

IN THIS ISSUE

Billings Community Seed Library 1

Crack The Seed Packet..... 2

Meet Common Buckthorn (*Rhamnus cathartica*)..... 3

Book Review: One Garden Against The World..... 4

Winter In The Non-Food Garden 5

Earthworms: Good And Bad News.. 6

Quick Earthworm Facts 7

Vermiculture With Master Gardener Joann Glasser 8

Fight The Blight! 9

Plants For The Winter Garden..... 10

Plant List For The Winter Garden..... 11

Recipe: Minestrone Soup 12

We want to hear from you!
Send your submissions for the newsletter to ymastergardener@gmail.com by March 1st for the next issue.



Yellowstone Master Gardener



NEWSLETTER

Volume 14, Issue 1 • January/February/March 2025

Billings Community Seed Library

by Sheri Fredericksen

For those of you unfamiliar with this great volunteer opportunity, this article is for you!

Work on the first Community Seed Library started in 2019 but plans were put on hold due to the pandemic. Through the hard work of the Magic City Community Garden Coalition, Songbird Community Garden volunteer Cynthia Jessee, and Americorps VISTA member Emilie Burditt, the first Community Seed Library opened in the spring of 2021 at the First Christian Church in downtown Billings.

By allowing community members to pick up seeds on an as-needed basis for their gardens, the Community Seed Library hoped to offer low-income individuals and families the opportunity to start their own gardens and grow their own food by lowering the cost of gardening. The meager collection of seeds was used by the parishioners and the economically disadvantaged.

In the fall of 2021, Cynthia decided it was time to revive the seed library and move it to a

location where it would be easily accessible to the community. She put out a call to the Yellowstone County Master Gardeners for volunteers and Wendy Rice, Linda Gokey, and Kristi Picchioni answered with a resounding “yes” to the endeavor. Together they found a home for the new seed library at the Billings Public Library (BPL). With the help of BPL director Gavin Woltjer, and many volunteers from the Yellowstone County Master Gardeners as well as the Montana Audubon Center, the Billings Community Seed Library (BCSL) was opened to the public on April 30th, 2022. Drawers are stocked with end-of-season donations from local nurseries and hardware stores as well as seeds saved by local gardeners. In 2025, the BCSL will include seeds donated by Zoo Montana to their seed selection.

continued on page 2



Kristi Picchioni (left) and Patti Doble with the seed library cabinet.

Crack The Seed Packet

by Laura Estes

If you want to start gardening as soon as possible, grow from seed. Whether you start seedlings inside while snow is still on the ground or plan to sow directly into the garden, growing from seed is more economical, reduces plastic waste, and offers more variety than any garden center. Seeds are amazing – tiny possibilities waiting to spring to life.

While I personally prefer the internet to narrow down my options, seed catalogs are a beautiful and low tech alternative, and many local stores put up seed racks after the holidays. Don't forget the Billings Community Seed Library (at the library downtown) as a source. However you search, buy early so you have plenty of time to formulate your planting plan. Each seed packet is like a well-organized, mini-gardening book. Don't skip the directions!

On the front is usually an eye-catching picture and some basic information like plant variety and maybe a summary of growing conditions. On the back are the details, presented in different ways depending on the company. Paying attention to these eight things will ensure success:

- Region where the plant will grow: A planting zone map may be shown; seeds displayed in stores are usually geared toward this climate but don't take it for granted
- Suggested sowing date, often expressed as 'weeks before/after last frost': Last frost is about May 15th in the Billings area but be a weather watcher; providing extra protection may be necessary to help fudge the date
- Sowing depth: Planting too deep puts unnecessary stress on emerging seedlings (this is the hardest thing for me to get right)
- Correct spacing: Thinning once seeds emerge makes strong plants
- Preferred soil: Will amendments be helpful?
- Sun exposure: Plant in the right spot
- Days to emerge: Replanting may be necessary if you don't see anything around that time
- Days to maturity: Helps identify short season varieties; vegetable harvest may last well beyond



Other interesting attributes that may be listed and 'sell' you are such things as edible flowers, pollinator friendly, drought/cold tolerant, disease resistance, good for containers, heirloom, etc. Keeping the packet is a handy future reference. If you were pleased with the results, it may also give you a head start on choosing seeds for next year!

Here are a few sources for organic and heirloom seeds on the internet:

- <https://www.anniesheirloomseeds.com/>
- <https://www.johnnyseeds.com/organic/>
- <https://seedsavers.org/>
- <https://www.botanicalinterests.com/>
- <https://www.highmowingseeds.com/>

BILLINGS COMMUNITY SEED LIBRARY

continued from page 1

Kristi organizes the team's meeting schedule, makes flyers for upcoming events, does advertising and updates the BCSL's Facebook page. Additionally, she sends out email blasts to individuals who have signed up to receive the information.



