



Looking Toward Spring Gardens ...

It is the time to start vegetable plants, and we've included a list of vegetables that perform well on the Oregon Coast - see pages 3 through 5.

Some vegetables grow better when started inside (or in a greenhouse or coldframe) and then transplanted as a seedling. You can also save money by starting your own seeds. There are great resources for seeds, in particular Tillamook County Library's "Seed Library." Or check out the North County "Seed Exchange" on March 3rd at White Clover Grange.



Vegetable species are started at different times depending on their tolerance to cool conditions and light frosts. For example, cabbage family plants are generally tolerant of temperatures down to 28 degrees Fahrenheit once they have gotten to a certain size and have been hardened off. They can be started now. Hardening off means taking your transplants out of the greenhouse environment for several hours per day prior to transplanting. They are placed in indirect light and allowed to adjust to cooler conditions.

Plants develop a thicker leaf cuticle and resistance to wind. A week of hardening is often enough.

After transplanting, vegetables can be protected by hot caps, floating row covers (a gauzy fabric that traps some heat) or plastic cloches. Cloches add more heat but must be opened and closed to avoid "cooking" the transplants.

Tomatoes and other sub-tropical vegetables require more care. They cannot stand frosts and need more heat. Peppers are very intolerant of cold soils. Tomatoes are usually started in mid-March for transplant out by mid-May. Peppers should be started two weeks later for early June transplanting.

It helps to preheat the soil before transplanting (or seeding for that matter) by putting clear plastic over the soil. This can raise the soil temperature from 45 degrees to 65-70 degrees in a matter of two or three days.

Spring frost date planning

Using averages from climate data calculated from 1981-2010 temperatures, the average "last frost" occurs in Tillamook County by May 4th. These averages represent the 90% certainty that the last spring temperatures below 32 degrees will occur by that date. That doesn't mean we won't have frost after that date, but it is not as likely. Remember, there are many "micro-climates" throughout Tillamook County, such as up river valleys, etc. Planting after Mother's Day is a good rule of thumb for Tillamook County. Use your soil thermometer for the best information on when the soil has warmed up for optimal germination.

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PRESIDENT'S CORNER



The 2019 OSU Master Gardener classes began on January 10 with 25 apprentices – an outstanding number! The OSU Master Gardener™ Program helps Oregon gardeners learn more about the art and science of growing and caring for plants. It also enables these trained volunteers to extend sustainable gardening information to their communities through educational outreach programs. Master Gardeners volunteers answer home gardening questions at the Extension Office, staff plant clinics at farmers markets, work in community, school, or local demonstration gardens, speak to local groups about home gardening and much more. Some of the courses presented during the program include cultural methods of sustainable gardening and growing your own food, gardens, lawns, fruit trees and landscape. One of the first classes is everything you need to know about soil, essentially you will be learning gardening from the 'ground up'! If you did not register for the classes this year, mark your calendars to register next fall. Better yet, call the Extension Office and put your name on their contact sheet for the 2020 class.

Tillamook County Master Gardener Association (TCMGA) is beginning the year with a new Board. 2019 officers are: President - Cammy Hickman, Past President - Karen Sarnaker, Vice President - Sarah Ostermiller, Treasurer - Nika van Tilburg, Recording Secretary - Neal Lemery, Corresponding Secretary - Arla Ayers, Historian - Jake Lyons, OMGA Representative - Linda Stephenson, OMGA Alternate Representative - LeRoy Satter, 2017 Class Representative - Jerilee Henderson, 2018 Class Representative - Kristy Lund. All of us are dedicated to educating others about sustainable gardening practices. Our focus this year will be to enhance our public education outreach program.

To execute those efforts, TCMGA will be holding Spring and Fall Classes, mini-clinics at the upcoming Plant Sale in addition to our regular presences at the Manzanita, Tillamook and Pacific City Farmers Markets. Master Gardeners will be on duty at the OSU Extension Office throughout the growing season to answer questions from the public. We have also initiated contact with area organizations to explore ways to collaborate on activities, programs and events that will enhance home gardeners' skills.

Spring Classes have been scheduled for Saturday March 30 and will be held at the OSU Extension Office and Learning Garden. The classes are open to the public and approximately 60-90 minutes each. Typically, the cost per class is minimal; however, some may be more if materials or supplies are necessary. We are now gathering recommendations for topics and will have class announcements and registration information out soon.

Mark your calendar for the **Annual TCMGA Plant Sale, Saturday, May 4, 9am to 2pm** at the 4H/FFA Pavilion at the Tillamook County Fairgrounds. This is your opportunity to shop for tomatoes, herbs, vegetables, natives and perennials. Our Master Gardener Help Desk will be open to answer all your questions, plus our famous Garden Garage Sale. Master Gardeners will be presenting educational topics and some of the vendors will demonstrate their products, as well. This is our primary fund raising event for the year with proceeds from the Plant Sale benefiting scholarships for Tillamook residents and local OSU Master Gardener™ Programs.

GARDEN ON!

Cammy Hickman

TCMGA President 2019

Vegetable Production in the Pacific Northwest Coastal Region

Vegetables are not difficult to grow. With some crops you will get just one chance a year so it is wise to give them the attention and conditions they need right from the start. Start with good soil, high in organic matter and a pH between 6 - 7. Be sure they have enough food and water to promote steady growth. Protect plants from wind, rain and frost. Prevent diseases and control, or exclude hungry pests. Grow Vegetables where they will receive 6-8 hours of sunlight per day.

