



# GROWING

Extending Knowledge and Changing Lives in Linn and Benton Counties

## Volunteers: 'The Backbone' of 4-H

By Mitch Lies,  
*GROWING* Editor

As a youth, Sherrie Deaton didn't participate in 4-H. She didn't show animals, create static exhibits, or shoot archery. As an adult Extension 4-H club leader, however, Deaton has been involved in all of those activities, and more.

Far from being a burden, Deaton said the time she dedicates to 4-H is a gift.

"You gain more than you give," she said.

Today, Deaton, a mother of two teenagers, is a 4-H Leader for three Benton County clubs: Creations, a club centered on cooking, sewing and art; Howling Hawks, a club that explores STEM, or science, technology, engineering, and math; and Power Paws, a club that works with dogs. And over the past nine years, she's helped lead clubs in archery, sheep, pigs, horses, and more.

Like many 4-H club leaders, Deaton didn't set out to be one of the hundreds of volunteers that serve Oregon State University Extension 4-H each year. It was her children's interest that got her involved, starting with her daughter Shelzza's interest in horses.

"We started with horse, and then we did 'cooking and sewing.' So, those were our first two clubs," Deaton said.



Sherrie Deaton, of Monroe, says volunteering for the OSU Extension Service's 4-H Youth Development program "is a gift. You gain more than you give."

Shortly after, Deaton was encouraged to take the 4-H leader training. Soon she was a club leader for a horse project club and the Creations Club. Two years later, her son, James, joined 4-H with an interest in archery and pigs and Deaton branched into new fields.

"It's a gift to be able to do it," she said. "I'm lucky. My husband makes enough at his job that I don't have to

work full time, so I can put my time into this. I love the people I've gotten to know, both the other leaders, the parents, and the kids. And this gives me the opportunity to teach and watch kids 'get' a concept. I'm the one gaining from this because I get to do new things and meet people from all over the state and watch kids shine."

Known as America's

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## Volunteers Vital to Gardeners, Woodlands and Food Preserver Education Programs

By Mitch Lies, *GROWING* Editor

Like 4-H, other OSU Extension programs rely on volunteers, including notably the Linn and Benton County Master Gardener, Master Woodland Manager and Master Food Preserver programs.

Volunteers for the three Extension programs provide much of the hands-on, day-to-day functions of the programs, Extension faculty said, and typically are the point-of-contact for community members interested in gardening, food preservation and small woodlands management.

"Without our volunteers, we couldn't do all of the work that we do," said Jennie Gilbert, Master Food Preserver program coordinator for Linn and Benton counties.

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From left, volunteer Cindy Kitchen, Extension faculty Jennie Gilbert, and volunteer Ann Capps staff the Master Food Preserver program booth at the Linn County Family Farm Expo on May 13. Nearly 300 people stopped by the booth that day, according to Gilbert.

# Who We Are

The Oregon State University Extension offices in Linn County and Benton County offer practical, lifelong learning experiences. We sponsor conferences, workshops, demonstrations, tours, and short courses. We recruit, train and manage volunteers who assist us with community outreach and education. Our Extension faculty and volunteers answer questions and give advice by phone, in person, through e-mail, and on our Websites. We provide brochures and flyers with specific information on a variety of subjects. We are funded by a cooperative partnership between Oregon State University, the U.S. Department of Agriculture, and our local counties.

## Office locations and hours

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>.

## Program Staff Phone Numbers

Linn County 4-H Youth Development	Andrea Leao	541-730-3534
Linn County 4-H Youth Development	Abby Johnson	541-730-3469
Benton County 4-H Youth Development and Benton County Liaison	Carolyn Ashton	541-713-5000
Benton County 4-H Youth Development	Elli Korthis	541-713-5000
Field Crops*	Christy Tanner	541-730-3537
Livestock & Forages*	Shelby Filley	541-672-4461
Dairy*	Jenifer Cruickshank	971-600-1222
Small Farms*	Melissa Fery	541-730-3538
Small Farms*	Teagan Moran	541-713-5000
Tree Fruit and Small Fruit	Erica Chernoh	541-344-1709
Small Farms & Groundwater Education*	Chrissy Lucas	541-713-5009
Community Horticulture*	VACANT	541-730-3471
Forestry, Natural Resources*	VACANT	541-967-3871
Regional Fire Specialist*	Kayla Bordelon	541-730-3543
Forestry and 4-H Youth	VACANT	541-713-5000
FCH & SNAP Ed*	Tina Dodge	541-730-3541
FCH	Jennie Gilbert	541-730-3531
SNAP Ed*	Iris Carrera	541-713-5005
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\* Multi-county assignment

## Administration and program support serving Linn County

Office specialist	Laurie Gibson	541-248-1088
Office specialist	Jody Hill	541-967-3871
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## Administration and program support serving Benton County

Office specialist	Kelly Cotter	541-713-5000
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**Extension Service**

# Volunteers: 'The Backbone' of 4-H

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largest youth-development organization, 4-H, which is open to all youth between the ages of 5 and 19, serves more than 6 million youth annually across the U.S. Closer to home, Linn and Benton County 4-H programs reach approximately 5,000 youth annually through community clubs, school programs and summer activities. About 1,000 youth are directly enrolled in 4-H in the two counties. They are served by four 4-H youth development Extension faculty (two in each county) and approximately 300 volunteers.

"Volunteers are the backbone of the program," said Abby Johnson, 4-H faculty for Linn County Extension Service. "Our program would not exist without them."

"We are extremely appreciative of all the time and energy our volunteers give to the program to help our 4-H members thrive," added Carolyn Ashton, 4-H faculty for Benton County Extension.

Most volunteers commit to a couple of hours a month over the course of a year, and a few extra hours during the summer fair season. Then there are the exceptions. Deaton estimates she puts in 200 hours a year working with multiple clubs.

Deaton, who holds a master's degree and is a former grade-school teacher, said it is not necessary to be an expert in a field to be a club leader. She knew next to nothing about farm animals before serving as club leader for pigs and sheep, she said. And Deaton was never into sewing before becoming club leader in a Creations Club that works with sewing. "I'm terrible at sewing, but I'm learning. Every year I learn something new," she said.

"My teaching background helps," she added, "because if I don't know the answer to a question, I know how to find it. But really, you end up being more



PHOTO BY ANDREA LEAO

Volunteer Rob Damon teaching 4-H members about swine showmanship at the Linn County Youth Livestock Auction Field Days held in May. These events wouldn't be possible without the help of a large group of volunteers.

of an organizer than anything else. And you can put in as much time as you have available. If you only have two hours to commit a month, there's still a way you can help and be involved. If you have 200 hours, that will work too.

"And the same thing is true for kids," Deaton said. "We have some kids who just want to go to a few meetings and meet people. Then we have kids that go full in and take advantage of the full breadth of opportunities available in 4-H."

Deaton's children fall into that latter category. Shelza, who graduated from Monroe High School this year, has been involved in several 4-H clubs during her high school career and was able to go to Atlanta, Georgia, in November for National 4-H Congress, to Washington, D.C., in April for the National 4-H Conference, and during spring break, she went to Salem to talk with Oregon legislators on behalf of 4-H. And James Deaton, a sophomore in high school who is involved in two 4-H clubs, went to Japan in June as part of the 4-H Outbound program.

"If you have a passion, there is a way to grow that passion in 4-H," Deaton said. "There is so much you can do."

And, Deaton said, 4-H provides an opportunity for volunteers to grow their passion, as well. "It is a great way for volunteers to get to practice your passion and teach it to other people and watch them grow and develop in it, and to learn more about your passion," Deaton said. "I definitely would encourage people to get involved and become leaders."

People interested in volunteering for 4-H are encouraged to contact their local Extension Service office.

"With so many kids interested every year, we can never get too many volunteers," Johnson said. "Especially in areas like food, sewing and clothes, we have a really low number of volunteers, as well as in Cloverbuds: We really need some more volunteers for our youngest age group."

In Linn County, the phone number is 541-967-3871. In Benton County, call 541-713-5000.





Chrissy Lucas  
541-713-5009  
chrissy.lucas@oregonstate.edu

# Groundwater Protection Education

## Screen Your Well Water for Nitrate

The OSU Extension Service will be offering a free nitrate screening in selected locations across the southern Willamette Valley. A water quality educator will be on site at all of the clinics. Clinics will be held at the following locations and times.

- July 15th - Philomath Museum Family Day located at 1101 Main Street in Philomath from 10 a.m. to 2 p.m.
- July 19th - Taste of Tri-County and Business Expo in downtown Monroe along 6th Street from 4-7:30 p.m.

- August 5th - Corvallis Farmers Market on 1st Street in Corvallis from 9 a.m. to 1 p.m.
- August 23rd - Corvallis Farmers Market on 1st Street in Corvallis from 9 a.m. - 1 p.m.
- August 24th - Lebanon Farmers Market on the corner of Main Street & Grant in Lebanon from 2-6 p.m.
- September 16th - Albany Farmers Market located at Ellsworth St & 4th Ave from 9a.m.-1 p.m.
- OSU Extension Service Linn County Office located at 33630

- McFarland Rd located in Tangent - During Business Hours - Call Ahead
- OSU Extension Service Benton County Office located at 4077 SW Research Way in Corvallis - During Business Hours - Call Ahead

A portion of the Southern Willamette Valley has been designated as a Groundwater Management Area by the Department of Environmental Quality due to elevated nitrate in well water. While it is especially important for households with pregnant women or



newborns to test for nitrate because of a rare type of blue-baby syndrome, all homes with private wells should be aware of their nitrate level.

