



# A Newsletter for GARDENERS OF ALL LEVELS

By Helena Area Master Gardeners

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## Gardening Projects, Tips and Hints

### Judy Halm

If you have ever wished you had extra arms and hands when you are carrying items to and from your garden, here's a trick you can use to save your back and reduce trips to the garden shed. Pull your kids' winter sled out of storage and put it to use in the garden.

Flat-bottomed plastic or aluminum sleds work best. You can pile weeds, garden gear or zucchinis on the sled and pull it through your garden and yard to wherever your final destination. As long as you don't have too much weight on the sled, it should slide nicely across your grass. I have used two of the sleds in the winter for hauling hay bales to my horses; a six-foot long sled holds two 40-pound bales and slides freely over the snow. On dry, dead grass I move one bale at a time. In the summertime we have used the sled to haul weeds out of the garden, as well as for carrying tools from one end of the rows to the other.



You might want to reinforce the holes through which the pull rope passes on the sled; if you pull too hard or have too much weight on the sled, the rope can pull through the holes.

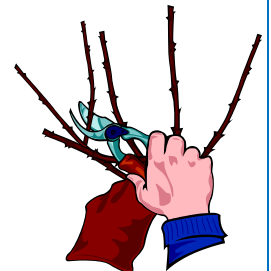
## Share your gardening projects, hints and tips!

Do you have some time-saving ideas you use in your garden to help you along? Do you have a garden or landscaping project with which you are pleased? Consider sharing your projects, hints and tips with other gardeners. Send a description of your idea or project to [Helenamaster-gardeners@hotmail.com](mailto:Helenamaster-gardeners@hotmail.com) and we will share it with our readers. A Word document works best, and including photos will help readers visualize your idea.



## It's Time to Prune!

Now is the time to be pruning those trees and shrubs for spring. Check out the January 2012 issue of The Growing Zone <http://www.co.lewis-clark.mt.us/index.php?id=75> for more information about which plants to prune now and which to prune after they bloom in the spring.



## SPINACH: *Not Just for Popeye Anymore!*

### Charlotte Bowenhollow

Spinach is a decorative, versatile, nutritious vegetable, found in numerous kitchens and home gardens across the world.

It seems to have been documented first in Persia, originated in Nepal, worked its way to China by the 7<sup>th</sup> Century, Europe by the 13th and America at least by the 1800s. Thomas Jefferson sowed Prickly-Seeded spinach, with a smooth triangular leaf, at Monticello in 1809. The genus name “*Spinacia*” derives from the Latin for “spine” which referred to the spiny seed covering, the prickly seed of today. The species name “*oleracea*” means “edible.” Spinach seeds may be smooth and round or prickly, which, after years of developing new types, is not indicative of any particular type.

Spinach used to belong to the Goosefoot Family, along with other food species, such as, beets, Swiss chard, quinoa, etc. Recently it has been included in the Amaranthaceae Family.

### Recommended Varieties

There are three basic types: Savoy, smooth-leaf and semi-savoy. Since spinach is a cool season crop, it is usually planted twice a year, in the spring and fall, in order to take advantage of the best temperatures for growth. Performance, such as disease resistance, varies with the different types and their seasonal adaptations.

Savoy varieties have dark green, deeply crinkled leaves (harder to clean), a low growth habit, and handle cold well.

‘Bloomsdale Long Standing’ (48 days) is slower to bolt (go to seed), richly flavorful, thick leafed and more tolerant of temperature variations. It grows somewhat erect, produces well in spring, summer and winter (with mulching.)



Bloomsdale Long Standing

‘Melody’ (F1, 42 days), grown in spring and fall, is very popular, disease resistant, has a heavy yield, and grows fast. It is very slow to bolt and will thrive in sun or part sun.



Tyee Spinach

Semi-savoy varieties have a more upright habit, leaves are less creased (and stay cleaner), are better at bolt and disease resistance and more likely chosen by the home gardener.

‘Tyee’ (40 days) is a favorite 3-season spinach, and it can over-

winter in many areas. Extremely bolt and disease resistant, upright vigorous growth and distinctive dark green leaves make it a frequent choice.

‘Indian Summer’ (F1, 40-45 days) is another 3-season variety; leaves are somewhat fine and flatter. It is very slow to bolt with high yield and disease resistance.

Smooth leafed spinach has broad, flat leaves, grows faster and yields more than the other types, and is often used for baby spinach leaves and processed spinach. ‘Olympia’ (F1, 45 days) has thick, dark leaves that grow upright, exceptional bolting tolerance, rapid growth and disease resistance. It is a good spring and early summer candidate.



Space

‘Space’ (F1, 40 days) is slower to bolt than most smooth leaf varieties, is vigorous, upright, has thick leaves and is suitable for later plantings.

Spinach options to consider during the hotter weather are Malabar Spinach (*Basella alba*) and New Zealand Spinach (*Tetragonia expansa*), both clearly misnamed. Malabar Spinach is a tall heat-loving vine with mild-flavored thick leaves, is good eaten raw and wilts when cooked, seeming more like spinach. New Zealand Spinach has crisp, succulent leaves. It is good raw, but dissolves when cooked and then is better as a thickener. Both are nutritious and may deserve more attention than they get.



