Country Living

Provided to you by the
OSU Extension Service Columbia County
505 N. Columbia River Hwy, St. Helens OR 97051
Phone: 503.397.3462
Email: Chip.Bubl@oregonstate.edu
Office hours: Closed until further notice

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June 2020

Programs for you . . .

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

Columbia County Beekeepers Virtual Meeting June 4th at 6pm. "Breaks in the Honey Bee Brood Cycle: Naturally Occurring Interruptions" Email for login information: LindaZahl2@gmail.com

OSU Tree School is Now Online! Tree School Online is a free 15-week webinar series that will include many of the classes that were set for Tree School Clackamas, along with some new classes developed exclusively for Tree School Online. Register for the free classes and view past webinars here: https://extension.oregonstate.edu/tree-school/tree-school-online-class-guide

OSU resources & publications: https://catalog.extension.oregonstate.edu/

Oregon State University
Extension Service
Columbia County

Chip Bubl

Chip Bubl, OSU Extension Faculty, Agriculture

Agricultural Sciences & Natural Resources, Family and Community Health, 4-H Youth, Forestry & Natural Resources, and Extension Sea Grant programs. Oregon State University, United States Department of Agriculture, and Columbia County cooperating. The Extension Service offers its programs and materials equally to all people.

In the garden

The value of a vegetable garden

I have taught a lot of vegetable gardening classes over the last 40+ years in Extension. I found that the most important motivations for gardeners are food freshness and quality, the ability to grow types of vegetables that you can't find in a store, the desire to grow food for friends, family, and food banks, and a pure love of gardening. When I ask them if they can save money by growing their own, they will usually respond in one of several ways, i.e. yes, lots; no way, it costs a lot to garden; or yes, once I learned what I was doing.

I think the last answer is telling. It takes time to learn how to do anything of value well. Once that learning is in place, mistakes decrease and productivity rises fairly dramatically. That is when you can best take the measure of gardening and what it can offer, economically and otherwise.

An economist would view gardening through several lenses. The first question she would ask is "what would it cost to replace from the grocery store what you <u>use</u> from your garden?" This calculation is reasonably straightforward. For example, if you harvested 100 pounds of onions from the garden and were able to consume 90 pounds before some rotted in storage you could compute a grocery store value: 90 x $.80/# = $72.00 worth of onions.

But it doesn't stop there. To get that $72, you had to work and when you got paid, at the end of the day, you are probably taking home about 70 cents for every dollar earned after taxes, workman's comp, social security, etc. So to spend a dollar at the grocery, you have to earn about $1.42. So to spend $72 on onions you had to earn $72 x $1.42 = $102.

After the costs of sets, fertilizer, etc. which could total roughly $20 (water bills are a big variable), the difference between cost and avoided grocery expense is your return to your own labor and skills. It effectively adds to the household income, it isn't taxable, it is a lot more fun and cost effective than watching television, and it is healthier to boot. What a deal!

The second economic test would look at the amount and value of produce you actually eat per square foot planted. If your goal was to replace some of what you buy and if space, time, and/or water were limiting, you would concentrate your efforts on growing those vegetables that have a combination of reasonably high yield/square foot, fairly fast growth cycle, easier to grow, perhaps fewer insect pests, and have fairly high grocery store replacement costs. Some of the best vegetables in this test include:

- greens like collards, chard, kale, lettuce, arugula, etc.
- green onions
- radishes
- garlic and onions
- specialty potatoes
- tomatoes, esp cherry and smaller types
- annual herbs like basil, cilantro, and parsley
- woody perennial herbs: thyme, rosemary, bay, as part of your permanent landscape
- zucchini
- pole beans

Winter squash like butternut would make the list for many gardeners because they are easy to grow, they can be stored for winter use, and don't take huge amounts of water if you drip irrigate. They do take a lot of space but if you have it, they make some sense.

A final look might combine nutrition with some of the cost replacement ideas. Cornell University Extension released a "nutrition garden" 30+ years ago. And no surprise, it looks a lot like the list above. If you want a copy of their 10' x 10' (now well-aged) plan, see the next page.

How inscrutable are plants?

Plants maintain life on earth by converting sunlight, carbon dioxide and water into simple sugars. But how closely do you look at plants? Are they just a background for houses, buildings, animals, and birds? Is green just green?

