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Yellowstone Master Gardener



NEWSLETTER

Volume 13, Issue 4—Oct/Nov/Dec 2024

Meet Master Gardener Lori Buxbaum

By Sheri Fredericksen

Lori grew up in the Dubuque, Iowa area. She spent her early years helping her mother with the family garden, a task she didn't much care for especially when it was hot and humid. They grew a variety of vegetables and raspberries in a garden that was terrace-like as the landscape was very hilly.

Lori holds several degrees, including a BA in Political Science, a BSN in Nursing, and an MHA in Health Administration. She has been a substitute teacher, a social worker, and a nurse/case manager. Her work has taken her from Iowa, to Havre, and finally to Billings. Lori retired from nursing in 2018.

Lori's husband Keith was the family gardener. Lori canned everything from the garden as they always had an abundance of produce. Once she retired she felt ready to tackle gardening. Lori enjoys growing different tomato varieties as well as zucchini. This year she tried growing a zucchini tree* to save space. Lori said the plants weren't as productive as typical zucchini plants but she will try again next year. They also have apple trees, plum trees, grapes, and red and white raspberries on their property. During a recent tour of the Eagle Ridge Iris Gardens in Lockwood, the owner gave a demonstration of pollinating iris. Subsequently, Lori cross-pollinated an iris from that garden with one in her yard and is looking forward to how the resulting hybrid does next year.

Lori and her husband Keith took Level 1 master gardener classes in 2019. Lori also took an online course to familiarize herself with square foot gardening. Each year, Lori and her husband coordinate the planting and care of the Veteran's Garden at the Yellowstone County Courthouse. They are always looking for ideas to add different perennial plants that will do well in the planters.

When asked what drew her to the master gardener program, Lori's response was simple--she'd recently retired and was looking for opportunities to join service organizations. In addition, she belongs to a quilting group that makes quilts for local charities and "Quilts of Valor" which creates and distributes quilts to Yellowstone County veterans. Lori is also involved in "Operation Christmas Child" and makes young girls' dresses, dolls with matching clothing, and a matching tote bag. Along with other toys and personal care items, gifts are distributed to areas of need throughout the world.

Prior to retiring, Lori's biggest gardening challenge was "finding time." Her current challenge is still "finding time" as she and Keith help with their three grandchildren. Lori is always looking for new and different gardening methods and ideas, and hopes that next year she'll have better results with her zucchini trees!

**For more information on zucchini trees, search YouTube "growing zucchini vertically."*



Visual ID of Nutrient Deficiency

by Joy Culver

Several Billings Master Gardeners attended the May 2024 “Diagnostic Bootcamp” offered by MSU Extension to Master Gardeners, County Agents and landscape professionals.

The presentation on soil nutrient deficiency was particularly helpful. Dr. Clain Jones, Extension Soil Fertility Specialist, offered visual assessment tools to help recognize nutrient deficiencies because specifically identifying and addressing only what is lacking saves the time and expense of supplying unneeded supplements.

For example, nitrogen, phosphorus, sulfur, and iron are common nutrient deficiencies in Montana soil. Older lower leaves may become yellow and/or light green when nitrogen is in short supply. In contrast, if young upper leaves become yellowish, the missing element may be sulfur. In addition, if younger leaves display interveinal chlorosis, an iron deficiency could be present. (Interveinal chlorosis is a condition in which a sharp color contrast exists between the deep green veins of the leaf and the lighter green plant tissue located between the leaf's veins.)

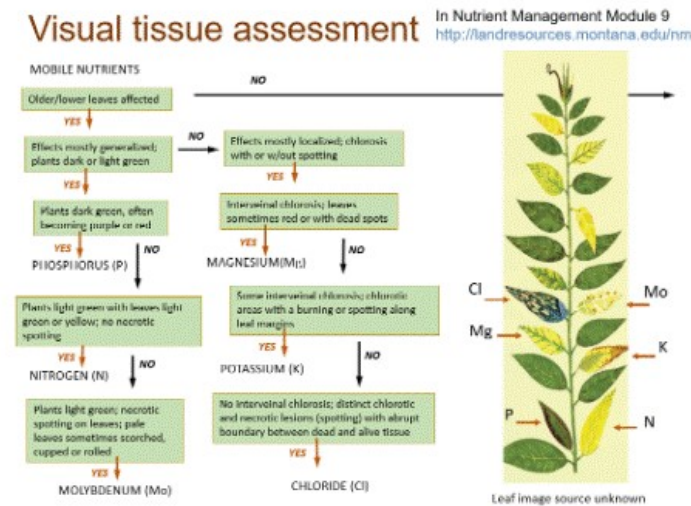
The online Nutrient Efficiency Assessment Tools (see link below) reference “mobile” and “immobile” nutrients.