New Zealand Spinach

### How to Grow

Germination. Spinach seeds rapidly lose viability so are best replaced every one or two years. Priming a week ahead of planting is often suggested to improve germination rate. Soak seeds in tepid water for 24 hours; let dry a day or two then move into an airtight container in cool area until planted. Soils above 75° reduce germination, which is usually expected to be 7-10 days.

If you want to save seed, know that hybrid (F1) varieties are not dependable in reproducing desired characteristics. Spinach is dioecious (male and female parts on different plants) and wind-pollinated so it is good to know the process that best leads to success. See this MontGuide to learn more: <http://www.msuextension.org/publications/YardandGarden/>

## **SPINACH: *Not Just for Popeye Anymore!* - continued**

### [MT199905AG.pdf](#)

**Soil preparation.** The soils for planting spinach can vary but should be nitrogen rich, evenly moist, well-drained, and high in organic matter. Before planting incorporate 3 inches of compost and work into the top 6 inches of soil. The temperature of soil is best at 45° to 75°, but not less than 35°. pH is important to spinach and there are many viewpoints on what is best, as is true with every other aspect of growing spinach. It seems generally agreed upon that a pH of 6.5 is a safe number to use; above 6.5-7.0 you may see yellowing and below 6.0 you may see poor germination or stunted growth. Be sure to rotate your spinach crop with a non-Goosefoot species so needed nutrients have a chance to renew.

**Plants** can be grown from sown seed or transplants. Start seeds inside 4-6 weeks prior to planting. Thin when there is a 2 inch spread; transplant when there are 4-6 mature leaves and a well-developed root system. Sow seeds ¼-½ inch deep in the spring; plant them 1 inch deep later in summer when mulch and extra water will be important.

**Planting and spacing** seed in a row should be 1 inch apart with rows 12 inches apart, or 8 inch spacing in a raised bed. Space transplants 2-3 inches apart and thin to 4-6 inches. Provide organic mulch such as grass clippings, straw or hay. Spinach grows best when the temperature is 60°-65°, and should be at least below 75°. In the spring plant the transplants near the last frost-free date in your area; sow seeds outdoors 4-6 weeks earlier. To have a fresh batch ongoing, plant a small crop every 10 days. In the fall, start seeds inside or sow seeds 4-6 weeks before the first frost. Many varieties will over-winter if they have 4-5 leaves and are mulched heavily; remove the mulch after snow melts and then add fertilizer.

**Water** should be sufficient to keep the soil evenly moist to about 6 inches, or about 1-2 inches per week, depending on soil composition and temperatures. This is best with a drip system, keeping leaves dry. Water fluctuations lead to tougher, more bitter leaves, slower growth and premature bolting.

**Fertilize** by adding the compost before planting and some alfalfa meal (2-3 lb. per 100 sq. ft.) for spring and summer planting. In the fall use fish meal (4-5 lb. per 100 sq. ft.) or blood meal. Use a shot of compost tea after thinning and sidedress a couple of weeks later if you aren't able to add the meal at planting.

### **Problems**

**Physical:** Mulch, shade and/or row covers helps the soil to retain needed moisture, moderates temperatures by cooling the soil, reduces weed growth, and provides protection from a

heavy frost. Mulch can be grass clippings, straw, shredded newspapers, etc. Proper temperatures produce sweeter spinach. Row covers or even upright shade cloth can delay or divert the heat so the plants can reach that key 6 weeks of cool weather.



Spinach and lettuce interplanting

Another technique is interplanting the spinach among tall crops to provide extra shade. In very warm weather, partial shade and filtered sun are often beneficial. Competition from weeds is a threat for this shallow

rooted plant but cultivation can damage roots. Cut the weeds off at the soil line instead.

**Bolting**, the development of the seed stalk at the top of a useful plant, is a common frustration. It is triggered by hot temperatures (above 77°) and the lengthening of days (14-16 hours). It is worsened by water stress and overcrowding. It is delayed by picking leaves frequently; yellowing leaves use moisture and nutrients needed for new growth.



Bolting Spinach

**Insects and disease** have not traditionally been large problems for this cool season, fast growing plant. However, there are several strains of downy mildew which affect spinach. Mildew-resistant cultivars have been developed. Using disease resistant cultivar seeds as well as keeping water off the leaves helps prevent downy mildew problems. Spinach blight, spread by aphids, distorts new growth and is alleviated by use of insecticidal soaps. Slugs, and their clean-edged holes, can be diverted by pit traps of beer. Leafminers, known by pale tunnels inside the leaf, can be discouraged by row covers, removing affected leaves and hand "squishing."

### **Harvesting**

Pick outer leaves on a regular basis once the plants have 5-6 leaves that are 3-4" in length, or whenever you want to eat some! Some say it is better for the plant to cut the leaves rather than picking them. As the weather warms, harvest the whole plant to an inch or so above the ground and wait for new leaves to regrow. If you wait for frost to harvest your fall crop you may get more and "sweeter" spinach; cold increases sugar production.

## SPINACH: *Not Just for Popeye Anymore!* - continued

When you are storing spinach in your refrigerator, stay away from avocados, melons and apples. These products emit ethylene gas which will cause greens like kale and spinach to yellow and deteriorate quickly. I use Debbie Meyer Green Bags for my fruit and vegetables; they somehow counteract the gas and really extend freshness! If you are freezing spinach, blanch it first, either in the microwave or by steam; boiling changes the color. Cool and freeze in containers or plastic bags.