Part of the problem is that there are so many plants!

All the various
Difficult names
Weeds of spring

Shado

Plants may be so complicated and different from animals that we find it hard to relate to them. How does water in plants move from the soil into roots and then upwards 200 feet without any energy being spent by the plant and no moving parts except some "gates" on the underside of the leaves? How do they show up so unannounced?

Humans named plants initially to help remember if they could use them for food, medicine, and/or fiber. Many lives were lost in this process. Early pictures (when humans started drawing them) of plants didn't really distinguish the key characteristics we look at today. The flowers and seeds, which are so critical in plant identification, were not well drawn. And early European pharmacists/botanists also got sidetracked by a religious doctrine that said if it looked like a lung, it must be a "sign" that it cured lung problems. There was some real overthinking there and that mistake took some time to cure.

Enough of this. Plants are too important to our past and our future. It is time to learn some names. When you learn a plant name and can tie it to a plant, you know that plant A isn't plant B. To be able to name a plant is to begin to understand how it grows (annual, biennial, or perennial), how it reproduces, and other important facts about it. That is the beginning of all human knowledge, knowing when something is or isn't something else. That knowledge becomes a community possession which can be passed around over space and time. It truly is fun and fulfilling to be able to know more about some of the plants you either loved or perhaps, have removed for years.

- Good guides for learning plants include *Northwest Weeds* by Ronald Taylor, *Trees to Know in Oregon* (an OSU Press paperback) and *Plants of the Pacific Northwest Coast* by Pojar and Mackinnon

Cornell

A Nutritious Garden for Limited Space

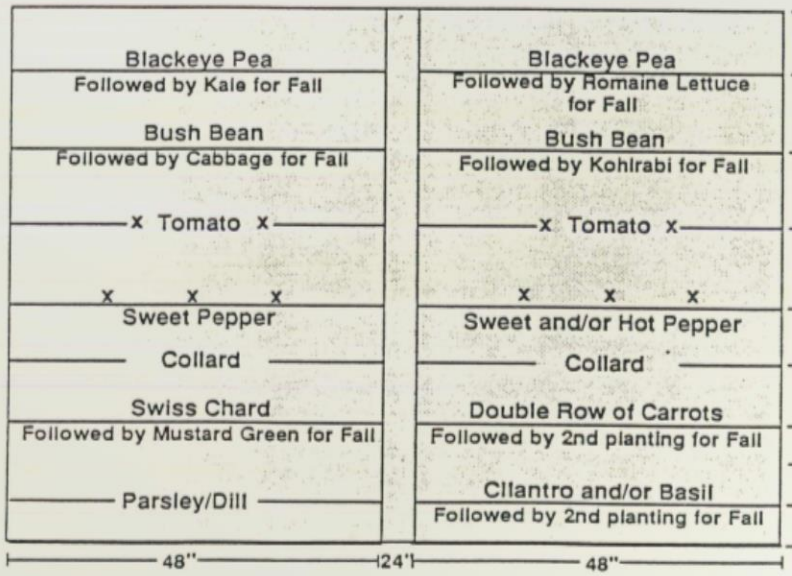
Starting a vegetable garden in May means planning for summer harvest. The same space can produce tasty food well into the autumn months. No matter how large a garden you have, getting the biggest value from the space is important. Value can be measured in many ways including *nutritious value*.

Here is a plan for a 10' x 10' garden—practical enough for even the tightest urban locations. Each square inch is planned for maximum Vitamin A, Vitamin C, and fiber, often found low in the American diet. The protein in Blackeye Pea and beans is a good substitute for animal sources of protein, which are often high in fat.

The herbs and hot peppers enhance the flavor of prepared dishes, helping to reduce the use of table salt.

The garden will yield from late June well into October or November. As with any vegetable garden, it requires at least 6 hours of sunlight and fertile, well drained soil with adequate organic matter. Water conservation techniques and normal pest control should be standard procedures.