Artichokes - These perennials get larger and more productive each year and they like our climate. They are tolerant of light frost, but not root hardy in very wet and cold clay soil. Aphids love them, keep a close eye out: If you see ants, look for aphids and wash them off with a hard spray of water or dust with your favorite insecticide. A good variety that will produce chokes the first year is "Imperial Star", others will take two years to produce.

Asparagus - Asparagus will grow anywhere in our region, these perennials need full sun. They will grow in mass and size of spears, spreading out so will need some space to grow into. All male hybrids have been bred to produce more and larger spears instead of seeds. Whether grown from crowns or seeds, you can harvest lightly the second year and for about 6 weeks each year thereafter. Then the ferns must be allowed to grow and store energy for the next years' crop. Slugs are especially fond of new spears. Put bait out early or you may find only a stump.

Beans - Bush beans take more space and can end up sprawling on the ground. They tend to set a crop and stop producing. Pole beans are more productive over a longer period. They require trellising, may grow 6' to 8' and will cast a shadow. Beans come in green, yellow and purple, the latter turn green when cooked. Beans require warm soil to germinate; if the soil is cold the seeds are liable to rot. Dry shelling beans require a long warm season to mature and dry; even inland they are a gamble. Fava and Soy beans both grow well here.

Beets - Beets are a great crop in our climate, easy to grow with few pest or disease problems. They are easy to direct seed or can be grown as transplants. In the latter case be sure to plant them at no more than two true leaf stage. Beets need a pH above 6, and boron that our soils naturally lack. Beets need lots of water to produce good roots. Yellow, white and striped beets are open pollinated varieties and results may be variable. No major pests or diseases.

Broccoli - It doesn't like heat so it is well suited to this climate. It is best grown from transplants, and easy to start from seed. It needs plenty of water and is a heavy feeder. Check catalogs for seasonal varieties that can provide you with broccoli all year. After harvest of the first head, most will produce side shoots if well fed. Common pests include aphids, cabbage worms and root maggots. "Small Miracle" is a good compact variety for small gardens.

It makes a big central head and it produces lots of side shoots. Brassica's can be grown under a row cover to reduce insect pests, but be sure to still check for slugs.

Cabbage - Like broccoli, cabbage prefers to be cool, very warm temps will cause heads to split. Since the leaves are what we grow it for, it needs plenty of nitrogen. Keep well watered. There are dozens of shapes and sizes, plus red and many shades of green. Savoy and Chinese cabbages are a bit fussier. Cabbage is subject to all the problems of other brassicas and is a SLUG MAGNET!

Cauliflower - Cauliflower is the fussiest of the brassicas; it prefers to be cool so it likes our climate. Like beets, it is also sensitive to boron deficiency. Stress or sudden temperature changes can cause it to bolt or "button", which means making a tiny head on a tiny plant. Besides white there are now green, yellow and fluorescent purple varieties. Cauliflower seems to be more attractive to the fly that is responsible for root maggots. Cabbage worms and slugs are fond of cauliflower.

Carrots - Most root crops do well here. Carrots like deep loose soil to produce the longest roots so raised beds would be best. If you have heavy soil, try a short variety. They must be direct seeded and kept moist so the soil surface never crusts over. They are slow to germinate so a screen over the bed or come coconut fiber work well to maintain moisture. The varieties meant to be grown as baby carrots will do well in shallow soil or containers. Wire worms and carrot rust fly maggots will burrow into the root effectively ruining it. Carrot Rust Flies can be excluded by the use of row covers, but wire worms are more difficult.

Corn - Corn will not grow close to the ocean because it needs heat. Several miles inland it is worth a try if you have full sun and a warm spot. Choose early to mid season varieties, Maximum of 80 days to maturity. Ultra early varieties will produce small ears but may not be as good as larger later varieties. . The super sweet types may need isolation from other corn types and some need very warm soil to germinate. "Lucious", a new type called tablesweet is my personal favorite. Corn is really big grass so it needs plenty of nitrogen. It should be direct seeded when soil is warm. For good pollination plant in as close to a square plot as possible. Corn is pollinated by wind so if it is planted in long single rows you may not get good pollination. Cover seed bed with floating row cover to enhance heat and foil crows and jays. In our area the worst insect problem is cutworms and of course slugs will damage new shoots

Cucumbers - An easy crop. They prefer to be warm and need some protection from the wind. Great in the greenhouse, trellis them up to keep fruit straight and clean. Seeds are best started inside on a heat mat; they will not germinate in cold soil. The catalog description should say clearly that they will set fruit without pollination.

Vegetables - Continued ...

Cucumbers Cont'd - Some to look for include "Sweet Success", "Diva" and "Cool Breeze". English cucumbers are best in the GH, seed can be expensive, but they are well worth the money. Some to look for are hybrids "Pepinex" or "Socrates" and open pollinated "Tall Telegraph". Common problems include powdery mildew and 12 spot or striped cucumber beetles. Flea beetles like them as well.

Garlic - Garlic is one of my favorite crops and very easy to grow. Garlic is clone propagated; it rarely has flowers and bears no true seed. There are two different types of garlic, soft neck and hard neck. The soft necks have several layers of small cloves; it is what you find in the grocery store. The hard necks generally produce large bulbs with fewer and very large cloves. This type puts up a stiff stalk in the center. These stalks should be removed when they have made one curl to direct the energy to growing large bulbs. These tender stalks are delicious stir-fried. Garlic needs sun and prefers loose, well limed soil and moderate fertility. Plant on 5" centers in October to harvest the following summer. Mulch to discourage weeds and keep bed weed free. Don't water after first of June. Harvest when half the leaves show some yellowing; don't leave in the ground too long or they will split their wrappers. If in doubt, dig a bulb and check for clove development. Hang in a warm dry place with leaves intact to cure for about a month. Clip tops to 1" and trim roots. Store at around 60 degrees in a dark dry place. An out of the way closet in the house works well. Refrigeration will break dormancy and promote growth. Save the largest cloves for seed to be planted in October.