### Benefits

In addition to fiber and protein, spinach provides Vitamins C, A and K, Calcium and minerals, including Iron. There is also Thiamin, Potassium and Folate (a B vitamin), as well as Carotenoids. Some of these are associated with reducing cholesterol, reducing the risk of heart attack and/or cancer (there is current research on spinach extracts and the reduction of ovar-

ian, prostate, and stomach cancers). There is evidence for improved eyesight, brain and gastrointestinal functioning. Not quite the Fountain of Youth, but certainly worth growing and eating! So, I will continue to grow spinach and hope a few of these ideas will improve my yield – yours too!

Tyee, Space, New Zealand Spinach and Interplanting photos courtesy of [www.grow-it-organically.com](http://www.grow-it-organically.com)

Spinach Bolting photo from [www.theinadvertantgardener.com](http://www.theinadvertantgardener.com)

Bloomsdaly Long Standing photo from [www.genericseeds.com](http://www.genericseeds.com)

### References

[www.wimastergardener.org/?q=spinach](http://www.wimastergardener.org/?q=spinach)

[www.grow-it-organically.com](http://www.grow-it-organically.com)

[www.garden.org](http://www.garden.org)

[www.extension.usu.edu](http://www.extension.usu.edu)

## Recipes of the Month:

### Bacon and Creamed Spinach

#### INGREDIENTS

1 pound fresh spinach, about 2 large bunches  
3 to 4 strips of lean bacon, uncooked, finely chopped  
1 clove garlic, minced  
1 medium onion, chopped  
1/8 tsp. Nutmeg

Salt and pepper to taste  
2 Tbsp. butter  
2 Tbsp. flour  
1 cup milk



#### PREPARATION

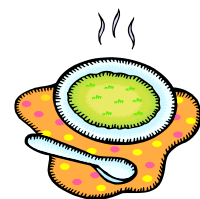
Clean and drain the spinach. Blanch in hot water about 2 minutes. Rinse and cool immediately. Chop and save. Brown the bacon, then add the minced onion and garlic. Sauté. In a small saucepan, melt butter then add the flour and cook, stirring until smooth, about 2 minutes. Add milk, stirring continuously, and cooking until thick. Add the spinach, bacon and onion mixture, sauce, nutmeg and salt and pepper into a pan. Simmer, remove from heat and serve. **4 servings**

### Spinach-Broccoli Soup

#### INGREDIENTS

1 tbsp. olive oil  
2 large bunches green onions, minced (about 2 1/2 cups)  
Salt and pepper to taste  
2 1/2 pounds broccoli, stems peeled, chopped finely  
1 pound fresh flat-leaf spinach, washed and trimmed

2 tsp. dried marjoram  
1 quart low-sodium chicken or vegetable broth  
2 large garlic cloves, minced  
Plain yogurt (for serving)



#### PREPARATION

Heat oil in a large sauce pan over medium-high heat. Add onions, season with salt and pepper, and cook, about 5 minutes. Add garlic and marjoram and cook about 1 minute, stirring often. Add broccoli, cook and stir until bright green, about 2 minutes. Add broth; cover and bring to a boil. Reduce heat; simmer 5–8 minutes. Add spinach; stir until wilted, about 2 minutes.

Purée soup in a blender until smooth; adding water if too thick. Return soup to pan, season to taste with salt and pepper. Add a spoon of yogurt on top of each bowl of soup to serve.

## Seed Shopping Tips

### Connie Geiger

We've been planning our garden for 2013. That means doing an inventory of our old seeds, and ordering new. It's usually about this time that our gardening friends and acquaintances start asking "Where did you get the seeds for those Bells of Ireland?" or "What seed companies do you usually order from?" So I thought I would pass along some thoughts and suggestions to keep in mind when you're overwhelmed by all those seed catalogues that clog your mail box at this time of year. Perhaps you have some of your own ideas and discoveries to share? If so, email them to us ([HelenaMasterGardeners@hotmail.com](mailto:HelenaMasterGardeners@hotmail.com)) and we'll put them in the newsletter.



**Compare prices:** Keep in mind that seed companies are in the business to sell seed, and in our culture what is the major factor that influences sales? Advertising! Why do you think seed companies send you, in the dead of winter, those beautiful catalogues with gorgeous pictures of sumptuous vegies and fruit, and voluptuous flowers? Because they know you can't resist buying them, just KNOWING that yours will look just as good come spring or summer. Remember those pretty catalogues cost money to produce and so the price will often include that added cost. Shop around. Some of the best seed deals come from the companies who put their money into the seed, versus the advertising. Many catalogues still do have lots of helpful information. Use them for your research, and increasing your awareness of choices; for purchasing seeds or plants you may not find elsewhere; or for selecting the variety you want, but then search elsewhere for a possibly cheaper price. Also be a smart shopper by doing the math. Some



companies sell their seeds by the packet, and then provide a confusing chart showing you how many seeds are included in the package, or for larger packets the cost per 1000 seeds. Other catalogues sell by the gram and identify how many feet of plants you get per gram. If you don't pay attention to that you may not be getting the cheapest price after all, and may end up with enough carrot seeds to fill a field. For example: from one catalogue you can get seed for 10 ft. of carrots for \$2.40; in another catalogue you get 750 seeds for \$3.45, but that is 25 ft. of carrots.