For your free nitrate screening, bring about 1/2 cup of untreated well water in a clean, water-tight container. You may either

wait for your results (the test takes 5 to 10 minutes if the well water clinic is not busy) or drop off your container with your contact information and we will mail your results and recycle your container.

Visit <http://wellwater.oregonstate.edu> for more scheduled workshops and free nitrate screening clinics. Summer interns will be all over the Willamette Valley this summer hosting clinics. If you are interested in hosting a neighborhood screening on your driveway, please reach out to Chrissy.lucas@oregonstate.edu

## Meet Our Summer Interns

**Ava Cordle** is from Albany, Oregon, but is currently studying at OSU-Cascades in Bend, Oregon. She is a second year student studying environmental science with an applied ecology option. She is excited to work and spend time in the community and meet people. Ava is looking forward to working for Extension this summer and getting the opportunity to learn more about the program.



4-H and FFA her whole life. Going into her senior year, she is working towards receiving her Agriculture and Food Business Management degree. Her goal after graduation is to work for an Extension program or in administration for a commercial ranch. Lauren is excited to broaden her horizons through this internship and gain insight into what it is like to work for Extension this summer.

**Lauren Henkens** is from Wilton, California but currently lives in Corvallis while attending OSU. Lauren has strong ties to agriculture back home since she grew up on a small ranch and raised livestock for



**Olivia Jacobs** is from Beaverton, Oregon, and is studying Ecological Engineering at OSU. Her passions include soil, restoration in riparian areas, and being outdoors. She is beyond excited to connect with local communities in the Willamette Valley.



## THE BE WELL STUDY

### Do you get your drinking water from a well? Get a free water test!

The **purpose of this study** is to learn about:

- 1) chemical contaminants in well water
- 2) the health of those who drink well water
- 3) how wells are maintained

**To participate** in The Be Well Study you will complete a survey that requires 30-60 minutes, receive and return a well water test kit and receive your well water test results with a guided explanation.

**To be eligible**, you must: be at least 21 years old, be a homeowner in the state of Oregon who uses a private well as the primary source of drinking water, have lived in your home for at least 12 months and plan to live in the home for at least 12 months from now.

For more information, please contact us at: [BeWellStudy@oregonstate.edu](mailto:BeWellStudy@oregonstate.edu) or (541)737-1078  
OR Dr. Veronica Irvin at [veronica.irvin@oregonstate.edu](mailto:veronica.irvin@oregonstate.edu) or (541)737-1074.



If you are interested in participating, please visit us at:  
[wellwater.oregonstate.edu/bewellstudy](http://wellwater.oregonstate.edu/bewellstudy)  
to begin the survey.





## Upcoming Workshops:

- **July 18** – Pickle Workshop – Halsey Community Center 6 p.m., Cost \$10
- **July 20** – Pressure Canner gauge testing – Halsey Community Center 7 p.m., Free
- **July 25** – Pressure Canning workshop – Linn County Extension office 6 p.m., Cost \$10
- **Aug 12** – Pressure Canning – Halsey Community Center 9 a.m., Cost \$10
- **Aug 16** – Salsa Class – Linn County Extension office 6 p.m., Cost \$10
- **Aug 24** – Salsa Class – Halsey Community Center 6 p.m., Cost \$10
- **Aug 30** – Pickle Class – Linn County Extension office 6 p.m., Cost \$10

To register for Linn County Extension classes call our office or e-mail [linn.extension@oregonstate.edu](mailto:linn.extension@oregonstate.edu).

To register for Halsey classes, contact Jennie Gilbert at [jennifer.gilbert@oregonstate.edu](mailto:jennifer.gilbert@oregonstate.edu) or call 541-730-3531.

## Food Preservation Workshops Back in Person

After a three-year hiatus, in person food preservation workshops and events are back in Linn and Benton counties. The classes and events were paused when the pandemic started. Information was shared by staff and volunteers through social media, email, publications, and Zoom meetings. It was a challenging time for staff and volunteers to stay connected to the community. It was difficult to keep a cohesive group of volunteers active when there were no classes or events for them to work.

Volunteers are an important part of the food security and safety Extension program. Volunteers are trained to be Master Food Preservers (MFP) and can train and assist the public with food safety and preservation questions and classes.

In January 2023, past volunteers were contacted to see if they wanted to recertify and become active volunteers again. Sixteen people responded to the call and



took the MFP recertification exam in April. The new vision and goal for the food safety, security, and preservation program is to be out in the community educating the public. Workshops will now be scheduled at various locations in Linn and Benton counties.

On May 11, the first in person workshop in three years was attended by 12 community members, two MFP volunteers, and the food safety EPA at the Halsey Community Center in Linn County.

The class, Introduction to Food Preservation, provided demonstrations of equipment and samples of different methods of food preservation. Attendees learned how to make freezer jam and sauerkraut using simple equipment and ingredients. The interactive workshop was a success and the attendees asked for more classes. They also gave feedback about what type of workshops they would like to see in the future.

The MFP group has tabled two big events, The

Family Farm Expo and Get Outdoors Day, where they had information tables and samples for attendees. Engagement for these two events was highly successful, with more than 200 people stopping to talk with volunteers at each event. Master Food Preservers staff booths the Albany and Corvallis Farmers' Markets twice monthly and the Brownsville Farmer's Market once a month to highlight in-season produce recipes and answer food preservation questions as well as provide safe food preservation publications.

Now that the group is gathering steam again, there will be many more events and workshops planned. There is also a new Master Food Preserver group training coming in Fall 2023. Anyone interested in training to be an MFP and/or volunteering for the OSU Extension Linn and Benton County programs can contact Jennie Gilbert at [jennifer.gilbert@oregonstate.edu](mailto:jennifer.gilbert@oregonstate.edu)

We're Here to Help You

## Grow a Thriving Garden

Visit our website and YouTube channel to find helpful growing resources!

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Connect with Us!   



# Freezing Fruit and Vegetables with Food Hero

Freezing is a good way to take advantage of the summer season bounty!

## Prepare Fruit

- Wash hands with soap and water
- Gather cooking tools and freezer containers.
- Rinse fruit or vegetables gently under running water.
- Spread on a clean towel and pat dry to remove water.
- Peel, trim, pit and cut as desired. Aim for pieces



that are about the same size.

## Keep Fruit from Browning

- Cover apples, bananas, peaches and pears with water as you peel and cut.
- Adding 1 Tablespoon of fresh or bottled lemon juice for each cup of water may help
  - Drain water before packaging.

## Package before freezing

Freezing is a good way to store fruit and vegetables

- Use containers that are air tight and freezer-safe. Label them with the fruit or vegetable name and

date.

- Put fruit or vegetables right into the container or spread in one layer on a baking sheet and freeze until firm. Then put into the container.
- Remove as much air as possible from the package. Squeeze air from freezer bags or cover the top edge of food in a freezer container with a piece of plastic wrap before closing.
- Close the container and freeze right away. For best quality, use within 8 to 12 months.

Freezing Fruit Whole or Cut	
<b>Whole</b>	Bananas, berries (blackberry, blueberry, cranberry, gooseberry, raspberry, strawberry) cherries, currants, figs, grapes
<b>Cut (chop, mash or slice)</b>	Apples, apricots, bananas, grapefruit, kiwis, mangos, melons, nectarines, oranges, peaches, pears, plums, rhubarb

Preparing Vegetables for Freezing	
Celery, onions, peppers, tomatoes	Package right after preparing.
Beets, potatoes, sweet potatoes, tomatoes, winter squash	Cook until done. Cut, mash or blend, if desired, then cool and package.
All others	Blanch using the picture directions below, then package.



## Blanching Vegetables: This short heat treatment protects the flavor and color of vegetables:

### How to blanch for freezing

- Bring 1 gallon (16 cups) of water to boil in large pot.
- Lower 2 to 3 cups of vegetables into the boiling water.
- Return the water to boil and begin timing.\*
- Move vegetables to a bowl of ice-cold water; cool completely.
- Drain the vegetables and pat them dry, then package.

### Time needed \* Vegetables

- 2 minutes – Carrots, parsnips, peas (snap or snow), spinach and other leafy greens (except collards), turnips
- 3 minutes – Asparagus, beans (green or wax), broccoli, cauliflower, celery, collards, okra, summer squash (including zucchini)
- 4 minutes – Corn cob (after blanching, slice off kernels to package), eggplant

## Food Hero for Older Adults: Focus on Water

Most fruits and vegetables are full of water! Enjoy them in a Mix and Match Salad.

*Water is essential for all body functions. Replenish daily for good health.*

### Mix and Match Salad

1 cup fruits and vegetables, any mixture

+

1 to 2 Tablespoons Flavor enhancers

+

1 to 4 Tablespoons Nutrient boosters

**Some types:** apple, bell pepper, berries, banana, broccoli, cucumber, cabbage, cauliflower, celery, grapes, grapefruit, mango, melon, orange, peach, pear, pineapple, salad greens



**Savory dressing:** 1 teaspoon vegetable oil (any type), 2 teaspoons vinegar or citrus juice, salt and pepper to taste.

**Sweet dressing:** add ¼ teaspoon honey or sugar.

**Yogurt dressing:** 2 teaspoons yogurt, 1 teaspoon vinegar or citrus juice, ¼ teaspoon honey (optional) and salt to taste.

