



Written by Minnehaha County Master Gardeners



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Month Events:

May 8 | Plant Sale at the Sioux Empire Fairgrounds 9 AM CDT – 12 PM CDT

Fri 30 - Sat May 1 | Arbor Day Planting - Sioux Falls Parks & Recreation seeking volunteers to help plant 355 trees in 2 days!

Contact: www.helplinecenter.org/tree or contact the Helpline Center at 211

Natural Fertilizers for Natural Lawn care

By Pam Conklin, Master Gardener

When considering fertilizers, there are 3 primary nutrients listed: Nitrogen (N), Phosphorus (P), and Potassium (K). Respectively, their attributes are to help plants stay green, promote root growth, and protect against drought and disease. Before heading to the garden center, know your lawn's square footage and how to [calculate the nutrient content](#). Then, you'll know how many bags to buy, and what is the most cost effective choice. Unlike synthetic fertilizers, natural fertilizers actually build healthier soils and plants. Below is a breakdown of 4 leading natural lawn fertilizers. Another bonus to going natural is that these fertilizers will *not* burn your lawn, if over applied.



Milorganite
6 - 4 - 0

Milorganite is a sludge product made from wastewater treatment plants in Milwaukee.

It is labeled safe for use on lawns, shrubs, ornamentals, and home gardens. There are some possible contaminants in Milorganite, or any sludge product. Cornell Waste management and the Department of Crop and Soil Sciences at Cornell University took an [in-depth look](#) at these contaminants. They found that 9 metals, including a higher concentration of iron, and organic chemicals considered to be environmental pollutants, such as polybrominated diphenyl ethers, but are regulated by the EPA do fall below

maximum limits. The analysis also mentions other toxic organic chemicals and pharmaceuticals that are not tested, nor regulated by the EPA. This product is labeled hazardous to pets and children for a few days, and not for use near water.

Ringer Lawn Restore is an organic certified lawn fertilizer that is said to be a safer alternative to Milorganite. One advantage is that it doesn't smell. It is a slow release granule that requires only one application per year. Ringer Lawn Restore is considered immediately safe for pets and children, as long as you follow the label. It's ingredients are bone meal, feather meal, chilean nitrate, soybean meal, potassium sulfate and various soil microbes. Ringer Lawn Restore will green up your lawn, will not burn, and also improve overall plant structure and health. It is not recommended for use near water, despite containing 0% phosphorus.



Ringer Lawn Restore
10 - 0 - 6



Sustane Organic Fertilizer
4 - 6 - 4

Sustane is an organic certified product. It is a slow release, non-smelly nitrogen fertilizer made in Minnesota. It is made from aerobically composted turkey litter. The composting process results in a rich humus that feeds and builds the soil, as well as providing 17 nutrients that are essential for plant photosynthesis and structural integrity. Sustane is used for agriculture, landscape, home gardens, lawns, and erosion control revegetation. Sustane may contain certain metals that are below EPA maximums and should not be used near water.



Corn gluten meal
10 - 0 - 0

Corn gluten meal (CGM) is a byproduct from processing corn for oils. On the lawn it works as a slow-release, high-nitrogen fertilizer and pre-emergent herbicide. CGM works by inhibiting the formation of roots in germinating seed. If you are seeding, or overseeding new grass, it is safe to apply CGM once the grass reaches at least 1.5 inches. CGM also enriches the soil by adding organic matter as it breaks down. This process takes about 4 - 6

weeks. Because the main use of CGM is as a pre-emergent herbicide, multiple applications, every 4 - 6 weeks are needed to be effective. Many people apply it in the spring and fall. CGM is considered safe to use in home gardens, landscapes, and lawns. It is safe for pets and children. [Learn more from ISU Extension](#)

Calculating Your Sprinkler Output

by Pam Conklin, Master Gardener



Experts in lawn care recommend giving lawns an average of 1 inch of water per week for optimal lawn health. Why 1 inch? Because 1 inch of water will provide moisture to a soil depth of about 6 inches, and this practice encourages longer, healthier roots. Consistently over or under watering your lawn will cause the roots to die, or become shallow. Your lawn will become stressed and more susceptible to disease and pests. Therefore, try to stay within the 1 inch per week rule. This quick method for measuring any sprinkler system’s output will let you know how long to run your sprinkler to get the optimal amount of water to keep your lawn healthy and beautiful.