Patti Doble has also been instrumental in the success of the BCSL. Patti started volunteering with the program in 2022 and has collaborated on presentations with other volunteers and former Extension Agent Heidi Schueler on seed planting for both square foot gardening and companion planting.

The BCSL can be found in the Montana Room of the BPL. It is open to the public year-round during library hours. The BCSL not only provides free seeds to library patrons but also offers educational events throughout the year. The BCSL hosts a seed swap in March of each year, which is the organization's largest event. The education committee is currently working on events for calendar year 2025. Information on potential subjects and locations will be forthcoming.

BCSL's goal is to strengthen the Billings community by fostering the enjoyment of gardening and healthy eating. There are many opportunities to volunteer with the BCSL. If you'd like to volunteer or donate seeds, please contact Kristi Pichionni at kpichionni@gmail.com.

Meet Common Buckthorn (*Rhamnus cathartica*)

by Anthony Sammartano

Common buckthorn (*Rhamnus cathartica*) is a tree native to Eurasia, where it is prized for its fast growing ability, and its usefulness in hedges. As is the tale of invasive species, the ecosystem disruption from buckthorn is quite extensive. The thick foliage of mature trees act as a barrier for sunlight trying to reach the forest floor. This inhibits the growth of native sun loving plants, such as plains cottonwood, chokecherry and buffaloberry.

The berries of buckthorn are also trouble, as they contain the chemicals anthraquinone and emodin, which produce laxative effects. The berries are some of the last berries left on trees in the winter, making them extremely tempting for hungry critters. Imagine you are an animal preparing to winter, and your goal is to fatten up as much as possible. Eating buckthorn berries would be detrimental, as the laxative effects purge your system of fat stores that you need to survive the winter.

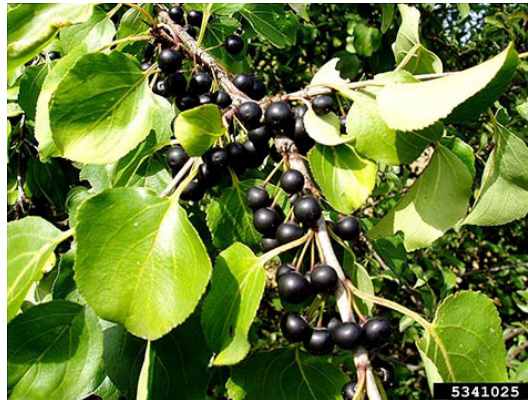


Thorns on a buckthorn stem

But wait! There's more!

As buckthorn continues to grow, it slowly leaks a chemical cocktail into the soil through dropped leaves, fallen fruits, and root growth. This process is called allelopathy, and it reduces the germination of other plant species in the soil, leaving a bare patch that is perfect for baby buckthorns to grow in.

Thankfully there is hope! The aridness of our region is a problem for buckthorn, as it can only find its minimum water requirements along riparian areas, or in landscapes with or adjacent to irrigation systems. This concentrates the populations of buckthorn, which makes eradication effective. The Yellowstone County Weed District has been busy working in our public parks, clearing out



Buckthorn berries and leaves



Buckthorn stem and leaves



Buckthorn leaves

thick stands of buckthorn with heavy machinery using a masticator. These huge chipping machines break through the impenetrable stands of woody invasive species, clearing the way for sun loving native plants to reestablish, and allowing for ease of retreatment when new invasive species emerge.

Unfortunately, this form of treatment isn't practical for buckthorn found in and around town, but if you live within the city limits of Billings, there is a free treatment option that I encourage you to take advantage of. Once you have identified buckthorn in your landscape, you can call the City of Billings (406.869.3926) or email them (hoegert@billingsmt.gov) to request removal. The city has hired "Buckthorn Slayers" to take appointments and clear properties of buckthorn. They will treat and haul away the cut brush for free! If

you find yourself with a buckthorn problem outside of city limits, please reach out to me so we can discuss potential treatment options (anthony.sammartano@montana.edu).

Our region has the opportunity to eradicate buckthorn, but the success of this effort is reliant upon the community at large (that's you!) to be educated on what buckthorn looks like and take action when it is found. If you believe you have buckthorn in or near your landscape but aren't 100% certain, feel free to email me photos or bring samples to the Extension office for me to identify.

One Garden Against The World

In Search of Hope in a Changing Climate

by Kate Bradbury

Kate Bradbury is a wildlife gardener and author living in Portslade-by-Sea near Brighton in England. She writes for The Guardian, BBC Wildlife, Royal Horticultural Society's The Garden magazine, and is wildlife editor of BBC Gardeners' World Magazine.

Kate gifts us with a deeply impassioned, heartfelt, personal memoir of a year in her urban wildlife garden, sharing stories of her plants and animals as well as her family and community. She is terrified by the rapidity of the onset and scale of climate events – she chronicles a severe drought during the summer of her memoir which included the hottest temperature on record for England. And she intersperses statistics on the loss of habitat and wildlife in England with hopeful stories of toads, robins and hedgehogs coming to live in her garden.

