

**By Towns-Union Master Gardeners  
GROWING DAHLIAS**

**Note:** Thanks to Nell Brown and family for sharing their dahlia experience through tubers from the Todd Dahlia Farm supplied to Meeks Park and the Union County Farmers Market! Thanks to Alan Driskell of Hiawassee and the Carolinas Dahlia Society for sharing additional expertise!

**Cultivars.** Decide on the type bloom you desire; consider form, size and color. Look at the Fabulous Fifty in the annual American Dahlia Society (ADS) Classification Guide or online. They include cultivars that have placed in shows in various regions of the country. Annually, the Carolinas Dahlia Society has a plant sale; also tubers are sold at the Hiawassee Garden Club plant sale on the square in early April. Note the size of the bloom and the height of the plant.

**Bed Characteristics.** Plant dahlias in full sun or 5-6 hours per day, preferably from 9 am to 3 pm. Consider a water source; dahlias need 1 inch of water per week. Plan to water if rain is inadequate. Design beds to drain properly as dahlias do not like wet feet. Some people plant tubers permanently in pots (2 gallon, minimum) and then into the soil for the purpose of protecting from voles and ease in getting tubers out of the ground in the fall. This is not a recommended practice. Eight inch tall cylinders made from ¼ inch hardware cloth and 30+ inches in circumference can also be used to protect against voles; plant tubers in the center of the cylinder.

**Bed Preparation.** In spring, one month prior to planting tubers apply ½ lb. 10-10-10 per plant & till bed. If the soil can't be tilled until planting due to weather, go ahead and apply fertilizer one month prior to planting and just scratch it in.

**Early Start.** If you overwinter tubers in a cool, dry place, which is recommended for N. GA, you may choose to remove plants from storage in February, divide (see "Dividing Tubers" below), and put individual tubers in pots with soil. Starting in March, place them in sun during the day being careful to protect them from cold nights by bringing them inside until warm weather. This will enable your plants to bloom one month early. Other-wise tubers planted early to mid-May will start blooming in July. If there is time between dividing tubers and planting, follow instructions under "Temporary Storage...."

**Regular Start.** If you do not choose the early start described above, plant divided tubers (see "Dividing Tubers" below) in the ground after the last frost, which is early to mid-May in N. GA. Dahlias planted in May should bloom early- to mid-July. Best blooms are two weeks before the first frost.

**Dividing Tubers.** You need a sharp, short-bladed knife for dividing. A curved knife designed for cutting linoleum flooring also works well and is found in hardware stores. Divide tubers carefully 1) not to break neck, 2) get part of the crown or where the tuber connects to the mother plant, and 3) get at least one eye. Note: If you cannot find an eye, which appears like a pimple on the tuber, you may need to replant the entire root system with all its tubers or cut entire root system in half with a longer knife and plant each half. As you divide the parent clump, write names on each tuber. If there is time between dividing tubers and planting, follow instructions under "Temporary Storage...." If the neck on the tuber (between the tuber and the crown) breaks, throw that tuber away.

**Temporary Storage of Divided Tubers.** If you are starting early (see "Early Start", above) place tubers in Styrofoam coolers/boxes in a cool dry place. Store them on a 2 inch layer of coarse vermiculite with light sulfur to control moisture. Store tubers in a Styrofoam container on a damp (use spray bottle to moisten) layer of newspaper. Place in a cool place, around 50 ° F.

**Layout and Staking.** Lay straight rows with stakes and string which will be removed at time of planting. Plant tubers with rows with at least three feet apart and plants at least three feet apart in the row. Rows may be further apart if spectators will be walking between rows. Before planting the tuber, place a rebar stake two inches from where the neck of the tuber is to be placed so the plant will be close to and easy to tie to the stake when time. One-half inch rebar is the stake of choice in 5-7 foot lengths depending on the cultivar of the dahlia. You will stop tying a plant to the stake 24 inches below the

anticipated height of the plant. Rebar comes in 20' lengths and the vendor should be able to cut a length into 1/4ths or 1/3rds. Drive stake to a depth of 17-18 inches. The plant will be heavy and will pull the rebar down if not deeply staked.

