

Everything I Wish I Had Known About Growing Dahlias

Arch Painter
archpainter1962@gmail.com

Tubers

- Avoid purchasing dahlia tubers from resellers. The majority of these tubers are raised in Europe and harvested by machine. That would not be problematic, but machines do not see crown gall and leafy gall on the plants or tubers, so those diseases get shipped out with the tuber clumps to unsuspecting buyers who then transfer the bacteria to their own garden soil.
- Try to buy from small growers or domestic growers where a definite virus and disease protocol is in place on their farms.
 - Swan Island in Canby, Oregon, is the largest domestic grower of dahlia tubers and have superior customer service. Their website is dahlias.com.
 - Dahliaaddict.com provides a list of growers (U.S. and Canada) along with a list of the cultivars they grow. If one is looking for a specific cultivar, this is the best place to locate the growers who offer it for sale.
 - The National Capital Dahlia Society holds tuber sales (donated by members) each year in April, May, and June at their monthly meetings. They also have a sale in Leesburg and one at Brookside Gardens in Maryland.
- Virus and gall can occur anywhere at any time, but buying from growers that are on the lookout for these diseases is a good preventative step.

Planting

- To extend the blooming season, one can pull tubers from storage in March and awaken them from their dormant state. Different cultivars awaken at different rates, with larger blooms usually being the slowest.
- Move the tubers from storage to a warmer location and wait for them to show signs of an eye or sprout.
- Divide into individual tubers or smaller clumps. Allow 24 hours for the cut to dry and cure before planting.
- I plant mine in 4x6 nursery pots (sometimes larger if the tuber is big) using moist potting soil. (This past year I used six compressed bales of Pro-Mix BX, which contains a biofungicide and mycorrhizae, which promotes root development. I did dampen the potting soil some, but not much.)
- Do not water the tuber nor plant in wet potting soil. The tuber contains all of the energy the plant will need until it sprouts and emerges from the soil. Once the plant growth appears above the soil line, begin to water, but do not over water; the plant needs very little moisture and rot is the biggest danger at this point. I usually give mine about 4-6

ounces of water when the growth first emerges. One can always add water, but it is difficult to extract water from a waterlogged pot.

- The plant should be hardened off outside in shade before being introduced to direct sunlight.
- Only plant in the ground once all danger of frost has passed.
- If the plant is 6-8 inches tall when planted, rabbits are less likely to munch it off. If they do munch off an emerging sprout, the tuber will generally produce two or more sprouts to replace it.
- Do not plant tubers (not prestarted) in the ground until the soil is consistently above 60 degrees.
- Tubers that have not been pre-started can be planted directly into the ground a week or more before the threat of the final frost as long as no sprout emerges before that frost. (If it does emerge, cover it nightly with a plastic bucket or metal can.)
- Generally, in this area it is safe to plant tubers or pre-started plants outside in mid-May.
- Plant tubers about 4-6 inches deep. I often plant that deep but do not cover to soil line. I wait until the plant emerges and grows some, then back fill around it.

Fertilizer

- Have the soil tested every couple years and add amendments as required. For dahlias, the ideal soil PH level is between 6 and 7.
- Use fertilizer that can be applied near the top of the soil as dahlias draw nutrients from the top and not from the bottom roots. Many growers use a timed-release fertilizer and just sprinkle it around the the stalk.
- Dahlias will need some nitrogen in the first months of growth, but then shift to a low-nitrogen fertilizer for the months of July, August, and September.
- Stop fertilizing the plants approximately one month before the anticipated frost date or the date one plans to lift the tubers for storage. Nitrogen applied in that last month may decrease the tuber's chances of surviving overwintering in storage.