If you pay attention, Kate is telling you how to build a wildlife garden which will attract birds, insects, reptiles, and mammals. She develops a meadow in her front yard, with short and tall grasses, wildflowers and bushes. In the backyard there is a pond in the center, surrounded by hedges, flower borders, a habitat pile, and an ivy-covered wall. Because she lives in England, you have to translate what she is describing to fit your own habitat and species, but that is secondary to appreciating her great connection to nature and her commitment to providing homes for wildlife. She is giving a firsthand up-close account of the effects of the changing climate (flooding, drought, heat, wind, cold – nothing stable or reliable) by telling us what happens to the frogs, hedgehogs, chiffchaffs,



gulls and bees. And she is urging us to take action, because she believes that many tiny individual actions will add up to bigger changes.

She leaves us on page 292 with a list of what we can do, starting with just growing more plants to absorb more carbon dioxide (CO₂) and provide more habitats.

- Grow flowers for pollinators.
- Grow leaves for leaf munchers, including caterpillar food plants.
- Plant a hedge, which will filter and slow down wind.
- Dig a pond.
- Make hedgehog holes (well, maybe not in Montana...)
- Be wilder by letting areas of grass grow long, leave fallen leaves where they land and stop sweeping away the pile of debris that accumulates behind your pots.
- Save water when it's wet so you can use it when it's dry.
- Grow food to connect you more with the land.

- Put up bird boxes.
- Keep an eye out for caterpillars on nettles or other foodplants in communal spaces (she tells how to re-locate caterpillars in trouble).
- Leave water for hedgehogs and birds to drink.
- Feed grounded bumblebees that have emerged from hibernation but haven't found nectar in time to give them the energy to fly.
- Rescue hedgehogs you notice are out in the day during winter.
- Get to know and record wildlife to help track the movement of species... Get to know who visits you now so you will know who arrives in the future and who stops visiting you, too.

And, lastly, in England: "It's not one garden against the world, it's 30 million gardens, 27,000 parks and countless balconies and roof gardens *for* the planet."

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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Ann McKean • Laura Estes
Sheri Fredericksen

CONTRIBUTOR

Anthony Sammartano

Winter In The Non-Food Garden

by Laura Estes

First, understand I rarely eat anything from my garden. Some wouldn't even consider my garden a garden. Still, I consider myself an avid gardener because pretty much everything related to growing plants brings me great joy. While digging in the dirt January through March isn't usually an option, there are tasks that make the next growing season even more enjoyable. Here are a few suggestions:

- Make sure the crown and roots of shrubs and perennials remain well protected with mulch. It insulates them from the cold, holds moisture, and provides shelter for beneficial organisms to overwinter (see *Nesting & Overwintering Habitat*; *Xerces Society* for more information).
- Water trees through the winter, especially new trees, if there isn't snow cover. Following leaf drop, water deeply once a week until the ground freezes. After that, if there is no snow cover, water once or twice a month. Water mid-day when temps are above 40. Water slow and deep and out to the edge of the tree's root spread.
<https://www.arborday.org/video/ask-arborist-how-do-i-know-if-my-trees-need-water> and <https://www.montana.edu/cope/email-format/admin/view.php?draft=13272&uid=66e23315db6df1.52618306> for more information.
- The form and structure of the garden are more evident in winter. Combine what you see with any issues noticed last season and brainstorm improvements. Gardening books, a cozy chair, and a cup of tea inspire me with many ideas to choose from. Specific focus areas are:
 - a. Were appropriate water systems available and working?

- b. Is there a cluttered area? Leaving space allows each plant to shine. Make sure plants are suited to their spot and decide if they are ready to be divided and shared.
- c. What additions would complement the existing landscape (e.g. plants, water features, structures, soil enhancements)? Is there something beautiful and/or interesting to observe in the garden at all times?
- d. Pick a "first-thing-next-spring" project and gather what's needed. Sometimes warm, sunny winter days can provide a head start on spring.

- Identify and prune off dead branches; it's easier to see and reach them now. Not only is it more aesthetically pleasing year round, removing dead limbs protects trees and shrubs from winter breakage that can damage healthy tissue. It also promotes a more vigorous tree or shrub next spring.
- Take inventory of tools and identify needed maintenance. At

a minimum, sharpening your lawn mower blade will "reap" great rewards. Sharp, rust-free pruners have a similar advantage. Is there a difficult task that could be made easier with a new tool? Winter shopping is fun. Last year I bought a hori hori knife that has proved incredibly versatile and useful. The year before, I got a retractable hose reel that improved my watering ease and reliability a hundred fold.



Hori hori knife

- Keep stretching and strength training so your body is ready to dive into garden work!