Mobile nutrients are: nitrogen, phosphorus, potassium and magnesium. They primarily affect lower, older leaves first. Immobile nutrients are: sulfur, boron, calcium, and iron. A deficiency of one or more of these typically affects upper, younger leaves first. The online tools include a flowchart and a drop-down key and step by step methods to identify the most probable deficient nutrient. Although visual assessment does not replace soil testing or plant tissue testing, visual information may help narrow down the culprits.

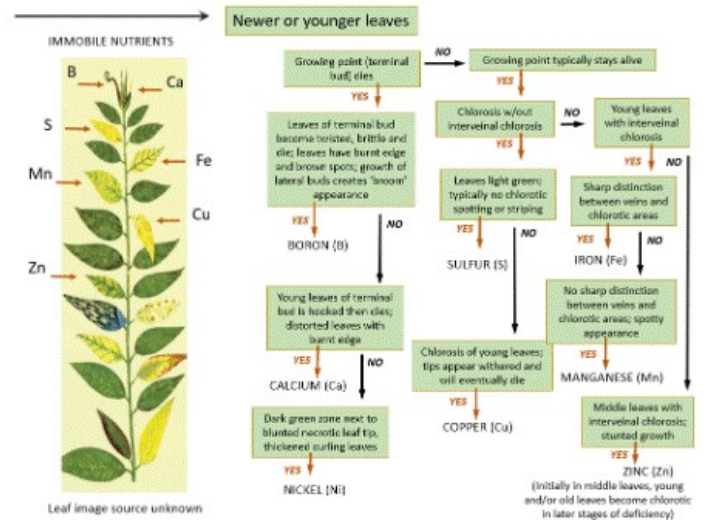
In a related discussion we learned micronutrients are rarely lacking if the soil has good organic matter content. Greater than 5% organic matter is considered adequate to supply necessary micronutrients. Since only tiny amounts are needed, micronutrients can be challenging to apply, so adding organic matter to supply them is the recommended approach.

This link provides a multitude of articles, the Nutrient Efficiency Assessment Tools and information useful to most gardeners: <https://landresources.montana.edu/soilfertility/nutrientdeficiency.html>

Mobile Nutrients - Cl, K, Mg, Mo, N, P



Immobile Nutrients - B, Cu, Ca, Fe, Mn, S, Zn



Harvest Tip: Freezing Onions



By Sheri Kisch

Onions are so easy to store that you may not want to bother freezing any. But if some of your onions are sprouting or not keeping well, you can salvage them by peeling and pureeing them in a blender. Pour the puree into ice trays, cover with

plastic (so the odor won't affect other foods) and freeze. After the onion cubes are frozen, transfer to a plastic bag for more compact storage. They're good for gravies and taking the “canned” taste away from canned soup.

You can also freeze whole onions: peel and wash, then blanch them in scalding water until the centers are heated (3 minutes for small onions, 7 minutes for medium to large). Cool, drain and freeze them on

cookie sheets. After they're frozen, put the onions in a plastic bag for convenient storage. That way, they stay separate, and it's easy to take out only what you need.

To keep large, European onions that don't store well, wash, chop and freeze them without blanching. Pack them in small containers, leaving ½ inch of headspace.

For the best flavor, use frozen onions within a month or two.

Hosta Virus X

by Ann McKean

I've had a really cool looking hosta in my garden for at least five years. I don't remember when or where I got it, but I remember thinking when I bought it that it was so unusual. That should have triggered suspicion, but I'm embarrassed to say I swatted down the red flags and bought it. Arg.

I was recently on a grower website that talked about Hosta Virus X and all my alarm bells went off. I ponied up the \$70 for five tests from Agdia and rushed to test when they arrived in the mail. I already knew. It was positive.

Hosta Virus X causes unusual mottled, pixilated-looking markings along with puckering and bleaching. It can lie dormant, not always showing symptoms immediately, and doesn't necessarily kill the plant. Plants can survive for years in a compromised state, but may eventually succumb, especially if other stressors are present.