The garden can be planted in the ground or in a raised bed. *We recommend planting during the third week in May and reseeding where indicated on August 1 for a Fall Harvest.* Thirteen out of the 18 suggested varieties may be grown from seed sown direcly in the garden. The five transplant varieties are readily available in local metropolitan markets. The total retail cost for seed, transplants, fertilizer and organic matter used in the 100 square feet is estimated at $20 and should yield about $85 worth of vitamins, protein, fiber and flavor.



(Not to Scale)

15" SOURCE OF VITAMIN A
Carrot
Collards
Kale
20" Mustard Green
Romaine Lettuce
Swiss Chard

20" SOURCE OF VITAMIN C
Cabbage
Collards
Kale
20" Kohlrabi
Mustard Greens
Sweet Pepper
12" Tomato

12" SOURCE OF FIBER
All

6" SOURCE OF PROTEIN
Blackeye Pea

6" ALTERNATIVES TO TABLE SALT
6" Cilantro, Basil, Dill, Hot Pepper, Parsley

Varieties recommended for Maximum Nutrition

'California' Blackeye Pea	*'Blue Knight'* Kale
'Jumbo' Bush Beans	*'Romaine'* Lettuce
'Savoy' Cabbage	*'Greenwave'* Mustard Green
'Nantes' Carrots	*'Plain Leaf'* Parsley*
Cilantro Herb	*'Lady Bell'* Sweet Pepper*
'Heavi-Crop' Collard Greens	*'Maxibelle'* Hot Pepper*
Dill Herb	*'Rhubarb'* Swiss Chard
'Grand Duke' Kohlrabi	*'Jetstar'* Tomato*
	'Early Girl' Tomato*

* Transplants

Experienced gardeners will notice the absence of some old favorites like summer squash, cucumber, corn, beets, onion, and eggplant. While these are fun to grow, they do not produce as much nutritious produce as the varieties included. A few nutritious vegetables, like winter squash and broccoli, are missing merely because of space limitations.

For more detailed information on the varieties selected write, Nutritious Garden, Cornell Cooperative Extension, 15 E. 26th St., 5th Fl., New York, NY 10010.

Acknowledgements: John Ameroso, Roger Kline, Ruth Lowenberg, Charles Mazza, Lisa Miller, Phyllis Pottinger, Nilda Tirado, Philson Warner of the Cornell Cooperative Extension Staff for their gardening and nutrition perspectives in this design.

The natural world

Ground squirrels

When I first got to Columbia County, I was puzzled by the fact that there were no gophers and very few ground squirrels (known to me growing up in the Willamette Valley as “gray diggers”). I still haven’t solved the gopher deficit but I think I know the answer to the ground squirrel absence. The Extension office along with other wildlife agencies appear to have had an extensive program to poison ground squirrels. Thousands of pounds of toxicants were provided over about a 20 year period. That effort seemed to end in the late 1960s though I am sure that it was carried further by individual farmers.

But slowly, the areas that had the most ground squirrels originally started to see higher ground squirrel numbers as the land was either mined, subdivided, or used for non-agricultural purposes. The numbers have climbed dramatically since the early 1990s. Ground squirrels are still confused with tree squirrels so let’s get into some of their identifying characteristics, habits, and biology.

First, the species we have is the Beechey Ground Squirrel, named for a Rear Admiral in the English Navy by the intrepid Scottish Explorer and Biologist, David Douglas. The first European scientific specimen was collected by Douglas along the banks of the Columbia River in Oregon, maybe Columbia County. They are also called the California ground squirrel in some parts.

Their geographic range used to be from the Columbia River south to Southern California and into eastern Oregon and the Sierras in California. Their range appears to be widening and they are now found in Washington and Nevada.

Ground squirrels are stocky with a coarse hair coat that is lighter colored in the summer and darker gray in the winter. There is a chevron pattern of light and darker hairs that shows on their back hair most clearly in the summer. They weigh about a pound and are 15 to 20 inches long including the tail. The tail is somewhat bushy but nothing like a tree squirrel tail. Hair on the tail will separate from the flesh if the squirrel is caught by the tail by a predator. The squirrel can escape but the hair doesn’t regrow and they chew the bony stub off.

They are called ground squirrels because they build a permanent burrow system that expands and develops more complexity every year. They are described as “semi-colonial”. This can be an understatement. In visiting with a neighbor, he noted he started with a few ground squirrels in one location and it morphed into a community with 20 or more in no time.