**Dried or fresh herbs and spices:** basil, cilantro, dill, oregano, cinnamon, garlic or chili powder.

**Protein:** nuts, seeds, fish, poultry, meat, cheese, yogurt, tofu

**Calcium:** cheese, yogurt, canned salmon, tofu

**Fiber:** beans, nuts, seeds, dried fruit



## Upcoming Linn & Benton Master Gardener events

### JULY

- 4 Plant Clinic - Sweet Home Farmers Market - 2-6 p.m., Sweet Home Library - 1101 13th Ave, Sweet Home
- 6 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 7-8 Oregon Master Gardener Association Joy of Gardening (formerly Mini-College), OSU Alumni Center, Oregon State campus. Learn more and register <https://extension.oregonstate.edu/mg/events/master-gardener-mini-college>
- 11 Getting Wild: Using Native Plants to Restore Biodiversity (Growing Oregon Gardeners) - noon - 1 p.m. PDT online. RSVP: [beav.es/S6n](https://beav.es/S6n)
- 13 Open House: Oak Creek Center for Urban Horticulture, 10 a.m.-2 p.m., 843 SW 35th Street, Corvallis. Learn more <https://extension.oregonstate.edu/mg/events/open-house-oak-creek-center-urban-horticulture-0>
- 13 Public Seed Library Talks - Harvesting & preserving crops, and fall season planting - 6-7 p.m., Corvallis Library, 645 NW Monroe Ave, Corvallis
- 13-15 Visit the Linn County Master Gardener Demonstration Garden during the Linn County Fair!
- 15 Plant Clinic - Albany Farmers Market - 9 a.m. - 1 p.m., 4th & Ellsworth, Albany
- 18 Plant Clinic - Sweet Home Farmers Market - 2-6 p.m., Sweet Home Library - 1101 13th Ave, Sweet Home
- 20 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 22 Plant Clinic - Corvallis Farmers Market - 9 a.m. - 1 p.m., 4th & Ellsworth, Albany
- 22 Garden Q&A Organic Garden Deter Pests Organically - 10 a.m. - noon - Lebanon Senior Center, 80 Tangent Street Lebanon
- 24 Growing Together LCMGA classes in the Demo Garden - Fall Planting, 5:30-6:30 p.m., Demonstration Garden, Linn County Fair and Expo Center, 3700 Knox Butte Rd, Albany.
- 26 Plant Clinic - Corvallis Farmers Market - 9 a.m. - 1 p.m., NW 1st St & Jackson St, Corvallis
- 27 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 29 Fall & Winter Gardening - 10 a.m. - noon - Calvin Presbyterian Church Community Garden Between Dixon & 13th

- 29 Plant Clinic - Albany Farmers Market - 9 a.m. - 1 p.m., 4th & Ellsworth, Albany
- 10 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 14 Growing Together LCMGA classes in the Demo Garden - Harvesting & Storing, 5:30-6:30 p.m., Demonstration Garden, Linn County Fair and Expo Center, across from Garfield Park (Corvallis).
- 29 Plant Clinic - Albany Farmers Market - 9 a.m. - 1 p.m., 4th & Ellsworth, Albany
- 10 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 14 Growing Together LCMGA classes in the Demo Garden - Harvesting & Storing, 5:30-6:30 p.m., Demonstration Garden, Linn County Fair and Expo Center, Safely Preserving Your Harvest (Growing Oregon Gardeners) - noon - 1 p.m. PDT online. RSVP: [beav.es/S6h](https://beav.es/S6h)
- 29 Plant Clinic - Sweet Home Farmers Market - 2-6 p.m., Sweet Home Library - 1101 13th Ave, Sweet Home
- 3 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 8 Savoring Summer:

- 3700 Knox Butte Rd, Albany
- 15 Plant Clinic - Sweet Home Farmers Market - 2-6 p.m., Sweet Home Library - 1101 13th Ave, Sweet Home
- 17 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 19 Plant Clinic - Albany Farmers Market - 9 a.m. - 1 p.m., 4th & Ellsworth, Albany
- 23 Plant Clinic - Corvallis Farmers Market - 9 a.m. - 1 p.m., NW 1st St & Jackson St, Corvallis
- 24 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.
- 26 Plant Clinic - Corvallis Farmers Market - 9 a.m. - 1 p.m., NW 1st St & Jackson St, Corvallis
- 26 Garden Q & A Organic Garden: The Many Ways to Compost, 10 a.m. to noon, Lebanon Senior Center, Lebanon
- 29 Plant Clinic - Sweet Home Farmers Market - 2-6 p.m., Sweet Home Library - 1101 13th Ave, Sweet Home
- 31 Plant Clinic - Brownsville Farmers Market - 3-6 p.m., Park Ave & N Main St, Brownsville.



# July-August 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 the predators and the parasitoids that feed on insect pests. 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.

## JULY

### Maintenance and clean up

- If you want a green lawn, water frequently during periods of heat and drought stress. Irrigate a quarter inch four to six times per week from June through August. Measure your water use by placing an empty tuna can where your irrigation water lands.
- Mound soil up around the base of your potato plants. Gather and eat a few “new” potatoes from each hill when plants begin to flower.
- To reduce evaporation, water vegetable and flower gardens in the early morning. Water the soil rather than leaves to reduce disease. Water deeply and infrequently to encourage root growth.
- Pay careful attention to watering and feeding hanging baskets of flowers or vegetable plantings during extended periods of hot weather.
- Weed and fertilize rhubarb and asparagus beds. A mulch of compost or rotted cow manure works well as fertilizer. Water deeply to develop crowns for next year.
- Mulch with paper, plastic, sawdust, etc. to conserve soil moisture.
- Stake tall-growing flowering plants such as delphinium, hollyhocks, and lupine. Stake tomatoes as necessary.
- Make compost of lawn clippings and garden plants that are ready to be recycled. Do not use clippings if lawn has been treated with herbicide, including “weed-and-feed” products. Do not compost diseased plants unless you are using the “hot compost” method (120 degrees to 150 degrees F).

### Planting and propagation

- Beets, bush beans, carrots, cauliflower, broccoli, lettuce, kale and peas planted in midsummer provide fall and winter crops. Get more tips on what to plant now in Fall and Winter Vegetable Gardening in the Pacific Northwest.
- Dig spring bulbs when tops have died down; divide and store or replant.

### Pest monitoring and management

Use chemical controls only when necessary and only after thoroughly reading the pesticide label. Consider cultural controls first, then physical and biological controls.

Choose the least-toxic options (insecticidal soaps, horticultural oils, botanical insecticides, and organic and synthetic pesticides), and use them judiciously.

- Control hollyhock rust by sanitation, picking affected leaves, or spraying with a registered fungicide. Read and follow label directions.
- Watch for cutworm damage in garden. In July, climbing cutworms become a problem and large portions of foliage will begin to disappear on established plants. Use barriers, remove by hand, use beneficial nematodes when soil temperature is above

55 degrees F, or spray with Bt-k according to label directions.

- Late July: Begin to monitor for early and late blight on tomatoes. Correct by pruning for air circulation, picking off affected leaves, and/or treat with approved fungicide. See this article for more information on common tomato problems.
- Place traps to catch adult apple maggot flies. You can use pheromone traps to monitor presence of pests.
- July 10: Spray filbert trees for filbertworm, as necessary.
- July 10-15: Spray peach and prune trees for peach tree borer and peach twig borer, as necessary.
- July 17-23: Third spray for codling moth in apple and pear trees, as necessary.
- Cover blueberry bushes with netting to keep birds from eating the entire crop.
- Monitor camellias, holly and maple trees for scale insects. Treat if necessary.
- Monitor rhododendrons for adult root weevils. Look for fresh evidence of feeding (notching). Try sticky trap products on plant trunks to trap adult weevils. Manage root weevils with beneficial nematodes (if soil temperature is above 55 degrees F). If root weevils are a consistent problem, consider removing plants and choosing resistant varieties.
- Spider mites can become a problem on ornamental plants, vegetables and fruit plants during hot, dry weather. Watch for dusty-looking foliage, loss of color and the presence of tiny mites. Wash infested areas with water or spray with appropriate pesticides. For more information visit the PNW Insect Management Handbook Landscape Pests - Spider Mites.
- Continue monitoring raspberry, blackberry, blueberry, cherry and other plants that produce soft fruits and berries for spotted wing drosophila. If the flies are present, use an integrated and least-toxic approach to manage the pests. Learn how to monitor for drosophila flies and larval infestations in fruit.
- Check leafy vegetables for caterpillars. Remove caterpillars as they appear. Use Bt-k, if necessary.
- Remove cankered limbs from fruit and nut trees for control of diseases such as apple anthracnose and bacterial canker of stone fruit. Sterilize tools before each new cut.

## AUGUST

### Planning

- The optimal time for establishing a new lawn is August through mid-September.
- Dampwood termites begin flying late this month. Make sure your home is free of wet wood or places where wood and soil are in contact.

### Maintenance and clean up

- Make compost out of lawn clippings and garden plants that are ready to be recycled. Don't use clippings if the lawn has been treated with herbicide, including “weed-and-feed” products. Don't compost diseased plants unless you are using the “hot compost” method (120 degrees to 150 degrees Fahrenheit).
- Fertilize cucumbers, summer squash and broccoli to maintain production while you continue harvesting.
- Clean and fertilize strawberry beds.
- Use mulch to protect ornamentals and garden plants from hot weather damage. If needed, provide

temporary shade, especially for recent plantings.