Normal hosta center left; diseased hosta on the right.

It is spread through sap, so, as always, good hygiene is crucial in the garden. Wash your hands well with soap and water and soak your tools for at least one minute in 14 oz TSP per 1 gallon of water between each plant. If you have an infection, don't mess with it until dormancy, then collect all dead and dormant plant material including as much root material as possible and throw it in the trash. Never compost it.

Assume that the disease is still present in the soil and don't plant more hostas in that location. If you find a diseased plant in your garden, don't panic. But don't move or share any hostas from that area. There is no cure for HVX, so if you spot an unusual hosta in a friend's garden or at a nursery, be wary and maybe skip that one. Wish I had!

<https://hort.extension.wisc.edu/articles/hosta-virus-x/>

<https://orders.agdia.com/agdia-immunostrip-for-hvx-isk-16600>



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*Please update MG training and
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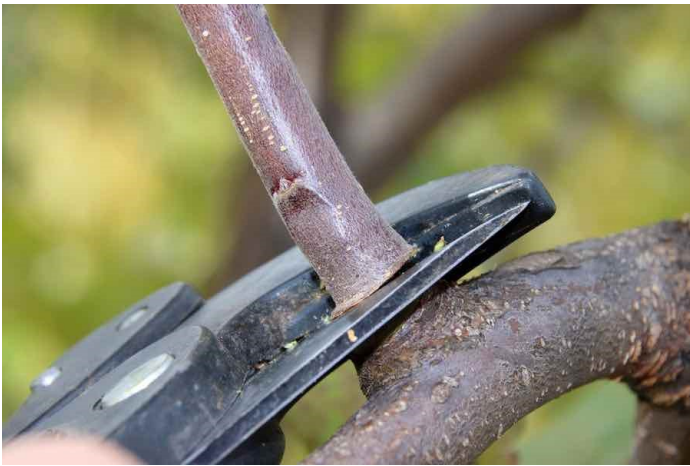
www.mtmastergardener.org
Select "Master Gardener Login"

Existing master gardeners: contact Sarah Eilers (sarah.eilers1@montana.edu) if you have not yet updated your profile.

New participants can go to the Login page and create a new account.

PRUNING APPLES (AND OTHER FRUIT)

by Ann McKean



I've always believed that pruning is a holy mystery and that one must have years of experience to do it properly. That's maybe partly true, but the art of pruning can and should be learned. There are some simple guidelines that, if followed, will get you growing in the right direction.

Start your pruning regime when trees are young. Proper shaping will create healthy, strong, prolific trees for years to come. Although late winter before bud break is the best time to prune for shaping and fruit set, if you see dying or diseased branches, don't wait for winter, but remove them as soon as possible. Start with clean hands, and clean and sharp tools. Remember to spray your clippers with the strongest rubbing alcohol between cuts and between trees.

First, remove all dead and diseased branches. Next, remove all suckers around the trunk and sprouting up from the branches, and remove all branches that are below your knee. Make sure all your cuts are clean and just beyond the branch collar; never leave a longer stub. Now, take a good look at the remaining branches and prune out any that are crossing or pointing inward. Always cut the weaker of the two if there is a choice. Step back and admire your progress.

Having completed the basic cleanup, you can start to shape your young tree. Unless you are training for a specific style (e.g. espalier), most apple trees do best trained to a central leader. This results in a natural pyramid shape, allowing sun and air to reach all the branches. If your tree already exhibits a strong leader, great. If it has competition, remove the shorter weaker branch and if it is very long, cut the central leader back to 24-30 inches above the highest scaffold branch below it. Make your cut just above a healthy bud as this bud will become your new leader.

If necessary, thin the lower branches so they are no less than 4-6 inches apart vertically and evenly spaced around the tree. These are your scaffold branches. All branches should meet the trunk somewhere between 45 and 90 degrees or 10 and 2 on a steering wheel. If the angle is too narrow, the branch will likely split off the tree in the future. If any lateral branches are long and spindly, cut them back to the nearest strong bud which will grow in the desired direction.

Remember, never prune more than a third of live growth from any tree in a year. Pruning more will stress your tree and cause water sprouts to grow. If you are pruning an older tree, the same precepts apply.