**Planting.** Dig 12 inch deep holes for planting; this loosens the ground for tuber development. Plant one tuber which must have a piece of crown with an eye (See "Dividing Tubers"). The crown is where it came off the mother plant. If there is no eye, a plant won't come up. Unlike instructions from commercial growers, do not plant eye 6 inches below ground. Plant 2-3 inches below ground with the sprout end of the tuber slightly higher like it is lying on a pillow. If you are planting a small plant/sprout started inside in a container (see "Early Start") the plant will be two inches underground. If, in the spring, more than one plant emerges from the tuber (the tuber had more than one eye) observe the healthiest branch and cut the other back below the ground; this cut branch can be rooted with use of a root stimulator. If a sprout becomes damaged at any time, dig it up and throw it away because it will not bloom. Remove diseased plants during the growing season. Do not water at planting.

**Tying.** Tie dahlias with macramé cord when the plants are three inches tall. Amazingly these plants are very tender and will break with a strong wind. Start by looping cord (slip knot) around the young plant one time and loop remaining cord around rebar several times; this will provide extra cord for use in the future. This is done at the time you first pinch back the main stalk above the laterals (see "Grooming" below). Save cord for use from year to year. Some recommend looping each tie into a figure 8, with the crossed portion between the stem and the stake to keep stems from rubbing or being choked. Add more ties every 9-12 inches as the stem grows until the plant is supported approximately 24 inches below the eventual top of the plant. Use square knots where knots are needed. A strong wind will damage plants that are NOT tied.

**Identification.** If the identity of your Dahlia is important to you, be sure to add a tag to the stake at planting time. This will be an invaluable help when it is time to dig your tubers in the fall. If you can find them use 8-10 inch strips of old metal (vs. vinyl) blinds for identification, being careful to rewrite each year and to punch hole in blind strip and attach this to the top of the rebar with a zip tie. You can easily see the name for reference and for visitors. You may want to also put information such as bloom diameter and plant height for the purpose of "Grooming" as described below. If you know the ADS classification, add this to the name. When you dig tubers, keep names with the clump of tubers with labels or write on tubers. When you divide tubers, write name directly on the tuber with permanent marker.

**Water.** Do not water at planting. Dahlias need one inch of water every week. Plants may be watered in the late afternoon. Dahlias do not like wet feet; see information above about "Bed Characteristics". Do not get water in hollow stems that remain after grooming or cutting stems because remaining stems will rot. If the stem is cut, place plumber's putty/paste in the stem to prevent rotting. Mist/spray the plants at any time they appear wilted. It will not harm the plant to gently spray them with water. It is also OK to overhead water.

**Grooming.** Note: The Colorado Dahlia Society has a web site with excellent pictures representing many of the processes discussed here: <http://dahlias.net/dahwebpg/CultureIndex/Culture.htm>

When plants begin to emerge from ground, look at the dahlias at least every day or even several times a day. To achieve a compact, bushy plant, with larger blooms consistent with a cultivar, pinch out or "top" the stem above a specified number of opposite, leaf sets/pairs (see below) on young plants. Topping is the act of removing the growing tip of the main stem of a young dahlia plant. Some people refer to it as "stopping" because it is the process by which we stop the growth of the main stem and cause emerging laterals (secondary stems or branches) to begin vigorous growth. This will be when the dahlia is about a foot high. Do this with great care!

The number of leaf sets you leave is based on the ultimate size of the bloom. Each set/pair of leaves left will produce two laterals (secondary stems/branches) one on each side of the stem each which will produce one bloom. Cut off non-productive leaves that may remain on a stem but which are not supporting laterals. If you want to remove the lowest leaf

sets in order to prevent leaves from touching the ground and becoming susceptible to insects and fungi, these leaf sets/pairs will be in addition to the ones counted below:

AA (10+ inches) need **four** (4) laterals or two sets/pairs of leaves.