Greens - Many greens will grow well in our cool climate. They are especially good for spring and fall crops in the cloche where they stay clean, and don't get battered by rain and hail. Most will transplant well. The thing to remember is that you are growing them for their leafy parts, so they need plenty of nitrogen and water to grow fast. If they grow too slowly they are liable to be tough, strong tasting or bolt. Most greens are fast maturing crops so many will bolt no matter what the weather conditions. They need to be succession planted, seeds sown every couple of weeks, to have a continuous supply. Most are attractive to slugs and flea beetles.

Lettuce - Lettuce is an easy crop for anywhere in our area, in cloches or outside in the summer. Lettuce can be direct seeded, but is easy to start inside. It needs only bright light but no direct sun or heat to germinate. Seedlings transplant very easily and are actually hard to kill. Like other tender greens you will get the best lettuce if you protect from heavy rain and hail. Lettuce also needs plenty of nitrogen and consistent moisture or it will bolt and get bitter. The variety to choose from is huge, from baby to huge heads with many color and texture variations. Some newer varieties have some bolt resistance and heat tolerance bred in. Lettuce doesn't cross-pollinate easily so

you can save seeds of your favorites. Plant seeds about once a month for a steady supply, set half out and hold the other half to be planted a week or two later. The biggest problem is slugs; they crawl in and have no reason to come out. Food and shelter in one! Bait as soon as planted out and check often.

Onions - Onions need full sun and prefer light soil high in organic matter. Plant onions on 6" centers for the biggest bulbs. Onions grown from seeds are preferable to sets for a couple of reasons. Onion sets are more prone to disease and a larger percentage will produce flower stalks. Seed grown onions may get larger and there are many more varieties available. They are easy to start, plant in March in deep pots for long healthy roots. There are two different onion types; long day and short day. In our latitude we need long day types since day length governs bulbing. New day neutral varieties, crosses of the two types, are not subject to day length and have the potential to get very large. Onions have shallow roots; need an inch of water a week. Weeds will steal nutrients and water; keep beds weed free. Onions are relatively free of problems but onion maggots may attack. Check the roots if onions are not showing good growth and use insecticide if necessary. In late summer when half the onion tops have fallen over bend the rest over and leave for a few days. An enzyme in the neck tells the onion to go dormant. Pull onions carefully keeping tops intact. Hang in a warm dry place to cure. Cut tops to one inch and trim roots. Length of storage depends on the variety of onion. Store cool and dry.

Peas - Peas will grow anywhere in our area but should be protected from the wind. Choices include shelling peas, sugar pod and snap peas. When soil is wet and cold, pre sprout in the house in a tray between two layers of wet paper towels, this method is my preference anytime. Be sure to maintain moisture but don't drown them. In 4 or 5 days when the root is visible, place on the top of a prepared bed and cover with compost or soil. When planting out at this stage, use a dusting of insecticide to protect the vulnerable seeds. Build supports for vining varieties out of anything the peas can cling to, string and stakes works very well. Unsupported they will sprawl on the ground and be targets for crawling insects, disease and dirt. Powdery mildew is a common problem but can be discouraged with good air circulation. Aphids like peas and pea enation mosaic virus is a disease spread by aphids. Newer varieties have resistance or tolerance to this disease bred in but you still need to watch for aphids. Plant peas every few weeks from late winter to mid summer for a continuous supply in cooler climates.

Potatoes - Potatoes grow very well in the coastal climate. They are easy and will do especially well in light sandy soil, needing only moderate fertilizer and water. There are many combinations of colors of skin and flesh. There are many types from fingerlings to huge lunkers,

Vegetables - Continued ...

Potatoes Cont'd - with many different textures. Some bake or mash better and some are waxy and firm textured. Do not lime soil where you plan to plant potatoes; keeping the soil on the acid side will help discourage scab disease. Scabby potatoes, although unsightly, are edible. Potatoes can be planted fairly early, though they are not frost tolerant they will grow again if frosted. Too much water and fertilizer will cause the potatoes to grow too fast and get a disorder called hollow heart. Basically an empty spot in the middle, you'll know it if you see it. Pests that like potatoes are flea beetles and wire worms. Flea beetles eat pin holes in the leaves and lay eggs that when hatched will burrow into the potato. Wire worms, the larvae of click beetles, will also burrow into the flesh ruining it. These are hard to control, learn what they look like and kill them as they appear.

Pumpkins and Winter Squash - Pumpkins will grow close to the ocean with some wind protection; small early ones will work best. Winter squash must be grown inland; they need heat and a long season to produce a sweet flesh. Good fertility and plenty of water will produce big fruits. Some of the newer hybrids are very sweet. Pumpkins and squash can be direct seeded but starting them inside will give you a head start on the long growing season. They transplant easily if handled carefully. Powdery mildew is a problem in our climate; it blocks the plants ability to convert sun energy to sugar. It needs to be prevented so that the squash or pumpkin will attain large size and maximum sweetness. All squash types need to be pollinated, if they have lots of blooms but no squash, it is likely that the blooms are not getting pollinated. This happens if there are no bees, or if there is only one plant. More plants will increase the probability that you will have a male and a female blossom open on the same day. The female blossom has a miniature fruit; the male blossom has only a stem. Harvest before frost, store cool and dry, not cold. Squash may not develop full sweet flavor for a month or so.