**GMO:** Genetically modified seed is a "growing" concern (pun intended) of many gardeners and farmers, because of possible implications for future seed availability, future food production, and the global environment (for more information on GMO see <http://edis.ifas.ufl.edu/fs084> or <http://www.npr.org/blogs/thesalt/2012/10/15/162949288/farmer-tackling-monsantos-seed-policy-gets-a-day-in-supreme-court>). For those of you who are concerned about this, and wonder how to know whether the seed you are ordering is genetically modified, look for a "safe seed pledge" in the seed company's catalogue, or on their website.

Though nothing is absolute, companies with a seed pledge make the effort to not knowingly sell genetically modified seed. The pledge is usually found somewhere in the general introductory section of the catalogues. Here are a few seed companies that have taken a seed pledge to sell GMO-free seed: Johnny's, Territorial, Fedco, and Seeds of Change. There may be many other safe-seed companies of which I am not aware.

**Organic:** Many seed companies are now offering "organic" varieties of seeds, particularly those with GMO seed pledges since organic growers and farmers are required to use non-GMO seed. Each variety will usually be labeled in the catalogue with "organic" or "OG".



**Heirloom:** Growing plants from seed stock that is supposedly from our parents and grandparents' era is also popular with gardeners in recent years. These older varieties are often known for their vigor and hardiness, and are sometimes "open pollinated" which means they lend themselves to seed harvesting for future years of planting, with fairly consistent results. Keep in mind however that labeling seeds as "heirloom" is not a technical term, nor is it necessarily rare or "magical". Many of us already have "heirloom" varieties in our gardens. Many of our common annual and perennial hybrids and "crosses" date back decades and sometimes hundreds of years. Keep in mind that humans have been altering the reproduction of plants for centuries. Sometimes there are good reasons why the older varieties have been re-bred, perhaps to be hardy in other growing zones, or to improve flavor or culinary qualities, or to withstand newer diseases and pests. Research your seed sources to find out their growing and pollinating methods, and determine for yourself if their methods match what you find important about "heirloom" for your garden needs. Many seed companies now offer heirloom seeds. Some specialize in them, such as SeedSavers.org, Rareseeds.com, Sustainableseedco.com and Selectseeds.com.

**Support local seed businesses:** If you buy from a local seed company you are more likely to obtain seed from plants that are hardy to your area. It can also save you money on the shipping, and it supports a business that contributes to your local economy, ensuring ongoing access to locally grown seeds, and plant varieties. Some Montana seed companies include: **Fisher's Seeds**, PO Box 236, Belgrade, MT 59714, 406-388-6052; or <http://nativeideals.com/>

**Source location:** Check the seed catalogue to see where the seed company is located. That is often an indication of the growing zone their seeds have been selected for. Seed grown by a seed company in Southern California or Florida may not grow so well in our northern region. You might do better ordering from a seed company based in Vermont, or Michigan, or even better, western Colorado, or Idaho.

Happy seed shopping!

## Choosing and Buying Top Soil for your Garden

### Judy Halm

If you had less than stellar performance from your garden or flower beds last year, you may be thinking about purchasing top soil to add to your beds to improve their production. Perhaps you are planning a new bed in an area with what appears to be poor soil. Purchasing a few yards of top soil may be just what you need.

Top soil can be purchased from several sources, including local hardware stores and nurseries, sand and gravel companies, local farmers or other top soil sellers. Top soil can be bought in individual bags, if you just need a small amount, or in bulk for those who need a lot.

There are no regulations governing the quality of top soil sold in Montana. This article will provide you with a few hints on choosing top soil for your garden.



### Buying in bulk

Buying top soil in bulk may be the best solution if you need several yards or more. Begin by asking some of your gardening friends for their experiences with any suppliers they may have used before. Your local MSU County Extension Agent may be another great source of information. You can also check in the Yellow Pages or the local newspaper for the names of suppliers.



After you have a list of potential top soil suppliers, you may want to call them, or better yet, visit the providers so you can see the product and ask questions. Companies that specialize in providing soils may have blends suitable for lawn soil, garden soil, flower beds or even a **compost/soil blend**. You may even be able to create your own mix, like 40% compost with 60% top soil.

**Ask where the soil came from.** Ask the provider if he knows the source of the top soil he is selling. It might have come from cultivated farm land undergoing development, the ground surface over a gravel pit operation, recently cleared forest land, or an area of land that has been abandoned because of heavy metal contamination. If you can determine the source of the top soil, you may have an idea if the soil could be contaminated with herbicides from a farmer spraying his fields for weeds. Certain herbicides can persist in the soil for many months or years, and may damage desirable plants in your garden.

**Smell the soil.** Dig into the topsoil pile and pull out a handful. If the soil has a chemical odor, it could have been contaminated by petroleum products or other toxic waste. Good top soil should have a pleasant earthy odor. If you have concerns about contaminants in the soil, consider having a soil test done before you purchase a load for your garden. Ask your Extension Agent for recommendations about testing laboratories.

**Check the texture of the soil.** Soil is made up of three main particle types: sand, silt and clay. You can determine a rough estimate of the texture of the top soil by filling a quart jar one-quarter full of the soil you plan to buy. Make sure the soil is well crushed, with all rocks, sticks and roots removed. Fill the jar three-quarters full of water, and shake the jar for several minutes to break up the aggregates. Let the contents of the jar settle for several hours, then look at the relative amounts of sand, silt and clay contained in the layers. Sand, the heaviest and most coarse part of the soil, will be on the bottom. Silt, lighter and smaller than sand, will be in the layer above sand. Clay, the smallest and lightest particles, will be on top. You can then determine the percentage of each type of particle present by measuring the level of each layer compared to the total amount of all layers, or just eyeball a rough estimate. An ideal mixture would be from 30% to 50% sand, 30% to 50% silt, and 5% to 15 % clay. This mixture is called loam.

