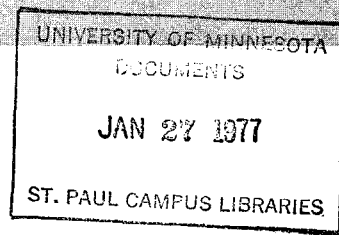


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FSH-5

HORTICULTURE NO. 5

C. GUSTAV HARD

# Tuberous Begonias

The appearance of new and improved varieties of tuberous begonias has led to an increased use of this showy plant. New flower types and varieties add needed color and glamour to the garden.

The natural home of the tuberous begonia is the densely wooded tropics. So it requires shade, warm temperature, rich soil, and adequate moisture. Tuberous begonias can be grown either from seeds or from their tubers.

## GROWING BEGONIAS FROM SEEDS

May-flowering tuberous begonias can be produced from seeds sown in December. Press the small seeds into the soil, but do not cover them. Use a soil mixture consisting of one part well rotted manure, one part well rotted leaf compost, and two parts sandy loam soil. Sterilize this material before planting seeds.

In a container, place some drainage material such as coarse gravel or broken pottery. Fill the container to within 1 inch of the top. Sift the top one-half inch of soil through a fine mesh screen. Firm the seeds to the soil and cover them lightly with sifted sphagnum moss.

Water the top thoroughly by sprinkling with an atomizer or fine sprayer. Place a glass pane over the container to maintain the desired humidity. Put the container in a relatively shaded spot. Begonia seeds germinate in 8 to 10 days.

Keep the temperature at about 70° F. Temperatures less than 65° F. slow up germination and result in a poor stand of plants. About 3 or 4 days after germination, remove the glass pane to prevent seedlings from becoming spindly. Do not allow the soil to dry out at any stage of seedling growth.

## Soil Treatment

Sterilize soil for seeding and for transplanting. Sterilization will control seedling diseases and insects. Place the prepared soil mixture in a metal container, cover, and heat in an oven for 1 hour at 200° F. To assure uniform heat penetration, the soil mixture should be fairly moist before being placed in the oven.

You also can use a pressure cooker. Place the soil in a pan, set the pan in 1 inch of water in

a pressure cooker, and let it steam for 15 minutes at 15 pounds pressure.

## Transplanting

When the third set of leaves appears, transplant seedlings to another container. Place seedlings 1 inch apart in each direction. Use the same soil mixture as suggested for the original seedlings, but do not sift any soil.

When tips of leaves begin to overlap, transplant seedlings again. This time, place them about 2 inches apart in each direction.

When plants again start to crowd each other, place them in 4- to 6-inch plots. If the last spring frost has occurred, transplant them directly to a shaded location in your garden. Remember that the flowers will face the direction the leaves point.

Water plants regularly with lukewarm water. Apply a complete fertilizer once a month during the summer to maintain a continuous succession of large, beautiful flowers.

## GROWING BEGONIAS FROM TUBERS

May-flowering plants of tuberous begonias are more easily and quickly started from tubers than from seeds. You can purchase tubers from your florist.

In February, place tubers, round end down, in moist peat moss, sphagnum moss, or vermiculite in open trays at a temperature of 70° F. Place tubers 3 to 4 inches apart, with the tuber tops about one-half inch below the moss surface. Allow indirect sunlight during this period. Tubers rot easily, so water them sparingly until new growth appears.

Within 4 or 5 weeks, there should be enough leaf top growth to shift tubers from open trays into 5- or 6-inch pots. A suitable soil mixture consists of one part sandy loam, one part well rotted manure or peat moss, and one part well rotted compost. Mix in a heaping teaspoon of 0-20-0 fertilizer (superphosphate) for each gallon of soil.

Place pieces of broken clay pots or coarse gravel over the drainage hole before filling the pots.

Locate the newly potted plants in an east window where they will receive good light but little direct sunlight. Do not allow the temperature to drop below 60° F. at night. A minimum temperature of 65° F. is best.