Deer/rabbits/groundhogs/voles

- Drill a hole in a bar of Irish Spring soap and hang it over the plant or beside it. Deer do not like the smell.
- Use [Hortonova](#) netting over the dahlias if they are planted in a row. I use metal t-posts at each end of my rows and every 10 feet down each side of the row (I plant double rows of dahlias in a four foot wide by fifty foot long space with the plants 18-24 inches apart, so I get about 46 plants in each double row). I use three layers of the Hortonova on each row—at 15-18 inches, again about 26-30 inches, and a final layer at about the four foot mark.
 - The netting is not pretty, but it provides stability for the plants and allows for airflow and plant movement.

- Deer do not like sticking their heads through anything in order to eat.
- Nothing but a bullet or relocation will stop a groundhog. They will not only eat the plant, they will tear down the stalks just for spite.
- Planting marigolds or mint beside the dahlia plant may deter some insects and some animals. The same is true for Sweet Annie, but Sweet Annie will seed the whole garden, and mint is very invasive.
- Peppermint oil on cotton balls may deter rabbits. Once the plant is a foot tall, rabbits tend to leave it alone. Consider shaping chicken wire into tubes or domes to protect very young plants.
- Voles love to use mole holes to access dahlia tubers and eat them, causing the plant to wither and die. Getting rid of voles is difficult. Most growers give up and plant in grow bags instead, using a metal t-post in the ground beside the grow bag to support the plant. [Grow bags](#) should be at least 5 to 7 gallons in size.
- Poisoning voles is probably the only way to kill them, but their dead carcasses can be deadly to pets and birds.
- One option for vole control is to buy a gallon of castor oil and mix it with an equal amount of water and a half cup of dishwashing liquid. Then either spray or pour this mixture on the flower bed and water it into the ground. The castor oil will make the roots taste bad, so the voles will likely leave. Note: this does not kill the voles, so they will just move to another part of the property. Pouring male urine around the garden bed perimeter will also deter them.

Support

- Most dahlias get really tall, even if they are pinched back, so they will need support.
- Bamboo sticks generally will not be strong enough.
- Insert metal t-posts into the soil BEFORE planting the tubers to prevent stabbing the tuber. As the plant grows, loosely tie the plant to the post. In some cases, it may be necessary to use a post on each side of the plant instead of behind it. An alternative would be to use a double peony ring in conjunction with the post.
- I use the Hortonova netting on my raised beds and in my garden rows. I used the double peony rings in my pots this year and found them to work really well.
- Tomato cages are used by a lot of growers. Turn the cage upside down so the wide ring is at the ground. Cut off the metal spikes that would normally go into the soil and bend them to create staples, then use those staples to secure the ring into the ground.

Pinching and Disbudding

- In late spring/early summer, once the plant has at least four sets of leaves, pinch out the center of the plant to encourage lateral growth. I usually wait and pinch right above the fourth set of leaves. This will cause new lateral stalks to emerge at each of the remaining leaf nodes, making the plant more bushy and less tall and gangly.

- Growers who focus on growing dahlias for show often pinch out some of those laterals as well, so that the plant has only three or four stalks. This focuses more of the plant's energy into producing those huge blooms.
- Most dahlia cultivars will produce stems with two or three buds clustered together. As early as possible, gently pinch off the side buds and leave the center bud. If not, the side buds will actually produce longer stems than the center bud, resulting in a crotched bloom. Disbudding means trading quantity of flowers in the first flush of blooms for quality of blooms.
- At the Mid-Atlantic Trial Garden in Derwood, Maryland, we remove the emerging lateral growth from the two sets of leaves below the bud. This helps control the height of the plant and forces the production of longer stems.