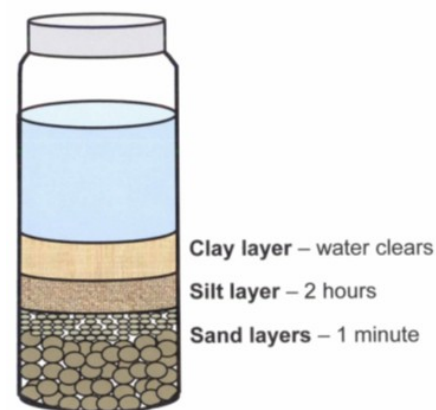


Image courtesy Colorado State University Extension

The top soil should be screened to remove large debris and plant roots, and it should be free of large clumps of soil. Dig into the soil to see if you can locate chunks of wood, large rocks or plant roots. The soil should be relatively weed-free, although this may be difficult to determine by just looking at the soil. If the soil pile has many plants growing in it, chances are that you will be taking weeds home to your garden.

## Choosing and Buying Top Soil for your Garden - *continued*

**Perform a bioassay on the soil, if time allows.** If you have concerns about persistent herbicides in the soil, purchase a small amount of the soil to perform a test. Plant several seeds of susceptible plants such as tomato, pepper or peas in pots and allow them to germinate for up to 6 weeks. Also plant several seeds in a seed starting mix you know to be safe. If the leaves in the unknown soil begin to show curling or other deformation, you should suspect herbicide damage. A good description of the bioassay procedure is available at <http://whatcom.wsu.edu/ag/aminopyralid/bioassay.html>.

Once you have purchased the soil and have had it delivered, consider mixing in organic matter (compost) as you prepare your bed or garden for planting. An ideal soil mixture should have 5% to 8% organic matter. Organic matter allows the soil to store more water, provides air space and feeds the useful microorganisms in the soil. Adding organic matter on a regular basis will help your topsoil maintain its growing potential into the future.

### Gardening Quotes

"There are always flowers for those who want to see them." - Henri Matisse

"We can complain because rose bushes have thorns, or rejoice because thorn bushes have roses."-- Abraham Lincoln

"There are no gardening mistakes, only experiments." -- Janet Kilburn Phillips

"God gave us memories that we may have roses in December."--J. M. Barrie

## The Real Meaning of Plant Catalog Terminology:

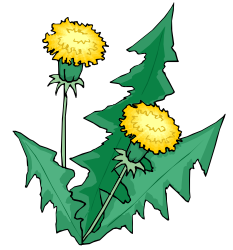
- **"A favorite of birds" means to avoid planting near cars, sidewalks, or clotheslines.**
- **"Grows more beautiful each year" means "Looks like roadkill for the foreseeable future."**
- **"Zone 5 with protection" is a variation on the phrase "Russian roulette."**
- **"May require support" means your daughter's engineering degree will finally pay off.**
- **"Moisture-loving" plants are ideal for landscaping all your bogs and swamps.**
- **"Carefree" refers more to the plant's attitude than to your workload.**
- **"Vigorous" is code for "has a Napoleonic compulsion to take over the world."**
- **"Grandma's Favorite" -- until she discovered free-flowering, disease-resistant hybrids.**



# Weed Seeds in the Garden!

## Judy Halm

Have you ever wondered why you keep pulling the same weeds out of your garden, year after year after year? After several years of pulling, digging and cutting weeds, it would seem you should see fewer and fewer new weed plants. Weeds being what they are – a plant out of place – they have figured out novel ways to survive, despite our best efforts to eradicate them.



Nearly all soil has what is called a “seedbank.” If you could sift through a bucket full of soil, you would be amazed at the number of seeds the soil would contain. Just as you and I put money in the bank each year, plants put seeds into the soil to insure their future survival. If you miss a few weed plants, allowing them to produce and drop seeds, you will likely be assured of the same weeds for years, or in some cases, decades.

Weeds survive so well because they are extremely adaptable and can survive in situations that more desirable plants cannot tolerate. Many weeds survive drought because of roots that descend deep into the soil where they can secure moisture that more shallow-rooted plants cannot reach. Disturbed or cultivated soil provides a location where fast-growing weeds can out-compete desirable plants by extracting moisture and nutrients from the soil or by shading the wanted plants. Some weeds such as Canada thistle and quackgrass spread by underground roots or rhizomes, and when cultivated and broken into bits, begin sprouting from each broken piece.

One of the most important adaptation weeds have developed is the ability to produce seeds that can number into the thousands and can survive for years in the soil. Although some weed seeds may die in the seedbank due to natural causes or predation by insects or microbes, many more will survive to grow another day. For example, a lambsquarter plant may produce 40,000 seeds in a good season, and the seeds may last for up to 40 years.

The following chart, mined from data from the University of Nebraska – Lincoln, the University of California, Utah State University Cooperative Extension Service, Montana State University Extension Service, University of Wisconsin Extension Service, Ohio State University Extension Service, and the Ontario Ministry of Agriculture, lists common weeds, the number of seeds produced per plant (in a good year) and the length of time the seeds may survive in the soil.