In especially prolific years, fruit thinning may be required. Trees that are not thinned could suffer broken limbs and will likely have a sparse fruit set the following year.

Pruning is an important part of care for all fruit trees for healthy shape and fruit production. Don't be afraid to prune your trees; no pruning is more detrimental than inexperienced pruning. And remember that even the most experienced pruners have different styles, so go forth and prune!

Interesting Garlic Facts

by Suri Lunde

- * Garlic and onions are naturally toxic to cats and dogs.
- * Differentiate garlic and onion plants by their leaves: onion leaves are round, garlic leaves are flatter.
- * Elephant garlic, which resembles a giant head of garlic and belongs to the same genus *Allium*, is a type of leek, not a true garlic.
- * Garlic is a superfood because it is very rich in antioxidants, vitamins A and C, fiber and various amino acids.
- * Garlic contains trace minerals which are important for normal functioning of our metabolism including copper, iron, magnesium, germanium, zinc and selenium.
- * 90% of United States garlic production comes from California.
- * Although April 19 is National Garlic Day in the US, garlic festivals are celebrated at different times in many parts of the country.
- * To get rid of garlic smell on your fingers, rub your fingers on a stainless steel object under running water.
- * Stop aphid attacks on roses by spritzing the plant with a crushed garlic-and-water mix.
- * To peel a head of garlic, trim the top off the bulb and remove any really loose skin from around it. Microwave the whole bulb for 20 seconds. Let it cool for 15 second; each garlic slips easily from its skin.
- * In Central European folklore, garlic was used to ward off vampires, werewolves, and demons by rubbing garlic on keyholes and chimneys, hanging garlic cloves on windows, or wearing a garlic necklace.

Go Gaga For Garlic by Suri Lund

Garlic (*Allium sativum* L.) falls under the allium family, which includes shallots, leeks, onions, chives, and scallions. A garlic bulb is a collection of cloves. The scape is the curling stalk and is considered a bonus crop that you can stir-fry or sauté. The tip of the scape flowers and eventually forms bulbils. Garlic is one of the easiest crops to grow: low maintenance, cold hardy, disease and pest resistant, and you can plant a lot in a small space.

Garlic Types

Hardneck varieties produce a stiff stem through the center of the bulb. They produce bigger cloves, have sharper flavors, and are hardy for areas with cold winters like Billings.

Softneck varieties, commonly sold at supermarkets, have small cloves with a relatively mild flavor. Softneck garlic generally prefers mild winters, and is the type to grow if you want to make garlic braids.

Growing Garlic

Purchase garlic from a local farmers market, garden center, or garlic seed supplier. Each clove will sprout into a garlic plant, so determine how many bulbs to buy. Avoid planting garlic purchased at the grocery store because they have been treated with sprout inhibitor to extend their shelf life and are harder to grow.

Plant cloves in the fall (4-8 weeks before the ground freezes) or spring (as soon as the ground can be worked). Garlic overwinters well and early planting will produce larger and more flavorful bulbs. Choose a spot with full sun and well-draining soil. Work the soil to a depth of 4 inches and add compost and manure. Separate the garlic bulb into individual cloves, leaving the papery skin intact. Plant cloves pointed end up, with the base of the clove two to three inches deep, spacing each clove 4 inches apart. Cover the planted garlic cloves with soil and pat gently.

Garlic can also be grown in pots. Use a non-clay-based pot with good drainage, wide and deep enough, and fill it with rich potting soil.

If planting garlic in the fall, fertilize and mulch

heavily with 6 inches of straw, hay or compost. Remove mulch in the spring to help the soil warm up. If planting garlic in the spring, mulch to retain soil moisture and help control weeds.



Garlic Plant Care

In early spring, trim scapes that emerge from the ground to make the plant divert its energy into bulb production.

No need to water garlic plants during fall and winter. Water the garlic every 3 to 5 days throughout the growing season. Stop watering two weeks before harvest.

Fertilize if the garlic shoots look yellowish or limp in the middle of the growing season. Weed as necessary to avoid competition with other plants for nutrients and water.

Harvesting Garlic

Harvest in July or August when four stem leaves turn brown and begin to die off. Dig up the garlic plants with shoots and bulbs attached, and brush off excess soil. Do not wash the garlic because it will prolong the curing process and potentially cause it to rot. Cure for at least two weeks.