There are many more suggestions for food gardeners to extend their harvest year round. For now, the above activities will keep me ready for the growing season soon to come. For more winter gardening tips: <https://apps.msuxextension.org/magazine/articles/5525>



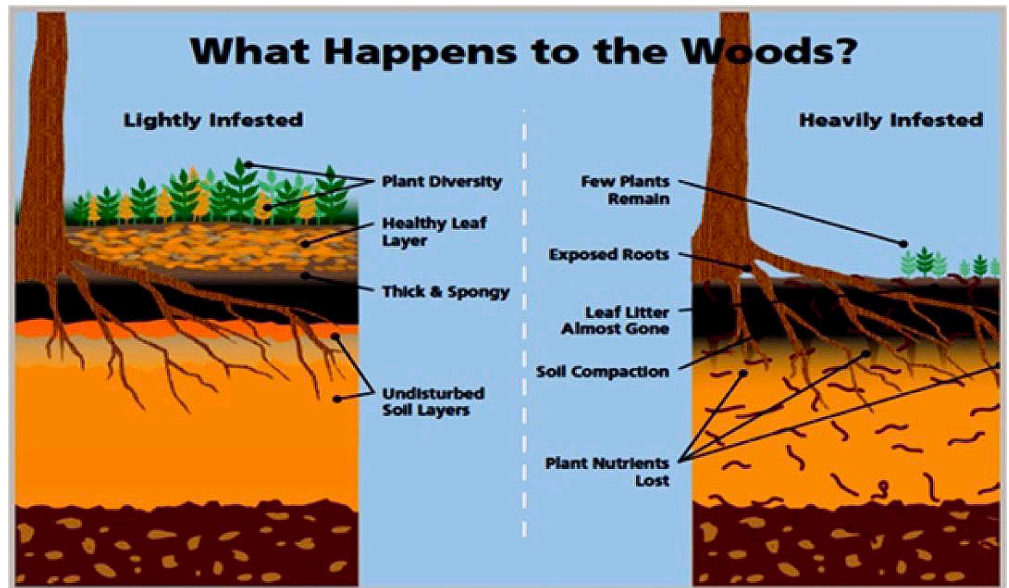
Earthworms: Good And Bad News

by Ann McKean

Where they have naturally evolved, earthworms are vital to many worldwide terrestrial ecosystems; Charles Darwin devoted an entire book to the subject. Earthworms are found near the soil surface or many feet below and perform the crucial functions of decomposing organic material and creating channels in the soil for air, water and nutrients. As they move through the soil, they consume up to a third of their body weight every day in organic material and soil, breaking it down into available essential nutrients and creating humus-rich soil, while gathering their nutrition from the bacteria and fungi on that decomposing material.

Earthworm castings (poop, i.e. vermicast) contain 50% more nutrients (calcium, nitrogen, phosphate and potassium) and microorganisms than surrounding soil. In addition to calcium carbonate which lowers soil acidity, vermicast also unlocks other important minerals for plants that would otherwise be inaccessible. Earthworms also support the symbiotic relationship between plants and soil fungi.

While there are thousands of species of earthworms on the planet, the 100 species in the U.S. are native only to the areas of the country that were not scrubbed by glaciers in the last Ice Age. These ecosystems which emerged as the glaciers receded, evolved to function without earthworms. Beginning with the first settlers, 45 species have been introduced from other parts of the world. Two



Damage is done to forests by jumping worms and other earthworms

Image courtesy of Wisconsin DNR



This undated handout photo from the Wisconsin Department of Natural Resources shows an invasive jumping worm (bottom) next to a common nightcrawler.

now-ubiquitous species are the red wiggler and the night crawler. We consider them beneficial in our gardens where they improve the soil. However, forests that have evolved without worms have been damaged due to the altered balance of leaf litter, chemical composition, and soil structure caused by their introduction. One especially pernicious recent introduction is the Asian jumping worm (*Amyntas agrestis*). These prolific, invasive worms wreak havoc in the environment by gobbling up organic material and its nutrients faster than it can be replaced, displacing native decomposers (including native worms where they do exist), and causing soil compaction, actions which weaken native plants and promote the rapid expansion of invasives.

The best way to safeguard our ecosystems is to be cognizant of the species of worms you purchase for

continued on page 7



Map courtesy of Backyard Nature

Quick Earthworms Facts

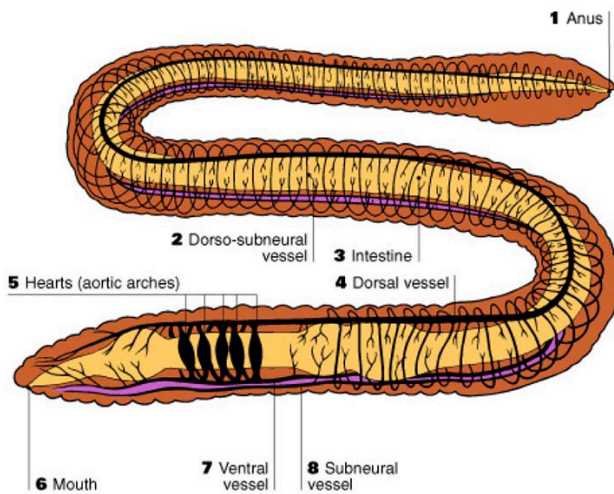
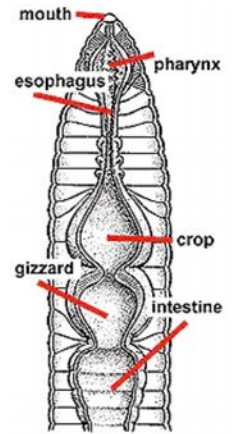
by Ann McKean

