VOLUME: XIII *ISSUE*: 5 2022 AUGUST

Cover Artwork by Pam Conklin

A word about Minnehaha County Master Gardeners: We are volunteers trained through the South Dakota State University Extension Master Gardener Program. The Minnehaha Master Gardeners mission is to provide current, research-based, consumer horticulture information and education to the citizens of South Dakota through Master Gardener projects and services. For more information on becoming a master gardener, visit SDSU Extension Master gardener volunteer program

Be sure to stay in touch with all of Minnehaha County Master Gardeners' news: **follow us on FaceBook, visit our website,** or **email us.**

What's inside

Highlighting Master Gardeners

By Pam Conklin, Master Gardener

Some things are better in twos. This couldn't be truer than in the case of Ray and May Schaefer. This is one busy couple with no sign of slowing down anytime soon. May, a full-time nurse at one of the hospitals in Sioux Falls, is an avid quilter, who grows and preserves vegetables, following the tradition of her mom and grandma. Ray, although now retired, restored their home from the foundation up, helped his brother build a villa in Costa Rica, and enjoys woodworking. He also graciously does the heavy lifting for May.

May's interests in gardening started in childhood, when she and her siblings helped weed their mom's acre-sized vegetable garden in their bare feet. "Shoes off" their mom would tell them before they entered through the garden gate. With an embedded love for gardening and a love for continuous learning, May completed the extension master gardener training class in 2000, saying she absolutely loved it. Ray was encouraged to go through the training himself, after he started asking May questions, a lot of questions! So, in 2004 Ray also joined the master gardening program.

The couple co-chairs two annual events for the Minnehaha Master Gardeners. In about 2006, they became co-chairs of the annual plant sale, although Ray claims he was more of the "gopher," running errands for May, who organized and directed the sale. They are still running the plant sale, but this year, they started teaching new members the co-chairmanship responsibilities. The plant sale is May's favorite committee, because she loves watching people's faces light up when they shop for plants. May is an active club member. Besides co-chairing two committees, she has also served as the club secretary multiple years, as well as, participated with Gardening with the Masters, and garden tours.

Ray likes teaching people, even when not volunteering in a master gardener event, like when he advised a neighbor about establishing native grasses. It makes sense that Ray's favorite event takes place at the annual Water Festival, teaching 4th graders

about the importance of plant roots in water absorption and soil erosion prevention. Together Ray and May line up the exhibits and volunteers for this two day event. They also shared their property at a previous garden tour, where Ray presented a seminar on their 10 acre native grassland.

When asked what they've learned as master gardeners that they've incorporated into their own garden, there was no hesitation. They got into raised beds. Ray, being a retired carpenter, said he enjoys building raised beds for their vegetable garden. May also mentioned planting flowers among the vegetables to attract more pollinators, which has considerably increased their garden yield. Some of what May plants in and near her vegetable garden include, zinnias, purple coneflowers, mums, and daylilies. Ray mentioned dandelions, which are great for bees!

Speaking of pollinators, Ray and May have done something really special. They have been sharing laughs and interest in gardening for forty-four years and in that time, they managed to dedicate several acres of their property to native grasses and flowering plants, which qualified a section of their property to be an official butterfly way-station. May explained that to certify for this, certain varieties and number of plants were required for habitat, dill and milkweed, and a variety of native flowering plants to assure a continuous supply of pollen and nectar for Monarchs, Black Swallowtail, Yellow Swallowtail, Painted Ladies, and many other types of butterflies and moths. I understand that not everyone has the space or time to create a certification-qualifying butterfly way-station, but I hope more people catch the bug. Checkout Monarch Watch to learn more.

If you would like to learn more about becoming a Master Gardener, please visit the SDSU Extension webpage about Becoming a Master Gardener Volunteer.

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.

Turmeric (*Curcuma longa*) is in the ginger family (Zingiberaceae). In Zone 4, turmeric is grown as an herbaceous annual. Turmeric rhizome is yellowish brown, with a dull orange interior. The canna-like leaves grow 2-4 ft. and take 8-10 months to mature.

Most grow turmeric in a large pot indoors in the fall and transplant in the spring after the soil is 50º F outside to allow for a total of 10 months. Harvest when the leaves start to turn brown or after the first frost.

Health Benefits: Turmeric has been used in food preparation and as a medicine. The active ingredient is curcumin. Curcumin has anti-bacterial, anti-oxidant, and anti-inflammatory properties as well as vitamins, nutrients and minerals. Turmeric has been used for chronic conditions caused by inflammation. Curcumin has improved memory, decreased pain, lessens depression symptoms, and also helps prevent cancer and lowers the risk of heart disease.

