



A Newsletter for GARDENERS OF ALL LEVELS

By Helena Area Master Gardeners

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If you have questions or comments, or would like to submit an article or tips and hints, contact us at HelenaMasterGardeners@hotmail.com.



Keeping a Garden Journal

Judy Halm

For some, one of the enjoyable activities of the winter months is planning ahead for the next garden growing season. A garden journal is a tool that can help make that planning easier and quicker.



A garden journal does not need to be elaborate or artistic, and can be as simple as a small notebook that you use to take notes during the garden season; a spiral-bound notebook with multiple sections for a variety of topics; a loose-leaf 3-ring binder into which you can insert pages and photographs; or a purchased blank journal to fill as you wish. Those who are tech savvy can keep garden information online or in an app on a smartphone or tablet. (<http://davesgarden.com/community/>)

Purchased journal	Random slips of paper kept in a folder or shoebox
Spiral notebook	Hand-made journal
Loose-leaf journal with sections for seed packets, garden diagrams, photographs and notes	Electronic journal (smartphone app, Excel spreadsheet)



What to Use

Why keep a garden journal? It's always a good idea to learn from past successes and mistakes, and one of the best ways to do that is to write down what worked and what didn't work. You can note things like seed-starting dates; transplant dates; direct seeding dates; vegetable and flower names and varieties and the seed source. For example, I note the seed supplier for carrots, (Fedco), the variety (Scarlet Nantes), the year for which the seed was produced (2014), and whether the seed is certified organic (ORG). Other items that can be tracked are high and low temperature, rainfall dates and amounts, watering dates and amounts, garden pests and treatment, fertilizer addition and amounts, and harvest dates. Noting which varieties produce the best vege-

Seed sources (catalog, nursery, home improvement store)	Fertilizer applications
Garden diagram – what's planted where	Pest control measures
Seed starting dates (indoor and outdoor)	Patterns in your garden locations
Transplanting dates	Harvest dates
Temperatures	Amounts harvested
First and last frost dates	Favorite varieties
Rainfall	What worked, what didn't work
Watering schedule	What to try next year

tables or flowers, in what location of the garden, can give a head start on next year's planning.

Garden Seed Longevity

Judy Halm

If you are like many of us, you often have more seeds in a packet than you have space in your garden to plant them. The good news is that most seeds will remain viable for a period of time past the year for which they are packaged.

How long seeds can be stored depends a lot on moisture and temperature. Most seeds will last for a year when stored at room temperature in your home. To maintain seeds for more than a year, store them under 50° F and at a relative humidity less than 15%. This could be in a cool, dark and dry basement. The best method is to place the seeds in a sealed jar in the freezer.

How can you tell if your stored seeds are still viable? Take 15 to 20 seeds and place them in a damp paper towel. Roll or fold the paper towel and place it in a plastic bag at room temperature. Check the seeds after two or three days to see if any are germinating, then check them over the next two weeks. If most of the seeds germinate, they are good to plant in your garden. If most don't germinate, you are better off purchasing new seed. If handled carefully, the germinated seeds can be transplanted into containers or in the garden.

The following chart shows the general longevity of common garden seeds when properly stored. Your seeds may last longer or shorter than these times.

Vegetable Seed Type	Longevity, years	Vegetable Seed Type	Longevity, years
Arugula	3	Kohlrabi	4
Basil	3-5	Leeks	1-2
Beans	2-3	Lettuce	2-5
Beets	3-4	Melons	5-8
Broccoli	3-4	Mustard	3-5
Brussels Sprouts	3-5	New Zealand Spinach	3
Cabbage	4	Onion	1
Carrot	2-3	Parsley	1
Cauliflower	3-5	Peas	3
Celery	2-3	Peppers	2
Chard, Swiss	4	Pumpkin	4
Chinese Cabbage	3	Radish	5
Cilantro	3-5	Rutabaga	4
Corn	2-3	Soybean	2-3
Cucumber	5	Spinach	2-3
Dill	5	Squash	2-5
Eggplant	3-4	Tomato	4-6
Fennel	4	Turnip	4
Kale	4	Watermelon	4



For More Information:

Iowa State University: <http://www.ipm.iastate.edu/ipm/hortnews/1999/4-2-1999/veggielife.html>