Entrance holes are not plugged. They like to burrow under debris or rock piles for predator protection. That doesn’t mean they can’t climb trees because they can. But it isn’t their favorite terrain. In fact, if threatened by a coyote, they aren’t likely to run up a tree for protection but seek the comfort of their tunnels. They are swift runners.

Ground squirrels don't like dense forests (usually), but prefer open pastures and brushy areas. They readily adapt to disturbed landscapes like railway right of ways, drainage district dikes, gravel mine spoils, etc.

Ground squirrels prefer succulent vegetation but will eat some insects, eggs of ground nesting birds, and try roadkill. They are very fond of berries and fruit. They will strip bark off of trees for food. They can get most of their water from dew and moisture in succulent vegetation. As forage dries up, they move to eating seeds, fruit, etc. They cache food and carry it to the caches in mouth pouches.

Illustration from baynature.org

Females give birth to one litter (averaging 6 young) annually. Their young nurse in the burrow until about 6 weeks of age when they begin exploring.

Ground squirrels hibernate in the winter. They will, in some hot dry periods, go into a heat-induced summer estivation (like a hibernation) for several weeks until the weather cools. Ground squirrels live four to five years.

Are they a benefit? Yes, by moving soil layers and seed around squirrels maintain a complex plant ecology. Their abandoned burrows serve as home to reptiles, amphibians and even some ground nesting birds.

What damage do they do? If you are a farmer, the burrows and mounds can affect harvesting equipment or injure grazing livestock. Gray diggers can eat a lot of alfalfa. Field or container planted nursery trees can be stripped of bark and ruined. I once visited a nursery to prepare a talk on rodents for a commercial audience and was shown the extent of damage on container Japanese maples. Many were destroyed and to add insult to injury, the gray diggers buried hazelnuts in the pots!

The most significant non-farm damage comes from burrows that undermine supports for a deck or other structures. This can be very serious and generally leads to a negative view of these squirrels.

Removing cover piles and brush may help reduce ground squirrels but tight mowing encourages ground squirrels because they have a better view of predators (coyotes, hawks, eagles, some domestic dogs, etc.). In California and Southern Oregon, rattlesnakes are their mortal enemy.

It is possible to live with them, especially if they haven't caused any structural concerns. Usually their plant damage is rather limited.

There are baits that can be used with, as always, **careful attention to label directions and restrictions (placement underground or in bait stations, and removal of dead animals).** It is potentially a crime to kill a non-target animal. To my knowledge, there are no baits labeled for homeowner use. Live-trapping can work for one or two ground squirrels but not for the whole colony. It is legal to hunt ground squirrels where hunting is legal and appropriate. For more information see:

http://ipm.ucanr.edu/PMG/PESTNOTES/pn7438.html

~ JUNE ~

Garden hints from your OSU Extension Agent

Oregon State University Extension Service encourages sustainable gardening practices. Always identify and monitor problems before acting. First, consider cultural controls; then physical, biological, and chemical controls (which include insecticidal soaps, horticultural oils, botanical insecticides, organic and synthetic pesticides). Always consider the least toxic approach first. All recommendations in this calendar are not necessarily applicable to all areas of Oregon. For more information, contact your local office of the OSU Extension Service.

Planning

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

Maintenance and Clean Up

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

Planting/Propagation

- Plant dahlias and gladioli.

Pest Monitoring and Management

- Continue monitoring blueberry, strawberry, cherry and other plants that produce soft fruits and berries for Spotted Wing Drosophila (SWD). If SWD are present, use an integrated and least toxic approach to manage the pests.
- First week: spray cherry trees for cherry fruit fly, as necessary, if fruit is ripening.
- First week: spray for codling moth in apple and pear trees. Continue use of pheromone traps for insect pest detection.
- Learn to identify beneficial insects and plant some insectary plants (e.g. Alyssum, Phacelia, coriander, candytuft, sunflower, yarrow, dill) to attract them to your garden. Check with local nurseries for best selections. See PNW550 (Encouraging Beneficial Insects in Your Garden) for more information.
- Control garden weeds by pulling, hoeing, or mulching.
- Control aphids on vegetables as needed by hosing off with water or use insecticidal soap or a registered insecticide.
- Watch for 12-spotted beetles on beans and lettuce and cabbage worms or flea beetles in cole crops (cabbage, broccoli, brussel sprouts). Remove the pests by hand or treat with registered pesticides.
- Spray peas as first pods form, if necessary, to control weevils.
- Birch trees dripping a sticky fluid from their leaves means that aphids are present. Control as needed.
- Use yellow sticky traps to monitor for cherry fruit fly. About 1 week after the first fly is caught, spray cherries at appropriate intervals.
- Last week: second spray for codling moth in apple and pear trees, as necessary.

