Winter 2022

Issue 68

DODGE COUNTY Master Gardener ASSOCIATION

Seed Selection

Inside this issue:

Now that spring is looming, it is time to select seeds and plan gardens. The choices can be mind boggling, so let's break it down.

There are two types of seeds available to the home gardener: open-pollinated and hybrid. Open pollinated plants are pollinated by insects, birds, wind, humans, or mechanical means. Because there are no barriers to the pollen transfer, there is more genetic diversity, contributing to more variation within the population. As long as pollen is not transferred within the same species, the seed will remain true to the plant type.

Within the open-pollinated category are heirloom varieties. These plants generally are more than 50 years old and the characteristics are so stable that the pollen does not have to be controlled. When grown in a garden, and the seeds are saved, future generations of heirloom vegetables will retain the all distinguishing characteristics.

Hybrids are the result of pollination of one variety with pollen of a second variety, merging the best characteristics of both. These first-generation hybrids (F1) can be bred to better withstand environmental stresses like drought, temperature fluctuations, and disease resistance.

However, seeds from hybrids will not produce plants identical to the parent. Not only will the second-generation plants not be true-to-type, but they will be less vigorous. Therefore, seed from hybrids cannot be saved by the home gardener, but must be purchased annually.

Seeds of hybrid plants typically are more expensive than open pollinated ones. The plants are often more disease resistant, higher yielding, and have greater uniformity. However, open pollinated plants, under the right conditions can produce just as well

For most gardeners, a mix of each type provides good results. Compare several cultivars and decide which meets the desired needs. If saving seeds and trading with friends and neighbors is appealing, stick to open pollinated varieties. If increased vigor or disease resistance is of interest, work with hybrids. Check seed packets carefully for the terms "hybrid' or "F1" to identify hybrid varieties.

There is a third seed option, however this one is not available to home gardeners, Genetically Modified Organisms (GMO). GMOs are not the same as hybrids. Hybrids are created by crossing two different, but related, plants and the process takes place in the greenhouse or field. It is a process that has been established for well over 100 years. Genetically modifying, however crosses unrelated organisms at the genetic level and takes place in a laboratory. For instance, a bacteria is crossed with corn to make a pest resistant plant. No seed companies supplying home gardeners have GMO seeds. So, any advertising of "non-GMO garden seeds" is nothing more than a marketing gimmick.

Carol Shirk
Certified Master Gardener

Upcoming Meetings

Anyone with an interest in gardening is welcome to attend the following free programs. Master Gardener meetings are held on the fourth Thursday of the month at 6:30 p.m. Currently meetings are only available to Dodge County Master Gardeners via zoom.

Watch for further updates when we will meet in person and for a new venue.

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Master Gardener Websites

http://www.wimastergardener.org/

https://wimga.org/

http://dodge.uwex.edu/master-gardener/

Master Gardener E-mail

askamastergardener@att.net

from little seeds grow mighty trees

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Master Gardeners Offer $1000 Scholarship

The Dodge County Master Gardener Association will award a $1,000 scholarship to a high school senior who is planning a career in some area of horticulture.

The recipient must live in Dodge County and be a graduating senior from any public high school, parochial high school, or home school.

The student must have applied to a two or four year accredited college or technical school that has a program leading to a degree or certification in a horticulture or related area. Careers may include, but are not limited to, horticulture, plant science, soil science, agriculture, environmental science, landscaping, forestry, science education.

Application forms are available in the guidance offices of Dodge County and area high schools. They include Beaver Dam High School, Dodgeland High School, Horicon High School, Hustisford High School, Lomira High School, Mayville High School, Randolph High School, Watertown High School, Waupun High School, Lakeside Lutheran High School, and Central Wisconsin Christian School. Application forms are also available online at: http://dodge.extension.wisc.edu/master-gardener/

Questions may be directed to: askamastergardener@att.net.

The deadline for applying for the scholarship is April 1, 2022.

Dodge County Master Gardener Community Presentations

March 22, 2022 6:30 p.m. Mayville Public Library, 111 North Main Street, Mayville WI

Container Gardening ~ Carol Shirk, DCMGV

Did you know that containers are not just for flowers? This presentation will give you the knowledge needed, followed by a visual demonstration of a container being filled and made beautiful. One lucky winner will be able to take the filled container home.