Summer Squash - Zucchini is sometimes a joke, but most summer squash are very easy and will grow close to the ocean with wind protection. Most summer squash varieties will cross-pollinate but not with winter squash. If you only grow one plant, pollination is the single biggest problem you will have. It is a good idea to grow at least 2 or 3 to ensure that you get male and female blossoms open at the same time. If you don't want all zucchinis plant a couple of other kinds, there are many colors and types to choose from. Squash need good food and water to keep producing. Squash will grow rapidly, keep picked to promote continued production. When small they need protection from slugs and beetles. Once plants get some size there are few insects that can harm them. Powdery mildew and pollination failure are the biggest problems for squash in our climate.

Tomatoes - Depending on where you live it is very possible to grow your own tomatoes on the Oregon Coast.

You will need at least 8 hours of sun. If you live close to the ocean southwest exposure is best, a wall to radiate heat helps. Sun and heat are what makes tomatoes sweet! You will need some kind of cover. It can be a very simple cloche or a greenhouse. The cloche can be a large cage wrapped in clear plastic. Choose early maturing varieties, 80 days or less. If you are close to the ocean fewer days is better. For our climate, you should add about 2 weeks to the stated days to maturity. Cherry or small-fruited tomatoes may have a better chance of ripening. A couple of short compact cherry tomatoes are "Honey Bunch Grape" and "Sweet Baby Girl". Start your own seeds if possible, that way you can choose varieties that are best suited to your conditions. Look for disease resistant varieties. Tomatoes like good fertility but not too much nitrogen. Keep moisture consistent especially when plants are fruiting. You can grow tomatoes in pots but you will need to keep them well watered. The single most important detail in choosing a tomato variety is the growth type. Determinate varieties are shorter, and more compact, some are dwarf and may not need much support. This type will set a crop of fruit; stop producing flowers and direct energy to growing and ripening the fruit. These are good if you live close to the ocean or are growing in a cloche. Indeterminate varieties continue to grow taller and keep producing more blossoms and setting more fruit, until killed by frost. They also require more pruning to keep them under control. They can easily take over a cloche or grow out of the space allotted to them. Be aware that most (not all) "heirloom" tomatoes are indeterminate, will grow large plants and may be slow to ripen fruit. All tomatoes should have support to keep them off the ground. If you are going to grow an indeterminate variety, be prepared to support it. Tomatoes are subject to a several diseases. Late Blight is a devastating fast moving fungus that shows up when the weather conditions are just right, usually late in the season. It starts with a small gray patch on one leaf, soon there are more. It leaves foliage looking burnt and soon it affects the fruits and quickly kills the plant. There is NO CURE! Prevention is key! Organic and conventional sprays started early and used weekly should keep plants healthy. Some varieties have resistance to some diseases bred in, but not to this particular disease. Do not smoke around the plants or handle them if you have been smoking. Tobacco mosaic virus affects tomatoes and can be carried in cigarettes. Do not irrigate overhead and avoid splashing water on the leaves. Destroy any diseased plant parts by burning or putting in trash. Do not put grocery store tomato or potato trimmings in the compost. Since they are subject to the same diseases you should not compost any tomato or potato parts. As much as possible, rotate your crops. Blossom end rot is a condition; it is not a disease. It is a calcium deficiency caused by irregular or insufficient water. It shows up as a dry leathery brown patch on the blossom end. It is unsightly but does not affect the tomato.

Author: Sally Reill - Lincoln County Master Gardener

Ecolawn: Less work and water

An ecolawn is a low input alternative to a conventional perennial grass lawn. Ecolawns provide a turf-type ground cover and tolerate typical uses of grass lawns.

Unlike a standard grass lawn, however, an ecolawn is a mix of broadleaf and grass species that:

- are mutually compatible and ecologically stable
- stay green through the dry summer months
- need less water than conventional grass lawns
- require little or no fertilizer

An additional benefit is that ecolawns usually require less mowing than standard lawns - once every 2 to 3 weeks during spring, summer, and fall. If watered and fertilized like a conventional lawn, however, luxurious growth will result requiring more frequent mowing.

How do I establish one?

Site preparation and establishment are basically the same as for a standard grass lawn. Regular watering is necessary for seed germination and establishment, especially during the first summer.

Once established, however, water requirements are estimated to be 1/4 to 1/3 those of a conventional lawn.



There are several commercially available ecolawn seed mixes, but most include key components tested by OSU Turf Specialists. Ecolawn components include:

- Dwarf perennial ryegrass and hard fescue - non-competitive grasses, green during winter, may go dormant during summer depending on irrigation
- Yarrow – drought tolerant, green through summer, can be invasive around edges
- Clover – nitrogen fixation, drought tolerant, green in summer

Some mixes include other flowering broadleaves plants such as English daisy, Roman chamomile, or alyssum.

Another choice for a drought-tolerant lawn is a dwarf tall fescue such as Water Warden. This turf resembles a conventional lawn but again, needs much less water once established.

Lengthen Growing Season with Coldframes, Cloches

Do surprise frosts or cool temperatures foil your plans to ripen peppers or tomatoes? Do you want to keep lettuce or other greens growing over the winter?

If so, try building a simple coldframe or a cloche, which is like a mini-greenhouse with an arched roof.

Coldframes can prolong the growing season in the fall and be used to start flower and vegetable plants before normal outdoor planting dates in the spring. Young plants are protected from frosts, pummeling rains, icy sleet and wind. The sun enters the clear top of the coldframe by day, heating the soil. At night, the coldframe slows the loss of heat.