A (8-10 inches) need **six** (6) laterals or three sets/pairs of leaves.

Bs to BBs (4-8 inches) need **eight** (8) laterals or four sets/pairs of leaves.

The number of leaf sets above reduces by two the number of laterals with each increment (increase) in bloom size. Fewer laterals, therefore less weight, is desired on the plants with the largest blooms. The leaves that remain are the support for new laterals. Later in the life of the plant, only remove leaves if the stem above that lateral is not desired. The leaf provides the support for the lateral branch.

The small growth that emerges in the angle made by the main stem or a lateral stem and a leaf stem is referred to as a "lateral." Yes, a developed lateral is similar to a main stem in all respects except that it stems from the main stem. When removing laterals, take care to not damage other parts of the plant such as the stem or leaf. A "lateral" is often referred to as a meristem or an axil when it is small and a lateral when it is larger, having leaves and laterals of its own.

Also, remove as soon as possible any new laterals that will produce flowers (see "Grooming"). This allows the energy to go into the development of fewer, but larger flowers. The terminal stem will produce the strongest bloom.

If your goal is to produce the largest possible bloom on the terminal end of a branch/stem, you must throughout the growing season, remove all of the laterals (or side buds) emerging from leaf sets EXCEPT for the two laterals emerging from the leaf set closest to the stem/branch from which the branch emerged. **This will be where your next bloom will come from.** The leaf is necessary support for the emerging lateral that you want to keep so be careful with leaves, only removing those which are NOT needed to support a lateral. If more than one bud develops on the terminal end of a stem, remove the two outer buds leaving the center bud.

You will get three-four bloom cycles on a plant. For example (1) one bloom comes from the terminal end of the original branch; (2) two additional blooms from the first two laterals growing off the original stem, and if desired (3) two-four additional blooms from the two laterals off the first laterals..

**Pests.** The tender new growth of a Dahlia is one of the favorite entrees of slugs and snails. Take the necessary precautions to protect plants. Additionally, if close-by plants attract Japanese Beetles, the Beetles will attack your dahlias and may eat tender young buds. Pick off Beetles before they can do damage or use a liquid Sevin<sup>®</sup> product to spray. Try to spray when the largest number of Beetles are present and when sluggish, often in the heat of the day. Voles may damage dahlia tubers if they are allowed in beds. Unfortunately, the best way to rid a bed of voles is to have a cat. In the absence of a cat, some growers put their tubers in large plastic grower pots (2 gallon or larger) and then plant the entire pot in the ground. This is not recommended, however.

**Mulch.** Mulch only after plants are actively growing as premature mulching prevents tubers from getting the heat they need to sprout and grow. Ground-up leaves are preferable. Other mulches are not recommended.

**Deadheading.** It is necessary to remove a spent bloom and stem promptly if you want your Dahlias to provide a continuous, extended flower show. If blooms die on the plant, cut the bloom's stalk just above where it intersects with another stem; this should be where two new laterals remain from which new blooms have/will emerge. This same process is used for cutting blooms for show or display, see "Cutting Blooms" below. The secondary blooms will be stronger than the first flower.

**Digging Tubers.** After a hard freeze (or in the absence of a frost, no later than mid- to late-November) when the stalks have turned completely brown, cut plants back to 6". If you do not dig tubers immediately, use plumbers putty/paste to close off the hollow stem left from cutting. Tubers will shrivel up if dug too early; they will not develop.