Colorado State University Extension: <http://extension.colostate.edu/docs/pubs/garden/07221.pdf>

Purdue University Extension: <https://hort.purdue.edu/ext/storingseed09.html>

Fedco Seeds: http://www.fedcoseeds.com/seeds/seed_saving.htm

High Mowing Seeds: <http://www.highmowingseeds.com/blog/seed-viability-chart/>

Food Safety Begins on the Farm—Good Agricultural Practices

Good Agricultural Practices (GAP) for Vegetable and Fruit Growers in Montana

By Jonda Crosby

While working with farmers in three workshops for On-Farm Food Safety training, I learned a great deal about the participants' fresh fruit and vegetable operations, their concerns and questions about their responsibilities to their customers related to food safety as farmers. Montana fresh fruit and vegetable farmers are aware of and participating in food safety practices at the farm level. And they always have been. However with relatively new on-farm food safety guidelines readily available and buyers expecting farmers to incorporate food safety processes and recordkeeping - many farmers want to assure themselves and their customers that they are following Good Agricultural Practices, known more commonly as GAPs.



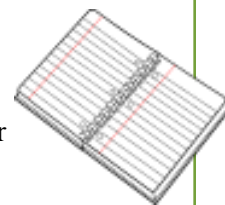
There is a lot of information regarding food safety available to farmers these days, due in part to the recent outbreaks of food-borne illnesses from fresh produce. In recent years cantaloupes, spinach, fruit juices and green onions have all made the news.

“Knock on Wood”, Montana farmers have not been the center of attention in any large scale food-borne illness outbreak. It doesn't mean we couldn't have an outbreak, but our risk in Montana for fruit and vegetable producing farms is greatly reduced for several reasons. Montana farms tend to be smaller, owner operated and managed. We are blessed with a dry environment. Montana farmers by and large eat their own food so they have a personal vested interest in growing and selling high quality safe food. Most of our water sources used for irrigation are from the mountains, relatively cold and quick flowing. Other commonly used water sources are municipal or from deep wells. Much of the fresh fruit and vegetable harvesting and packaging labor is family or small crews that have a long history of working together in safe, clean working conditions and environments. And in Montana most markets are close to the farms, farmers know their customers, and a farms fruits and vegetables are not anonymous – they are Judy's carrots, Homestead's kale, Eric and Audra's garlic and on and on identifying every farm's crop and people who grow it. Traceability of any product in the case of an emergency

would be easier due to Montana fruit and vegetable farms' proximity to its markets.

But don't think because Montana has not had a recent food-borne illness outbreak in fresh fruits or vegetables, that we never will. We have risk in Montana. We have open water sources including rivers, ponds, and reservoirs that we irrigate our crops from that are at risk of contamination. We use sources of fertilizer derived from animal manures. We have domestic livestock, wildlife and migratory birds in our state, close to and on our farms. And we certainly have Salmonella, Listeria and E. coli in our soils, in our water and on our farms as well.

While contemplating what to write as a follow-up to the food safety training, I have concluded that the farmers' questions themselves are what is of value – because what they want to know is likely what every other fruit and vegetable grower wants to know. So what follows are the Frequently Asked Questions (FAQs) gleaned from the Montana trainings held at Chico, Great Falls and Helena.



Q: Do I HAVE to have a written food safety plan for my farm?

A: No. Food safety plans are not required if your buyer (s) have not requested it and you are selling directly to the consumer without any post-harvest handling (washing, chopping, bagging, mixing etc).

Q: If I am Exempt under the Food Safety Modernization Act do I have to have a food safety plan for my farm? **A:** No. Food safety plans are not required unless you are doing post-harvest handling (washing, chopping, bagging, mixing etc).

Q: Our Farmers' Market is thinking about requiring a Food Safety Plan, will I need one to sell there – even if I am Exempt under the Food Safety Modernization Act?

A: If any buyer requires that you have a GAP Food Safety Plan –then, Yes, you will need to complete one if you want to sell through their market.

Q: What pathogens do we as farmers need to be primarily concerned about?

A: Bacteria including: E. coli (primarily the more virulent strain **0157:H7**), Salmonella, and Listeria.

Food Safety Begins on the Farm—Good Agricultural Practices... *continued*

Q: Where do these bacteria come from?