Visit Mayville Public Library's website for more information and registration information if applicable. https://www.mayville.lib.wi.us/ or call 920-387-7910

March 24, 2022 10:00 a.m. The Watermark, 209 South Center Street, Beaver Dam, WI

Spring Perennial Vegetables ~ Carol Shirk, DCMGV

Have you ever considered planting horseradish, asparagus, rhubarb, Egyptian onions or garlic? Or do you simply have some questions about your existing beds? Learn planting tips, care and maintenance, variety choices and more about these spring perennial vegetables.

Click here to register online (Internet Registration ends March 17, 2022.) or call 920-887-4639

April 5, 2022 6:30 p.m. Waupun Public Library, Waupun WI

Square Foot Gardening ~ Carol Shirk, DCMGV

Square foot gardening is an intensive gardening method that maximizes space and reduces work. This is a great method for people who have limited space, who want to try something new, and who want to reduce the time spent in the garden, but still have a bounty to harvest.

This is a virtual event. Call the library at 920-324-7925 to sign up. The Zoom link will be emailed several days before the program.

Did you know: garden seeds are rigorously tested for quality & purity.

Dampening Damping-Off: Tips on Seed Starting to Avoid Disease

By Brian Hudelson, Plant Disease Diagnostic Clinic

After a long, cold winter, it's time to start growing plants from seeds for the upcoming growing season. Damping-off is a common disease that can prevent seed-starting success. Here are tips that can help prevent damping-off from being a problem.

Buy high quality seed from a reputable source. High quality seeds are less likely to carry damping-off organisms.

Use pasteurized soil. Pasteurized soil has been steam treated to kill pathogens.

Use clean pots/containers. Store new pots or flats in sealed plastic bags to prevent possible pathogen contamination prior to use. When reusing pots, soak them in 10% bleach (1 part of a disinfecting bleach, 9 parts water) for 30 minutes, then rinse well to remove bleach residues.

Plant seeds at the proper depth. This will promote quick germination and rapid growth of seedlings out of the early stages of growth when they are most susceptible to damping-off.

Start seeds at higher temperatures. This will again help plants grow out of their susceptible phase quickly. Consider using a seed-starting heat pad (available at your local garden center), particularly if you start seeds in a colder part of your home (e.g., a basement).

Don't overwater! Damping-off organisms are more active in wet soils. Water enough to keep seedlings alive, but keep plants a bit on the dry side to slow development of damping-off pathogens.

Seed starting can be a fun way to start the gardening season. With just a little extra effort, you can prevent damping-off from dampening your gardening efforts.

For more information on damping-off and its management, check out University of Wisconsin Garden Facts XHT1124 (Damping-Off), available at **https://pddc.wisc.edu/fact-sheet-listing-all/** or **https://hort.extension.wisc.edu/articles/damping/**.

Hardening Off Seedlings

Plants started indoors will not have been exposed to full sun, wind or fluctuating temperatures. If they are not gradually accustomed to the outdoor environment, a process called "hardening off," their leaves may be scorched by sun or wind. They may even wilt and die.

- Two weeks before planting outdoors, move seedlings outside.
- Start by putting them outside for a few hours in the shade during the warmth of the afternoon, protected from wind.
- Bring them back inside before temperatures start to drop at night.
- Each day, leave the plants out a little longer, and expose them to a little more direct sunshine.
- By the end of two weeks, unless freezing temperatures are forecast, the seedlings can stay outside in a sunny area until you are ready to transplant them into the garden.

An easy way to harden off plants is to place them in a cold frame, a temporary mini-greenhouse.

- Commercially produced cold frames are available in many designs.
- Construct a simple cold frame.
- Adjust the lid of the cold frame as needed to protect plants from freezing temperatures.
- Vent the lid a bit farther each day to accustom the plants to wind and cold.

University of Minnesota Extension—Starting Seeds Indoors

Did you know: the arrangement of the sunflower seeds follow the mathematical Fibonacci sequence.

How To Test Seed Germination

1. Place 10 seeds on a damp paper towel.
2. Fold the paper towel and place it in a plastic bag or reusable container. This will prevent the paper towel from drying out.
3. Label the container with the plant name, date, and number of days expected for germination (info from seed packet).
4. Leave the container in a warm place and observe for seed germination. Sunlight is not needed.
5. After the expected number of days for germination, count the number of seeds which have begun to grow. If all 10 seeds grow, plant as normal. If seven to nine seeds grow, increase the number of seeds you plant. If six or fewer seeds germinate, it is best to buy new seeds.