1. Randomly place 2 to 6 tuna cans, or other shallow cans with a flat bottom (all cans must be the same size) within the spray pattern of your sprinkler system. The amount of water output varies depending on the distance from the sprinkler.
2. Run the sprinkler for 15 minutes, then turn it off.
3. Measure, in inches, the volume of water in each can.
4. Add the volume of each can together and divide that sum by the number of cans used to give you the average inches/15 minutes.
5. Compare your result (you may need to round up to the nearest match) to the chart below to find how much time your sprinkler must run to water to 1.”

Average water depth after 15 minutes		Total time needed to water 1 inch
1/8"	=	120
1/4"	=	60

1/2"	=	30
3/4"	=	20
1"	=	15

Sources:

regionalh2o.org/water-conservation; [Sprinkler Water Usage](#); [Water and Lawn](#)

Companion Gardening: Using plants to benefit plants

by Pam Conklin, Master Gardener

The anecdotes described in this section provide garden tips for preventative solutions through companion growing that have been tested by time and keen observation, but not necessarily by science.

The following tips come directly from one of my favorite gardening books, Carrots Love Tomatoes, by Louise Riotte.

As you sow, or transplant cucumbers, squash, and melons, drop 1 or 2 radish seeds next to them to repel striped cucumber beetles.

Tomatoes will also benefit from radishes to ward off two-spotted spider mites.



Acalymma vittatum, cucumber beetle



Tetranychus urticae, two-spotted spider mite
(greatly enlarged photo)

Photos taken from Florida University's [Featured Creatures](#) website, where you can also read an in-depth profile of each insect.



Cucumber beetle larvae feed on the roots of cucurbit (melon, pumpkin, squash, and cucumber) plants, but don't harm the plant. The damage results from the adult beetles as they feed on leaves, flowers and fruit of the plants. These beetles may also carry and spread bacterial wilt, which infects a plant's vascular system. It helps to keep adjacent weeds and other debris under control.



Two-spotted spider mites feed on the underside of leaves, removing sap from the plant and leaving a mottled, or speckled looking leaf, called stippling. The fruit will also display stippling. Webbing can be seen under leaves and at the stem ends of the fruit. In severe infestations, the plants may wither and die. It is important to remove adjacent weeds, as they may harbor mites.

Broccoli Rabe - My Mistake

by Deb Howard, Master Gardener



A few years ago I discovered a recipe for Pasta Frittata with Broccoli Rabe that quickly became a favorite in our house. In addition to being delicious, it uses ingredients I always have on hand -- eggs, pasta, parmesan, garlic and broccoli -- making it easy to whip up on a busy weeknight. It wasn't until I was researching how to sow my newly purchased broccoli rabe seeds this spring, that I learned that broccoli rabe is nothing like the frozen broccoli I'd been replacing it with in my frittata.

Broccoli rabe (*Brassica rapa*) looks like a scrawnier, leafier version of broccoli. Or a cross between broccoli and spinach. The thin but sturdy stems are surrounded by bunches of jagged-edged leaves and are topped with small flowerheads. Despite some similarities in appearance to broccoli, Broccoli rabe (or *raab*) is more closely related to the turnip than to broccoli.

The flavor, especially of the leaves, is described as uniquely bitter, grassy and nutty, similar in flavor to other bitter greens, such as mustard greens or raw kale. It is considered a staple vegetable in Mediterranean cuisines where its bitterer-than-most powerful flavor is used to cut through heavy sauces and balance out fatty proteins.

Broccoli rabe (correctly pronounced either "rob" or "robbie") is also known by several Italian names, including *rapini* and *broccheletti*. It is a



cool-season brassica, which translates to it growing best in the spring or fall in our region. If planted in fertile, moisture-retentive soil, it is a cut-and-come-again crop that will produce three or more cuttings over a period of a couple of months. To harvest the leaves for eating raw in salads or cooking, wait until the plants are approximately 4" tall and leafy. Cut the leaves, leaving 1" above the soil. The plants can also be left to grow taller and then harvested for the tender "asparagus-like" stalks and sweet young flowerheads.

Nutritionally, broccoli rabe offers up plenty of vitamins A, C and K, along with minerals like iron, manganese and folate, and as much protein as a comparable serving of spinach. Two cups of broccoli rabe contain over half of the recommended daily intake of vitamins A and C. It takes only a half cup to provide 100% of the daily recommended amount of Vitamin K. Additional less glamorous nutritional benefits include 2 grams of fiber per cup, lutein (an antioxidant that protects retinas) and high levels of glucosinolates (which our body can convert into cancer-fighting molecules). (HINT: Since Vitamin A is fat soluble, cooking with a little olive oil will help get the full health benefit. Pairing the broccoli rabe, whether eaten raw or cooked, with some citrus or Vitamin C-heavy produce will help your body absorb the iron that's plentiful within the plant, as well.)

