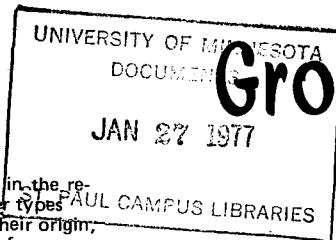


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Growing Dahlias

Dahlias (*Dahlia pinnata*) are natives of central Mexico in the region of Mexico City. The early forms were mostly single flower types that grew on well-drained soils of volcanic origin. Because of their origin, dahlias require well-drained soils, fairly sunny locations, and, of course, proper fertilization and protection from pests.

Dahlias provide one of the widest arrays of flower colors, sizes, and forms. They range from ½-inch pompons to the "dinner plate" dahlias that may approach 12 or more inches in diameter. Flower forms include daisy-like single types and fully double types with intermediate forms such as collarettes and anemone types. Dahlias come in nearly all flower colors except true blues. Flower sizes and forms are illustrated in figure 1.

PROPAGATING DAHLIAS

Dahlias can be propagated vegetatively or from seed, depending on the type of dahlia.

Propagation from Seed

Planting dahlias from seed usually does not result in uniform flower forms, colors, and types, although dwarf bedding types such as the 'Early Bird' or 'Unwin' hybrids can be satisfactorily grown from seed. Seeds can be started indoors or sown directly in the garden. When starting dahlias from seed indoors, be sure to use a well-drained medium that is free from diseases and insects. Commercially available soil preparations containing peat and vermiculite are excellent. A soil-containing medium such as a mixture of one part sandy loam soil, one part shredded sphagnum peat moss, and one part sand is excellent, but such mediums must be pasteurized.

Plant seeds about ½ inch deep in a pot, pack, or flat. Cover the seeds with more of the soil medium or pure vermiculite and add water until the soil is thoroughly moistened. Placing a film of polyethylene or a pane of glass over the container will keep the surface moist and enable the seeds to germinate undisturbed. Place the container in a warm location (not in direct sunlight) and allow seeds to germinate. Dahlias normally germinate in 5-7 days at temperatures between 70°-80° F. When the new shoots are first visible, remove the plastic or glass.

Vegetative Propagation

The storage organ of the dahlia is a fleshy or tuberous root. Dividing the dahlia's clump of tuberous roots is a common propagation method. When divided, dahlia roots must each have one live bud or eye. These buds are located in the crown area and the division must be made at this location (figure 2). Use a sharp knife or pruning shears. You can plant these divisions in the garden or start them indoors. When starting divisions indoors, use soil mixtures and containers like those described above.

Propagating dahlias from cuttings is frequently performed to increase the number of valuable varieties or new types. Start roots indoors as described above and take a cutting when the new shoots develop



Figure 1. Some popular dahlia types (clockwise from lower left): tiny pompon, double cactus (incurved type), collarette, single, and double formal decorative (in center).

(figure 3). Each cutting should have at least two sets of leaves. Insert each cutting to a depth of ½-1 inch in a moist medium such as vermiculite or sterile sand. Keep the medium moist and warm at all times.

SOIL TREATMENT

Mediums containing soil from the garden or field should be pasteurized to control disease organisms and to kill weed seeds and insects. Place the prepared soil mixture in a metal container, cover it, and heat it in an oven for 1 hour at 180° F. To assure uniform heat penetration, be sure the soil mixture is fairly moist before you put it in the oven.

You also can use a pressure cooker. Place the soil in a pan and set the pan in 1 inch of water in a pressure cooker. Let it steam for 15 minutes at 15 pounds pressure. Normally it is unnecessary to pasteurize the peat and vermiculite mediums previously discussed.

PLANTING IN THE GARDEN

Garden Preparation

Dahlias are heavy feeders, so prepare the garden bed by spading or rototilling to a depth of as much as 8-10 inches. Working compost or manure into the garden will provide for a desirable slow release of nitrogen for dahlia growth. This is also a good time to work in a fertilizer such as 5-10-15 or 5-10-10. Apply it at about 2 pounds per hundred square feet. If soil tests indicate low pH, add lime (ground limestone) at this time also. Dahlias utilize large amounts of potash for root devel-