Built with wood or metal sides, coldframes can have a hinged or removable clear top so the cover can be raised on sunny days and then lowered during cool nights. Side walls can be as high as needed, but 8 to 12 inches are the usual height. The north wall of the frame box is usually built higher than the south for better sunlight exposure. A top with a layer of fiberglass works well; glass or plastic do not hold in heat well overnight. For maximum cold protection you can put an insulating material over it at night or use a layer of clear fiberglass on each side of the roofing frame.

For an easy, inexpensive cloche, use concrete reinforcing wire; buying a roll of wire mesh and cutting it to form "Quonset hut" arches to cover an area you want to protect. Concrete reinforcing wire comes in 5- and 7-foot rolls, so plan accordingly.



Photo by Sam Angima

Cover the wire with two layers of clear plastic, a sheet of fiberglass, or one layer of row cover plus one layer of plastic.

"Even old bed sheets will work if you just need nighttime protection from frost," she added.

Another way to build a cloche is by stretching plastic sheeting over PVC hoops. For instructions on that technique, see the OSU Extension guide called [How to Build Your own Raised-bed Cloche](#).

Source: Pat Patterson

Educate Yourself Before Using Pesticides

Reaching for a pesticide – even an organic one – should be a thoughtful act. Nothing used to kill pests is risk-free.

First decide if you need pesticides at all by practicing Integrated Pest Management or IPM.

IPM is defined as a way of thinking about pest management that values:

- Using knowledge about the pest’s habits, life cycle, needs and dislikes;
- Using the least toxic methods first, up to and including pesticides;
- Monitoring the pest’s activity and adjusting methods over time;
- Tolerating harmless pests;
- Setting a threshold to decide when it’s time to act.

Before using pesticides, identify your pest or disease. If you don’t know or can’t figure it out, capture the pest or take a large sample of the diseased plant to your local [OSU Extension Master Gardeners](#). Prevention is key so monitor your garden closely for the first signs of a problem when it will be easier to control. Before you move up the IPM ladder, decide your threshold for damage in the garden. Leaving some of the bad bugs will attract the good ones that will kill them.

If you decide the infestation is getting out of hand, don’t immediately get out the pesticides. Try biological controls like nematodes, lacewings or Bt (*Bacillus thuringiensis*) or physical methods like sticky traps, trap plants or a blast from a hose. Still not happy? Try a short-lived pesticide like neem oil or horticultural soap before moving up the IPM ladder. Just be aware, organic pesticides are often as toxic as synthetic ones.

People think natural is good and synthetic is bad. It’s not that simple. Certain things that are natural are more toxic than synthetic.

Nicotine, strychnine, and lead are all natural, but their impacts can be deadly. Sulfur can cause all sorts of problems from explosions when combined with products like nitrates and heavy metals to potential death if inhaled. Goggles and gloves are required for application of copper sulfate, which can be harmful to the skin and eyes. Even mint oil can be highly toxic to the eyes.

Vinegar, even household vinegar, if you look at the safety data sheet it requires goggles to apply. Acetic acid (vinegar) can cause lasting eye damage.

Some organic pesticides low on the toxicity list include neem oil, pheromones, pyrethrins and most essential oils. Choose a product with instructions and precautions for pesticide use.



Toxicity is not the only thing to consider. Natural pesticides tend to break down faster than synthetic products, which persist longer in the environment. Biopesticides are more pest-specific so they’re less likely to kill non-target garden-dwellers, which will hang around to feed on the bad bugs.

To determine a product’s toxicity, do some research, make use of the Master Gardeners or post clear photos of the entire plant and the damaged portion to [Ask an Expert](#), an online service from OSU Extension. The label will also have the pertinent information, and it’s the law to follow it. When you decide you need an organic pesticide, look for the OMRI (Organic Materials Review Institute) stamp on the label. Based on the label requirements, you may still need to wear goggles, gloves and a face mask. Wearing safety equipment when you’re gardening may seem intrusive, but the alternative can be toxic.

The label will also indicate for which pests and plants it’s appropriate.

Look at the label and see if it is labeled for the plant you want to use it on and the insect that you’re targeting. It might say ‘home gardens, squash, powdery mildew.’ It needs to be specific. See if it works on the plant and insect or disease you have.

Buying a pesticide can seem daunting, but finding those that target your needs makes it simpler to choose. Be sure to mix it up sometimes because pests can build up resistance.

If you’re in a situation where you have to apply an organic pesticide over and over again, it’s time to switch. Try a different pesticide that’s labeled for your problem. Something just a little different could be just the ticket.

But the bottom line is the use of IPM, which gives a complete toolbox of solutions.

If you realize you’ve put out the “welcome mat” for pests, figure out what it is and remove it. Change the spacing, the watering plan, or introduce barriers to pests. If you choose to use a pesticide, treat it with care and follow the label, whether it’s organic or not.

Author: Kym Pokorny
Source: Kaci Buhl

Identify the problem before treating the plant



When you've got a plant that looks a little – or a lot – in distress, don't start trying to fix it until you know the problem.

It could be a simple glitch like not giving it enough water or putting a sun-loving plant in the shade. The first line of defense is knowing your plant, its characteristics and needs.

People assume if a plant changes appearance that it's a problem; but it may not be a problem at all. It could be an oddball characteristic like a conifer whose foliage changes color in winter. That always worries people.

Once a gardener came to the Extension Office because his arborvitae hedge had turned a rusty brown color. It turns out to be its winter color. In response to cooler temperatures, some conifers change color. Some conifers have really spectacular winter color, but for arborvitae, it just looks off.