[\(https://www.eatthis.com/broccoli-rabe-weight-loss-superfood-you-should-eat-now/\)](https://www.eatthis.com/broccoli-rabe-weight-loss-superfood-you-should-eat-now/)

I am excited to try some Pasta Frittata with Broccoli Rabe once again...this time using broccoli rabe harvested fresh from my garden instead of frozen broccoli pulled from my deep freeze. Will we enjoy it just as much? Only time will tell!

Ground Cherries (*Physalis Solanaceae*)

By Carla Goetsch Master Gardener Intern

The ground cherry genus has 80 species that are in the nightshade family. They are cousins of tomatoes but not related to cherries. Species that are grown for food include the husk tomato, tomatillo, Cape gooseberry, or Aunt Molly's Ground Cherry. The Chinese lantern is grown as an ornamental. Ground Cherries can be annuals or perennials. The leaves have irregularly toothed margins, the flowers are bell shaped with five petals and transform into baglike calyx enclosing a fleshy berry similar to a tomato.

Aunt Molly's

The most common variety is "Aunt Molly's" (*Physalis pruinosa*). They taste sweet and just a little tart similar to pineapple. Pennsylvania Dutch growers have grown them since the 1830's. They are extremely productive with husked fruit (1/2"-3/4") that are high in pectin, so are good for making jams, or pie fillings. The fruit is a favorite of children since the husk is easily peeled and the berry can be consumed straight out of the garden. It is easy to know when to harvest since the husk turns from green to a papery tan husk that falls to the ground. The storage life is extremely long (4-6 weeks) at cool room temperatures.

Plant seeds 1/4 inch deep, 12-18 inches apart. They may be started from seed 4-6 weeks before last frost or directly sown in well drained, fertile soil, that is in full to partial sun. The days-to-maturity is

75-90 days. The plant is an annual but due to the large amount of fruit that fall to the ground, volunteer plants often come up the next year in the same location. Plants may be thinned to 12 inches apart.



Tomatillos (*Physalis ixocarpa*) or (*Physalis philadelphica*)

Tomatillos are also known as Mexican green husk tomato or “tomato verde” since they are a staple in that country’s cuisine, being the main ingredient in salsa verde and chili verde. They are about the size of a small tomato with a hull that splits open and starts losing its green color when ready to harvest. The fruit will be bright green (or yellow or purple depending on the variety), firm and a bit sticky. To use, rinse the sticky film off. Tomatillos are most often cooked or roasted to sweeten their tart flavor. Keep the husks intact until they are ready to be used, and unlike tomatoes, they can be stored in the refrigerator without affecting flavor. They are an annual that are usually grown from starter plants that are planted after the last frost date. You need at least two plants to get a good crop since they cross pollinate. Caging the plants help keep the fruit off the ground. Days to maturity is 60 days.



Chinese Lanterns (*Physalis alkekengi*)

Chinese Lanterns are the ornamental variety of ground cherries that are part of the nightshade family, *Solanaceae*. They are a hardy perennial in zones 3-9 that provide bright pumpkin orange calyx or “lanterns.” They are often used in fall decorating and add interest to a late summer/fall flower bed. The plant can be very aggressive and spreads quickly via underground rhizomes and self-seeding. The seed pods and berries are toxic. The biggest trick to growing Chinese Lanterns is

keeping them contained. They like full sun, but will tolerate partial shade. It is also not particular about soil quality, or amount of water.



Did You Know...

By: Debi Ulrey-Crosby, MG



Photo courtesy of Morton Arboretum



Photo courtesy of Oregon State University

The **Ginkgo biloba** tree is considered a living fossil with no known living relatives and has endured for more than 350 million years with very little change to the tree. Fossils tell us that relatives of today's ginkgo were among the earliest trees, growing over much of the Northern Hemisphere for 200 million years. However, by the end of the ice ages, just a single species remained on mountainsides in China. These trees survived and as civilization spread in Asia, people fell in love with the beauty and grace of the ginkgo tree. As trade opened to the Western world in the 18th century, travelers and traders took ginkgo seeds and cuttings back with them to their countries.

The word *ginkgo* comes from the Chinese *yinxing* meaning 'silver apricot' and *biloba*, meaning 'two-lobe'. It is often called the maidenhair tree because its leaves resemble a maidenhair fern native to England. You might also hear it called the 'stink tree' because the fertilized seed of the female tree produces butyric acid that smells like...well, vomit. Because of this, nearly all nurseries only sell the male species.