Weed Species	Number of seeds per plant	Length of seed survival in undisturbed soil (in years)
Ball mustard	490	10
Canada thistle	680/stem	20
Common lambsquarters	40,000	40
Common purslane	52,300	30
Common ragweed	3,380	40
Common sunflower	7,200	8
Dandelion	15,000	6
Redroot pigweed	117,400	10
Common mullein	150,000	40
Prickly lettuce	27,900	6
Quackgrass	50	4
Field bindweed	500	40
Chickweed	1000	10
Houndstongue	100-500	3
Russian knapweed	100 - 1200	3
Spotted knapweed	1000	8

Least you fear that all is in vain if you let a few weeds go in your garden, there are a few ways you can reduce the number of viable seeds in your garden.

Don't let those weeds go to seed! Remove the weed plants when they are young, before seed heads are produced. If the weed spreads by rhizomes or stem parts, dispose of them outside your garden.



If you add compost or amendments and then till your garden, till only deep enough to incorporate the amendments. Deeper tilling will bring buried seeds to the surface where they may sprout. If you make your own compost from yard or garden waste, make sure the compost pile reaches high enough temperatures (150 - 160 degrees Fahrenheit) for the appropriate length of time to kill any weed seeds that may be in it. Contact your local Extension Service for information on composting.

Mulch flower beds and gardens to prevent light from reaching weed seeds. Some weeds, such as bindweed and quack grass, may grow through the mulch, but annual weeds are dissuaded by mulch.

Solarize your soil before planting desirable seeds. Spread clear plastic on the soil for several weeks before planting time; the heat of the sun can kill many annual seeds.

As a last resort, herbicides will control many types of weeds. Unfortunately, desirable plants are also killed by herbicides, so contact your local Extension Agent for information on how to select the correct herbicide for your location and weeds.

contact your local Extension Agent for information on how



## Gardening Calendar - Connie Geiger

Conditions during each spring 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](mailto:HelenaMasterGardeners@hotmail.com).

### February

- Check wind protections of tender evergreens to ensure they're still shielded from late winter storms.
- Check stored flower bulbs, vegetables, and fruits for rot and fungus problems. Discard any showing signs of rot. Remove sprouts from potatoes.
- Plan next year's garden: inventory and check dates of old left-over seeds, sprout a few in moist paper towel to ensure still viable. Order garden seeds. Review garden journal and notes about successes and failures of previous years. Draw garden layouts; remember to rotate plantings for pest and disease control. Include plans for insectary plants (e.g. Alyssum, Phacelia, coriander, candytuft, sunflower, yarrow, and dill) to attract beneficial insects to the garden. See [PNW550](#) (*Encouraging Beneficial Insects in Your Garden*) for more information. <http://extension.oregonstate.edu/gardening/calendar>.
- Using detergent and mild bleach solution, clean old pots and seed trays to prepare for seed starts; use a soilless media or sterilize soil for starting seedlings in pots or flats.
- 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. Once vigorous growth begins, prune and re-pot.

### March

- Clean, sharpen, and oil garden tools; sand and repaint handles. Tune up and repair lawn mowers, garden tractors, and rototillers. Review lawn service contracts and make changes. Clean pruners and other small garden tools with rubbing alcohol.
- Prune deciduous trees and shrubs (see pruning article and chart from January 2012 Growing Zone Newsletter at <http://www.co.lewis-clark.mt.us/index.php?id=75>)
- Apply dormant oils where needed.
- Prune and fertilize gooseberries and currants.
- Take hardwood cuttings of deciduous ornamental shrubs and trees, and of healthy scion wood for grafting fruit and nut trees. Wrap in damp cloth or peat moss and place in plastic bag. Store in cool place.
- Set up an area for starting your garden seedlings – good light and heat source etc.
- Cut back dead rose canes, ornamental grasses, and any remaining perennials in flower beds.
- Rake remaining leaves from the lawn, to prevent suffocation.
- Set up a cold frame or hoop house for early start on greens, onions, and radishes.
- Once spring blooming shrubs (forsythia, pussy willow, and crabapple) form tiny buds you can cut them to bring indoors and put in water, to force them to bloom.
- Plant indoors or in greenhouse, seed flats of cole crops (mustard family - cabbage, cauliflower, broccoli, and Brussels sprouts), and eggplant, tomatoes and peppers.
- Check with local nursery and garden stores for seeds and early planting options.
- Use a soil thermometer to help you know when to plant vegetables. Some cool season crops (onions, kale, lettuce, and spinach) can be planted when the soil is consistently at or above 40°F.
- Cover patches of garden with black plastic to warm the soil for early plantings.
- Scratch lawn surfaces impacted by snow mold; seed bare and damaged spots; aerate, fertilize, and possibly thatch the lawn.



### April

- Help prevent damping off of seedlings by providing adequate ventilation.

When soil is dry enough to work:

- Prepare garden soil for spring planting. Incorporate generous amounts of organic materials and other amendments, using the results of a soil analysis as a guide.
- Prepare raised beds in areas where cold soils and poor drainage are a continuing problem. Incorporate generous amounts (at least 2") of organic materials.
- Fertilize rhubarb with manure or a complete fertilizer.
- Take a soil test of your garden soil, if not done in the last 3 years
- Place compost or well decomposed manure around perennial vegetables, such as asparagus and rhubarb.
- Fertilize evergreen shrubs and trees, only if needed. If established and healthy, their nutrient needs should be minimal.