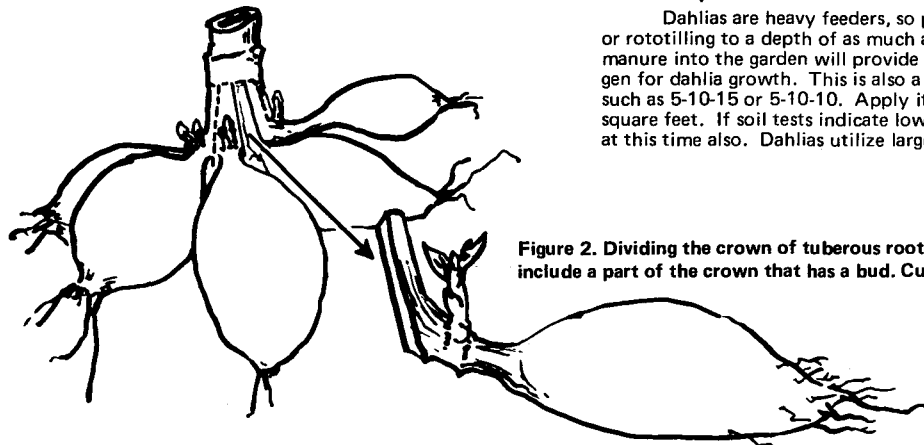


Figure 2. Dividing the crown of tuberous roots. Care must be taken to include a part of the crown that has a bud. Cut as indicated by dotted lines.

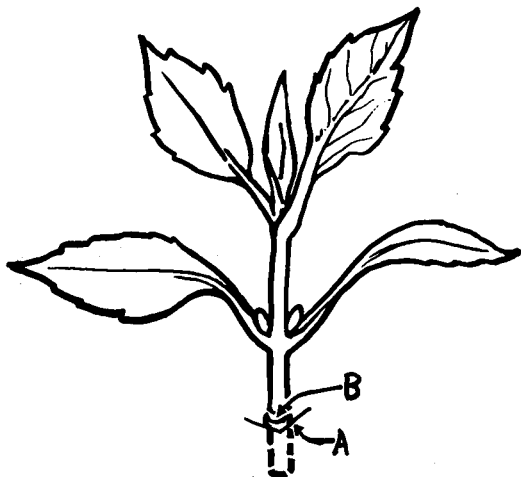


Figure 3. Propagation by cuttings. Young shoots root readily when taken as indicated. The cut is made at A and may include a node (B), from which leaves are removed. (Including a node is not essential to successful rooting, however.)

opment, so add extra potassium if soil tests indicate low levels. Testing your garden soil is recommended procedure for dahlias and many other garden crops. Your county agricultural extension agent (check your telephone book under county offices) or the Department of Soil Science, University of Minnesota, St. Paul, Minnesota 55108, will furnish information and forms for testing soil.

Direct Seeding

Because dahlia seeds are relatively large, they can be planted directly in the garden in a well-prepared seedbed about mid-May in central Minnesota. Plant seeds about ½ inch deep at the spacing you desire for the established plants. If you plan to transplant your dahlias, you can sow the seeds closer together.

Direct Planting of Root Divisions

Root divisions can be successfully planted in mid-May in most parts of Minnesota. Dig a hole large enough to lay the root down with its sprout about 3 inches from the surface. Drive a 4-6 foot stake into the ground at the edge of the hole. Place the root in the hole with the sprout up and cover it gently with soil to a depth of about 1 inch. Label the stake with the dahlia's cultivar (variety) name. Use a felt tip pen or other permanent marking material. When the new shoot emerges, place more soil in the hole as the plant develops.

Dahlias are full sun plants but usually will do well if they receive a minimum of 5-6 hours of sunlight each day. When roots are planted directly, most large types should be spaced approximately 3 feet apart in both directions.

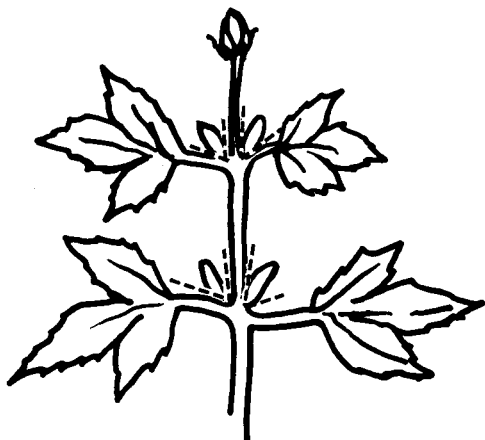


Figure 4. Disbudding and disbranching to increase flower size and make longer-stemmed blooms. Buds or small branches should be removed as indicated by dotted lines.