The Chinese and Japanese use the Ginkgo tree in their Buddhist practices and plant it around their shrines, temples and often in their home gardens after an important life event. Many have survived for thousands of years on the grounds of the temples and shrines.

The Ginkgo is able to tolerate soil pH around 3.7-7.0 and is often seen in street boulevards since it can tolerate a variety of harsh conditions and doesn't mind having its roots compacted. In ideal conditions, it can grow 60-80 feet, however, there are several varieties that are smaller, a few dwarf varieties, and even columnar varieties. They are also remarkably insect resistant. In fact, there are almost no insects that eat ginkgo leaves. Remember that these trees evolved long before today's leaf-eating insects were around, and they even survived the dinosaurs!

YOU can see the gorgeous, full grown ginkgo trees right here in your own backyard in Sioux Falls at the Japanese Gardens near Covell Lake. I encourage you to take a trip in late spring (the trees are slow to leaf out) or summer to look at this amazing tree...my FAVORITE TREE!

Sources: Carol McPherson, North Carolina State Extension Master Gardener

An ode to the ginkgo, as its fleeting golden leaves arrive in the last show of the summer,
by Beth Botts,
Morton Arboretum, published in the Chicago Tribune, Sept. 27, 2020

In the Herb Garden

By Priscilla Jurkovich, Master Gardener

The herb section will highlight an herb that can be grown in the South Dakota region.

Arnica (*Arnica Montana*) is a fragrant, flowering, perennial herb in the Asteraceae (sunflower) family known for many seeds in the flower. Arnica grows up to 24 inches in height. The plant tolerates any well-drained soil, but generally prefers sandy and slightly alkaline soil with full sunlight for the best condition. Arnica plants have long downy leaves and may have tiny hairs (trichomes). The flowers are generally yellow or orange daisy-like blossoms between two and three inches wide.



Health Benefits: Arnica flowers are commonly used topically in lotions or gels for treating bruising, muscle soreness, and joint aches. It has an anti-inflammatory compound called helenalin. Arnica has been used for arthritis pain, post-shingle pain, and post-surgical pain, wound healing and

diabetic neuropathy. However, it can be toxic if taken internally as it irritates mucous membranes or if applied to broken skin which may cause dermatitis if not diluted.



Gardening Kindness

Anelis Coscioni, Master Gardener

As life slowly changes to normal again, we start to wonder, what will the new normal look like? What did we learn from the year we have been apart from our loved ones? What changes will we keep?

Some people found comfort in gardening. I know that our family got to spend more time together doing gardening projects that we never got to do before. We never had enough time.

Did you know that “people who spend extended lengths of time around plants tend to have better relationships with others?” The article, “Health and well-being benefits of plants” (<https://ellisonchair.tamu.edu/health-and-well-being-benefits-of-plants/>) said that it improves relationships and compassion. Research shows that this is due to measurable increases in feelings of compassion; because of the effect of exposure to ornamental plants.

We all went through a lot. We all feel a need to be closer to our loved ones and to preserve the good things that happened. I know that our family will make an effort to continue growing our kindness from the seeds planted last year. I know we will continue to give ourselves some grace when we can't do what we want because we ran out of time. We will also work on being even more compassionate with others because sometimes when they are not so nice, it's just their pain that it's coming out and showing.

What will you keep? What kind of seed did you plant last year?
Let us know if you want to share your kind words.

Cheers!

Community Gardens

by Deb Howard, Master Gardener

Months before the first seedlings are planted in any of the Sioux Falls Community Gardens, a team of Minnehaha County Master Gardeners are at work behind the scenes collecting applications from hopeful gardeners for each of the seven gardens, assigning plots and collecting plot fees. The gardens are tilled as soon as the weather allows, followed by the process of staking out the individual plots and rows. In these photos, a group of Master Gardeners spend a chilly April Saturday marking the plots at Falls Park Community Garden.



Your Questions Answered



This is the first year I started Chamomile in pods, inside, but suddenly the plants stopped growing. What's wrong with them? What can I do?

The pods dry very fast and the roots have nothing to get water from. They look dry in the picture. Add a little fertilizer for seedling or transplant into 4" pots.

Have a question or comment for Master Gardeners? Email us at mcmgnewsletter@gmail.com, or info@minnehahamastergardeners.org, or call 605-782-3290 and leave us a message.

To all contributing Master Gardeners, for your time and knowledge, thank you!