- Camellias need deep watering to develop flower buds for next spring.
- Prune raspberries, boysenberries and other caneberries after harvest. Check raspberries for holes made by crown borers, near the soil line, at the base of the plant. Remove infested wood before adults emerge (approximately mid-August).
- Monitor garden irrigation closely so crops and ornamentals don't dry out.
- If you want your lawn to stay green, you'll have to water frequently during periods of heat and drought stress. Irrigate 0.25 inches four to six times per week from June through August. Measure your water use by placing an empty tuna can where your irrigation water lands.
- Prune cherry trees before fall rains begin to allow callusing in dry weather. This will minimize the spread of bacterial canker.
- Prune out dead fruiting canes in trailing blackberries and train new primocanes prior to the end of the month.

### Planting/Propagation

- Plant winter cover crops in vacant space in the vegetable garden
- Plant winter kale, Brussels sprouts, turnips, parsnips, parsley and Chinese cabbage.
- Mid-summer planting of peas; use enation-virus-resistant varieties. Plant fall crops of cabbage, cauliflower and broccoli.
- Plant cauliflower, broccoli, Brussels sprouts, spinach, turnips and parsnips.

### Pest monitoring and management

- Remove cankered limbs from fruit and nut trees for control of diseases such as apple anthracnose and bacterial canker of stone fruit. Sterilize tools before each new cut.
- Check apple maggot traps; spray tree if needed.
- Control yellowjackets and wasps with traps and lures as necessary. Keep in mind they are beneficial insects and help control pest insects in the home garden.
- First week: If necessary, spray for walnut husk fly.
- First week: If necessary, second spray for peach tree borer and/or peach twig borer.
- First week: If necessary, second spray of filbert trees for filbertworm.
- Check for root weevils in ornamental shrubs and flowers; codling moth and spider mite in apple trees; scale insects in camellias, holly and maples. Treat as necessary.
- Watch for corn earworm on early corn. Treat as needed.
- For mite control on ornamentals and most vegetables, hose off foliage, spray with approved miticide if necessary.
- Check leafy vegetables for caterpillars. Pick off caterpillars as they appear. Use Bt-k, if necessary.
- Continue monitoring peaches, plums, prunes, figs, fall-bearing raspberries and strawberries, and other plants that produce soft fruits and berries for Spotted Wing Drosophila. If SWD are present, use an integrated and least toxic approach to manage the pests.
- Corn may need protection from earworm. Spray new silks with appropriate pesticides if necessary.
- Spray potatoes and tomatoes for early and late blight.

# Growing Annual Morning Glory

**Source: Brooke Edmunds,** Community Horticulture faculty

Annual morning glory (*Ipomoea* spp.) is a quick-growing flowering vine that thrives in warm sunny spots. Their large flowers open in the morning to the delight of the early bird gardener. But just mentioning the name “morning glory” can cause concern among some. If you’ve lived in warmer areas of the United States, you might know annual morning glory as a nuisance weed. And the hard-to-manage weeds called bindweed (*Convolvulus arvensis*) and hedge bindweed (*Calystegia sepium*) share the common name of “morning glory,” but are very different plants.

One of the most noticeable differences between bindweed and annual morning glory is their growth habits. Both are vines with trumpet-shaped flowers but behave very differently in the garden. Bindweeds are perennial and spread through underground roots (up to

9 feet deep!). It can grow in a variety of soil types and is often found in fields, gardens and along roadsides. Bindweed plants tend to grow along the ground or in low-lying plants like vegetables, grass, herbs, and shrubs. Bindweed can be incredibly difficult to manage.

## Annual morning glory and bindweed are very different plants.

Here in Oregon, annual morning glory plants won’t survive a frost, and vine growth is limited by the shorter growing season. Annual morning glory grows from seed and the plants may self-sow. This means that seeds produced by the previous year’s plant will sprout and regrow in the same place. The seeds can survive in the soil for several decades so may show up in the same area for years. Luckily, unwanted seedlings are easy to control by hand-pulling.

The leaves and flowers of the two plants are also different. Bindweed leaves



A vine of field bindweed with arrow-shaped leaves compared to the large heart shape leaves of Annual Morning Glory.

are arrow-shaped and smaller than the leaves of annual morning glory (see photo). Annual morning glory leaves are large and heart-shaped. Bindweed flowers are white or pink and about 1 inch across.

Annual morning glory flowers are larger (2-6 inches across depending on the cultivar). The flowers come in various colors,



Annual Morning Glory is a vining plant and requires a fence or trellis to grow on.

from blue to red and purple to pink and white. Annual morning glory blooms from early summer until the first frost.

## How to grow annual morning glory:

Choose a site that receives full sun and has well-drained soil. Annual morning glory also grows well in containers.

Make sure there is a trellis or fence for the plants to climb. Annual morning glory vines can grow up to 15 feet long depending on the cultivar.

Annual morning glory is a heat-loving plant, so wait until the soil warms up to at least 60 F. Then, plant the seeds directly in the soil about ¼” deep. Keep the soil moist.

Once past the seedling stage, the plants tolerate dry soil but appreciate irrigation during heat waves.

## Cultivars of annual morning glory to try:

- Heavenly Blue (4- to 5-inch blue flowers)
- Scarlett O’Hara (4-inch red flowers)
- Flying Saucers (5- to 6-inch variegated blue and white flowers)
- Grandpa Ott’s (2- to 3-inch deep purple flowers with a red center)
- Zeeland Hybrid (mix of pink, purple, white, and variegated flowers)

## Are you a houseplant enthusiast?

The internet is full of tips for houseplant care. But not all of them are based on science or proven to be safe and effective. So Master Gardeners Leo Sherry and Carrie Falotico researched these suggestions just for you! Whether you are new to houseplants or are familiar with growing them, we hope this list of research-based resources will support your success.

## Houseplants for everyone

- Which houseplants are right for me?
- How do I start houseplants from cuttings?
- How do I care for houseplants?
- How do I fix houseplant pests or diseases?
- What kind of houseplant is this?

We made a list of research-based resources to help you find answers!

Scan to view or visit: [beav.es/538](http://beav.es/538)



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# Linn Soil and Water Conservation District



Poison Hemlock



Tansy Ragwort

## Noxious Weed Board Reinstated

**By Kevin Seifert,**  
Linn SWCD

Linn County is reinstating a Noxious Weed Board, formerly known as Linn County Weed Control Committee. The group has been inactive since 1997.

On Tuesday, June 6, Linn County commissioners approved expanding the Noxious Weed Control Advisory Committee to nine members from its previous membership of seven.

The group has been inactive for decades but was reinstated in April by Linn County commissioners after hearing landowners' concerns over the invasive plant Tansy Ragwort (*Jacobaea vulgaris*). Tansy is toxic to livestock and there were efforts to control it through releases of predatory caterpillars in the

80's. The yellow flowering plant can have a detrimental effect on pastures, making them unfit for livestock. Young plants appear as basal rosettes with ruffled leaves. Mature plants can be 2-4 feet tall. June through October it blooms with a daisy like flower with 13 yellow ray petals and yellow-orange centers appear.

Poison Hemlock is also becoming prevalent in the Valley, (*Conium maculatum*) is a biennial weed from the carrot family. Eating even a small amount can kill people, livestock, and wildlife. Poison Hemlock stems are hollow and have purple spots and streaks. Leaves are bright green and fernlike and have a strong musty odor when crushed. Flowers are tiny, white, and arranged in small, umbrella-shaped clusters on the ends

of branched stems.

Many noxious weeds follow a "boom and bust" cycle. Right now, Tansy and Poison Hemlock are especially prevalent. Poison Hemlock can be seen throughout the Valley and along many riparian habitats that are critical for wildlife in dry conditions. It's common when a long-wet spring is followed by really warm weather. The current weather cycle has made perfect growing conditions for a multitude of noxious weeds.

According to the proposal to reinstate the committee, noxious weeds were creeping up in pastures, logged-over lands, rights-of-way, and by streams and rivers. Because Linn County is an agricultural-centric community, disturbances in the ground can often

welcome invasive species. Land management choices can make opportunities great or less prevalent for some weed species. Tillage timed wrong or over grazing can make it hard for beneficial species to out-compete noxious weeds.

Some weeds can be toxic to animals, or cause skin irritations. Others can contaminate crops or block irrigation systems. Noxious weeds in all types of production can lead to great economic loss and it is every landowner's responsibility to try and keep them at bay with cultural practices that fit each type of management style.

The Weed Board will not only take input on where the largest problem areas are, but also be a vessel for procuring funding to help with control or eradication

of some of the problem areas.

Looking for outbreaks and getting them into the reporting system Weedmappers will help the Oregon Department of Agriculture better treat Class A noxious weeds.

We are seeing Eastern Oregon weeds brought over in forage for animals. Weeds such as Puncture Vine and Yellow Starthistle are of great concern and will be very prolific on the West side of the Cascades if left unchecked. Making sure your feed is as weed free as possible, and then controlling outbreaks when you see them goes a long way to keeping these problematic plants under control or eradicated.





## Irrigation: When and How Much Should I Irrigate My Small Farm?

**By Evie Smith, OSU Extension Service Small Farms & Master Gardeners Coordinator, Lincoln County**

Once you've chosen and installed your irrigation system, you face a new set of questions around how to use your system. There are several schools of thought about how to best make decisions about your irrigation management. Which one you choose will depend on how much time and other resources you are able to invest in irrigation scheduling and what you want to accomplish with your irrigation program. Broadly, irrigation scheduling can be based on soil conditions (scheduling based on soil moisture), weather conditions (scheduling based on evapotranspiration), or plant conditions (scheduling based on plant water status). In general, each of these practices requires understanding a plant's specific water needs throughout the season and using monitoring data to determine when to irrigate in order to meet those water needs. Irrigation Management Basics from OSU Extension <https://beav.es/T3F> describes the general process and considerations for irrigation scheduling using weather-based irrigation scheduling as an example.