Hot Weather Watering: Best Times, Worst Times, and Saving Times

By Jason Cruse, Master Gardener

As we enter the dog days of summer, watering gardens and lawns becomes a higher necessity in order to keep everything producing and, in the case of lawns, at least somewhat green. There are MANY wives' tales and stories about when the best times to water are and the terrible effects on gardens and lawns when watering at other times. Additionally, as Master Gardeners, we should be good stewards of natural resources. Let's look at when, why, and how to water.

Why Water in the Morning: Watering in the morning is the most accepted time of day to water. According to the University of Nebraska-Lincoln, watering in the morning allows leaves to dry during the day, making them less susceptible to diseases. Additionally, according to Iowa State University, water soaks more deeply into the soil in the morning than at other times of the day, more efficiently reaching the roots where it is needed most.

Why Water in the Evening: Evening watering also promotes water absorption into the soil. However, "top" watering (using a sprinkler or a hand-held hose nozzle) allows water to gather and remain on leaves, which can lead to disease and fungus, according to both UNL and Iowa State. Using a soaker hose in the evening is recommended, as this again puts water directly into the soil and keeps water from the leaves.

Why Water in Mid-Day: Watering in the afternoon is **not** recommended, except in case of extreme heat. UNL says that watering in the afternoons, when temperatures exceed 90 degrees, can bring down temps around plants, which can help reduce plant heat stress. For lawns, afternoon watering can reduce heat patch disease. In both cases, however, watering should be light, and last only 5-10 minutes. The point is to cool, not drench roots.

When to Water: If you wait to water until leaves show signs of distress, you are too late. Plant growth has already been stunted. Rather, plan your watering. University of Minnesota extension says that a vegetable garden needs about 1" of water per week. For a 100 square foot garden, this is equivalent to 62 *gallons* of water per week (for reference, most single community garden plots are over 200 sq ft. There is no standard time ratio for watering, as it is completely dependent on how you water and how much water comes through your hose. The only sure method of measuring is to use a watering can.

Instead, test your soil. There are several accepted methods for determining if your plants need water. UNL recommends soil be wet ½" *below* the deepest part of plant roots, to encourage downward growth. The University of Minnesota suggests a 2" standard across lawns and gardens. Even if your soil is dry on the surface, if it is moist 2" below the surface, you are probably fine. If it is dry 2" below the surface, it is time to water.

Conserving Water: Water is not an infinite resource. In the upper Midwest, we are subject to periods of drought, which lead to municipal watering rules. In order to help conserve water in general, here are some guidelines:

1. Adjust the amount of watering by how much rain has been received. If we've received an inch of rain that week, skip watering.
2. Use mulch or plastic film to keep water in the ground
3. Use soakers, or drip systems to place water exactly where it is needed
4. Where possible, use a watering can instead of a hose
5. Weed regularly so water goes to *good* plants
6. When planting, group plants together by water zones—thirsty with thirsty, dry tolerant with dry tolerant—so you aren't watering everything every time.

Resources:
Iowa State University Extension
Molloy University Extension
Northern Ireland Government Services
University of Minnesota Extension
University of Nebraska-Lincoln Extension

Petunias as Ground Cover

by JoAnn Christensen

The winds of South Dakota are a blessing and a curse for delicate landscape plants, as well as the soil beneath the plants. The blessing is the soil dries out during a rainy year and the curse is the fertile topsoil blows away. Wood chips on hillside landscaping tend to blow off into the surrounding lawn during high winds. One of the solutions I used in my developing landscape was to use annuals to hold soil in place. The afternoon sunny area is a perfect location for my petunias. As the larger shrubs fill in, there will be less need for ground cover in coming years.

This year, I opted to grow my own petunias from seed so I had enough plants in the color I wanted for my yard. Oftentimes, the popular colors are sold out early for large scale planting. Likewise, buying annuals too early can be problematic as well. How many of us filled the dining room table with annuals until it was warm enough to plant?

The petunias I chose this year are coral/red with yellow throats, as well as simple white petunias. Both types are self-cleaning with little maintenance. Petunia seeds are very small and generally pelleted to make planting easier. I carefully placed one seed in each grow pot of high-quality seedling mix and grew them under an LED grow light system during winter months. By spring, the young plants were ready for the

landscape. Warm weather was delayed, followed by a spring hail storm in Sioux Falls. As a result my outdoor planting scheme had a late start this year. Eventually, the petunias filled in nicely. The white border provides a lovely accent under the evening street lights and moonlight. The petunias slow down the rain on a hillside and minimize soil erosion during heavy rains. Next summer, try using petunias as ground cover.