A: Generic *E. coli* is in the intestinal tract of mammals; **cattle** and other ruminants are the most common source of the most toxic *E. coli* variants. *Listeria* is found naturally in soil and water. *Salmonella's* primary reservoir is in the intestinal tract of animals.

Q: What are the most important practices I should be instituting on my farm to help prevent future contamination from these pathogens?

A: 1) Keep livestock and other domestic animals out of growing, harvest and packing areas, and minimize the presence of wildlife and rodents. 2) Know the source of your fertility inputs. Add fertility inputs like manure, 120 days prior to harvesting a crop that is growing close to the ground. If using compost, be certain it has been prepared with adequate levels and duration of heat and turnings to kill pathogens. 3) Use water that has been tested for pathogens before using it to irrigate. Water used to hydro-cool crops must be potable (quality equal to Safe Drinking Water Act), and water used for the application on produce crops of fertility or pest management inputs that require water that is potable, as well. 4) For everyone working directly in harvested crops that are typically eaten raw, like apples, peas and beans, be sure harvest tools, and the harvest and packing containers are clean, that workers have convenient access to restrooms, soap, potable water to wash hands, and single-use towels for hand-drying.

Q: So what are the major food safety risks that I would need to include in a Food Safety Plan for my farm - exactly?

A: 1) Water source (s) and use (s), 2) Farm land – history of land being used for growing fruits and vegetables and adjoining land use (remember blowing manure from a cattle feedlot over a mile away caused one of the worst food borne illness issues), 3) soil inputs including manure and compost, 4) ag chemical inputs, 5) field worker hygiene, 6)

the ability to trace all crops from the farm to the marketplace, 7) capacity and a system to control animals and pests, 8) safe harvest, packing and transport systems and procedures.

Q: So, how will my system be verified that I am following these practices?

A: Once you have your food safety plan in place – verification of your plan can be completed by a 2nd party verifier to “test” your food safety plan. The verifier will observe both your plan and your field practices while onsite. You will receive feedback on the areas of weakness in the plan and the operation and in areas of what you are doing well. If a full GAP audit is needed to satisfy your buyers request then an audit by a qualified Gap Auditor will be necessary and they will follow the same procedure as the verification to assess your operation procedures and practices.

For those of you who already are certified organic –your records for harvest, measures to protect your crops, and traceability records of your products will make the development of a food safety plan MUCH MUCH easier.

If you feel like your head is spinning a bit at this point, know that there are a lot of resources to help producers and to answer questions, resources that are free and readily available to the public. These resources include sample food safety plans, audit checklists, and FAQ's.

Recommended sites include: North Carolina <http://www.carolinafarmstewards.org>

Cornell University (<http://www.gaps.cornell.edu/educationalmaterials.html>)

The University of Minnesota (<http://www.extension.umn.edu/rsdp/community-and-local-food/good-agricultural-practices/>)

Many people would love to grow their own food...



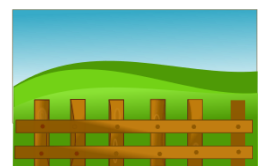
but no one has been able to find **bacon** seeds!

It's almost spring...



Get so excited that you wet your plants!

By the time you find greener pastures,



you can't climb over the fence!

Master Gardener Association - Gold Country Montana

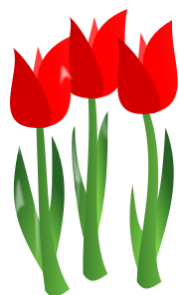
Master Gardeners in Lewis & Clark, Jefferson, Broadwater and Powell counties now have access to a new Master Gardener Association. Named the “Gold Country Montana Master Gardener Association”, the group was formed in 2015 by Master Gardeners in the Helena area.



The mission of the Association is “to support the Montana Master Gardener program in its efforts to provide public education in gardening and environmental stewardship generated from unbiased and research-based data from Montana State University and other university systems through education, communication and advocacy.”

The purpose of the Association is “to offer volunteer-based leadership providing horticultural and gardening consultation, information, education and service in support of the Montana State University Extension Service, the Montana State University Master Gardener program, and the Lewis and Clark County Extension Service. The Association will perform special tasks and engage in continuous activities related to the Master Gardener program with the ultimate goal of increasing science-based gardening knowledge for its members and the general public.”