### Soil-Based Irrigation Scheduling

Factors such as soil texture/type and soil water

holding capacity can impact a plant's ability to take up water from the soil. Granular Matrix Sensors (trade name: Watermark sensors) and tensiometers are two common and relatively easy to use tools that provide real-time information about how much water a plant is able to take up from the soil, and therefore when it is time to irrigate. Both types of sensors are inserted into the soil and remain in the same place to collect data throughout the growing season. The links provided above include more information about irrigation scheduling (including data about plant water needs) based on each of these technologies as does the OSU publication Irrigation Monitoring Using Soil Water Tension <https://catalog.extension.oregonstate.edu/em8900>.

### Weather-Based Irrigation Scheduling

Although soil water status is an important indicator of irrigation needs, this measurement alone does not provide complete information about plant irrigation requirements; atmospheric factors also play a large role in the level of plant water use and can provide indications regarding plant irrigation needs. Farmers can calculate crop evapotranspiration (ETc) (the amount of water that a plant loses to the atmosphere), and use that value to estimate



the amount of water that needs to be supplied to meet a plant's water needs. Evapotranspiration-based irrigation scheduling or water-balance method from the University of Minnesota Extension <https://extension.umn.edu/irrigation/evapotranspiration-based-irrigation-scheduling-or-water-balance-method> provides a step-by-step process for and examples of calculating plant irrigation needs based on ETc. If you would like to try your hand at using ETc calculations for scheduling irrigation on your farm, you may find the following resources helpful: Weather Station Data

including ET data (Western Regional Climate Center) You will need to choose the weather station that is closest to your location or in a location with similar climatic conditions to your farm: <https://wrcc.dri.edu/Climsum.html>

Crop Coefficients (Kc) for many crops commonly grown in the Pacific Northwest. [http://irrigation.wsu.edu/Content/ET\\_IWR\\_For\\_WA.php](http://irrigation.wsu.edu/Content/ET_IWR_For_WA.php)

### Plant-Based Irrigation Scheduling

Plant water status measurements are the most sensitive type of water monitoring measurements.

Stem Water Potential (SWP) measurements are the form of plant-based water data measurements that have the most scientific evidence for accuracy. Farmers can collect this data on their farms using a pressure chamber. OSU Extension Service's videos on Scheduling Irrigation with a Pressure Chamber (Part 1 <https://extension.oregonstate.edu/video/scheduling-irrigation-pressure-chamber-part-1> & Part 2 <https://extension.oregonstate.edu/video/scheduling-irrigation-pressure-chamber-part-2>) go into detail about how to collect plant water status data using this tool. Unfortunately, collecting SWP measurements can be time- and cost-prohibitive for small farmers. Some automated plant water status measurement tools are on the market and others are being developed, though there are varying degrees of data to support their accuracy for irrigation scheduling purposes.

For farmers who have access to it, irrigation can be a helpful tool in a farmer's drought management toolbox. There is no one right way to set up or manage an irrigation system- the 'best' strategy is as diverse as the type of small farms. The resources in this article provide farmers a foundation of information about science-based irrigation management practices.



# My time with OSU Extension Small Farms Program

By Crystal Kelso

My journey with OSU Extension started as an Internship with Teagan Moran in the Small Farms Program for the summer, and then evolved into a Student Worker position for the remainder of my time at OSU while I finished my BS in Horticulture: Horticulture Therapy. During this time, I have had the opportunity to make life long connections to farmers, herbalists, and Veteran farmers through collaborations within the OSU Extension farming networks. Some of these collaborations include farm tours, Coffee & Chats, Medicinal Herbal Salve Making workshops, working with partnering organizations, and hosting a monthly Medicinal



Herb group. The biggest take away from this experience is the abundance of growth in myself. Professionally, I've gained skills in public speaking, resource development, and leadership. Personally, I've learned to have confidence in my abilities, and have made so many new connections across a variety of fields that have opened my path to align with my long term goals once I graduate, and even given me an advantage in my immediate career opportunities. The Internship and Student Worker position has been such an important step for my future, and I highly recommend that anyone interested in developing those same skills and opportunities to put themselves out there and go for it!

## OSU Extension Small Farms Program Southern Willamette Valley Farm Tours

These are opportunities to hear directly from the farmers and to network.

To register visit Small Farms Program Events: <https://smallfarms.oregonstate.edu/smallfarms/upcoming-events>

### July 2023

#### Commonplace Farm (Corvallis OR)

Date: Sunday, July 16, 1 p.m.

Tour Theme: Wholesale salad greens and microgreens

<https://www.commonplacefarm.com/>

You can learn more about them by listening to their For the Love of Farming Podcast episode here: <https://beav.es/TUU>

### August 2023

#### Four Wands Farm (near Philomath OR)

Date: Thursday August 17, 5:30-7:30 p.m.

Tour theme: Homestead, diversity & sustainability. Dairy goats, meat rabbits, herbs, veggies, eggs, greenhouses

You can learn more about the farmer Katy Stokes by listening to her For the Love of Farming Podcast episode here: <https://beav.es/TUw>

### September 2023

For Military Veterans in Farming:  
Uncle Wayne's Tomatoes, Inc. (Eagle Creek, OR)

Date: Saturday, September 9, 9:30-11:30 a.m.

Tour theme: Tomatoes! Varieties, transplanting,

growing in a field, marketing. <https://www.facebook.com/people/Uncle-Waynes-Tomatoes/100064840473931/>

County Line Flowers (Harrisburg, OR)  
Date: Wednesday, September 20, 10 a.m. - Noon

Tour theme: Flowers! Establishing perennial borders for cutting flowers, dealing with poor drainage, weed management, efficiency, trying no-till this year

<https://www.countyline-flowers.com/>

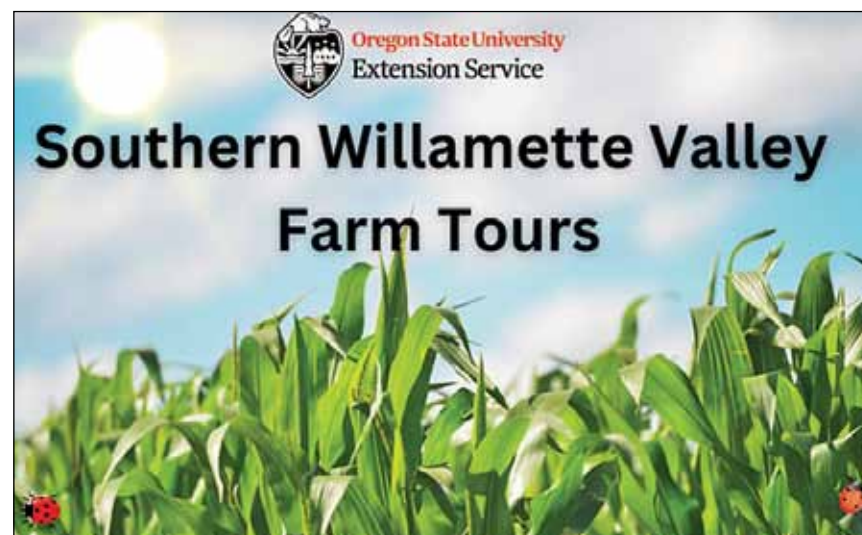
### October 2023

#### Goodfoot Farm (Philomath OR)

Date: Sunday, October 1, 2-5 p.m.

Tour theme: Diversified market farm. Featuring labor, reduced tillage, sliding scale economies & more! <https://www.goodfootfarm.com/>

A For the Love of Farming Podcast Episode featuring Beth from Goodfoot Farm coming soon! You can find it at: <https://beav.es/TUi>



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## South Valley Field Crop Notes for July-August

### General Management

- Use harvest season to scout for vole activity and take advantage of baiting opportunities over the summer.
- Make sure seed moisture is acceptable for storage: below 12 percent for grass seed, and below 14 percent for grain.
- Continue to scout spring wheat and spring-planted grasses for cereal leaf beetle.
- Test your soil after harvest to begin your plans for fall nutrient/lime applications. Use a lime requirement test to determine how much lime is needed. Lime rate recommendations are now available for the Sikora Buffer test and SMP buffer test at: <https://beav.es/3rB>

### Grass

- Scout for moths (sod webworm, cutworm, armyworm) during and after harvest and determine if you should plan for control of eggs and small caterpillars on fall regrowth or new seedlings.
- Decide your best option for post-harvest residue management. Both full straw load and baling have pros and cons and can result in successful grass seed yields. Take into account nutrient removal, fuel cost, and price for bales. See recent OSU grass seed production residue management guide: <https://beav.es/ZYn>
- Be sure to submit modified land history applications before working any ground.

### Wheat

- Avoid sprout damage in wheat by not delaying harvest. Art Deco and Biancor are the earliest maturing, followed by Goetze.
- Reduce problems with temperature, airflow, and moisture by storing grain levelled rather than in peaked piles.

### Mint

- Nitrogen applications should taper off in early July to reduce potential leaching losses.
- Scout fields for caterpillars and flea beetles.
- Contact Christy Tanner if interested in Coragen or Vantacor for control of mint root borer and cutworms. Most effective application timing is expected to be ~July 7.



## Agriculture Can Be Stressful, But You Are Not Alone

Agriculture is an occupation full of potential stressors like weather, changing economic markets, animal health and machinery breakdowns. When these start to compound, many farmers experience excessive amounts of stress, making it hard to remain positive and move forward through the

hard times.