Insects

- Spider mites: These are nearly invisible and difficult to eradicate or even control. They attack the underside of the leaves and usually start at the bottom of the plant and work their way upwards. The leaves will appear to have pinpoint light discolorations. Left untreated, the mites will destroy the plant and can do serious damage in only a few days. Do NOT use Sevin brand insecticide because it actually causes spider mites to thrive. I spray with [Avid](#) miticide using a hand sprayer with a wand so I can get the application on the underside of the leaves. Remove the leaves with the most damage and put them in the garbage, not in compost.
- Thrips: the damage to the leaves will resemble spider mite infestation. Thrips can carry virus from plant to plant. Spray the undersides of the leaves with insecticide.
- Stink bugs/tarnish bugs: these sap-suckers will bite into a bud and pull out the "juice," thus causing cell damage. The result will be deformed blooms that only open on one side.
- Earwigs: I despise these things. I am not an organic farmer, but I do try to minimize the risk to pollinators. I apply [granular Triazicide](#) to my lawn and garden beds at the beginning of the season to control ants and earwigs. Most pollinators are not going to burrow in the ground, so this is less risky than using the spray version of this insecticide.
 - An organic option is to use food grade [Diatomaceous Earth](#) around each stalk. This can also prevent slug and snail damage.
 - Some people slather petroleum jelly around the base of the stalk.
- Slugs/snails: Mix some dishwashing liquid into a five gallon bucket of water—make it pretty sudsy. Pour this around rocks, concrete pavers, bricks, and any wooden structures used to form the flower bed. Some people use a product called Slugo Plus.
- Save all egg shells and allow them to dry, then crush them and put them around the stalks. For snails and slugs, that is a minefield of razor blades.
- Put diatomaceous earth around each stalk.

Diseases

- There are two primary types of disease that affect dahlias: gall and virus.
- Gall is caused by bacteria. It can exist in the soil, or it can be transferred to the soil from a gall-infected tuber. There are two bacteria to blame, and they result in very different growths.
 - **Leafy Gall** will manifest as densely clustered and spindly shoots emerging around the main stalk of the dahlia. This gall may not be seen at all when the plant is growing, but may be visible once the tubers are dug. At that point, the leafy gall will appear as a tight cluster of white growth.
 - **Crown Gall** will manifest as a bulbous protrusion on the tuber or the crown. This growth is generally a clear deformation and does not produce eyes.
 - Plants/tubers showing signs of gall should be destroyed. Clean all shovels, cutters, and containers with bleach water.
 - Soil should either be removed, allowed to go fallow for a season, used for growing plants that are not susceptible to gall, or solarized.
- There are about six different viruses that affect dahlias. It is estimated that virus affects about 85% of the dahlias grown in each garden, so being virus-free is probably not possible. Still, one should destroy any plant that shows signs of a viral infection in order to control the spread to other plants. Most virus infection is caused by insects like thrips which carry the infection from plant to plant. Not all plants infected with a virus will show visible signs of the infection. The tubers will carry the infection, and the seeds may also carry the infection. The two most common viruses now are Dahlia Mosaic Virus and Tomato Spotted Wilt Virus. There is no “cure,” so the plants should be destroyed. Unlike gall, the virus will not infect the soil.
- **Prevention is key. To reduce the risk of spreading virus from one plant to the next, prepare a solution of bleach water (one part bleach to nine parts water) and put it in a coffee cup or a can. Take this with you to the garden when you plan to deadhead or cut flowers. Dip the cutters into the bleach water after cutting from one plant and before cutting from the next plant. The bleach water is hard on the metal cutters, so rinse them with clear water and then dry with a paper towel after using them. Spray the blades with WD-40. Otherwise, they will rust.**

Cutting for vase or show/Deadheading

- It is recommended to cut the stem below the second set of leaves down from the bloom. Cutting deep into the plant will encourage the laterals that emerge as a result of that cut to grow taller in order to get to the sunlight, creating longer stems for the next set of blooms.
- **When cutting dahlias for arrangements**, cut when the bloom is at least $\frac{3}{4}$ open, but the center is still tightly bunched. Dahlias do not open if cut too soon.