## Gardening Calendar - *continued*

- Apply commercial fertilizers, manure, or compost to cane, bush (gooseberries, currants, and blueberries), and trailing berries.
- Clean up overwintering plants such as geraniums, begonias, coleus - cut off all leggy growth, trim back to a few buds.
- Remove old growth and debris from garden beds. Manage weeds while they are small and actively growing with light cultivation or herbicides. Once the weed has gone to bud, herbicides are less effective.
- On warm days start turning the compost pile to get it working again.
- Direct seed sweet peas, snap peas, snap dragons, pansies, violas, spinach, arugula, lettuce, chard, radishes.
- Start cucumbers, squash, and pumpkin, indoors for transplant.
- Spot spray lawn with broadleaf herbicide, but be careful to keep drift away from garden plants and trees, or dig out broadleaf weeds with hand tools while ground is soft and moist.
- Pot tuberous begonias.
- Keep Easter lilies in a bright, cool location out of direct sunlight. Water as soil begins to dry.
- Divide hosta, daylilies, and mums.



## 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](mailto:HelenaMasterGardeners@hotmail.com) and we will pass the questions on to our expert panel for answers.



### Brent Sarchet, Lewis & Clark County Extension Agent

Q: What is a "blog?"

A: According to Wikipedia, a blog is a discussion or informational site published on the World Wide Web and consisting of discrete entries ("posts") typically displayed in reverse chronological order (the most recent post appears first). Until 2009 blogs were usually the work of a single individual, occasionally of a small group, and often were themed on a single subject. More recently "multi-author blogs" (MABs) have developed, with posts written by large numbers of authors and professionally edited. MABs from newspapers, other media outlets, universities, think tanks, interest groups and similar institutions account for an increasing quantity of blog traffic.

The Lewis & Clark County Extension Office recently unveiled its blog titled "Everything Agriculture," which can be found here, <http://extension.lccountymt.gov/>. As the definition describes above, a blog is a platform for communicating and sharing information with the public that can be interactive between the writer and the readers. It is a way of sharing information and invoking a dialog among the readers and the writer. Think of it as a group conversation via a web site. Everyone absorbs and shares information in different ways, using different forms of media for their information gathering purposes. The blog is an attempt to interact with those who may not use the traditional forms of information gathering such as reading newspapers, attending workshops or lectures, and reading books. This is a new adventure for me, so I will be learning along the way.

There are tons of blogs currently on the internet. People blog about everything from their personal lives and family to religion and science. The trick is knowing which blogs to follow and which ones not to waste your time reading. How do you know what this person is saying on a particular blog is factual, or if the author is creditable? Do your research; most bloggers have a short biography or description of themselves located towards the bottom of their home page or at the end of a post. Be skeptical of a blogger if he or she doesn't have an education or experience in the topic he or she is blogging about.

I encourage you to check out my blog and other blogs on the internet. Let me know what you think and what you find. If you find a helpful blog, let me know, and I will share it on my blog. Sign up to receive email notices of when new blogs have been uploaded. I welcome your suggestions for new article ideas. Come and start a conversation!

## Plant Profile - Field Bindweed

### Judy Halm

One of the most annoying plants most gardeners have to deal with is field bindweed. With white to pink trumpet-shaped flowers and long narrow stems, field bindweed can be seen throughout the United States.

### Origin

Field bindweed, *Convolvulus arvensis*, was introduced into the United States from Europe in the 1700s, and by 1900 had been found in all of the western states. It is also known as morning glory, wild morning glory, possession plant, and creeping Jenny.



Photo by Pedro Tenorio-Lezama, bugwood.org



Joseph M. DiTomaso, University of California-Davis; bugwood.org

### Biology

Field bindweed is a perennial plant which spreads by seeds and by roots under the soil. It has long slender twisting stems which can reach 10 feet in length. When the growing stem encounters an object such as a post, fence or another upright plant, the bindweed stem will begin to wind around the object and the plant will grow upward toward the light. The leaves are shaped like narrow arrowheads, with two basal lobes.

The faintly scented bindweed flowers may be pink to white and have petals that are fused into a funnel shape. Flower heads are about one inch across, open in the morning and close at night. Seeds that are produced mature about 3 weeks after flowers bloom. The seeds have a hard coat that is difficult to penetrate, helping the seeds to survive but remain viable for long periods of time before they sprout.

The root system may reach as much as 20 feet below ground while shallow, horizontal lateral roots are formed in the top 2 feet of soil. Many parts of the bindweed root can produce new roots. Roots broken up by tilling can produce multiple new plants. Roots capable of budding have been found as deep as 14 feet under the surface. Fragments of vertical roots as short as two inches can form new plants. The underground network of roots allows the bindweed plant to overwinter and persist for many years.

### Problems

Crop yields can be reduced by 50% or more where field bindweed infestations are dense. The deep root system competes with crop plants for soil nutrients and water, and the climbing vines can cover plants and shade them. The vines cause problems with tillage and harvesting by clogging machinery. Field equipment can carry bindweed stems and roots to other fields, where new infestations can begin. Agricultural land contaminated with field bindweed can be reduced in resale value.