Due in part to the stresses that are faced, agricultural workers have high rates of suicide. If you or someone you know is experiencing excessive stress or thoughts of suicide, please reach out to a confidential crisis support line. You may visit OSU Farm and Stress Assistance Network

<https://extension.oregonstate.edu/farm-ranch-stress-assistance-network> for more information, including a list of county-specific resources.

If you are in need of immediate assistance, reach out to the Suicide and Crisis Lifeline at 988 or 1-800-273-8255.

## Field Crops intern excited to learn more about the science of Ag

Hi! I am Sprout Mahoney, an OSU student majoring in Crop and Soil Science. I have worked in different aspects of Oregon's agriculture for more than ten years and decided to return to school to better understand the science of agriculture. I am excited to work further with local farmers during my internship with Christy Tanner at the OSU Linn County Extension Service Field Crops program. Agriculture always faces issues, and I am interested in hearing what struggles people are having and



helping to bring about solutions. Two specific areas I am looking forward to learning more about are

pest management and GIS applications in agriculture. And I always want to know more about our soils!





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# Commercial Agriculture Tree and Small Fruit

## Plant Tissue Testing for Orchard and Berry Crops

By Erica Chernoh

Plant tissue analyses can be used to assess the nutrient status of horticultural crops and is an important component of a nutrient management program. Soil sampling is important for determining the soil pH and identifying which plant essential nutrients are available in adequate or deficient levels. A plant tissue analysis will provide information on the elemental composition of the plant or plant parts sampled (e.g. leaves or petioles), or in other words, how much of the essential nutrients the tree has taken up from the soil. Plant tissue analysis is typically used to diagnose nutrient deficiencies and monitor the effectiveness of fertilizer practices. A plant tissue analysis is not a substitute for soil testing and is most effective when used in combination with a regular soil sampling program.

Tissue tests for most horticultural crops are done in mid-summer because that is when nutrients are most concentrated in the leaves. For blueberries, tissue samples should be taken between late-July and early-August. Take samples from the most recent fully expanded leaves

from below the fruiting zone, and sample different cultivars separately. For raspberries and floricane-fruiting blackberries, test primocane leaves in late July to early August, and during the green fruit stage for primocane-fruiting blackberries. As with blueberries, collect samples of the most recent fully expanded leaves, and test cultivars separately. For strawberries, take samples of the most recent fully expanded leaves. Sample from mid to late-August for June-bearing cultivars, and between June and early October for day-neutral cultivars. Take enough leaf samples to be representative of the area you are testing, and sample cultivars separately.

For hazelnuts, leaf sampling should be done in August, the time of year the nutrients are most concentrated in the leaves. To sample, collect leaves from the mid-shoot of this year's growth. Take at least 50 leaves from across the field in order to obtain a representative sample, collecting five leaves from 10 trees. If the leaves are dirty, wash them in cold water with a drop or two of detergent, and spread them out to dry on a screen or dry surface for a few hours.



Sampling recent fully expanded leaves in strawberry plant.

For tree fruit crops, such as apple, pear, and cherry, sampling is done in July and August. Take samples from the mid-canopy of recently mature leaves from the middle of non-bearing shoots or non-bearing spurs. Be sure to take multiple samples from across the orchard so that there are enough samples to be representative of the area you want to test (in general, about 50 leaves from a 10-acre block). Do not mix samples from different species or cultivars.

It is important that the

samples be delivered to the lab quickly. If you live within driving distance of a lab, it may be easier to deliver them yourself. If you need to mail the samples, it is better to mail them early in the week (Monday through Wednesday) so that they are delivered to the lab by Friday. If they arrive over the weekend, they may sit in transit or in a mailbox over the weekend causing the samples to mold or decay. Always contact the lab or visit their website prior to collecting the sample to review fees, specific

instructions, and download forms. Make sure you fill out the forms correctly and label the bags you send the sample in with your name, date, crop, field name/number, and sample number (if applicable). Include the information form in a separate sealed bag.

For more information on soil and leaf tissue sampling and interpreting your test results, refer to the following OSU Extension publications, *Growing Hazelnuts in the Pacific Northwest: Orchard Nutrition (EM 9080)*, *Nutrient Management for Blueberries in Oregon (EM 8918)*, and *Strawberry Nutrient Management Guide for Oregon and Washington (EM 9234)*. For information on tissue testing of tree fruit crops, refer to the WSU Tree Fruit webpage on leaf tissue analysis (<https://treefruit.wsu.edu/orchard-management/soils-nutrition/leaf-tissue-analysis/>). A list of laboratories that offer leaf tissue testing services in Oregon can be found in EM 8677 Analytical Laboratories Serving Oregon. OSU Extension publications can be read or downloaded for free from the OSU Extension Catalog: <https://catalog.extension.oregonstate.edu/>.



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## Neighborhood Leaders Gather to Prepare for Wildfire Season

**By Kayla Bordelon,**  
Regional Fire Specialist

On May 20, the OSU Extension Fire Program and community partners hosted the

Benton County Fire Resilient Neighborhood Leaders Workshop at the Wren Community Hall, attended by more than 40 invited neighborhood and community leaders from across Benton County. The goal of the event was to bring community leaders together with local fire experts to develop the knowledge, skills, confidence, and community network that residents need to make decisions about reducing wildfire risk to homes and neighborhoods.

The workshop was led by me, Kayla Bordelon (Regional Fire Specialist) and Carrie Berger (Fire Program Manager) and featured four topics:

- Fire Ecology/Risk, instructed by Leo Williamson (Protection Unit Forester, Oregon Department of Forestry Philomath Unit) and Daniel Leavell (Associate Professor of Practice; Fire Specialist, Forestry and Natural Resources Extension, Fire Program at Oregon State



Benton County Emergency Manager Bryan Lee announces new funding to support wildfire resilience in Benton County.



Oregon Department of Forestry Community Wildfire Foresters discuss best practices for creating defensible space around homes with workshop participants.

- Home Hardening (Home Fire Risk Assessment – Access and Structure), instructed by Rich Saalsaa (Deputy Fire Chief, Philomath Fire & Rescue) and supported by Stephanie Stafford
- Defensible Space (Home Fire Risk Assessment

- Defensive Space, Topography, Utilities, and Fire Protection), instructed by Jake Ruhl (Community Wildfire Forester, Oregon Department of Forestry Philomath Unit) and Trask Hodgson (Community Wildlife Forester, Oregon Department of Forestry Toledo Unit).
- Firewise Landscaping (fire resistant planting), instructed by Paula Lupcho (Benton County Master Gardeners Association)

Participants included Firewise Community leaders, Community Emergency Management Team (CERT) volunteers, and other neighborhood representatives. Workshop participants reported afterwards that they appreciated the in-depth sessions conducted in small groups, where they had the opportunity to ask questions directly to the experts and engage in dialogue. As one attendee reported, “the largest benefit for me was introduction to key personnel. Many questions arose during workshop, but now know who to ask to get answers.” Other participants

appreciated the hands-on demonstrations and outdoor learning opportunities. Overall, workshop attendees reported knowledge gains in all four content areas, and most reported that they planned to put their new knowledge into action by improving their own preparedness for fire. Improvements that participants expect to make prior to fire season include removing vegetation from around their homes, adding non-combustible materials like rock or pavers within 5’ of structures, cleaning debris from their roofs and gutters, screening their vents with fine metal screening to reduce the chance that flying embers can enter their home, and sharing all of this information with their neighbors.

Twelve local experts participated from OSU Extension, Oregon Department of Forestry, Office of the State Fire Marshal, Benton County Emergency Management, Philomath Fire and Rescue, Corvallis Fire and Rescue, and Benton County Master Gardeners Association. All partners said that the workshop was a valuable use of their time and





Workshop participants identify fire resistant plants in an interactive activity hosted by Master Gardener, Paula Lupcho.

helped to strengthen their relationships with other entities in the wildfire resilience community in Benton County. Partner agencies also learned a lot from conversations with attendees, including new ways that we can lend a hand to support neighborhood leaders in preparing their communities for fire season.

If you want to learn more about preparing your home and neighborhood for wildfire season, check out the line-up of webinars that the OSU Extension Fire Program offers on our website (<https://extension.oregonstate.edu/fire-program/online-webinar-guide>). For Benton County folks, I'd recommend you start with this local webinar featuring many of the experts who instructed at the workshop: [https://www.youtube.com/watch?v=boIGNbJ\\_Ocg](https://www.youtube.com/watch?v=boIGNbJ_Ocg).



Neighborhood leaders practice assessing a structure for fire risk, guided by Rich Saalsaa, Deputy Fire Chief of Philomath Fire and Rescue.



caption

## Volunteers Vital to Gardeners, Woodlands and Food Preserver Education Programs

*Continued from Page 1*

“They are the backbone of the Master Gardener program,” said Brooke Edmunds, Extension horticulture faculty for Linn, Benton, Marion and Polk counties. “We train Master Gardeners volunteers to be community educators on sustainable gardening topics, and then we work with our partner associations in each county to do the volunteering.”

Master Woodland Manager program volunteers help coordinate tours of small woodlands, conduct on-site visits when requested, take leadership roles in groups like the Oregon Small Woodlands Association, Soil and Water Conservation District boards, and the Oregon Department of Forestry committees. They also help with fundraisers, such as the Linn County Small Woodlands Association’s annual seedling sale.