Illinois Extension—Will My Seeds Still Grow

Seed Viability Chart

Approximate life expectancy of vegetable seeds stored under favorable conditions.

1 Year	2 Years	3 Years	4 Years	5 Years	6 Years
•Onion	•Corn, sweet	•Asparagus	•Beet	•Collards	•Lettuce
•Parsley	•Leek	•Bean	•Brussels sprouts	•Cucumber	
•Parsnip	•Okra	•Broccoli	•Cabbage	•Endive	
•Salsify	•Pepper	•Carrot	•Cauliflower	•Muskmelon	
		•Celeriac	•Chard, Swiss	•Radish	
		•Celery	•Chicory		
		•Chinese cabbage	•Eggplant		
		•Kohlrabi	•Fennel		
		•Pea	•Kale		
		•Spinach	•Mustard		
			•Pumpkin		
			•Rutabaga		
			•Squash		
			•Tomato		
			•Turnip		
			•Watermelon		

Unused seeds should be stored in a cool, dry location.

Iowa State University Extension & Outreach—Life Expectancy of Vegetable Seeds by James Romer, Department of Horticulture

Did you know: the poppy seed pod can hold more than 200 seeds.

Seed Growing Terms

Cotyledon. A seed leaf, the first leaf from a sprouting seed. Monocots have one cotyledon, dicots have two.

Damping off. Stem rot near the soil surface leading to either failed seed emergence or to the plant's falling over after emergence.

Damping off can be a serious problem with seedlings. The fungi, *Rhizoctonia spp*. and *Fusarium spp*., along with the water mold *Pythium spp*. are the most common pathogens responsible for damping off **

Direct seeding (direct sowing). Planting seeds into garden soil rather than using transplants.

Embryo. The tiny plant that is formed inside a seed during fertilization. It has two growing points, the radicle (a tiny root) and the plumule (a tiny shoot).

Embryo dormancy. Common in seed of woody perennial plants. A physiological condition in the embryo that prevents it from growing. This type of dormancy can be overcome by stratification.

Endosperm. The tissue surrounding the embryo of flowering plant seeds that provides nutrition to the developing embryo, or the food-storage area in a seed for the growing embryo.

Germination. The processes that begin after planting a seed that leads to the growth of a new plant.

Hardening off. The process of gradually exposing seedlings started indoors to outdoor conditions before transplanting.

Outer seed coat. The protective outer shell for the seed.

Scarification. Artificial methods to soften the seed coat including scratching or rupturing the seed coat with sandpaper, nicking it with a knife, or degrading it with concentrated acid.

Seed coat. The protective outer layer of a seed that provides protection for the enclosed embryo. The seed coat usually prevents water from entering the seed until time to germinate. The seed coat in many cases allows seeds to be stored for extended periods.

Seed dormancy. An adaptive feature of some plants to keep the seeds from germinating until conditions exist that favor seedling survival.

Seeds might have a hard or thick seed coat (physical dormancy) Other seeds have internal chemical or metabolic conditions that prevent germination (chemical dormancy)*

Stratification. Chilling seed under moist conditions. This method mimics the conditions a seed might endure after it falls to the ground in the autumn and goes through a cold winter on the ground.

Thin. (1) To remove an entire shoot or limb where it originates. (2) To selectively remove plants or fruits to allow remaining plants or fruits to develop.

Viability. A seed's ability to germinate.

North Carolina State Extension, North Carolina Extension Gardener Handbook.

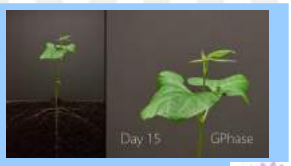
*Penn State Extension—Seed & Seedling Biology

**University Of Connecticut UConn Home and Garden Education Center—Seed Starting

Time Lapse Video

Take three minutes to watch this beautiful time lapse video, set to music, of a cross section of a kidney bean growing, showing how roots and upper part of plant grows. I think you will enjoy it.

Video is Courtesy of GPhase



https://www.youtube.com/watch?v=w77zPAtVTuI

Did you know: the average strawberry has 200 seeds. It's the only fruit that bears its seeds on the outside.