Once you've determined it isn't just a characteristic of the plant and the plant is getting the sun exposure, water and nutrients it needs, it's time to move on to solving the mystery. To do that, ask a series of systematic questions to diagnose and effectively address the cause of the malady.

Identifying the problem first enables you to go about fixing the problem in the appropriate way. Even if your problem is caused by a pest or disease, sometimes a person may choose to use a pesticide, organic or otherwise, but you have to apply it when it's going to be effective. How people mess up is applying something that's not needed or apply it when it doesn't work. You don't want to waste resources on a problem you don't have. Sometimes people spray first and ask questions later. It should be the other way around."

Whether you decide to diagnose your plant woes on your own or use an OSU Extension Master Gardener, the process is the same. The trained volunteers ask the same questions and require you to come in armed with as much information as you can gather. If you don't know what the plant is, they'll help identify it and move down the diagnostic process to uncover the trouble.

Sometimes people don't know what to look for. People notice symptoms of the plant and their eyes go right to that issue. They may see a tree with leaves that are wilting so they bring in the leaves and that's not the issue at all. You have to look at that tree holistically.

Follow it down from twig to branch to trunk to roots. The real problem may be somewhere else on the tree. Sometimes we send people back to do a walk around the tree.

About 30 to 40 percent of people who approach Master Gardeners are unprepared for the questions they'll be asked. But no one should be intimidated.

Some people are avid gardeners, others are new. It's dramatically different. We get from super simple problems to some that are complex that they've already had other experts out for consultation. There's no typical client.

You can bring in samples, photographs and as much information as you can muster of the affected plant for your local Master Gardeners to examine. If coming into the office is onerous, you can email photos and information, as well. You'll find the email address, phone number and address of your local Extension office on the website. Or submit a question and photograph to OSU Extension's Ask an Expert service.

For more information about pests and diseases, go online to the PNW Plant Disease Management Handbook and the PNW Insect Management Handbook..

The principles of diagnosing a plant problem are very similar to going to a doctor or an auto mechanic. The doctor and the auto mechanic are looking for evidence of the root of the issue.

Important questions to ask as you begin your investigation:

- What's the identity of the affected plant? Determine whether a "real" problem exists; maybe whatever the plant is doing is normal. What are the characteristics of the plant? How does it display them throughout the year?
- How many plants of the affected species are present?
- How many plants in that group are affected?
- What is the pattern of damage within the population? A uniform pattern usually indicates non-living, environmental causes of the problem. A random pattern indicates that diseases or pests could be culprits. But don't over-analyze "uniform" versus "random."
- Which part or parts of the plant are affected? Just the leaves, fruit, shoots, a combination of those, or the whole plant?
- What's the pattern of damage on the leaves and stems of the individual plant? If the damage pattern is uniform or random it can often indicate the cause is non-living or caused by pests.
- What's the pattern of damage on the plant parts?
- What time of year did the symptoms appear?
- Are the symptoms spreading, improving or constant? Pest or disease problems often become worse with time. Environmental problems in some cases look bad for a while but may start to improve.
- Are any signs of a pest present? Signs of a pest could include slug slime trails, rodent mounds or holes, fungal fruiting bodies, or distinct notches cut from the leaf margin.

Author: Kym Pokorny

Source: Neil Bell & Brooke Edmunds

Expert tips for growing kiwifruit

If you have a good strong trellis, are a bit of a gambler and have a love of kiwifruit, there's no reason not to grow your own crop. As vigorous as they are, though, don't expect to plop these vines into the ground and stand back.

Kiwifruit need some attention to yield the large amount of fruit they're capable of producing. Proper siting, fertilizing, watering and, most importantly, protecting from cold weather, are necessary to keep your plant in good shape.

There are three types of kiwifruit, the most common being the fuzzy kiwifruit (*Actinidia deliciosa*) available at the grocery store, usually the cultivar called 'Hayward.' Joining the lineup are hardy kiwifruit (*A. arguta*); and kolomikta kiwifruit (*A. kolomikta*), which is not often grown for fruit. Instead, gardeners become enamored of the variegated pink leaves and use it as an ornamental vine.

Hardy kiwifruit, also called kiwiberries because of the grape-sized fruit, are most suited for home gardens because they are best adapted to Oregon's westside climate. The highly aromatic fruit has smooth, green skin – sometimes with a red blush – that's edible, making them great for snacking. Fuzzy kiwifruit don't ripen on the vine and are harvested in fall when they are "green ripe." They can be stored in a cold area for months, which is why they you'll find fine fuzzy kiwifruit in grocery stores year-round.

Fuzzy kiwifruit are best grown in warmer regions like California, because vines can get winter cold injury in most areas of Oregon. Hardy kiwifruit are better adapted to our region because they are very winter cold hardy and fruit will vine ripen from mid-September into mid-October. You'll sometimes find them at farmers markets and some grocery stores.

Of the hardy kiwifruit, the easiest to find are 'Ananasnaya,' (sometimes called 'Anna') with jade-colored skin, bright green flesh, black seeds and a pineapple-type flavor (the name means "pineapple" in Russian) and 'Ken's Red,' a New Zealand cultivar with olive green skin and darker green flesh with deep red streaks.

The young shoots and fruit of all kiwifruit species are sensitive to frost injury. Temperatures of 30 degrees or less for only 30 minutes can severely damage newly emerging shoots in the late winter through spring.

To reduce the chance of damage, grow kiwi plants in warmer areas of the garden that are protected from frost, avoiding low areas or cool sites. When temperatures are forecast to drop to 32 or lower, drape the vine with row covers before sunset and remove them when temperatures rise above freezing.