Volunteers for the Master Gardener programs staff tables and answer questions at farmers’ markets, Saturday markets, and community fairs. They occasionally will show up at garden centers in the spring to help with gardening questions. Each county Master Gardener program develops and sustains a demonstration garden, where they put their skills on display for the general public. And, depending on the county, volunteers help with plant sales or other events designed to raise funds for the programs.

Master Food Preserver program volunteers distribute recipes and safety information for canning, provide demonstrations and answer any questions the public might have while staffing tables at events, Gilbert said.

And volunteers will staff ‘help desks’ at County Extension offices and help conduct classroom training once a year for new volunteers.

“They help at events and classes that I couldn’t do by myself,” Gilbert said. “So, they’re integral to the operation of the Master Food Preserver program.”

To volunteer for the Linn or Benton County Master Food Preserver program, interested parties are asked to call their respective Extension office or contact Gilbert at [Jennifer.Gilbert@oregonstate.edu](mailto:Jennifer.Gilbert@oregonstate.edu).

To volunteer for the Linn Master Gardener program, interested parties are asked to call Laurie Gibson in the Extension Office, 541-967-3871. To volunteer for the Benton County Master Gardener program, call the Extension Office at 541-713-5000.

To volunteer for the Linn or Benton County Master Woodland Manager programs, call the Oregon Small Woodlands Association headquarters at 503-588-1813.

Gilbert noted that Linn and Benton County Master Food Preserver programs will be holding classes sometime this fall, probably in October, to train new Master Food Preserver volunteers.



# Linn County 4-H Youth Development

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## Educational Workshop Weekend at Linn County Fairgrounds



Participants at the Linn County Youth Livestock Education workshop weekend.

In May the Linn County Youth Livestock Auction committee, along with Wilco and Purina hosted an Educational Workshop weekend. All Linn County 4-H and FFA members were invited to attend the workshop held at the Linn County Fairgrounds. Presenters shared about important nutrition for each species of animal, the importance of biosecurity, and then everyone received hands on practice showing their animals. Participants walked away with more knowledge about their project, information on how to write buyer letters, and a lot more confidence with their project.



Youth hone their skills working their beef cattle in the show ring during the LCYLA Education workshop weekend.



Participants receive instruction on showing their poultry.

## Linn County Fair July 11-15

Our members have been working hard getting ready for fair. It takes months of work at home before bringing projects to fair. For the livestock kids there are lots of hours spent in the barn feeding, bonding,

grooming, and working with their animals.

The members that exhibit in the static area put in lots of time too, taking a hundred pictures to find the best one, painting and repainting the perfect

picture, lots of field trips for the forestry, entomology, and geology members. These members have also been taking opportunities to attend workshops offered at the Extension office to increase their skills!

### Fair show schedule

#### July 11

9 a.m. Poultry Show  
2 p.m. Meat Goat Market and Breeding Show  
5 p.m. Swine Breeding Show  
5 p.m. Beef Market Show

#### July 12

9 a.m. Rabbit/Cavy show  
9 a.m. Swine Market Show  
9 a.m. Dairy Goat Showmanship  
1 p.m. Sheep Market Show  
4 p.m. Meat Goat Showmanship  
4 p.m. Beef Showmanship

#### July 13

9 a.m. Swine Showmanship  
9 a.m. Dairy Goat Breeding Show  
2 p.m. Sheep Showmanship  
3 p.m. Small Animal Costume Contest  
4 p.m. Dairy Cattle Show

4 p.m. Beef Breeding Show  
5 p.m. Cloverbud Small Animal Show and Tell  
7 p.m. Awards for Static Exhibits

#### July 14

9 a.m. Open Class Beef Show  
9 a.m. Open class Sheep Show  
10 a.m. Small Animal Master Showmanship Contest  
3 p.m. FFA Livestock Master Showmanship Contest  
5 p.m. 4-H Livestock Master Showmanship Contest  
6:30 p.m. FFA Livestock Awards Ceremony

#### July 15

8:30 a.m. 4-H Small Animal and Livestock Awards Ceremony  
12 p.m. Linn County Youth Livestock Auction

## 2023 Linn County Youth Livestock Auction

The Linn County Youth Livestock Auction will be held Saturday, July 15th beginning at noon. We will begin registering buyers at 10 a.m. with lunch being served at 11 a.m. The sale order will be chickens, turkeys, rabbits, beef cattle, lambs, pigs, and meat goats. We have multiple processors confirmed for all the animals. If you can't make it to the auction, please check out the website to see other ways to support the youth or to find out more information. [www.LCYLA.com](http://www.LCYLA.com)

## Tractor Safety Classes a Success

By the end of the youth tractor safety classes this spring, more than 180 youth, ages 14-17, were certified to operate machinery on farms. This program would not be successful without the help of local businesses and farms willing to host the classes. This year Knife River Training Center, Boshart Trucking, and Victor Point Farms have graciously hosted the classes at their facilities. Also, a huge thank you to Pape Machinery and Linn Benton Tractor for supplying equipment.



Cassi Hyde helping a student learn how to operate a tractor during one of the classes offered this year.



PHOTOS PROVIDED BY LINN COUNTY EXTENSION



A 4-H member warming up with her horse during pre-fair.

## 2023 Linn County Horse pre-fair

Over Memorial Day weekend more than 20 horse members gathered at the fairgrounds to practice skills they have been learning and to learn some new things. Pre-fair is a practice fair that allows the members to demonstrate their skills in front of a judge and gain new knowledge.

Members participate in showmanship, trail, equitation, and gaming. This was also a great weekend for the members to come together and make new friends. The horse members also hosted an Open Play Day as one of their two fundraisers of the year.



Members in the ring during a class at horse pre-fair.



Jazzy Dobbs, 9, and Avanlee Oberson, 10, get ready to go in the ring during horse pre-fair.



Paisley Benson, 10, on her horse ready to go in the ring during horse pre-fair.



Kelsie New, 13, with her horse during pre-fair.

## Embryology in the Classroom Wraps Up the 2022-2023 School Year

Linn County 4-H's Embryology in the Classroom wrapped up the 2022-2023 school year with 3 successful hatches in three schools across Linn County in June. The project directly reached 600-plus students across Linn County, in districts including Greater Albany Public Schools, Lebanon Community School District, and Sweet Home School District.

Now, the embryology program is being facilitated in the OSU Extension Linn County office! Watch our social media channels to see chicks hatch July 5-7, and be sure to stop by and visit them during the fair in the small animal barn. The OSU Extension staff is so excited to watch this program happen in their office this summer.



PHOTO COURTESY OF STEPHANIE ZAHLMANN

Chicks in the brooder after hatching in June, 2023.



PHOTO BY ABBY JOHNSON

The eggs are in the incubator at the Linn County Extension Office!



PHOTO COURTESY OF KELSEY GOULINS

Chicks starting to peep through in June, 2023.

## Check out the Flowers

Our 4-H members learned how to arrange flowers during our May workshop. Special thanks to our office manager, Michele Webster, for teaching this workshop!



Trinity Cordoza, 13, displays her bouquet at the flower arranging workshop.





# Benton County 4-H Youth Development

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## Animal Science Clinics

The Benton County 4-H program hosted a Beef Project Clinic on Saturday, May 20, and a Sheep Clinic on Sunday, June 11. 18 beef project members and 35 sheep project members and their families learned about nutrition & feed, fitting, bio-security, and then were able to learn about and practice their showmanship skills.



4-H Members practiced showmanship with their lambs and learned how to fit their steers.

## Lee Allen Memorial Youth Livestock Auction

*The Lee Allen Memorial Youth Livestock Auction will be held on Saturday, August 5th, 6 p.m. at the Benton County Fairgrounds*

The 4-H Lee Allen Memorial Youth Livestock Auction, sponsored by Corvallis Lions Club, is the culmination of a year of hard work by 4-H youth with their market project animals. When you purchase an animal at the Lee Allen Memorial Youth Auction, you are buying prize winning livestock raised by a 4-H member. Your purchase helps support individual 4-H members, it also brings you the highest quality of beef, pork, lamb, poultry and rabbits for your dining pleasure. The young people in Benton County 4-H are learning to produce the highest quality food for your table.



A youth takes her goat through the auction ring. Whether you are an individual/family, business, or local buyer your support is needed to assist Benton County 4-H youth. For more information please visit: <https://www.bentoncountylivestockauction.com/>

Being responsible, engaging in financial obligations and learning how to manage their own business operations only scratch the surface of the educational benefits. On a small scale, however, their costs are higher than commercial producers.

Whether you are an individual/family, business, or local buyer your support is needed to assist Benton County 4-H youth. For more information please visit: <https://www.bentoncountylivestockauction.com/>

## 2023 Benton County 4-H Horse Fair

Come watch our Benton County 4-H horse members compete at fair. It runs Thursday, July 13-Sunday, July 16 at the Benton County Fairgrounds beginning at 9:30 a.m. daily. This is a great place to see 4-H

members participate in cow roping, trail, western and English equitation, dressage, horse psychology, gymkhana, marketing, and other classes. There will also be an Equine Art exhibit, where you can see

photography, art, poetry, and educational posters created by 4-H members. There's no admission charge for this event. These members have worked hard all year and love to have spectators attend!



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## Volunteers needed at Fair in the 4-H Exhibit Building

Want to earn a one-day admission pass to the Benton County Fair? Just volunteer 2 hours of your time during August 3-5, in the 4-H Exhibit

building helping to monitor the 4-H Family and Consumer Sciences, Arts and Sciences Exhibits, and answer questions from the public. We are looking

for 2-3 people per shift beginning at 11 a.m. until 10 p.m. Please contact the Extension office to find out more and sign up! 541-713-5000.