- Strip the foliage from the stems to lengthen the vase life. Use other foliage in the arrangement rather than the dahlia leaves.
- **When cutting dahlias for showing**, cut the bloom when it is just slightly short of its peak show form. Leave a minimum of one set of leaves on the stem to frame the bloom. The bloom should be a perfect circle and not bearded (longer petals on the bottom than on the top), the center should be closed so no stamens are visible, and the bloom should be at a 45 degree angle to the stem (not clock-faced nor facing straight up). (Exception: waterlily form is allowed to face straight up). The stem should be straight and attach to the center of the bloom.
- **Deadheading:** If you opt to leave the blooms on the plant, they will last much longer than in a vase. However, it is imperative to deadhead the aging blooms in order to stimulate the production of more flowers. When deadheading, cut the bloom two sets of leaves below the bloom just like one would if cutting for vase or show. This will force new lateral growth.

Vaselife

- Most dahlias have a vase life of four to five days, depending upon the environment in which they are being displayed. Florists consider dahlias to be “event flowers” and generally only use them in weddings and single-day events where no one cares if the blooms are dead two days later.
- If dahlias are just being displayed in a vase by themselves, do not drown them. Only put enough water to cover the bottom of the stems by about a half inch or an inch. A stem submerged in a full vase of water will start to deteriorate, leaving murky water and rotted stems.
- Change the water EVERY SINGLE DAY.
- Avoid sitting them on or near sources of heat (sunlight through windows, TVs, refrigerators, stoves). Refrigerate or move to coolest spot in the house or garage at night. I brought an arrangement of huge Walter Hardisty dahlias home from a show in Gettysburg and left it sitting in my garage for over a week in early September, and the blooms stayed near perfect for the entire week.
- Ball form dahlias have the longest vase life; open centered form dahlias have the shortest vase life. As a general rule, the tighter the petals, the longer it will last.
- I created an arrangement for the ADS national show in September of 2022 using a cultivar called Chi Nese Red. All of the water slopped out of the shallow container during transport to the show venue, and once there I forgot to refill it. I realized my error when I returned home at 2 a.m., so the arrangement was without water for nearly seven hours before I got back to Reston, VA, to refill the container. To my shock, the dahlia blooms had not wilted in that time. I will always grow that cultivar.

Drying

- Dahlias can be dried, but the results will vary by cultivar.
- Silica gel beads can be used to preserve both color and form of the bloom, but removing the bloom from the silica is a time-consuming and tedious act. Also, these blooms should then be sprayed with a clear acrylic to prevent them from absorbing moisture and wilting.
- Some blooms can be air dried. This is the easiest, cheapest method, but it does not preserve form, and the blooms are still very fragile. Personally, I found most of the them to be pretty ugly, but they sold well at market, so I will ramp up my dried flower dahlia production next summer. Ball forms dry best. Dark colors do not dry well. Rycroft Jan, Veritable, and Holly Hill Lemon Ice dried best for me.

Lifting tubers

- In our area, it is generally too cold in winter to leave the tubers in the ground, so they must be lifted and stored until April.
- If one opts to leave the tubers in the ground, make sure the soil will drain well all winter or the tubers will rot. Cover the tubers with a thick (several inches) layer of mulch. Some growers even put a tarp over their dahlia beds to keep excess water from the tubers.
- I left my dahlias in the ground one year, and we had a mild winter, and I lost only one or two. So I left them the next year, and we had a prolonged cold snap, and I lost all of the dahlia tubers and all of my gladiolus corms. (I still leave some of my glads in the ground, but I generally pull some of each cultivar to ensure I do not lose all of them.)
- Once the dahlia plant has been growing for 120 days, it has had time to produce tubers mature enough to store for winter. It is not necessary to wait until the first killing frost in order to cut the stalks and lift the tubers.
 - Personally, I still prefer to wait until after frost, then leave the tubers in the ground for another week before digging. Leaving them for a week or two will cause the tuber clump to produce visible eyes, so it is easier to divide them into individual tubers or smaller clumps once dug.
- Dahlia clumps can be divided in the fall or stored and divided in the spring. Spring division usually means more clearly visible eyes, but the stalk/crown portion of the tubers is generally like cutting through hardwood tree trunks at that point. Most people who grow a lot of dahlias, do the division in fall or winter.
 - If the clump has visible eyes, I divide in the fall. If it does not have clearly visible eyes, I split the clump into half or fourths and store it until spring.
- Use the stalk circumference as a guide to how far out to dig when lifting the tubers out of the ground. The thicker the stalk, the farther away from the stalk one should insert the garden fork or shovel. Loosen the soil all the way around the tubers before inserting the garden fork (also called a potato fork) deep under the tubers and then lifting them out of the ground. It is a good idea to stop once the clump of dirt is about four or five inches out of the ground and gently pull the soil from the top of the tubers. This act will reduce the weight on the tuber necks and prevent some breakage.