Houseplants and Indoor Gardening

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

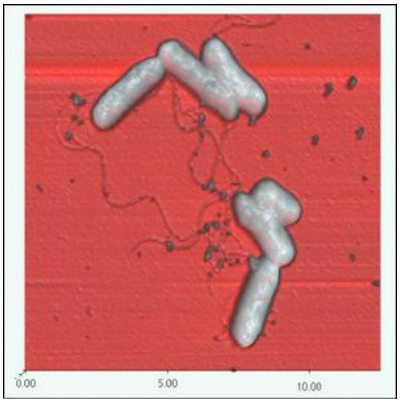
Farm and livestock notes

E. coli and the livestock industry

E. coli O157:H7 also known as STEC (short for Shiga-toxin producing E. coli) became a huge problem for the cattle industry in the 1990s. Contaminated meat, vegetables, and fruit led to a number of deaths and a significant number of cases of irreversible kidney damage. Major companies were brought to the edge of bankruptcy. The cattle industry was hard hit because most of the contamination was either directly in consumed beef (especially hamburger meat) or could be traced indirectly from beef feedlots or farms to contaminated fresh vegetables or fruit.

The initial research response led to guidelines about cooking ground beef past pink before serving and repeated random checking at all stages of food preparation in these facilities. That change was quickly adopted by the fast food industry which was so shook up by the Jack in the Box outbreak over 20 years ago.

But the beef industry knew that their market was on the line. So research began on the development and movement of E. coli in the production and processing stages of beef. It quickly became apparent that contamination of the carcass occurred as the hide was removed. It was clear that bits of fecal material adhering to the hide were being transferred to the meat. This insight has led to some strong decontamination methods of the animal before hide removal, greatly improved cutting techniques to minimize contamination, quick chilling and decontamination of the meat as it moves into the cooler, and a profound cleanliness in all stages of the production cycle and all parts of the facility.



Working backward, research indicated that E. coli O157 shed in manure increased in the feedlot **but could be lowered by feeding a high fiber ration in the week or two before slaughter.** Many feedlots have adopted feeding programs prior to slaughter that reduce the background presence of the bad E. coli.

In addition, it was found that some animals harbored and shed the bad E. coli more than others. Heavy shedders in a feedlot are generally thought to be 2-5% of the group at any one time, though some herds have been found to 100% infected. In cattle, it is a silent disease because they show no symptoms. This has been a more complex problem to work on.

The genetics of both the bacteria and cattle have been extensively studied for why this might be and whether there could be either breeding selection protocols to get beef that were less likely to acquire and shed the bad E. coli but it hasn't resulted in any major breeding management tools. Alternatively, a vaccine was developed to reduce STEC in cattle but has not taken off commercially. Recent research indicated that water troughs may be major spreaders of STEC among cattle. The lower the water level, the greater the spread.

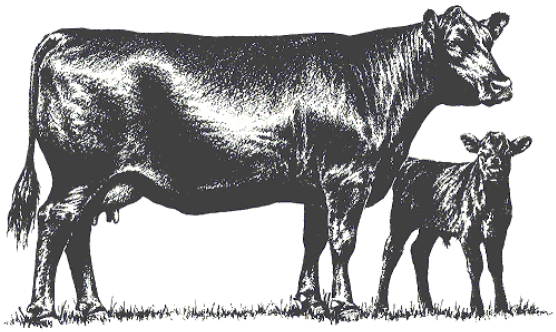
The final aspect of this problem is contamination of vegetables and fruits with E. coli O157. In almost all cases, beef were implicated either directly (the Lane County Fairgrounds incident in the 1990s) or indirectly in the more complicated spinach, lettuce, strawberry, and unpasteurized apple juice incidents. In these cases, cattle were thought to be the initial E. coli sources but in the spinach event the bacteria was carried by feral hogs into the spinach field. In the strawberry and apple juice cases, it was carried