## 2023 Benton County Fair & Rodeo - "Rocking Roping and Riding"

**Wednesday, August 2 - Saturday, August 5**

**Benton County Fair Hours:**

- Wednesday & Thursday - 11 a.m. - 11 p.m.
- Friday & Saturday - 11 a.m. - midnight

**Gate Admission:**

- Adults (17-59) \$10 per day or \$20 Season Pass
- Seniors (60+) \$5 per day or \$12 Senior Season Pass
- Youth (6-16) \$5 per day or \$12 Youth Season Pass
- Kids 5 and under FREE all day, every day
- Parking: \$5 daily at the gate or \$15 Season Pass
- Carnival Unlimited Rides for one day only: \$40 at the Fair Carnival Ticket Booths (\$30 Advance) For advance discounts go to: <https://www.bentoncountyfair.net/>

**Discount Days and Special Events:**

- Wednesday: Family Fun Day! Gate Admission is FREE to kids 16 and under all day

- Thursday: Senior Day! Gate admission is FREE to 60+ all day
- Military Appreciation Every Day at the Fair! Gate admission is FREE to all active, reserve, and retired military and National Guard when you show valid military ID at the gate during ticket purchase.
- \* All concerts and rodeos included with your fair admission

**Entertainment:**

- Radical Revolution, Wednesday, August 2, 7 p.m.
- Remedy, Thursday, August 3, 7 p.m.
- Chayce Beckham, Thursday, August 4, 8:30 p.m.
- Kurt Van Meter, Friday, August 4, 6:30 p.m.
- LANCO, Friday, August 4, 8:00 p.m.
- Back in Black, ACDC tribute, Saturday, August 5, 7 p.m.
- Mr. Speed, Kiss Tribute, Saturday, August 5, 8:30 p.m.

**Rodeo:**

- All Girls Rodeo, Wednesday, 7 p.m.
- NPRA Rodeo, Thursday & Friday, 7 p.m.

4-H Animals: Cattle, swine, goats, sheep, poultry, rabbits, and so much more! Be sure to visit the livestock sheds and small animal building to view these animals and find out about 4-H.

Lee Allen Memorial Youth Market Auction 6 p.m. Saturday, Aug 5

4-H Exhibits: During fair the 4-H building houses all of the non-livestock related 4-H exhibits including food, families, health, and more. Be sure not to miss it!

Willamette Valley Fiddle Contest - Friday, August 4 - come see Local, State and National fiddlers compete on the Oak Grove Stage.

These are just some of the highlights! For more information about the fun to be had at the 2023 Benton County Fair & Rodeo, visit fair and rodeo's website at: <http://www.bentoncountyfair.net/>

## Congratulations Benton County 4-H Graduating Seniors!

Benton County 4-H has 25 members graduating high school this year! These youth have worked extremely hard in both their academic and 4-H careers, and we are proud of them!

Kaitlyn Barnum, Hannah Beck, Brody Bushnell,

Addison Cleveland, Kolby Cook, Dylan Creager, Shelzza Deaton, Mya Flannery, Macy Freeman, Reagan Gurney, McKenzie Hauck, Emma Hood, Emily Hull, Adria Kaumanns, Abby Loyd, Kaitlin Mattson, Ty May, Aminah Moussaoui, Trinity

Reistad, Abbygail Robeson, Carter Romer, Mikayla Smith, Brayden Thibert, Evelyn Vega, and Dellaney Vroman.

Congratulations, graduates! We wish you all the best as you move forward into the next chapter of your lives.

## Applying Animal Biosecurity

During this time when several animal diseases and viruses have made headlines, it is critical to learn and practice biosecurity measures. Some practices are specific to a species, but the following are general for all species.

- Quarantine animals (new or returning) from any travel and events. As some diseases and viruses have longer incubation periods, two weeks to a month are standard quarantine times.
- If animals show signs of sickness, move them to a restricted zone away from other animals. Care for them last during chores and change clothes and boots between healthy and sick animals.
- Keep facilities clean. This doesn't just apply to cages and pens, but also to equipment and vehicles. Tires on vehicles should be cleaned and disinfected if you have traveled to other farms, shows, or places where animals are kept.
- Reduce and control migratory birds and rodents entering domestic animal zones as they can carry and spread diseases.
- Be vigilant with your animals. Understand what signs of disease look like for your species and watch for any changes in behavior, looks, and any sudden deaths. Contact your local veterinarian, Extension office, or USDA veterinarian hotline (1-866-536-7593). For any reports with wild birds, contact the Oregon Department of Fish and Wildlife (1-866-968-2600).

Not only do these practices protect the animals we care for, but they can also prevent the spread of a wide range of illnesses to other animals and humans. As some diseases and viruses are transferable to humans, it isn't just your animals that will benefit from high biosecurity standards.

## Get Outdoors Day 2023

Families enjoyed a day filled with fun and adventure at this year's Get Outdoors Day event held on Saturday, June 3. It was a beautiful day to be outside and learn about outdoor recreation at Peavy Arboretum. There were more than 250 participants who learned about streams, local wildlife and plants, and how to pack for a hike. Local partners included OSU Extension Benton County, Benton County Health Department, OSU Research Forests, Oregon Fish & Wildlife, and Corvallis and Albany Schools hosted the event, creating a welcoming and educational event for everyone, especially first time forest visitors.

## 4-H Award Winning Beekeeping Essay

*Benton County 4-H member, Elise Reese competed with 4-H members from around the state and was selected as the 2023 State 4-H Oregon Beekeeping Essay Contest award winner! Her essay now is in competition with other 4-H members across the country. Check out her award winning essay.*

*Continued on Page 20*



Elise working with her bee hive.

### “The Importance of Beeswax”

By Elise Reese

Since honey bees first evolved from wasps, they have been producing beeswax for a variety of purposes within their hives. These purposes include support for the colony’s health and wellbeing such as a foundation for nurseries, food storage, and a communication tool. Beeswax is also an important product outside of the hive. Product uses include candle making, health and beauty products, furniture polish and waterproofing. This essay will highlight and discuss the importance of beeswax both inside and outside of the hive.

Before beeswax is thought of as a product, how beeswax is produced is important to mention. In the hive, a colony of honey bees are hard at work performing a variety of tasks. The younger female worker bees are responsible for the production of beeswax. These bees are typically 12 to 18 days old. “The beeswax is produced in four pairs of specialized wax glands on the underside of the worker’s abdomen” (Caron, 51-52). When produced, wax scales are white in color. Bees move the scales to their mouths using their legs and then place the scale in position where they are pushed and formed into hexagonal shapes. It takes approximately 500,000 – 1,000,000 wax plates to make one pound of beeswax. It is extremely time consuming and forces the younger bees to use large amounts of energy to produce the wax.

Beeswax is necessary in the hive for many different uses. It is molded into hexagonal cells that provide a home to eggs, larvae, and pupae. These cells provide plenty of safe space for a bee to grow into adulthood. Cells can range in size depending on the egg that was laid by queen. If it is a normal sized hexagonal cell, a female (worker) egg will be laid. If the cell size is slightly larger, a male (drone) egg will be laid. The largest beeswax cell often shaped like a peanut, is reserved for new queens. To read the rest of the article please visit the following link: <https://beav.es/TSq>

# Rain gardens help keep pollutants out of waterways

By Kym Pokorny

As water runs down roofs, over driveways and patios and off other impervious surfaces, it might pick up pollutants as it flows directly into streams, wetlands, lakes, and groundwater aquifers.

Stormwater runoff from impervious surfaces has been routed directly to streams through stormwater pipes and ditches with little infiltration or treatment, according to Derek Godwin, Oregon State University Extension Service water management and conservation specialist. That’s because municipalities focused on getting the water off the property as quickly and efficiently as possible.

However, stormwater runoff has become the No. 1 source of residential pollution for waterways. It also increases potential flooding. Municipalities have responded, installing rain gardens, a type of green infrastructure, in public and commercial spaces to slow down and treat the water before it enters streams, wetlands, lakes and groundwater aquifers. They encourage homeowners to build them, too.

Designed and installed properly and planted with the correct plants, rain gardens are like tiny water treatment facilities. Water gathers in the rain garden, soaks into the soil and is taken up by plants. The water not used by plants moves into deeper soils and groundwater or flows more slowly to nearby streams.

The plants and soils filter nutrients, sediments and toxic materials from the runoff before it gets to waterways.

For more information about rain gardens and thorough instructions on how to build one, refer to The Oregon Rain Garden Guide, which Godwin co-authored.

Rain gardens can be designed with a variety of plant types and sizes that offer beauty and bird and pollinator habitat. Since the garden is designed to drain, you don’t need plants that withstand months sitting in water, such as broadleaf cattail (*Typha latifolia*). However, areas at or near where water enters the rain garden are frequently flooded and require plants that survive short periods of standing water and extended

periods of saturated soils, while plants on the rim should be suited for drier conditions.

The Rain Garden Guide includes designs and lists of plants for all areas of the state that work in sun or shade. The lists also indicate which plants work in different areas of the rain garden, from wet to dry. Rain gardens are divided into three zones: top (dry), slope (moderate) and base (wet). The U.S. Department of Agriculture’s wetland plants database is another good source of native plant information. Also, check nurseries that specialize in ponds. The full article can be found at <https://beav.es/Twf>.

**Source:** Derek Godwin, 503-510-7582, [derek.godwin@oregonstate.edu](mailto:derek.godwin@oregonstate.edu)



Rain gardens feature hardy, drought-resistant plants in a landscaping design with a purpose.