Voting membership is open to graduates of the Montana Master Gardener program who have successfully completed the Master Gardener training classes, the final exam, and have completed the required volunteer hours commitment. It is also open to Master Gardener students who have completed the Montana Master Gardener program classroom study and the final examination and are working on volunteer hours needed for graduation. Those who do not plan to complete their volunteer hours are not eligible for voting membership. Qualified Master Gardeners from Lewis & Clark, Jefferson, Broadwater and Powell counties may become voting members. For those who have not taken the Master Gardener course but who are interested in gardening, nonvoting memberships are also available. Annual membership dues are \$25.



Monthly meetings for the Association will be on the first Wednesday of each month. Activities or speakers are planned for each meeting. An Annual Master Gardeners’ Celebration will be held in the winter months. The recent Celebration was held in January at the Lewis & Clark County Fairgrounds, and saw over 100 attendees visiting booths, engaging in silent auctions, enjoying a prime rib potluck dinner, and focused on educational and entertaining presentations by Dr. Linda Chalker-Scott, PhD, associate professor and extension urban horticulturalist at Washington State University.

To reach the Gold Country Montana Master Gardener Association, e-mail them at goldcountrymastergardener@gmail.com. Also check out the Facebook page at <https://www.facebook.com/Gold-Country-Montana-Master-Gardeners-Association-1489915447970695/>.

Anybody who wants to rule the world should try to rule a garden first. ~Gardening Saying

My rule of green thumb for mulch is to double my initial estimate of bags needed, and add three. Then I'll only be two bags short. ~Author Unknown

There are two seasonal diversions that can ease the bite of any winter. One is the January thaw. The other is the seed catalogues. ~Hal Borland (1900–1978)

One of the worst mistakes you can make as a gardener is to think you're in charge. ~Janet Gillespie

Plant Profile: Rhubarb

Connie Geiger

One of the pleasures of early spring in my garden is seeing those unusual looking crinkled buds of rhubarb pushing up through the garden soil. Knowing what they will soon become takes me back to my childhood. My parents always had rhubarb growing in the yard and as kids we would pick the giant leaves and pretend they were parasols, or a giant fan, like in a scene from one of those old black and white movies about the tropics. So I decided to find out a bit more about this old fashioned plant that is often overlooked, despite its dramatic presence in many garden.

Rheum rhabarbarum, is a species of plant in the buckwheat family (Polygonaceae) – commonly known as the knotweed or smartweed family. It is often confused with another large leaved “vegetable”, burdock, which is found as a weed here in Montana, and is from an entirely different family of plants. Burdock leaves have a dull slightly fuzzy finish and a more pointed arrow-like shape, whereas rhubarb leaves are shiny, and palmate in shape.

History

Rhubarb dates back in human history to 2700 BC, where it grew wild in cold regions of Central Asia, including growing wild along the banks of the Volga River in Russia. In fact its name (Rheum) is derived from Rha, the ancient name for the Volga. In ancient China it was used for medicinal purposes. Marco Polo brought rhubarb to Europe where it was grown in Italy as a medicinal plant. In the 16th century, when it first reached Britain along the Silk Road, rhubarb was seen as a treatment for a variety of ailments, including toothache, jaundice, gout and indigestion. It wasn't really used as a food until the late 1700s in England, which is about the time that affordable sugar became widely available. If you've ever tasted rhubarb straight from the plant you know why sugar is so important! Rhubarb was introduced to North America with the transition to culinary uses, and was being marketed by the mid-1800s. It reached its peak usage primarily in England during WWII when it was used during food shortages, grown in excess during the Dig for Victory campaign of the war.

Commercial Growing

Rhubarb is generally commercially grown in early forcing houses during the winter months. Many of them are located in Michigan and Ontario, but most famously a 9-square mile “Rhubarb Triangle” in West Yorkshire, England. The rhubarb farmers there use a cultivation method that dates to the early 1800s. Plants are grown in fields for 2-years without harvesting. In the 2nd year, once they've been hit by frost (usually in about November) they're moved into heated sheds where they're kept, and eventually harvested, in complete darkness. Removing them from sunlight transforms the carbohydrates in the roots into glucose in the stems resulting in a distinctive bittersweet flavor, and more tender and redder stalks than rhubarb grown outdoors.