by deer droppings. In the recent lettuce contamination events in Yuma, Arizona and Salinas, California, cattle manure was either wind-blown and/or water carried through irrigation onto crops. It is again calling into question whether cattle can co-exist with farms that are growing fresh produce. Pictures from Salinas show lettuce fields on the flat ground and beef grazing on the adjacent hills. At a minimum, there probably need to be tree buffers to capture wind-lofted manure before it gets to vegetables or berries.

There is still a lot of work to be done to develop workable systems to help manage this problem. We have to get better at this.

Livestock feeding rules of thumb

Adult cattle: They can eat 2-3% of their body weight per day. The more digestible the food is, the more they can eat, a fact that is generally true for all livestock.



Steers: They can eat 3-5% if the quality is excellent. They will produce about a pound of gain for each six pounds of feed consumed. Food that is wasted doesn't count.

Ewes: Generally the same as adult cattle, about 2-3% of body weight/day.

Lambs: On good feed, lambs can consume 4% of their body weight and can convert that feed to meat at a 4 pounds of feed to one pound of gain ratio.

Hogs: When small they can eat 7-8% of their body weight and gain one pound for every 2-3 pounds fed. As they mature, they eat less as a percentage and the conversion drops to about 1 pound of gain for four pounds of feed.

You will get a better handle on your stock's performance if you weigh your feed every once in a while, pay attention to wastage, and worm on schedule so the parasites aren't getting the groceries.

Better hay next year

It's a gamble to make hay. The best quality hay is generally cut from mid-May until mid-June when it is still leafy. Sadly, our weather often doesn't fully cooperate. A forecast of four good hay-making days can vanish in a blink of the eye. So be prepared to cut smaller areas and turn the hay more frequently to speed drying. Four acres of great hay is worth a lot.

It is also worth knowing how much hay you are actually getting off your fields. People talk about "bales" but you need to calculate actual weight. So weigh ten bales and take the average for your bale weight and then calculate tons per acre from the number of bales you harvested per so many acres. You can calculate the size of a field by using the NRCS Soil Survey web site: https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm Click the green button to get started.

My experience is that most non-irrigated Columbia County hill-land fields produce about 1.5-2.0 tons per acre if fertilized with nitrogen in early April and with all grazing ended by late April. Avoid grazing from November to March. Consider taking a soil test if you haven't done so in a while. You can borrow a soil probe to take samples for a soil test from our office. Cost of a soil sample is about $40 from any one of several labs.

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Extension Service
Columbia County

505 N Columbia River Hwy
St Helens OR 97051

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How to Get Help in Columbia County: The OSU Extension Service office wants to make sure that you and your family have current and accurate information about accessing assistance programs in Columbia County during the Coronavirus outbreak. We have all been impacted by this crisis and we encourage you to reach out if you need help. Even though our office is currently closed, we are still working and are here for you! This resource list has been compiled by Jenny Rudolph: Jenny.Rudolph@oregonstate.edu

- **Supplemental Nutrition Assistance Program (SNAP):** https://oregonhunger.org/apply-for-snap/
- **Free School Meals:** https://www.summerfoodoregon.org/map/
- **Local Food Pantries -** Columbia Pacific Food Bank has posted a list of pantries: http://cpfoodbank.org/pantry/
- **Find Quick, Easy Recipes:** FoodHero.org
- **Oregon Health Plan (OHP):** ONE.Oregon.gov
- **IRS Coronavirus Economic Impact Payments (Stimulus Checks):** www.irs.gov/coronavirus
- **Scam Alerts and Price Gouging:** https://www.doj.state.or.us/consumer-protection/
- **Food Safety and Preservation Questions:** https://extension.oregonstate.edu/ask-expert
- **Research-based food preservation & canning resources:** https://extension.oregonstate.edu/food/preservation

And if you are in a position to GIVE during these difficult times, please visit: http://unitedwayofcolumbiacounty.com/

We are all in this together. Until otherwise directed, please continue to stay home, stay safe, and stay well!

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