Planning a Pollinator Garden

By Pam Conklin, Master Gardener

By now, you are probably seeing more pollinators flying about, and hopefully, you are committed to digging out some of your turf lawn to make way for a pollinator garden. If so, let's take the plunge and begin planning and preparing that space.

Decide on a location. Then, make the following observations:

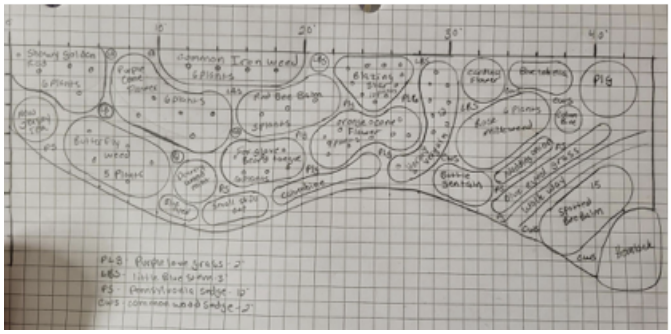
1. Is the area flat or sloped?
2. How much direct sunlight does the area get each day?
3. Is the ground covered with grass and/or weeds?
4. Is the soil hard to dig, or soft?
5. Is the area close to buildings, sidewalks, property lines?
6. What are the measurements of the area?

Bear in mind that your plant choices will be determined by the answers to these questions.

Understanding your soil is important. This step will insure you get the right plants for your soil, and avoid wasted time and money. Start with a simple test. Dig a hole that is 1 ft deep by 1 ft wide. If you are preparing a large area, you may want to dig a few holes in different areas. Fill it with water. Now, time how long it takes the hole to drain: if it is less than 10 minutes, you have soil that is more suited for plants that tolerate dry soils and even drought; if the hole holds water for an hour, you have a heavier clay soil, and you may want plants that tolerate wetter roots. You can go the more technical route. Click here for information about soil sample analysis.

After you've got an idea of what your soil is like and how big your area is, the next thing to do that will save you time and money, is to put a rough plan down on paper.

Hopefully, you have been researching a variety of native plants. Just be aware that some plant choices may not be available, so try to stay flexible in what you plant. If seed is available, consider this much less expensive alternative. Design based on plant size at maturity. Clumps of color are usually more eye-catching. Account for flowering-time and aim to have blooms in your garden throughout the entire season, spring - fall. Planting in odd numbers is an old landscaping trick, so choose 1, 3, 5, or 7 plants of each plant variety. If you are starting out small, choose at least 3 different species.



Your next step is preparing the ground. There are several ways to clear the ground of turf and weeds. The method you choose is dependent in part by how soon you want to plant, and how much time you have, as well as what resources. Decide what is right for you.

1. Smother Vegetation:
    1. Cover the area with thick cardboard, or 3 layers of newspaper, then cover the area with 3 - 4 inches of wood, or bark mulch to keep everything in place. This method will take 1 - 2 years, if you want to allow the cardboard to break down and add organic material to the ground.
    2. You may also cover the area with heavy tarp, or opaque plastic. This is called Occultation. Secure the covering with landscape staples or rocks or edgers. No organic material will be added to the soil, but the process will take only 4 - 6 weeks.
    3. Soil solarization is a similar method that uses clear plastic, which allows the sun's rays to pass through the plastic and quickly heat up the ground. The temperatures can quickly reach 140º F a few inches into the topsoil. This method will take 3-4 weeks minimum. The advantage of this method is that many weed seeds will also be destroyed. Click here to learn more about using the sun to clear ground cover.
2. Till or dig up the area to a depth of 5 - 8 inches, using a garden tiller. Remove as much of the vegetation as possible by raking through the soil, this will

discourage anything from rerooting. With this method, you are able to plant immediately.

    1. Alternatively, you can just dig up small pockets of turf and drop in a plant.

3. The last method to clear an area, is to apply a broad spectrum herbicide that kills off all vegetation. Keep in mind that herbicide use has contributed to the problems pollinators face. If you choose this option, carefully read and follow the label for proper use of when and how to apply, and what safety measures you should take. Be aware of chemical drift and residue. The label should explain how soon after the application you can safely plant.