Curing and Storing

Cure by spreading them out in a single layer in the sun in a warm (not hot) spot, OR hang the garlic upside down in a warm, shaded, airy and dry area, OR braid the stems and hang the garlic in a cool, dry place.

When cured, the outer skin is dry and papery, and the cloves are firm and easy to pull apart. Brush off dirt, and cut the shoots half to one inch above the bulbs and trim the roots, unless you prefer them to stay braided.

Store cured garlic in a cool (55 to 70 degrees F), dry place with good air circulation and moderate humidity, or in a garlic keeper. Save the biggest best-looking bulbs for next season's planting.

Planting Tips

Garlic's companion plants include carrots, eggplants, tomatoes, kale, beets, broccoli, and kohlrabi.

Avoid growing garlic next to peas, asparagus, parsley, sage, and beans.



Resilient Garden

Sustainable Gardening for a Changing Climate

By Tom Massey

This is a book by a British author and, thus, “garden” means yard or landscape, not vegetable garden. This is a book on landscape planning.

The world is facing two grave crises: climate change and loss of biodiversity. Climate change is bringing extreme heat, drought, floods, uncontrollable fires, and hurricane-force winds and hail. We now deal with all of these catastrophic events in our gardens and yards. This book addresses how our yards can be designed to be resilient now and in the future, as well as how we can help mitigate these dual disasters by how we garden.

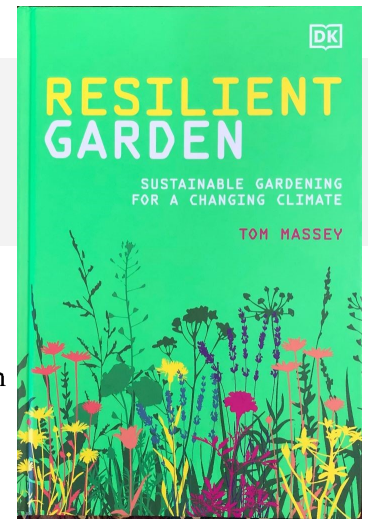
Topics covered in this information-rich book include:

Guiding Principles for Gardeners: design for the environment; reduce resources; source sustainable materials; consider the sustainability of the construction; design with time in mind; and introduce resilient design.

Key Actions for Gardeners: include trees; reduce hard landscaping; produce compost; use renewable technologies; think about greening on all planes; add green roofs; include productive plants; design seasonal planting areas.

Building in Biodiversity: include insect habitats; design for wildlife; garden without toxic chemicals; plant sustainable schemes; include natural water; consider alternatives to lawns.

The author clearly illustrates and explains the above principles and actions. Examples of suggested changes are replacing hard surfaces with permeable materials, building swales to ameliorate floods and save water for drought conditions, adding living roofs for cooling and added habitat, and growing food forests for habitat and food production.



From a library of images collected over many years, the author and AVA CGI (British architectural design firm) created plans for a front and back yard to tie the above principles to a real landscape plan, showing computer-generated before and after in realistic photos. The result is an exciting approach to landscape planning, creating a visual image of what the landscape would actually look like, going beyond a 2-dimensional map and lists of plants.

In the next section of the book, the author identifies many of the plants in the images from the landscape plan, showing how the plant looks in place and giving detailed growing information. In addition, each section offers alternative plants for the setting, which is helpful to American readers as not all the English plants are available in the U.S.

Lastly there is an informative section on garden materials and their environmental impact as well as alternative, greener choices, and a detailed list of references for further in-depth reading.

Resilient Garden is not a how-to book per se—it is more a book of information and ideas on new ways to plan and execute landscapes. It opens the reader up to many new ideas and possibilities, with clear and impressive illustrations to back up the ideas. There is a wealth of information contained in this book, waiting for you to discover and implement in your own yard.



Monarch Butterfly

by Ann McKean

Monarch butterflies are one of nature's great miracles. One of the few migrating insects, they travel from their winter habitats in Mexico and California to as far north as Canada (where they have now been listed as endangered). The winter population postpones sexual maturity for months, but each summer butterfly only lives for several weeks during migration, dying after it produces another generation. Incredibly, the new butterflies follow an internal compass to find their way back to the winter grounds.