Tips from Extension's publication [Growing Kiwifruit](#):

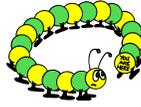
- Kiwifruit vines are either female, which produce the fruit; or male, which are vital for pollination and fruit production. Be sure to plant both unless a neighbor has a male.
- Build a substantial arbor or T-bar trellis that's tall enough to stand under for harvest; the stronger the better since the vines can grow 15 feet wide and produce up to 100 pounds of fruit.
- Plant 10 to 15 inches apart in spring in deep, well-drained soil in a sunny, protected area of the garden. Don't skimp on this advice since kiwi vines are susceptible to root rot.
- Water a couple of inches of water a week during the growing season. A drip system works best.
- Fertilize with about ½ pound of nitrogen per mature vine, dividing this into thirds (mid-March, mid-April and mid-June) use a well-balanced fertilizer 16-16-16 (3 pounds per season) or soybean meal (about 7 pounds per season).
- Prune females heavily in December. If it gets later in the season, the vines will excrete large amounts of sap, which dismays gardeners. It's best to prune early. If you are pruning late, don't worry too much about the sap loss. Prune males after bloom in late June. When pruning a mature vine, remove about 70 percent of the wood that grew last season. Most of the wood removed is older wood that already has fruited.
- In warmer regions of Oregon harvest fuzzy kiwifruit in late October to early November when they are still hard, but the seeds are black. They can be stored in a cold (32 to 40 degrees) area for several months. To ripen small amounts, put in a slightly vented plastic bag with apples or bananas. Harvest hardy kiwifruit, which do not all ripen at the same time, when they are soft to the touch. They should be eaten right away; or in order to store in the refrigerator for a few weeks, harvest fruit when they are still firm, but seeds are black (early September). When they are too ripe, the fruit will tear at the stem end. You can enjoy them throughout the winter by freezing them and letting them partially thaw before eating.

Author: Kym Pokorny
Source: Bernadine Strik

What's "Bugging" My Garden?



by Evelyn
VonFeldt
OSU Master
Gardener

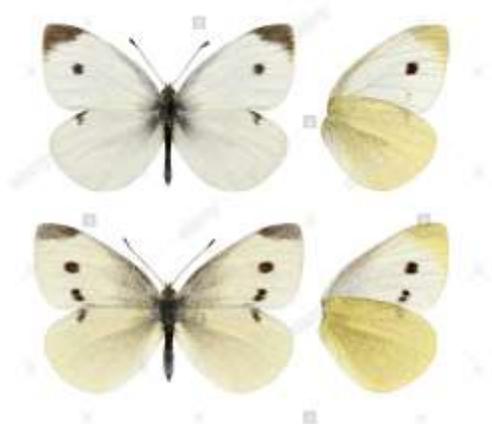


Imported Cabbageworm

The imported cabbageworm *Pieris rapae* is the bane of many gardeners in Tillamook County. It is like plant any brassica family plant (broccoli, cabbage, cauliflower, kale, brussels sprouts, mustard greens, turnip, rutabaga, kohlrabi, radish, collard greens, rapeseed) and they will come. The adult is the medium sized white butterflies you see flitting about all spring and summer. I know they are just looking for their next meal but turn your back for a couple of days and the eggs they lay turn into eating machines. One day you think everything is fine and then viola holes galore in your cabbage or kale leaves.



So let's look at their life cycle. The pupa overwinters on a host plant then emerges in April or May as an adult. With the adults the cool thing is you can tell at a glance the male from the female butterfly. The female has two dots on her upper wing while the male only has one. So given the chance of destroying the females could help a little bit.



After mating she lays individual eggs on the under sides of leaves of those brassica plants. The egg hatches in 4 to 8 days, larvae mature in 2 to 3 weeks eating and pooping their nasty pellets everywhere in your plant getting larger by the day.

They start out looking like a green thread barely visible eventually getting big and fat but still hard to see blending into the green of the leaf. They do have a lighter yellow-ish stripe down their back and sides. They don't spin a cocoon but spin a few threads attached to surrounding leaves to pupate before turning into an adult. There can be 3 to 5 generations per year.



I like to squish the caterpillar when I find them. Covering the plants with a floating row covering before the adults can lay eggs is a great alternative to spraying. There is a product called Bt (*Bacillus Thuringiensis*) that is a virus that only kills caterpillars so is safe for other insects like pollinators. I found out researching that their native territory is Europe, Asia and North Africa and they were accidentally introduced to Canada in 1860 and quickly spread all over North America, including Hawaii by 1929. Another example of a hitchhiker gone bad.

Sources: PNW Handbook 2018 PNW 8071, Alamy stock photos.

Garden hints from your OSU Extension Agent

MARCH

Maintenance and Clean Up

- Lawn mowing: Set blade at 0.75 to 1 inch for bentgrass lawns; 1.5 to 2.5 inches for bluegrasses, fine fescues and ryegrasses. Compost clippings, except where herbicides or weed and feed products have been used.
- Prune gooseberries and currants; fertilize with manure or a complete fertilizer.
- If needed, fertilize rhododendrons, camellias, azaleas with acid-type fertilizer. If established and healthy, their nutrient needs should be minimal.
- Prune spring-flowering shrubs after blossoms fade.
- Fertilize caneberries using band fertilizer, broadcast fertilizer or a complete fertilizer or manure.