Rhubarb flower bud

Backyard gardeners can imitate this “forcing” by simply covering the early spring shoots with a bucket or wash tub, encouraging the formation of the smaller, less acidic and more tender shoots.

Growing Rhubarb

Rhubarb is a great perennial for your garden. It is low maintenance, easy to grow, and lasts for years. Even if not used for cooking, it's a beautiful visual and textural addition to gardens and yards because of its gorgeous huge green leaves. It is best to start rhubarb from a crown or division, rather than from seed. Usually plant crowns in early spring when plants are dormant, or when plants are just starting to leaf out. It can also be started in the fall after dormancy. If it's not dormant make sure you plant right away rather than after it starts to dry out. Plant in soil that is fertile and well drained, although it grows well in most soils. A healthy rhubarb can get rather



Rhubarb – tpermaculture.blogspot.com



Burdock – from <http://www.natronacountyweeds.com/>

Plant Profile: Rhubarb *continued*

large so allow at least one square yard of space. Cover the crown with no more than two inches of soil.

Flower stalks should be removed as they appear, as they deplete reserves from the crown, slowing further production of new stems. Cut them off as close to the base as possible to discourage earwigs and other insects from taking up residence in the stump of the stem, causing damage to the plant. Keep the soil moist but not soggy.

In order for the plant to become well established, leafstalks should not be harvested the first year and only a few the second year. Never harvest more than one-third to one-half of the plant stalks, in order to preserve enough foliage to sustain the crown. The stalks are most flavorful when fairly young, so harvest them soon after the leaf expands. Harvest by grasping each leafstalk near the base and pulling it slightly to one side. Stalks can also be cut with a knife.

Harvest

The best time to harvest rhubarb is early to late spring. **DO NOT EAT THE LEAVES** of rhubarb, as it is considered poisonous due to high concentrations of oxalic acid. The high acidity is likely the plant's defense mechanism, and when leaves are damaged, such as after a frost, oxalic acid crystals in the leaves migrate down into the stalks, making them unsafe to eat. However, rhubarb leaves are safe to add to your compost pile, because the oxalic acid rapidly decomposes. Harvest and use only the stems of healthy looking leaves and store them, unwashed, in the refrigerator wrapped in perforated plastic until ready for use. Fresh rhubarb can be stored for two to four weeks at 32-36 degrees F and 95% relative humidity. After the last harvest (usually midsummer), the plants should be allowed to grow until killed by frost.



Dividing Rhubarb Plants

When a rhubarb crown is 6 to 10 years old, it may be dug up and divided. This should be done as early in the spring as possible. Insert a shovel about 6 inches into the ground next to the base of the plant and lift out the entire crown. Some roots will break off and be left in the ground. Using your hands, a hatchet, or large knife, separate the crown into fist-sized pieces, each with at least one bud and a large root piece. Pull away the dark brown sheaths left from last year's stalks.

Replant the new divisions as soon as possible. If planting is delayed due to weather conditions, store them in the refrigerator. Rehydrate the divisions before planting by soaking in water for at least two hours, or preferably, overnight.

Health Benefits

In recent years, with the surge in popularity of "health food" and heirloom varieties of fruits vegetables, rhubarb has experienced a bit of a comeback. It is an excellent source of fiber, and also contains vitamin C, K, and B, as well as calcium, potassium, beta-carotene, and lutein. There is even supposition that it may aid in preventing the onset of Alzheimer's. Unfortunately, some of the health effects may be negated by the large amounts of sugar needed to balance the very tart taste of rhubarb.

When cooking fresh rhubarb use the entire stalk, no need to peel it. Always use a non-reactive pan for cooking (anodized aluminum, stainless steel, Teflon or enamel coated, or glass). Otherwise the acid will react with the metal staining the pan and turning the rhubarb an unappetizing brown color. Rhubarb can be easily preserved by freezing (via the usual blanching method), canning, or even drying.

Rhubarb Custard Pie

Rolled pie dough for bottom and top crust
 3 heaping cups of fresh rhubarb – or a mix of rhubarb and strawberries
 1 ½ cups sugar
 3 tbsp flour
 ½ tsp nutmeg
 2 tbsp butter or margarine, softened
 2 eggs

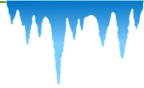


Place bottom crust in pie pan. Spread rhubarb in the pan. Mix sugar, flour, nutmeg, butter and eggs; pour over rhubarb. Add the top crust. Bake at 375 degrees for 40-60 minutes.