Earthworms:

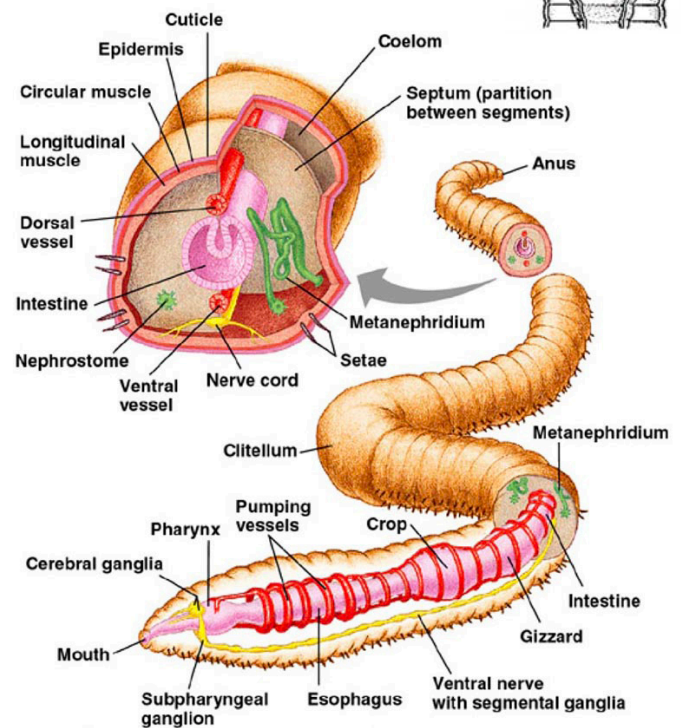
- are soft segmented invertebrates covered with tiny retractable bristles called setae
- have bilateral symmetry
- have no eyes, ears, nose or lungs
- breathe through their skin by diffusion
- can sense light (and avoid it)
- have a mouth, esophagus, crop, gizzard, intestine and an anus
- have five pseudo hearts
- have sex organs in a band called the clitellum (which is closer to the head than the tail)
- are hermaphroditic and exchange sperm during mating
- develop in cocoons
- can live up to several years
- range in size from a few inches up to three feet in the U.S.

- can often regenerate some body parts if injured
- do **not** form two new worms if cut in half
- survive between 32° and 95°F
- prefer 55-80°F
- must have moisture to survive
- have a total of 7,000 species worldwide
- are harmed by pesticides and chemical fertilizers

Source: <https://www.sas.upenn.edu/~rlenet/Earthworms.html>



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EARTHWORMS *continued from page 6*

composting (introduced but not considered harmfully invasive here, *Eisenia fetida*, the red wiggler is most recommended) and make every effort to not release non-native and potentially invasive worms into the environment. This is important not only for gardeners, who can check the soil of new plants, but for fisherman who should throw unused bait worms in the trash and not into

the wild places where they fish.

As we strive to preserve our environment, we can all marvel at the natural evolution of our complex ecosystems and the role of the lowly, invertebrate earthworm.

Links:

<https://ecosystemsontheedge.org/earthworm-invaders/>

<https://dnr.wisconsin.gov/topic/Invasives/fact/jumpingWorm>
<https://warren.cce.cornell.edu/gardening-landscape/warren-county-master-gardener-articles/invasive-asian-jumping-earthworms>
<https://www.theatlantic.com/science/archive/2020/01/jumping-worms-are-taking-over-north-american-forests/605257/>

Vermiculture With Master Gardener Joann Glasser

by Ann Guthals

Vermiculture (“vermis” is Latin for worm) is the raising of worms to transform organic material such as food scraps into vermicompost. Master Gardener Joann Glasser has been vermicomposting for three years because she says it produces “one of the best fertilizers, teeming with microbes and packed with nutrients.”

The worms are raised in a bin drilled with holes for aeration and filled with shredded material such as dried leaves, plain newspaper, and plain cardboard. There should be some moisture in the bedding material as worms do better in a moist environment. Joann puts cardboard on the bottom to help absorb excess moisture, then moves this cardboard into the rest of the bin after a while. Joann uses a 17- to 20-gallon lidded tote with ¼" holes drilled in the top, sides, and bottom for air flow. She sets this on a waterproof tray (some people put the bin within a bin to collect excess moisture, but she feels this restricts air flow).