Planting/Propagation

- Divide hosta, daylilies and mums.
- If soil is dry enough to work plant onions. Plant early cool-season crops (carrots, beets, broccoli, leeks, chives, parsley, rhubarb, peas and radishes).
- Plant berry crops (strawberries, raspberries, blueberries, blackberries, currants, gooseberries).

Pest Monitoring and Management

- Spray trees and shrubs for webworms and leafrollers, if present.
- Protect new plant growth from slugs.
- Prune ornamentals for air circulation and to help prevent fungus diseases.
- Monitor for European crane fly, treat lawns if damage has been verified.
- Start rose blackspot control tactics at budbreak. Remove infected leaves. Spray as necessary with registered fungicide.
- Trim or shear heather when bloom period is finished.
- Start tuberous begonias indoors.
- Take geraniums, begonias and fuchsias from storage. Water and fertilize. Cut back if necessary. Move outdoors next month. ☺

APRIL

Maintenance and Clean Up

- Allow foliage of spring-flowering bulbs to brown and die down before removing.
- Apply fertilizer to cane, trailing berries, and bush (gooseberries, currants and blueberries).
- Place compost or decomposed manure around asparagus and rhubarb.
- Cut back ornamental grasses to a few inches above the ground, in early spring.
- Optimum time to fertilize lawns. Apply 1 pound nitrogen per 1,000 square feet of lawn.
- Optimum time of year to dethatch and renovate lawns. If moss was a problem, scratch surface prior to seeding with perennial ryegrass.
- Prune and shape or thin spring-blooming shrubs and trees after blossoms fade.

Planting/Propagation

- Plant gladioli, hardy transplants of alyssum, phlox and marigolds, if weather and soil conditions permit.

Pest Monitoring and Management

- Clean up hiding places for slugs, sowbugs and millipedes.
- Monitor strawberries for spittlebugs and aphids; if present, wash off with water or use insecticidal soap as a contact spray. Follow label directions.
- If necessary, spray apples and pears when buds appear for scab. See *Managing Diseases and Insects in Home Orchards (PDF - EC 631)*.
- Use floating row covers to keep insects such as beet leaf miners, cabbage maggot adult flies and carrot rust flies from susceptible crops.
- Help prevent damping off of seedlings by providing adequate ventilation.
- Spray stone fruits, such as cherries, plums, peaches, etc., for brown rot blossom blight, if necessary. ☺

MAY

Maintenance and Clean Up

- Fertilize rhododendrons and azaleas with acid-type fertilizer. Remove spent blossoms.
- Fertilize roses. Control diseases. Select new disease resistant roses.

Planting/Propagation

- Plant dahlias, gladioli, and tuberous begonias in mid-May.
- Plant chrysanthemums for fall color.
- Plant (dates vary locally): Snap beans, broccoli, Brussels sprouts, cantaloupes, pickling cucumbers, dill, kale, parsnips, peppers, pumpkins, summer and winter squash, sweet corn, and tomatoes.
- Mid-May, transplant tomato and pepper seedlings.

Pest Monitoring and Management

- Monitor soft fruits and berries for Spotted Wing Drosophila (SWD).
- Trap moles and gophers as new mounds appear.
- Leafrolling worms may affect apples and blueberries. Prune off and destroy affected leaves.
- Monitor aphids on strawberries and ornamentals. Wash off with water, hand remove, or use registered insecticides labeled for the problem plant
- Control cabbage worms in cabbage and cauliflower, 12-spotted cucumber beetles in beans and lettuce and maggots in radishes.
- Tiny holes in foliage and shiny, black beetles on tomato, beets, radishes and potato indicate flea beetle attack. Treat with Neem, *Bt-s*.
- Prevent root maggots when planting cole crops (cabbage, broccoli, and kale) by covering with row covers, screens, or apply appropriate insecticides.
- Monitor rhododendrons, azaleas, primroses, etc., for adult root weevils. Look for fresh notching at leaf edges. Try sticky trap products. Protect bark by applying on poly sheeting or burlap wrapped around the trunk. ☺

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.

SAVE THE DATE!!

Sponsored by Tillamook County Master Gardener Association

Follow us on the web at: <http://tillamookmastergardeners.com>
 Facebook: <https://www.facebook.com/tillamookmastergardeners/>

Spring Home & Garden Classes

Saturday, March 30, 2019

9:00 am to 4:30pm

OSU Extension Service
 4506 Third Street
 Tillamook, OR 97141

Bees
 Roses
 Natives
 Moles!
 Crafts
 Much

Watch for class schedule and details on our Face
 Book page and Website

TCMGA Annual Plant Sale

Saturday, May 4, 2019

9:00 am to 2:00 pm

Tillamook County Fairgrounds 4-H and
 FFA Pavilion

Master Gardener Help Desk, Garden Garage Sale,
 Local Vendors

*Oregon State University
 Publications are available at:*

*[http://extension.oregonstate.edu/
 catalog/](http://extension.oregonstate.edu/catalog/)*

*If you do not have internet, you
 may request a copy of most of
 the publications cited in this
 newsletter from:*

*OSU Extension Service
 4506 Third Street
 Tillamook, OR 97141*

Phone: 503-842-3433

Master Gardener OFFICE HOURS

*OSU Master Gardeners ARE IN
 @ OSU Tillamook County
 Extension Service
 4506 3rd Street
 Tillamook, OR 97141*

The Tillamook County Master Gardeners
 volunteer service in our community
 and give hundreds of hours in service
 to the community by answering home
 horticulture questions.

Please stop by the Master Gardener
 Office with your questions.

Office Hours

12:30 to 4:30 PM

Mar — Monday & Thursday

Apr to Sep — Monday, Wednesday & Thursday