Field bindweed in home landscapes can infest flower beds, shrubs, gardens, and other areas. Removal of bindweed from these locations can be difficult, if not impossible.



Photo by Jack Kelly Clark, University of California

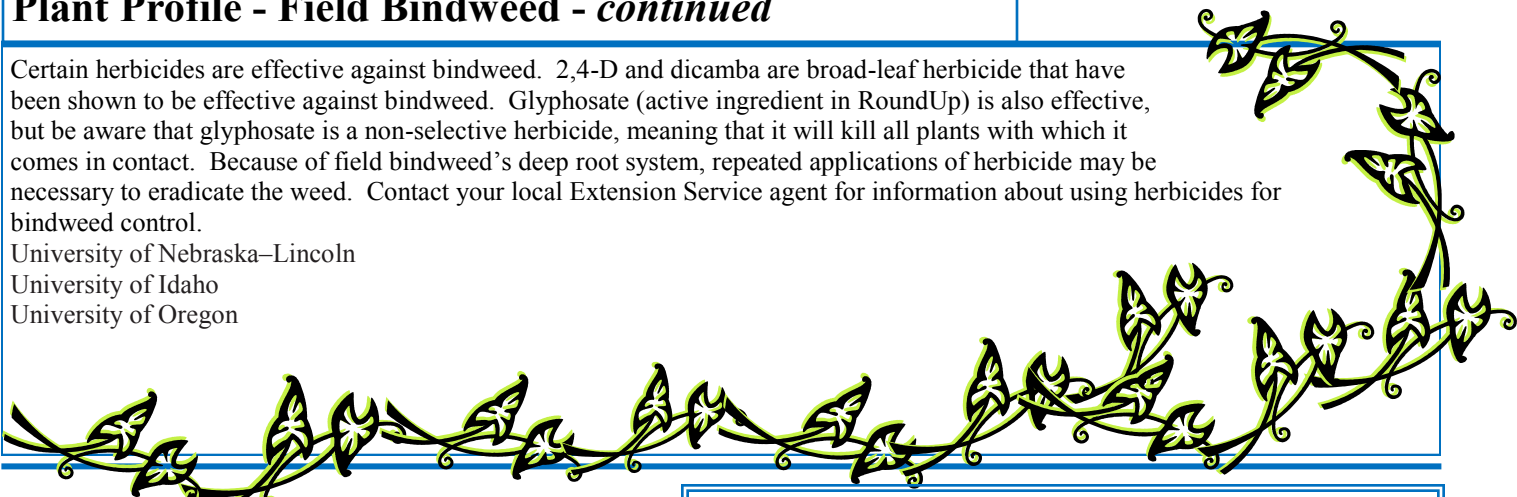
### Control

Eradicating established field bindweed is extremely difficult. Controlling bindweed can be done through a combination of methods, including cultural practices and chemical applications. If you purchase seed, compost or topsoil, try to insure that seeds or root parts are not included. For very young seedlings of bindweed, tilling or hoeing may provide efficient control. When digging the offending plants, make sure to dispose of the roots where they will not be allowed to survive. Perennial grasses compete well with field bindweed and cover crops such as alfalfa may reduce the growth. Solarizing the soil by covering it with clear plastic for several weeks may reduce the top growth for a number of weeks, but is unlikely to harm the deeper roots.

## Plant Profile - Field Bindweed - *continued*

Certain herbicides are effective against bindweed. 2,4-D and dicamba are broad-leaf herbicide that have been shown to be effective against bindweed. Glyphosate (active ingredient in RoundUp) is also effective, but be aware that glyphosate is a non-selective herbicide, meaning that it will kill all plants with which it comes in contact. Because of field bindweed's deep root system, repeated applications of herbicide may be necessary to eradicate the weed. Contact your local Extension Service agent for information about using herbicides for bindweed control.

University of Nebraska–Lincoln  
 University of Idaho  
 University of Oregon



## Event Schedule

### Spring Poultry Workshop Series

March 15th - 16th  
 Upper Conference Room at the Fairgrounds  
 (406) 447-8346

### [Heritage Poultry Cooking Event](#)

Sunday, March 17th  
 Fairground's Kitchen  
 (406) 447-8346

### [Private Applicator Training](#)

March 22nd  
 Augusta, MT  
 (406) 447-8346

## Know of an upcoming event related to gardening?

Let us know at [HelenaMasterGardeners@hotmail.com!](mailto:HelenaMasterGardeners@hotmail.com)

### Level I Master Gardener Classes

Thursdays, April 4th - May 30th  
 5:30 pm - 8:00 pm  
 Upper Conference Room at the Fairgrounds

### [Hands-On Fruit Tree Grafting Workshop and Pruning Workshop](#)

Saturday, April 6th  
 Upper Conference Room at the Fairgrounds

### [Private Applicator Training](#)

May 3rd  
 Lewis & Clark County Fairgrounds, Helena

### Helena Farmer's Market

April 27, 2013  
 Downtown Helena, Fuller Avenue

## 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>

## Contact Information

Helena Master Gardeners: [HelenaMasterGardeners@hotmail.com](mailto:HelenaMasterGardeners@hotmail.com)

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

### Newsletter Committee

Brent Sarchet

Judy Halm

Joy Lewis

Connie Geiger

Kathy Rucker

Cathy Morris

Karen Semple

Alice Hinshaw