Joann maintains one bin in summer and adds a second in the winter as the worms outgrow the first bin. She keeps the bins in her garage year-round – a basement is another choice. The bins do not smell if maintained properly and they can overheat outside in the sun. If her garage drops below freezing, she moves the bins to her greenhouse because it is kept at 50 degrees or warmer.

Joann harvests local red wiggler worms (*Eisenia fetida*) from her garden (not nightcrawlers; red wigglers are smaller and reddish in color). Red wigglers may be purchased, but Joann thinks the locals are hardier and using local worms decreases the risk of importing unwanted species of worms. You need quite a lot to start – the purchased worms come in lots of 100.

The worms are fed chopped-up food and garden scraps (no pesticides, no onions or garlic, no dairy or meat). To keep the temperature from getting too high, avoid too much green matter. Joann composts green matter first in a regular composter and gives the worms the large material left over when she sifts her compost. Ground up eggshells can also be added. Joann uses ground shrimp shells and squished grasshoppers to provide the worms with the chitin they need to form their egg casings. Joann adds a little citrus peel to balance the pH towards acidic and to keep fruit flies and gnats away. The worms like a slightly acidic pH. If the pH gets too acidic, Joann adds some dolomite to bring it closer to neutral.



The smaller you chop the food scraps, the faster they break down. It also helps to freeze the scraps before feeding to the worms to help break the cell walls for easier digestion. Joann feeds her worms 2 to 4 cups of ground up scraps every three days or so. She buries the scraps in three areas, lifting the existing material to add the new scraps. (If you smell ammonia, you need more aeration to avoid an anaerobic situation that will kill the worms and make a toxic compost.)

To harvest the worm castings, Joann spreads the material on a tarp in the sun. The worms migrate to the bottom of the pile to avoid the light. She takes the top of the vermicompost off and sifts it with a ¼" hole strainer. The resulting castings are then added to regular compost or potting soil between a 1:5 and a 1:10 ratio because straight castings are too rich for seedlings. This mixture can be used as fertilizer in the garden or for potted plants. She harvests every 2 to 3 months depending on how much she is feeding the worms and how many there are.

The worm bins can get infested with fruit flies or spider mites. If this happens, Joann digs in some powdered Neem cake. If the bins become too hot in the summer, she freezes ground compost and puts the frozen block in the bin. This will cool the bin as it melts – the worms move away from the frozen block if it gets too cold.

Joann’s advice to beginning vermiculturists:

- Be patient: it takes about 40 days for hatchlings to reach maturity. It could take three to four months before you see new worms.
- Don’t overfeed: feed every three to five days. Too much food may heat up the bin or cause it to go anaerobic if it becomes wet and compacted.
- A little too wet is better than too dry.

Fight The Blight!

by Anthony Sammartano

Eastern Montana is not readily thought of as the fruit tree haven of Montana. The Flathead region (maybe you have heard of their cherries?), and the rest of the western part of Montana are dominant in their fruit production, but don't count us out yet. A peek on Fallingfruit.org shows that there are 829 registered fruit trees in and around Billings. From walnuts to pears, Billings appears to be its own orchard. Since this wonderful resource is our backyard, it is prudent of us to be aware of detrimental diseases that could wipe out our whole harvest. In this article, I will talk about the major fruit tree disease, fire blight (*Erwinia amylovora*).

Fire blight is a bacterial disease that affects the blossoms and shoots on all major fruit producing trees, such as apples, pears, cherries, and even some non-edible fruiting trees like mountain ash and cotoneaster. The bacterium overwinters in infected branches and cankers, and is mainly spread in the spring by insects, and secondarily spread by rain, wind, and unclean pruning tools. In the spring, pollinating insects busily visit infected blossoms as they gather nectar and pollen, and spread the disease-causing bacteria to healthy blossoms, which can result in one sick tree in a neighborhood infecting the whole block! If left untreated, fire blight can severely damage or even kill infected trees as it spreads from the initial infection site throughout the rest of the tree. The spread and damage are more severe during times of increased temperatures intermixed with rain events that occur during bloom.

Signs and symptoms of fire blight infection include blossoms that wilt and turn brown, wilting spring growth, leaves and stems that brown or appear scorched, and in severe infections, cankers form on limbs and tree trunks (see photos for examples).

Last year, I sent multiple fruit tree samples from Yellowstone and Carbon County to the Schutter Diagnostic Lab in Bozeman to be tested for fire blight, and unfortunately received positive results. This prompted me to write this article so we all can be proactive in managing this disease, because eradication won't be possible, but risk reduction is.

