VOLUME: XIIII *ISSUE*: 1 2023 APRIL

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

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.

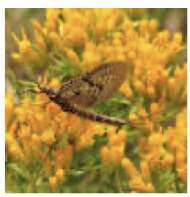
Common Parsley (*Petroselinum crispum,*) is a member of the carrot family (Apiaceae). Officially parsley is a biennial plant but in SD is mainly used as an annual. There are three common varieties: Flat leaf, curly leaf and parsley root. The flat leaves have leaves like celery or cilantro and have the strongest flavor. The Curly leaf parsley is decorative. The root parsley has white roots that look like young parsnips. Direct seeding and soaking the seeds overnight before planting improves your success as they take 7 to 12 days to germinate. Parsley grows best in well-drained soil and full sun, but can easily grow indoors and in containers.

Parsley is best known for its use in culinary dishes. Parsley is rich in antioxidants, Vitamin A, C and K, as well as B vitamins, calcium and iron. It has been used to freshen breath and as a natural diuretic.

Bug Bites

by Pam Conklin, Master Gardener

Insects! They are tiny, creepy-crawly, digging, biting, disgusting, yet, beneficial; without them, life as we know it would not exist.



Mayfly on Butterfly weed

This is the story of the Mayfly, Order: Ephemeroptera.
There are about 77 different Mayfly species documented and native in South Dakota, and around 600 species, overall in the US.

The larvae live in fresh waters for about one year, feeding on dead plant material, algae, and other aquatic insects, until they finally emerge as adults. The adult Mayfly lives for only 1 or 2 days and does not eat. They complete their life cycle by laying eggs in the water, where the next generation begins.
Because they are very sensitive to pollution, Mayflies are beneficial as bioindicators for water health. Mayflies emerge close to May, thus the name. If you don't look close enough you may mistake adults for mosquitoes, but mosquitoes don't appear until the July timeframe. Mayflies might swarm while looking for mates, but fear not, they do not bite, and adults do not feed; however, they are a highly nutritional food source for birds, especially hatchlings, bats, and of course fish.
When you see Mayflies and related species, like dragonflies and stoneflies, count your blessings, because there is a clean, fresh-water system nearby. Help Mayflies by supporting efforts to keep water free of pollutants, but also by withholding the use of insecticides and other chemicals. As stated earlier, they are highly sensitive to pollutants and that includes pesticides and synthetic fertilizers.

Sources:
https://www.maine.gov/dep/water/monitoring/biomonitoring/sampling/bugs/mayflies.html
https://www.keloland.com/news/local-news/mayflies-out-of-the-water-and-in-the-infield/
https://gfp.sd.gov/UserDocs/WAPCh4_AquaticSystems.pdf

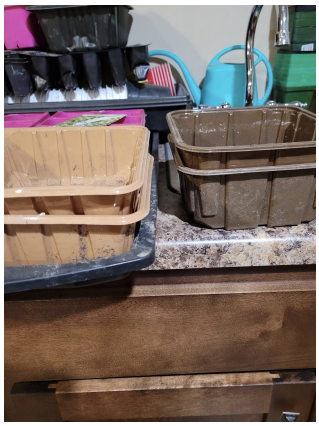
Seed Starting on a Tight Budget

By Susan Scholtz, Master Gardener

1) I knew there was something I forgot to do when I was closing down the garden last fall! Here are my old trash cans full of spent

potting soil, saved from my potato bins. Unfortunately buried in snow and frozen.
2) I was able to scrape free about a gallon of soil, and found a bit more soil in a potting bin in my shed. I sifted all of it and ended up with enough to start. No need to clear out the pennies from my coat pockets to buy potting soil!

3) As I sifted, the dust cloud swirled so I knew I would need to really soak this soil for a while. I added probably a gallon of water and let it soak overnight.
4) To sprout seeds and get them started, I used two large mushroom containers saved from my Costco purchases. One container has holes in the bottom - this one will have the soil and seeds in it, and the second container will hold water and the first container sits inside it. This way I can bottom water the seeds and sprouting plants and not knock over the delicate seedlings by sprinkling water. And they are free/recycled. These pictured were used last year as well.



5) Finally, I get to plant! I fill the containers only about half-full with soil. These plants will be transplanted as soon as they get true leaves, so they don't need much. I pat down the soil to push out large air pockets, make slight grooves with my finger, and try to sprinkle the seeds just in those grooves. This makes the tiny seedlings easier to remove at transplant time.
6) Some seeds need covering and some need light to germinate...check the seed packet for information. These I just patted flat and lightly covered with vermiculite (one small bag will last me 2-3 years!). LABEL EVERYTHING!
7) Even though all the base trays have water for the seed trays to suck up, I am also spraying the tops lightly with water to moisten the seeds.
8) I use boot trays to set my flats in to keep water from dripping, and put 3 trays of seeds under my grow light. It will be on a timer to light 6am to 9pm.
9) One last tray is in a sunny window. We shall see which does better.

Three of these trays are different varieties of onion: Talon, Redwing, and Patterson. In previous years I have had really good luck with Patterson storing from July till the following April, when I had used them all! I calculate that I need about 200 onions each year. The pink tray is Pansies. My favorite flower to put out really early.