While the butterflies feed on the nectar of many native plants, monarchs rely exclusively on milkweed for larval food, so planting members of the *Asclepias* genus is a crucial way to support them. There are several species of milkweed we can grow in our Montana gardens, some of which are better behaved than others. *Asclepias tuberosa* is a lovely orange milkweed that does not aggressively spread and tolerates our dry soils, while *Asclepias incarnata* prefers a tiny bit more moisture. *Asclepias speciosa*, vital for monarchs, will aggressively spread through its root system. I have all three varieties in my garden and manage the last variety by yanking any stray stalks that pop up.

NEVER plant tropical milkweed (*Asclepias curassavica*), which can cause disruption to their migration. Alas, despite my smorgasbord, I only saw one battered female in my garden this summer clinging to a milkweed blossom for dear life in a thunderstorm.

The monarch population has declined by 90% in the last thirty years. Habitat loss, pesticide use and climate change are all contributing factors. We can help by planting milkweed and other nectar plants and by avoiding pesticides.

Did you know you can tell the difference between a male and a female monarch? Did you know that male monarchs have a scent gland used to attract females? Have you ever seen a monarch chrysalis? It is a beautiful smooth seafoam green with a sparkling metallic gold band! Can you identify a monarch caterpillar? Check out these links for a fun quiz and more in-depth info!

<https://blog.nwf.org/2023/09/monarch-butterfly-identification-guide/>

<https://www.nwf.org/Educational-Resources/Wildlife-Guide/Invertebrates/Monarch-Butterfly>

https://www.nwf.org/~media/PDFs/Garden-for-Wildlife/Xerces-NWF/06-Rocky_Mtns_Monarch_Plant_List_spread.ashx



An Abundance of Carrots

by Ann Guthals

Of all the vegetables I grow, carrots are my hands-down favorite. I grow 4 to 5 varieties and, with a substantial mulch of straw, I leave them in the ground and pick carrots until November and even some years December. This love of carrots is not new in my life. When I was a girl, I was known as “Ann Turner the Carrot Burner” because I had carrots every day in my lunch bag, so many that sometimes my skin had an orange-ish tinge to it!



Besides just eating the carrots themselves, I use them in salads, especially in every green salad I make, and in soups. Here are two recipes that feature carrots as the star that I make fairly frequently. No quantities are given—just experiment until you find the amount that's right for you.

Carrot Salad

Peel and grate several large carrots. Mix with mayonnaise and seedless raisins. Sometimes I add small pineapple chunks for added sweetness.

Carrot and Broccoli Salad

Peel several carrots and slice into what my kids called “carrot pennies,” i.e. round slices, not sticks. Wash and chop broccoli into bite-size pieces. Mix carrots and broccoli with mayonnaise, seedless raisins, and roasted/salted sunflower seeds. Sometimes I substitute dried cherries for the raisins, for a slightly different taste. Carrots and broccoli are my favorite choices for this salad, but occasionally I add chopped celery and/or chopped red cabbage as well.

Excess cucumbers?

by Suri Lund

Try these ideas to enjoy crispy cucumbers beyond the growing season. Frozen cucumbers are good for 9-10 months.



BRINE-BASED FROZEN CUCUMBER

2 quarts sliced cucumber
1 onion, sliced
1–2 tbsp. kosher salt
1 cup distilled vinegar
1.5 cups sugar
Quart freezer bags

Directions: Mix cucumber and onion in a big bowl. Add salt, mix to coat. Cover and refrigerate for 2 hours. Mix vinegar and sugar into a pot. Boil and let brine cool.

Take cucumber-onion mixture from fridge and rinse well under cold water to wash off the salt. In a big bowl, add brine to cucumber and mix to coat.

Portion cucumber into quart freezer bags. Make sure to add liquid brine into bag. Freeze bags for one week before consuming. Thaw before eating. May add dill weed to defrosted cucumber before serving.

OIL-BASED FROZEN CUCUMBER

8 cups sliced cucumbers
2 tbsp of salt
2/3 cup olive or vegetable oil
2/3 cup white or apple cider vinegar
1/3 cup sugar or low-carb sweetener
1 teaspoon celery seeds (optional)
Quart freezer bags

Directions: Place cucumber, onion and salt in a large bowl. Mix and let sit for two hours. Rinse well with cold water and drain, then place into a clean bowl. Add the oil, vinegar, sugar, and celery seeds and mix well. Cover and refrigerate the mixture overnight.