Division

- It is a good idea to divide tuber clumps rather than replanting the whole clump.
 - If there are only two or three small tubers on the clump, I generally replant the whole thing.
 - If the tuber clump has multiple eyes, I divide the clump into smaller clumps or individual tubers, making sure each division has a clear eye.
 - A tuber without an eye is called a blind tuber and it will not produce a sprout. Not all tubers on a clump will have eyes. The eyes are usually at the point where the tuber attaches to the crown or on the crown itself.

Storage

- There are as many ways to store tubers as there are people who grow them. There is no “right” method.
- Ideally, tubers should be stored with high humidity (90s) and low temperatures (around 40 degrees). Neither the temperature nor the humidity should fluctuate very much. Yeah, good luck with that in Virginia.
- The best place in this area for storing tubers would be an earthen root cellar but very few of those exist.
- Store the tubers in the coldest place available that will not freeze (basement, garage, outbuilding).
- There are several methods for storage. The key is to find the best method that works for the storage environment in which one will be storing the tubers.
 - Avoid storing in paper or cardboard—the paper can wick the moisture out of the tubers. Once a tuber loses moisture, it cannot be soaked back into the tuber. If nothing else, line the cardboard box with a plastic trash bag.
 - Most of the growers in NCDS store in plastic containers with coarse vermiculite. Vermiculite is unique because it absorbs excess moisture then releases it if the inside of the container becomes too dry.
 - If storing in a sealed container, it is essential that the tubers be completely dry and cured (dormant rather than still producing energy) or they will generate condensation and then mold/rot.
 - Storing in open air generally leads to excessive shrinkage and moisture loss. It would be better to store in a container and leave the lid slightly ajar to allow air movement.
 - Some people use the SaranWrap method. The downside is that the tubers must be dry and must be watched carefully to prevent condensation and rot. Instructions for this method can be found on the American Dahlia Society website (dahlia.org).
- Regardless of the storage method used, check the tubers each week for the first month and then monthly for the rest of the storage period and make adjustments as necessary.

- When pulling tubers from storage in late winter/early spring, open the packaging to allow the tuber to breathe; otherwise the tuber will sweat from the sudden change in temperature and that condensation may cause the tuber to mold and/or rot.

Dahlia Forms and Size Classifications

- The term “dinnerplate” is an obsolete term and has no real definition other than large.
- The following terms are used in the United States to classify the size of a dahlia bloom:
 - AA = Giant (blooms over 10 inches)
 - A = Large (blooms over 8 and up to 10 inches)
 - B = Medium (blooms over 6 and up to 8 inches)
 - BB = Small (blooms over 4 and up to 6 inches)
 - M = Miniature (blooms over 2 and up to 4 inches)
 - MC = Micro (blooms under two inches)
- Dahlias are classified by the following forms
 - Formal decorative
 - Informal decorative
 - Semicactus
 - Straight Cactus
 - Incurved Cactus
 - Laciniated
 - Ball (over 3.5 inches)
 - Miniature ball (2-3.5 inches)
 - Pompon (under 2 inches)
 - Stellar
 - Waterlily
 - Peony
 - Novelty
 - Anemone
 - Collarette
 - Orchid
 - Orchette
 - Single
 - Mignon single

More information can be found on the American Dahlia Society webpage: www.dahlia.org .