If you suspect fire blight in a tree near you, please reach out to me (anthony.sammartano@montana.edu) so we can confirm if the disease is present. Once fire blight is confirmed, it is important to remove the infected part of the plant quickly and dispose of the infected plant material off site. Be sure to always clean pruning tools with



a disinfectant solution to avoid accidentally spreading the disease. Commercial fixed copper sprays can help prevent the spread of fire blight if the disease was known to be in the immediate area the previous season, but the best course of action is an integrated pest management approach. When planting new fruit trees, be proactive and select fire blight resistant species, and as always, practice good sanitation with your tools!



IMPORTANT LINKS



Yellowstone MG Newsletter Submissions
ymastergardener@gmail.com

Montana Master Gardener Program
<https://www.montana.edu/extension/mastergardener/index.html>

Montana State Master Gardener Facebook
<http://www.facebook.com/MTMastergardener>

Master Gardener links and resources
<https://mtmastergardener.org/linksandresources/index.html>

Schutter Diagnostic Lab (*plant diseases, insect damage, and environmental plant problem, how to send samples*)
<https://diagnostics.montana.edu/>

Montana Frost/Freeze/Precipitation Data by County
<https://mtmastergardener.org/linksandresources/frostfreezedata.html>

Yard and Garden MontGuides
<https://apps.msuxextension.org/montguide/index.html>

Yellowstone MG Newsletter Archive
<http://www.ycmgamt.com/newsltrpage.php>

Plants For The Winter Garden

by Ann McKean

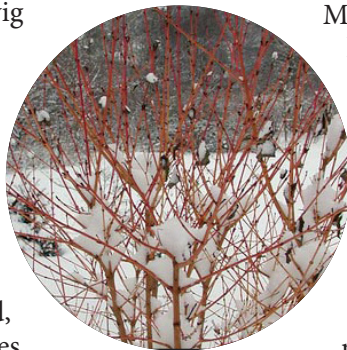
When we think of gardens, many of us picture them in summer, but gardens have a different kind of beauty in the winter, reflecting the stark quiet of the season. A thoughtfully composed variety of plants can elevate that beauty.

The elements of the winter garden are the same as in summer: color, texture, form and the spatial relationships of composition.

The colors of winter plants are not limited to brown and grey. Many grasses dry to a pale wheat color, while other perennials, including *Echinacea purpurea*, known as coneflower, have dark stems and seedheads. *Cornus sericea*, a North American native red twig dogwood, has many cultivars with varying heights and habits, white berries and bark colors ranging from deep maroon to bright red and even yellow. The brightest colors are on new wood, so prune the oldest canes to the ground to stimulate new growth. Aspens and birch have white bark, while Spring Snow crabapple trees have golden colored bark. Though our climate is too dry in the winter to support happy broadleaf evergreens, you can play with the greens, greys and blues of conifers such as pine, juniper, and spruce. Many plants have persistent fruits, including yellow, red and maroon crabapples. Another native, *Aronia melanocarpa*, common name chokeberry, has dark violet-blue berries and provides important late winter food for birds.



The author's garden in winter



Red twig dogwood

Mountain ash (*Sorbus*) has clumps of bright orange berries and silky reddish bark. Plant both chokeberry and ash for maximum contrast.

Texture is a fun element to play with in the winter garden.

You can juxtapose the silky barks of the aspens, birch, mountain ash or cherry trees with the coarse exfoliating barks of *Pinus sylvestris* (Scot pine) and the native *Physocarpus* (ninebark) or any spikey evergreen. Plant a clump of dark, coarsely textured

Echinacea next to *Panicum virgatum*, our native switchgrass, to play up the pale color and airy texture of the grass and the stiff structure of the dark coneflower. Clematis also leaves beautiful, delicate seedheads.



Clematis seedheads

Some plants with outstanding sculptural form include cushiony-looking compact pines and spruce, wispy upright grasses, strongly conical upright evergreens and the arching branches of the ninebarks. (Note that the ninebarks must be left in their natural graceful growth habit and not trimmed into poodles.) *Corylus avellana* 'Contorta' known as Harry Lauder's walking stick, which looks like a green blob in summer, really shines in winter with its naked corkscrew branches. (Make sure you plant it in a moist, protected place.)

Even though the leaves and flowers of summer are gone, winter is still an opportunity for beauty in your garden. Take a moment to be still and notice the complex interplay of colors, shapes and textures that combine to make your winter garden beautiful.

See page 11 for a list of dependable plants that survive winter in our area.