To loosen soil to remove a plant's tuber – use a garden fork and dig four sections (12 o'clock, 3 o'clock, 6 o'clock and 9 o'clock) around the base of the plant ten to twelve inches out from the stalk. Pick up gently because the necks of the tubers are fragile – don't break necks; if broken, discard. Bread trays are good for storage/transport because air can get to tubers; store tubers in a crawl space or other protected area on a shelf at around 50-60 degrees. Ideal temperature for storage during winter is 56 degrees. After digging, wrap identifying tags around the dug clump of tubers. If weather allows, lightly rinse, turn tuber clumps upside down and leave out in grass two days to dry, being careful to watch for freezing weather and get to a protected area. Skip this step if clumps are not expected to dry due to weather. Dirt if left on the tubers does not harm them but will need to be dusted off at time of division. If you plan to write names on tubers, you will need to clean somewhat. There is a permanent marker designed for the construction industry that will write on dusty surfaces. Put about 6-10 tuber clumps per bread tray into storage; placing with stalk up is ok at this time. Make sure they do not touch each other. Remember to store in cool (around 50-60 degrees) dry area. Store until February when you divide and plant in pots OR until April when you organize to plant in May. See "Temporary Storage..." above.

If you choose to NOT dig up your dahlias, you may be faced with 1) a freeze that will cause the tubers to rot or 2) if the tubers do sprout, you will probably end up with multiple sprouts (from multiple underground tubers that have not been divided) thus multiple stems/stalks. Where only one major stalk is desired, you will need to cut back all but the one healthiest stalk below the ground. Cutting them below ground reduces disease. The remaining sprout can be groomed as it grows. If you notice fungus on any tubers during storage, lightly mist them with Captan (see "Disease" below).

### **Fertilizing Schedule.**

Note: if you choose not to follow the instructions below, just use your tobacco throughout the summer every two weeks as instructed for Late May below.

In November broadcast **1/2 -3/4 lbs. of slow release lime per plant** in bed after digging the tubers. Till lime into in the soil after the tubers have been removed. You may also till in the leaf mulch as an amendment. 2-3 inches of leaf mulch may also be placed on the bed for overwintering and tilling in the next spring. If lime is not added in fall, use **fast release lime** in spring.

Mid-April, one month before planting broadcast **1/2 lb. 10-10-10 per plant** over bed and till in.

Late April-Early May plant tubers without adding fertilizer. Mr. Driskell listens for the cat bird to sing as a sign for his planting.

Around late May-early June, at time of initial topping (see "Grooming" above) fertilize with **7-20-20** (tobacco fertilizer) or **6-12-12**. Sprinkle **1/2 cup per plant** around drip line (about one foot out from plant) and scratch in lightly. Be careful not to scratch in heavily as new, fragile roots can be disturbed. Other acceptable fertilizer you may find is **5-14-12 or 5-10-15**.

Early to Mid- June-Mid July. After dahlias start growing (18 inches), fertilize twice before August 1 with **3 parts 7-20-20** (or other as described above) **to one part Ammonia Sulfate granules**. This should be about 2-3 applications (4-6 weeks) depending on the rate of growth of plants and if you used the early start method.

August. For the month of August, **leave off Ammonia Sulfate granules**. Continue with **7-20-20** (or other tobacco-like fertilizer above) every other week.

For the entire month of August and first half of September add the following every other week: In a Miracle Grow Spray bottle hose attachment add **8 ounces of Ammonia Sulfate Liquid (a concentrate)**; to this liquid in the spray bottle, add stem grower/color enhancer **Potassium Nitrate 13.5-0-46.2 crystals/powder to ¾ line** of the bottle; with water hose (rate of flow) attached, spray on the ground around the dahlias. Do not spray plants. Don't add water to the bottle. Spray until bottle is empty; this is enough for about 25-30 dahlias. This should be three applications.

**September.** Stop all fertilizing by the 3<sup>rd</sup> week in September regardless of the weather; this is to allow tubers to fully developing before digging.

**Disease.** Use a fungicide such as Captan if you need for fungus.

**Cutting Blooms.** For the finest cut flowers, cut them early in the day, when they first open.

Heat water which has set for 24 hours to allow any chlorine to dissipate and place the dahlias in this water and allow to sit; then remove from water and cut off 2 inches and place in cool water in a vase. Change the water daily. Cut Dahlias will last from 5-7 days. If you leave an open stalk on the parent plant after cutting the bloom, be sure to close the opening with plumbers putty/paste.

**ENJOY!**