Transplanting Seedlings, Cuttings, and Started Roots

Seedlings, cuttings, and started roots can be planted outdoors after all danger of killing frost has passed. For much of Minnesota, this would be about the end of May. Generally, the plant (cutting, seedling, or started root) should be planted at the same depth in the garden as it was in its indoor container. Large types should be staked for support.

CARE OF PLANTS

When plants are 3-6 inches tall, begin spraying every 7-10 days with an insecticide and miticide (malathion can be alternated with Sevin for insect control; Kelthane is a good miticide). Spray upper and lower leaf surfaces and tops thoroughly. Also spray soon after a rainstorm, since rain washes off protective chemicals. Where systemic chemicals (sprays of Meta-Systox-R or granular forms such as Thimet or Di-Syston) are used, less frequent spraying may be acceptable.

Keep your dahlias weed-free. Weeds compete for water, nutrients, and light, and often harbor harmful insects and diseases. Mulches are effective in controlling weeds. Organic mulches like straw and hay keep the soil cool and conserve moisture. They are particularly desirable in the heat of summer. Black polyethylene mulches help to conserve moisture and warm the soil, which can be desirable during the cool part of the growing season in the spring.

Dahlias are fast-growing, succulent plants and require large amounts of water. It is important to keep the soil moist, but not extremely wet. Do not overwater dahlias. Their fleshy roots can be damaged if excessive moisture excludes air from the soil. If a dry period occurs during flowering, water plants thoroughly twice a week.

Dahlia plants become massive and need support. The large flowering types, particularly, become very tall and, because of the succulent nature of their stems, require support to prevent plant breakage and loss of large blooms. Tie plants to the stake that was driven next to them at planting time. If you use string or soft twine for tying dahlias, tie the string tightly to the stake, but loosely to the stem to avoid constricting the developing plant. Start tying dahlias when they are about 1 foot tall, and continue to tie them at intervals of approximately 1 foot throughout the growing season. Individual stalks should be tied when buds begin to form and enlarge.

DISBUDDING AND SUCKERING

When the plant is about 15 inches tall, it will set a terminal flower bud. Remove this bud and any small buds next to it. Doing so will improve plant growth and allow the plant to develop a strong vegetative system for supporting the flowers that will appear later. When the next flower buds appear and reach a diameter of ¼ inch, there will be two small buds next to them. Remove these two buds gently with tweezers or your fingers. Also remove the axillary buds or suckers that appear in the axil or angle of the leaves and stem at the two nodes immediately below the flower buds (figure 4).

FERTILIZING

When plants are about 1 foot tall, scatter a handful (about 1/2 cup) of 5-10-5, 5-10-10, or similar fertilizer around them in a 2-foot ring. Water the soil thoroughly after applying the fertilizer. Repeat this procedure about the 1st of August.

When transplanting seedlings, rooted cuttings, or started root divisions, you may apply a liquid or soluble fertilizer starter solution such as 10-52-17, 20-20-20, or 23-21-17. Such solutions are usually best used at the rate of 1-2 tablespoons of dry fertilizer per gallon of water. Pour 1 pint to 1 quart of solution around the transplanted dahlia immediately after planting to help the plant get a rapid start and establish its root system quickly. If the solution should accidentally touch the foliage, wash it off by sprinkling the plant with water.

USING THE FLOWERS

The high point of growing dahlias is enjoying the flowers. They may appear any time in July, depending upon the varieties and types you're growing. To use dahlias as cut flowers, cut the blossoms when they are fully open. Use sharp shears or a knife to cut a long enough stem for the use intended. Plunge the cut ends into warm water immediately. When you're ready to arrange the flowers, cut off about 1/4 inch of the stem base and place the stems in warm water. Be sure to use a sharp knife or shears. Using floral preservatives or changing the water every 2-3 days will increase the life of cut flowers. Another useful technique is to place the basal inch of each stem in boiling water for 1 minute while shielding the leaves and upper stem and flowers from the steam and heat.

Mention of commercial names does not imply endorsement nor does failure to mention a name imply criticism.

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