### Summer Care

After the last frost, you can move begonias to a shaded location outside. Knock the soil ball out of the pots and plant the begonias at the same depth they were in the pots. If you plant them any deeper, rots may enter the stems.

A north exposure or location under shade trees is best for begonias. They should be protected from full sun during most of the day. However, it is good to locate them where they will get a little morning and afternoon sun. Plants grown where it is too shady become tall and leggy.

Tuberous begonias flower best when they are watered and fertilized during the summer.

Dissolve 1 teaspoon of a high analysis fertilizer such as 10-10-10 in 1 gallon of water. Apply this solution liberally to the soil surrounding each plant every 2 weeks. If the solution touches the foliage, wash leaves with water immediately.

You may apply a low analysis fertilizer such as 5-10-5 dry at the rate of one-fourth teaspoon per plant once every 2 weeks. Keep the fertilizer about 4 to 6 inches away from the stem.

On exposed sites, tie plants to a stake to prevent wind from breaking plants or flowers.

### How To Store Tubers

Tuberous rooted begonias stop growing with the first medium fall frost. When tops are injured by frost, cut stems off at the soil line. Dig up tubers carefully to prevent any injury. Remove the soil and old roots; store tubers at 50° F. until the following February.

If you have only a few tubers, store them in a jar filled with dry peat moss, sand, or vermiculite. When handling large quantities of tubers, place a thick layer of dry sand, peat moss, or vermiculite in a cardboard or wooden box. Then put tubers on the material and cover them with a deep layer of the mixture.

### DISEASE PREVENTION

Mildews- Tuberous begonias often are affected by mildews. A soft gray, furry appearance on leaves is the first sign of the disease. Later stages are indicated by a soft and dark brown discoloration of leaves. Prevent overwatering, provide good ventilation, and dust plants with a fungicide such as captan or ferbam.

Stem Rots- General rotting of the stem results from overwatering and use of unsterilized soil.

Sanitation helps control this disease. You can cut out the rotted spot on the stem with a sharp knife or razor blade during early stages of the disease. Then paint wounds with a paste made by adding a little water to ziram or zineb powder.

### INSECT CONTROL

Aphids, Thrips, Mealy Bugs, White Flies- Tuberous begonias are not frequently attacked by these insects. Thrips cause rough, rusty spots on leaves, generally between the largest veins. Leaves and flowers become deformed and take on a silvery appearance.

Use a 4- to 5-percent malathion dust to control these insects. Malathion also can be used as a spray. When plants are affected, several applications at weekly intervals are necessary for good control.

Cyclamen Mites- Feeding by these pests generally causes the stunting of young leaves and buds. The small center leaf becomes excessively hairy, then gray-green and brittle, and finally brown at the last stages. The undersides of leaves become shiny brown from attack by these tiny insects.

To control mites, use Dimite at the rate of one-fourth to one-half teaspoon per gallon of water as a spray, or use dicofol (Kelthane) at the rate of 1½ tablespoons wettable powder per gallon of water. An easy application method is to put on rubber gloves, hold the plant upside down, and immerse the plant top in the preparation.

### COMMON TROUBLES

Dropping of buds is caused by:

High temperature--Tuberous begonias require temperatures between 65° and 70° F.

Poor root system--Newly transplanted plants often lose buds because of a poorly developed root system.

Poor drainage--Center buds usually drop first. Tuberous begonias like well drained soil.

Dried out soil--When buds are present, never allow the soil to dry out.

Botrytis blight--This condition results in browning and drying out of buds.

Too many leaves and too few flowers are results of:

Too many shoots--Break off excessive shoots from the tuber before they become 2-3 inches high.

Overfeeding--Excessive growth occurs when plants are overfed, especially with nitrogen. Overfeeding keeps them in a vegetative state.

Leggy plants are caused by:  
Too little light--Tuberous begonias desire full light but not direct sunrays.

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