Chokeberry

PLANT LIST FOR THE WINTER GARDEN

Latin Name	Common Name	Texture	Color	Form	Perennial	Shrub	Tree	Evergreen	Regional Native or Nativar
<i>Calamagrostis x acutiflora</i> 'Karl Foerster'	feather reed grass	x	x	x	x				
<i>Echinacea purpurea</i>	coneflower	x	x		x				x
<i>Eutrochium maculatum</i> 'Gateway'	joe pye	x		x	x				x
<i>Festuca glauca</i> 'Elijah Blue'	blue fescue	x	x	x	x			x	
<i>Festuca idahoensis</i> 'Siskiyou Blue'	Idaho fescue	x	x	x	x			x	x
<i>Geranium x cantabrigense</i> 'Karmina'	hardy geranium		x		x			x	
<i>Panicum virgatum</i>	switchgrass	x	x	x	x				x
<i>Penstemon strictus</i>	rocky mountain penstemon	x			x				x
<i>Rudbeckia fulgida</i>	black-eyed susan	x	x		x				
<i>Rudbeckia hirta</i>	black-eyed susan	x	x		x				x
<i>Aronia melanocarpa</i>	chokeberry		x			x			x
<i>Artemisia tridentata</i>	big sagebrush	x	x			x		x	x
<i>Chrysothamnus nauseosus</i>	rubber rabbitbrush	x	x	x		x		x	x
<i>Cornus sericea</i>	red twig dogwood	x	x			x			x
<i>Corylus avellan</i> 'Contorta'	Harry Lauder's walking stick	x		x		x			
<i>Fallugia paradoxa</i>	Apache plume	x				x			x
<i>Juniperus horizontalis</i> 'Blue Rug'	creeping juniper	x	x	x		x		x	x
<i>Physocarpus opifolius</i>	ninebark	x	x	x		x			x
<i>Picea abies</i> 'Nidiformis'	bird's nest spruce	x	x	x		x		x	
<i>Picea pungens</i> 'Globosa'	globe spruce	x	x	x		x		x	x
<i>Pinus mugo</i> 'Sherwood Compact'	mugo pine	x	x	x		x		x	
<i>Rosa rugosa</i>	rugosa rose	x	x			x			
<i>Symphoricarpos albus</i>	snowberry		x			x			x
<i>Yucca glauca</i>	soapweed or Great Plains yucca	x	x	x		x		x	x
<i>Juniperus scopulorum</i> 'Moonglow'	upright juniper	x	x	x			x	x	x
<i>Malus</i> 'Spring Snow'	ornamental crab fruitless		x				x		
<i>Malus</i> 'Starlite'	ornamental crab		x				x		
<i>Picea pungens</i>	Colorado or blue spruce	x	x	x			x	x	x
<i>Pinus ponderosa</i>	ponderosa pine	x	x	x			x	x	x
<i>Pinus sylvestris</i>	Scots pine	x	x	x			x	x	
<i>Populus tremuloides</i>	aspen	x	x				x		x
<i>Rhus typhina</i>	staghorn sumac	x	x	x			x		x
<i>Sorbus americana</i>	American mountain ash	x	x				x		x

RECIPE submitted by *Suri Lunde*

Minestrone Soup

Ingredients

4 tablespoons extra-virgin olive oil, divided
3/4 cup chopped onion
1/2 cup chopped carrots
1/4 cup chopped celery
1 tablespoon tomato paste
1 1/2 cups chopped seasonal vegetables (e.g. potatoes, yellow squash, zucchini, cabbage, peas, butternut squash, green beans)
2 cloves garlic, pressed or minced
1/4 teaspoon dried oregano
1/4 teaspoon dried thyme
1 (14.5 ounce) can stewed or diced tomatoes
1 quart vegetable broth
1 teaspoon sea salt
1 bay leaf
Freshly ground black pepper
1/2 cup orecchiette, elbow macaroni or small shell pasta
1 (15 ounce) can Great Northern beans or cannellini beans, rinsed and drained
1/2 teaspoon lemon juice (optional)
Freshly grated Parmesan cheese, for garnishing

Directions

Warm olive oil in a heavy pot over medium heat. Once the oil

is shimmering, add the chopped onion, carrot, celery, tomato paste and a pinch of salt. Cook, stirring often, until the vegetables have softened and the onions are turning translucent, about 7 to 10 minutes.

Add the seasonal vegetables, garlic, oregano and thyme. Cook until fragrant while stirring frequently, about 2 minutes.

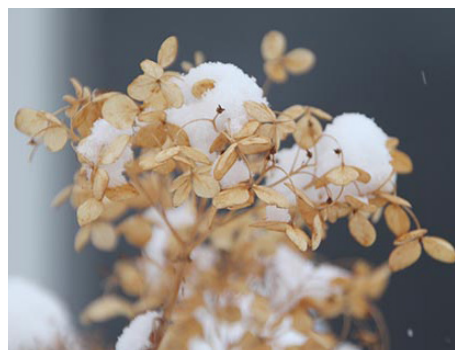
Add in stewed or diced tomatoes and their juices, broth, salt and bay leaves. Season generously with ground black pepper.

Bring to a boil, cover and reduce heat.

Add the pasta and beans. Continue simmering, uncovered, for 20 minutes or until the the pasta is cooked al dente.

Remove the pot from the heat, then discard the bay leaf. Stir in the lemon juice (if using). Season with salt and pepper to taste.

Serve hot with grated Parmesan cheese.



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