Below are examples of some of these methods….

cardboard & 3 inches of cedar chips

Occultation

pocket plantig

tilled & racked area

Now, the fun part - buying plants. Where to buy your native pollinator plants can be a little challenging, but with the recent addition of the iconic Monarch butterfly to the international endangered species list (IUCN), I hope finding quality native plants and cultivars becomes easier. To help you out, I suggest that you have your list of plants in hand and ask retail nurseries and greenhouses if they sell native plants. Minnehaha County Master Gardener spring plant sale may also offer a few native plants. Also ask friends. You may also check with Minnehaha Conservation, or the SDSU Native Plant Initiative, or go on-line. There are a couple of such places that are reputable, for example, a mail order retailer in Winona, MN. If you still need plant ideas, check out the Garden of Dreams in downtown Sioux Falls, next to the Arc of Dreams sculpture. There is a great variety of plants, and they are labeled for easy identification.

Every Plant has a Life Expectancy

by Carla Goetsch, Master Gardener

Like us, plants are living creatures and their days are numbered. For some plants, their days of life are short, and for others the number of years may be very long. Regardless, no living thing is truly immortal. Planting a plant is being optimistic, but you may want to consider how long that plant will live which seems pessimistic. Most gardeners know the term “Annual” means the plant will only live one season, typically 6-10 months. Biennials live up to 2 years. However, when we hear the term “Perennial” it does not mean forever, like we may think. In knowing the life expectancies of some common plants, it may help your self-esteem, as a gardener to know that a plant has reached its life-expectancy, and you did nothing wrong. Location and growing conditions drastically alter the averages of the listed expectancies. For example, a plant that wants full sun, may limp along in the shade for a couple years but will never meet its full potential. Oftentimes, variegated or hybrid plants will not live as long as the original cultivar. Drought and extreme weather conditions also change the expected life of the plant.

Most perennials tend to only live 3-5 years. The initial plant may die but if the plant is multiplying and replacing itself, you may not notice. Therefore the area of planting appears to live for several years, but you are likely seeing the next generation. This is helped along if you split the clumps, or take cuttings so you always have more. By doing this every couple years, the passing of the original plant is barely noticed, as long as its offspring are happily filling its spot. You may choose to avoid certain plants since the life span may be short, but also consider how easily it self seeds or spreads through rhizomes.

Average Life Expectancies of common perennials:

Peonies	70-100 yrs	Coneflowers	4 yrs (easily self seeds)
Hosta	10-30+ yrs	Hibiscus	5-10 yrs
Coral Bells	3-4 yrs	Day lilies	15-30 yrs

Shrubs too can show their age by becoming woody and less vigorous. By pruning the shrubs every few years, and propagating cuttings, we ensure fresh new growth as they age. Plants that are past their prime are more susceptible to dying out and insect attacks. This, gradually, makes them need more care, and it is time to propagate and think about the next generation.

Average Life Expectancies of common shrubs:

Common Boxwood	20-30 yrs	Forsythia	20-50 yrs
Hardy Hibiscus	50 yrs	Hydrangea	50 yrs

Lilac	100 yrs	Roses	35 yrs
Weigelia	20-50 yrs		

It is said that when it comes to trees, we do not plant a tree for ourselves, but for the next generation. However, many trees will not last that long due to storms, planting/growing conditions, or that some genus are just not that long lived. Succession planting and variety of trees in a tree shelter are critical to keep the shelter healthy for decades.

Average Life Expectancies of common trees:

Arborvitae	50-150 yrs	Juniper	350-700 yrs
Common Yew	100-3000 yrs	Peach tree	10-15 yrs
Apple Tree	35-45 yrs	Blue Spruce	150-350 yrs
Redwood	1250-2000 yrs	Crab Apple	70-100 yrs

House plants' length of life can be quite variable as well. It is a good idea to do some research on your favorite house plant to make sure you are propagating every couple years, especially if your favorites only live 2-3 years. Sometimes within a genus of a houseplant, there may be 500 different species and the life expectancy within the genus may be vastly different, depending on the species. So when you set out to do some research on how frequently you should be propagating, it is helpful to have both the genus and species name. It is possible that the house plant, philodendron, in its native environment (or with optimal living conditions), can live up to 100 years.

Average Life Expectancies of common houseplants

Rex Begonias	2-3 yrs	Polka dot begonia	3 yrs
Cane Begonia	5 yrs	Philodendron	20 yrs
Fiddle leaf fig	up to 50 yrs	Pothos	10-20 yrs
Spider plants	50 yrs	Ficus	20-30 yrs

Local Master Gardener Hosted Events!

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