well with others; can endure through challenges; and will stick with a job until it gets done. In 4 H, we believe true leaders aren't born – they're grown. 4 H programs hands-on approach gives young people guidance, tools and encouragement, and then puts them in the driver's seat to make great things happen. Independent research proves the unparalleled impact of the 4-H experience.

### Types of 4 H Programs

Our programs in science, healthy living and civic engagement are backed by a network of 100 public universities and a robust community of 4 H volunteers and professionals. Through hands-on learning, kids build

not only confidence, creativity and curiosity, but also life skills such as leadership and resiliency to help them thrive today and tomorrow.

4 H programs and resources are available AT HOME or through local in-person and virtual 4 H clubs, 4 H camps, in-school and after-school programs. With the support of adult mentors, youth select from a menu of hands-on project ideas to complete. 4 H programs are available for kids and teens ages 8-19. 4 H Cloverbud programs are available for kids ages 5-8.

### 4 H Programming

4 H programs are grounded in the belief that kids learn best by doing. Kids and teens complete hands-on projects in areas like science, health, agriculture and civic engagement, in a positive environment where they receive guidance from adult mentors and are encouraged to take on proactive leadership roles. Kids can concentrate on one focus area or they can try a variety of programs throughout their 4 H experience.

Regardless of the project area, all 4 H programs include mentoring and career readiness as core elements.

## 4-H'ers are...

4X

more likely to give back to their communities

2X

more likely to make healthier choices

2X

more likely to participate in STEM activities



## 4-H'ers participate in



5M  
ANNUALLY  
SCIENCE  
PROJECTS



2.5M  
ANNUALLY  
HEALTHY LIVING  
PROJECTS



2.5M  
ANNUALLY  
CITIZENSHIP  
PROJECTS

## WE NEED RURAL/URBAN HOME OWNERS



Have you thought about, or are you planning to sell your home? We don't just want to sell your home. We are service focused individuals with a win-win attitude committed to helping Sellers and Buyers. There are definite steps to insure a client is knowledgeable in advance of each decision. We want to be the ones to make sure you are protected throughout the entire process, whether a Buyer or a Seller. Regardless of whether your home is rural or urban, a Broker needs to understand the differences, and understand the intricacies of wells, septic systems, zoning, etc. This gives us an edge over other agents who only sell city homes. Please call 541.760.7718 for a consultation. Our Brokers are always accessible day & evening.... We are ALWAYS here for you.

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# Benton County 4-H Scholarships

There are 10 Benton County 4-H scholarships totaling \$15,000 available to current 12th grade 4-H members. All enrolled graduating seniors are eligible to apply. Applications are due January 15th, to the Benton Extension office (except the Horse Leaders Scholarship, which is due April 15th). For more information, visit our website.

## Scholarship Donors

- Moos Family
- Decker Family
- Hitchcock Family
- Bateman Family
- Benton County 4-H Horse Project Leaders Committee



4-H members submit an application that is primarily focused on their 4-H records. 4-H record books were judged in October by a committee of 4-H volunteers. Record books

are returned to the youth with comments and scores for how to improve them which can be fixed before the scholarship application.

## Are You an Environmental Educator in Benton or Linn Counties?

Connect with other informal and formal educators by joining The Natural Resource Educator Working Group. This is a networking group with a focus on outdoor

education in Benton and Linn Counties and is hosted by OSU Extension in Benton County.

The group has agency, organization, and school representatives that provide

environmental education at K-12 schools or community events. We meet 3-4 times a year, noon to 1:30 p.m., and usually host an informative speaker and time to share about your programs. This is an informal networking group, working to sustain and improve environmental education in our local area.