Gardening Calendar

Conditions during each season in your location will determine the actual timing of your garden work. If you have questions regarding the timing of garden activities in your area, please feel free to ask a Master Gardener at HelenaMasterGardeners@hotmail.com.

January



- Check storage vegetables and bulbs for mildew and rot, and destroy those affected.
- Reuse natural Christmas trees as a bird feeding station, or as added wind protection for evergreens; or cut limbs to use as winter protection for perennials
- Consult your garden journal and plan for the new growing season
- Plan and construct, or repair, garden projects: hoop houses, tomato cages, fences, gates, cold frames, trellises, benches
- Reapply or redistribute mulches that have blown or been washed away during the winter. Watch for frost heaving of tender perennials and cover if needed
- Replace windbreaks to protect sensitive landscape evergreens
- Moisture root system of stored geraniums (repeat monthly)
- Remember when deicing walkways and driveways to use calcium chloride or potassium chloride products that are less damaging to plants and lawns
- Bring out bulbs from cold storage for “forcing” for early indoor blooms
- Christmas flowering plants like poinsettia and amaryllis need bright light, cooler temps, fertilizing, and reduced watering
- Watch for rodent damage of trees and shrubs. Install mesh, wire or plastic trunk guards as needed
- Brush heavy snow and ice from tree and shrub limbs to prevent later damage. Multistemmed evergreens (arborvitae) can be tied together.
- Wrap tree trunks of young trees, and those with thin bark, to prevent frost cracking during cold sunny days
- Consult garden catalogues and start comparison pricing for Spring seed orders

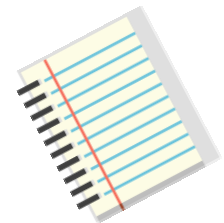
February

- Check with local nursery and garden stores for seeds and early planting options
- Inventory and check dates of left-over seed packets; sprout a few in a moist paper towel to ensure still viable
- Order new seeds for Spring planting
- Clean, sharpen, and oil garden tools; sand and repaint handles
- Using detergent and mild bleach solution clean old pots and seed trays to prepare for seed starts
- Clean indoor plants; giving them a “shower” helps remove dust that can clog pores or hinder light penetration and can also wash salts from the soil



March

- Repot indoor plants once vigorous growth begins
- Set up an area for starting your garden seedlings – good light and heat source etc.
- Draw garden layouts
- Review garden journal and notes about successes and failures of previous years
- Take a soil test of your garden soil, if not done in the last 5 years
- Trim certain fruit trees and deciduous trees, and some shrubs
- Cut back dead rose canes, ornamental grasses, and any remaining perennials in flower beds
- Rake remaining leaves from the lawn, to prevent suffocation
- Review lawn service contracts and make changes
- Apply dormant oils and fertilizers to trees and shrubs
- Cover patches of garden with black plastic to warm the soil for early plantings
- Set up a cold frame or hoop house for early start on greens, onions, and radishes
- Tune up and repair lawn mowers, garden tractors, and rototillers
- Aerate, fertilize, and possibly thatch, the lawn
- Once Spring blooming shrubs (forsythia, pussy willow, crabapple) form tiny buds you can cut them to bring indoors and put in water, to force them to bloom



Ask the Experts!

We all have questions about our gardens, lawns, trees, flowers or other landscape projects from time to time. Ever wish you could ask an expert in the field for answers to your questions? Here's your chance! In each issue of the newsletter we will answer one or more questions posed by our readers. Send in your questions to HelenaMasterGardeners@hotmail.com and we will pass the questions on to our expert panel for answers.



Brent Sarchet, Lewis & Clark County Extension Agent

Q: I am interested in beekeeping. How should I get started?

A: Beekeeping is a great hobby that the whole family can get involved in. I have enjoyed keeping bees for the last 6 years and every year I learn something new, and every year the honey is a little different, not only in terms of taste and color, but also in quantity. I got into beekeeping out of my love for plants and striving for better yields.