Pack cucumbers and brine mixture into airtight containers or freezer bags, leaving 1 inch of head space for expansion. Freeze for at least a week before thawing and eating.

REFRIGERATOR PICKLES

by Joel Guthals

This is a basic recipe. Changes can be made to suit individual tastes, (changing amount of salt, vinegar, or sugar; using other kinds of vinegar; adding hot pepper flakes; adding thinly-sliced carrots; etc.).

12 baby cucumbers (cut into quarters)
1 cup thin-sliced white onion
1 cup thin-sliced red bell pepper
Large clove of garlic, thin-sliced
2 sprigs of fresh dill (or 1 tsp. dill seeds)
1 tsp. coriander seeds
2 tbsp. salt
½ cup granulated sugar
1 cup distilled white vinegar
1 cup water

At least 2 clean, wide-mouthed pint Mason jars with clean lids (sterilization not necessary; but best to wash in dishwasher).

Pour water and vinegar into small saucepan. Add sugar and salt. Warm liquid until sugar and salt dissolve, then remove from heat.

Assemble vegetables in jars. First divide cucumbers among jars. Then place onion and pepper slices in the jars, then the garlic slices. Pour brine over vegetables (okay if liquid doesn't completely cover the vegetables). Add dill and coriander seeds. Tighten lids on jars and place in the refrigerator for at least 24 hours. May be eaten at this point, but will keep for several days and flavor improves with time.

Upcoming MG Events:



Tree Pruning Workshop

(Ins and Outs of Correct Pruning Methods)
Saturday, October 12,
10 :00 am - Noon
ZooMontana
Enjoy a presentation
from the president of the

Montana Urban and Community Forestry Association, and a hands-on demonstration in the arboretum. There is no cost for the workshop, please RSVP: billingsbotanical2@gmail.com

Buckthorn Bandits

(Community Volunteer Day!)

Saturday, November 2, 9:00 am - 2:00 pm
Two Moon Park (850 Two Moon Park Rd)
Join this community event to plant native trees, shrubs and wildflowers in areas formerly infested with invasive species.

Details at: <https://www.facebook.com/share/r8GLAnXmPzEcq44A/>

Montana Bumble Bee Atlas

by Laura Estes



On one of the first semi-cool summer days in early August I drove to Pompeys Pillar to learn to survey bumble bees. Mosquitos were in abundance and there were also more wildflowers still in bloom than I thought possible after all the heat. But flowers are, of course, what attract bumble bees.

Why survey bumble bees? Unlike the European honey bee, bumble bees

are native to North America and they are gentle, easy to spot creatures. With nearly 50 species in North America, I learned Montana is a hotspot, boasting 29 species (so far identified), the most of any state. They can also be found in many habitats (farm,

forest, prairie and your own backyard), and we can identify them to species using catch-and-release methods (and the comprehensive 1-page ID guide provided).

Bumble bees are also suffering serious decline. Much attention has been focused on honey bee decline. Native bumble bees are similarly affected; but without public awareness, data to support conservation efforts is lacking. A “community science” project partnered with the Xerces Society, the Montana Bumble Bee Atlas, gathers data to track and conserve them. Since everyone is welcome to participate, detailed data can be collected over large areas. There are currently active surveys covering 20 states; the Montana Atlas was launched in 2024.

Although the 2024 survey season ended August 31, you can submit incidental bumble bee observations at any time to Bumble Bee Watch. And now is a great time to start planning next spring's bumble bee watching adventures! I plan to gear up and involve my grandkids, friends and neighbors. The more the merrier, and what an excuse to get outside in our beautiful state.

Michelle Toshack is a Conservation Biologist and coordinator of the Montana project. She provides training and resources plus the necessary skills and confidence to conduct your own surveys as a community scientist. The Bumble Bee Atlas web site is a wealth of information:

<https://www.bumblebeeatlas.org/>.

For information specific to Montana: <https://www.bumblebeeatlas.org/pages/mountain-states>.