Our next meeting will focus on making our programs and sites more accessible for disabled audiences. The date of the next meeting will be late November or early December. If you are an educator, and would like to learn more about joining the group, or the date of the next meeting contact jody.einerson@oregonstate.edu



**Benton County and Linn County Extension programs may offer opportunities that are only open to the residents of their respective counties. Please check with your county Extension Office if you have any questions about participation eligibility for specific programs.**

## Ready, Set, Enroll!

Oregon 4-H enrolls youth based upon their age as of September 1, 2022:

- 5-8 year olds are Cloverbuds
- 9-11 year olds are Juniors
- 12-14 year olds are Intermediates
- 15-19 year olds are Seniors



### Membership Fees:

EARLY BIRD - \$40 PER MEMBER by JANUARY 15, 2023 for the first two family members (additional family members will be \$10 each)

ON OR AFTER JANUARY 16, 2023 fees will increase (amount to be determined)

If a youth is interested in joining Benton County 4-H, please visit our Benton County 4-H website and complete a member interest form. We work to place youth with clubs that are accepting members. Please contact the Extension office at 541-713-5000 if you have any questions.

## Adult Volunteers Wanted!

The Benton County 4-H Program is actively looking for adults who want to share their time and talents with youth, aged 5-19.

Are you interested in making a positive impact on youth? Do you have an expertise that you want to share? Do you want to learn new skills? Volunteers will receive training, support from OSU faculty and staff, and from other 4-H volunteer leaders, as well as access to project and resource books and materials.

We are especially looking for adults to start 4-H Cloverbud Clubs. Our Cloverbud program is for youth ages 5-8 years old. If you are interested in volunteering with the Benton County 4-H Program, please contact our office for more information. An upcoming training will be held on Tuesday, November 29, at the Benton County Extension Office from 6-9 p.m. There may also be an additional training after the New Year, date to be announced. Please call 541-713-5000 to register.

## Members with Special Needs

All youth are welcome in 4-H! Clubs are encouraged to invite youth with disabilities into their groups, enriching the lives of all the youth involved. If you have members in your 4-H club with disabilities or special needs who require special accommodations for participation in 4-H activities, please contact the OSU Extension Service at 541-713-5000 well in advance of any activity. Our goal is to reach all youth who wish to participate in 4-H.

## 4-H At Home

Explore fun, educational activities and learning experiences for kids and teens to do at home. Whether you're a 4-H member, a virtual learner, a homeschooler, or just looking for some quick and fun activities to take your interests to the next level, 4-H at Home has something for everyone. You can explore all the resources that are available at <https://4-h.org/about/4-h-at-home/>. There you can find more than 250 activities ranging from Gardening at Home and Fresh Chefs Cookbook, to the Nurturing Power of Nature and Space Exploration.

# Linn Extension Open House

The OSU Linn County Extension Service hosted an Open House the evening of October 17th at their office in Tangent. It was open to the public and was an educational time to meet with staff and learn about their programs. It was a good to see more faces in the office and each faculty member enjoyed sharing their programs and activities with folks that may not have been aware of them before.



OSU Linn County and area/regional staff. Back row l to r: Cassi Hyde, Jared Hibbard-Swanson, Erica Chernoh, Andrea Leao, Jody Hill, Elizabeth Records, Jody Einerson, Brad Withrow-Robinson. Middle row l to r: Kayla Bordelon, Diana Camacho-Figueroa, Abby Johnson, Laurie Gibson, Crystal Kelso, Chrissy Lucas, Christy Tanner, Jenifer Cruickshank. Front row l to r: Tina Dodge, Michele Webster.



Christy Tanner showd photos and data gathered while using her drone for research in field crops



Ozobots are a fun tool Abby, 4-H faculty uses to get 4-H youth interested in coding



The "Udder model" was popular and is used to educate by Jennifer Cruickshank, Dairy faculty



The blender bike is always a huge hit at any event. This time visitors helped whip up peach and carrot smoothies



Visitors played a game of good bug vs bad bug while Elizabeth looked on



Haley Tie shows off her entomology display to Tara Pesterfield, the new Executive Director of Oregon 4-H Foundation