The first thing I recommend to people interested in beekeeping is to sign up for a local beekeeping workshop. MSU in Bozeman offers a one day beekeeping workshop every spring, and I teach an intro to beekeeping class at Helena College starting in April; UM offers an online course and other workshops may be offered in neighboring counties through their Extension Offices. Also, purchase a good beekeeping book that has the basics and ideally written from someone who keeps bees in northern latitudes. The University of Minnesota has a great set of books that can be purchased at the Extension Office, or from the University of Minnesota directly.

Second, find a beekeeping mentor or join a local beekeeping club. There is a lot to beekeeping that cannot be learned from a textbook, and there are as many different ways of keeping bees as there are beekeepers. Learn from seasoned beekeepers on what works best for your area. You will find that everyone has their own opinions, so you may need to experiment and find out what works best for you.

Third, purchase your bees and equipment early from reputable sellers. There are three ways you can get bees. The best in my opinion is to purchase packaged bees. They can be purchased from Murdochs, Western Bee of Polson, online companies, and some local beekeepers will sell packaged bees. They will typically arrive in mid April or first of May depending on the weather. The next way to get bees is to purchase a nuc. Nucs can be purchased from local beekeepers, especially the commercial beekeepers in the state. Sunshine Aparies out of Columbus sells nucs every year, and a beekeeper out of Belgrade organizes the ordering and pickup; the scheduled pickup usually occurs in May in Belgrade. The other option of getting bees is to try and collect a swarm in early summer. Regardless of which option you choose, make sure you have all your boxes and frames ready prior to the bees arrival.

Beekeeping can have a large initial investment to get started. Depending on equipment options, you can easily spend over \$600 on the basic set-up including the bees. The key is to get educated prior to your start, so you don't have to buy new bees every year, which can get really expensive (ave. \$120 for a nuc or package of bees). Good luck!



Event Schedule

Gold Country Montana Master Gardeners Monthly Meeting

Feb. 3, 6:00 pm

Lewis & Clark County Extension office, Upstairs Meeting Room

Presentation will be on nutrients in Fruits and Vegetables, by Nina Heinzinger, nutrition instructor at Helena College

2016 Winter Gardening Workshop Series

5:15 pm – 6:45 pm

Feb. 5: *Vegetable Varieties Best Suited for Montana; Heirloom, Hybrids and GMO Seeds* Brent Roeder, MSU/Teton County Extension Agent

Farm Food Safety, Food Modernization Act - Brent Sarchet, MSU/Lewis & Clark County Extension Agent
Choteau Courthouse Annex

Feb.19: *Soil Fertility and Cover Crops* - Brent Sarchet, MSU/Lewis & Clark County Extension Agent

Common Plant Diseases in the Garden - Brent Roeder, MSU/Teton County Extension Agent

Augusta Senior Center

Please **RSVP** to bsarchet@montana.edu, 447-8350, for Augusta and roeder@montana.edu, 466-2491, for Choteau and Power

Level I Master Gardener Course

February 11th - April 7, 2016

5:30 pm – 8:00 pm

Lecture Hall at Helena College

Contact Brent Sarchet at bsarchet@montana.edu or phone 447-8350

Fruit Tree Grafting Workshop

Date: Saturday, April 2, 2016

Time: 9:00 am to 12:00 pm

Location: 4-H Bill Hamilton Building at the Lewis & Clark County Fairgrounds

Cost: \$15.00 and \$5.00 for each additional tree

(pre-registration is required and class size is limited to 25)

Useful Links

MSU Extension Yard & Garden: <http://www.msuextension.org/category.cfm?Cid=5>

Missoula Plant Diagnostics Database: <http://www.co.missoula.mt.us/extension/plantdata/>

National Center for Appropriate Technology gardening publications: <http://www.attra.org/horticultural.html>

National Garden Association: <http://www.garden.org/>

Helena Garden Club: <http://helenagardenclub.wordpress.com/>

Lewis & Clark County Extension Office Web site: <http://www.co.lewis-clark.mt.us/index.php?id=75>

MSU Master Gardener Program: <http://www.mtmastergardener.org/>

Helena Community Gardens: <http://helenagardens.org>

Newsletter Contributors

Brent Sarchet

Judy Halm

Connie Geiger

Jonda Crosby

Contact Information

Helena Master Gardeners: HelenaMasterGardeners@hotmail.com

Brent Sarchet, Lewis & Clark County Agricultural Extension Agent: (406) 447-8346 bsarchet@co.lewis-clark.mt.us