These seeds were planted on January 26... and as my Journal shows I have started my first seeds on this date for the past 3 years. Onions need a really early start, so they are the first every year. I'll continue to start different kinds of seeds every week or two from now through July.

Starting seeds is easy, fun, and frugal. With minimal cost and adding tools such as the grow lights a little at a time, you can save a lot compared to buying starts at a garden center.

DIY Compost Safety Test

By Pam Conklin, Master Gardener

Compost is great for adding back depleted nutrients and microbes to garden soil at the beginning of each growing season. If you're not buying professional mixes/bags at a garden center, you may opt for local composting programs, free city municipal compost, or do-it-yourself compost.

But, how can you be sure that the compost is not contaminated with harmful herbicides? Here is a simple bioassay test devised by Washington State University that anyone can do before adding compost to your garden.

1. Fill three 3-inch pots with potting soil (soil from your garden).
2. Next, fill 3 more pots with a mixture of two parts compost and one part potting soil (2:1 ratio by volume).
3. Label each pot according to the soil mix.
4. Plant 3 pea or bean seeds in each pot, keeping them watered. (Be sure to capture any water that drains from the pots, so there is no cross contamination.)
5. Put the pots in a sunny, warm place for the seeds to germinate.

Once the seedlings have three sets of true leaves, compare the plants growing in the compost mix with the control group growing in the potting (garden) soil. If you see any cupping, thickening, or distortion of leaves in the compost mix group, it may mean possible herbicide contamination in the compost. If that is the case, don't use the compost. Visit the last page of the bioassay test for pictures.

Pollinators Revisited

By Jason Cruse, Master Gardener

The importance of pollinators in both flower and vegetable gardens cannot be overstated. In training, each of us learned of the importance of all kinds of pollinators and spent a great deal of time learning about their value. We learned in general that native plants are good for pollinators. Science has told us over time that certain plants are better than others to attract and keep pollinators. There are some folks out there who write about how to repel pollinators. But now, new science has emerged suggesting that the hybridization of certain flowers reduces a pollinator's ability to extract the pollen, thus making them less useful for the pollinator.

Let's consider, for example, petunias. In and of themselves, petunias are an average pollinator and a lovely addition to the annual garden. However, recent studies show that hybridization—which brings more petals— may actually reduce the amount of pollen available to bees.[1] Additionally, some hybrid forms of pansies—another wonderful annual for gardens and strong pollinator, are now producing almost no nectar for bees due to the shape of the flower.[2]

Additionally, recent studies show that bees are *not* "generalists," meaning they don't just "see" or "smell" any old flower and decide to land on it for pollen. Attraction to flowers in bees appears to be "hard coded" in their DNA and may take centuries to change. Indeed, it does appear that bee colonies die off before they adapt to the new pollinators available to them.[3]

With these ideas in mind, the importance of planting native varieties of pollinators is even more crucial, but commercial interests make it difficult to do so. We are all familiar with big box stores that sell plants well before we should be putting them in the ground in SD. Is it a plan to sell more plants after another frost hits? Or is it a logistical decision on shipping? The answer is probably both. Further, as the population of South Dakota continues to grow with human transplants, we should expect to see an increase in horticultural transplants.

What, then, is to be done? First, encourage those we teach and serve that they should *not* try to replicate their garden from another state here. Though extreme, a recent example given comparing gardens in Australia to gardens in Great Britain is relevant. Gardeners in Australia want to have "English style" tea gardens. The climate can

support this plan, *but* the insects and pollinators cannot. Pollinators want what they know, not what is new.[4]

Second, we can redouble our efforts for plants that are native. This means more than searching for plants that are "zone hardy." Hardiness is necessary for a plant's survival, but hardiness alone is not enough to support native pollinators. Reliance on nurseries, even those that are local nurseries, is likely not sufficient. Remember, they are in business. Reliance on materials provided by educational and government resources, including South Dakota State University, are necessary.[5]

Finally, as discussed earlier, try to avoid overly hybridized varieties of plants. Studies are very recent in this area, so information is limited. However, in keeping with the theme and with the "wiring" of pollinators, heirloom or heritage plants remain the best options for native pollinators.

With many of us living in towns with strict ordinances on beekeeping and the documented decline in bees, it is our job to help pollinators do theirs.

[1] Native or Exotic? Double or Single? Evaluating Plants for Pollinator-friendly Gardens accessed 3/20/23
[2] Garden Flowers: Insect Visits and the Floral Reward of Horticulturally-modified Variants accessed 3/30/23
[3] The role of 'nativeness' in urban greening to support animal biodiversity accessed 3/30/23
[4] The beautiful flowers that bees can't use accessed 3/30/23
[5] Common Flowering Plants (Forbs) of South Dakota accessed 3/30/23

Do you have comments, questions, or topic ideas that you would like us to explore? Email us at mcmgnewsletter@gmail.com. We would love to hear from you!

Local Master Gardener Hosted Events!

May 13 _ Annual Plant Sale held at the Sioux Falls Fairgrounds. Stay tuned for more details!

All articles are researched and written by Minnehaha County Master Gardeners and Interns. Thank you to all, for sharing your knowledge!