L to R: Two Spotted (*Bombus bimaculatus*), Central (*Bombus centralis*), Ashton Cuckoo (*Bombus bohemicus*)

What you need to participate:

- A curiosity for insects and flowers
- Transportation to your grid cell (and permission to access it)
- An insect net and vials (glass jars from home work well)
- A small cooler and ice to chill bees
- A camera or smartphone to take high quality close-up pictures
- Access to a computer or smart phone where you can upload photos to Bumble Bee Watch and track your progress

Participation is easy:

1. Attend a training event (or train online).
 - Join a live webinar or watch the recording
 - Attend a training workshop (register online at [bumblebeeatlas.org/pages/events](https://www.bumblebeeatlas.org/pages/events))
2. Adopt a grid cell and select one or more sites to conduct your surveys.
3. Conduct at least two formal surveys within your grid cell between June 1 - August 31.
 - One formal survey includes both a bumble bee and a habitat survey, each following the standardized protocol provided. The minimum requirement is two formal surveys, but more surveys are welcomed!
4. Submit your data online using Bumble Bee Watch.

Wild Plants

Dandelions
Purslane
Plantain
Yarrow



Yellowstone County Master Gardener Newsletter MISSION STATEMENT

The mission of the Yellowstone County Master Gardener newsletter is to educate and inform, not to advocate or persuade. The Newsletter Editorial Board takes no position endorsing or opposing, approving or disapproving, any of the assertions or arguments in the contributed information. Information submitted to the newsletter is for your interest only.



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We want your articles,
garden pictures or quotes,
and suggestions.

Email :

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Deadline for the winter
(Jan/Feb/Mar)
issue is November 31

by Ann Guthals

FREEBIES FOR THE HOUSE AND YARD

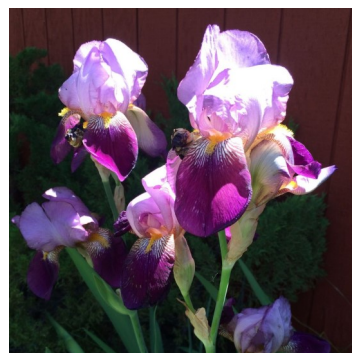
The other day I took a step back from close garden work like weeding and thinning to see the garden as a whole and realize how many plants I grow that are “free.” Many self-seed or I save seeds to plant next year. Once purchased, perennials are thereafter basically free each year. Some outdoor potted plants can be brought inside for the winter and placed outside the following spring, like geraniums. Foraging for wild plants costs little and some wild edibles grow in my garden like dandelions and purslane. Other plants can be divided to populate new areas of the yard or garden or be gifted to friends. Many houseplants can also be easily propagated. Edimentals (edible ornamentals) not only provide shade and habitat but free food, often fruit.

There are many advantages to these “free” plants. They can provide food, beauty, medicine (herbs, wild plants), and habitat at no extra cost. New starts and seeds can be shared with friends. Importantly, they decrease the use of non-biodegradable plastic by reducing the need to buy new plants in plastic pots each year. And growing them is fun!

Here is a small list of such plants that I or friends have grown. Of course, there are many more that could be added. Use it to get a start on next year’s planning. Extension offers many free publications to help: [//store.msuextension.org/Departments/MontGuides-by-Category](http://store.msuextension.org/Departments/MontGuides-by-Category)

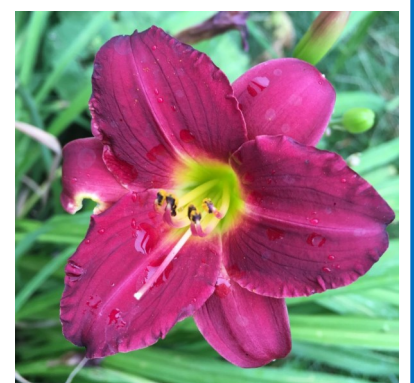
Fruit-bearers

Raspberries
Strawberries
Blackberries
Fruit trees like apples, plums
Grape vines
Currant bushes



Perennials

Jerusalem Artichokes
Allium
Dianthus
Echinacea (Coneflower)
Mint
Bulbs: Iris and Daylily
Cerastium (Snow in Summer)
Bushes, trees of many kinds



Seed Saving and Self-seeders

- Orach
- Marigolds
- Poppies
- Columbine
- Calendula
- Johnny Jump-ups
- Rudbeckia
- Love-in-a-Mist
- Borage
- Mountain Blue Bachelor Button
- Lupine
- Oregano



Starts for Garden/ House

Vegetables like tomatoes, peppers
Flowers like marigolds
Houseplants like violets, peperomia, philodendron or begonias —propagate by division or root clippings

