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## Forcing Flower Bulbs

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*Bulb forcing can bring the bright colors and fragrant aromas of spring indoors during winter. Daffodils, tulips, hyacinths, crocuses, and other spring flowering bulbs can be forced indoors from December through March. Paperwhite narcissuses are also forced indoors.*

### **Choosing**

Purchase bulbs from a local garden center as soon as they arrive in the fall. Bulbs are generally available from September through November. Bulbs also can be purchased from mail-order nurseries. Choose bulbs recommended for forcing; see list on page 3. They should be large, firm, and unblemished. So-called “bargain” bulbs and damaged bulbs often lead to disappointments. Large, high quality bulbs are needed because bulbs contain the immature flowers and food required to produce flowering plants.

### **Planting**

Most bulbs are forced in a well-drained, commercial potting soil. Containers for forcing may be metal, ceramic, plastic, or clay. Almost any container is suitable as long as it has one or more drainage holes and is twice as deep as the bulbs to be planted. The first step in planting is to partially fill the container with potting soil. Then gently place the bulbs on the soil surface. Adjust the soil level until the bulb tips are even with the rim of the container. Once the bulbs are in place, add additional potting soil until the bulb tips show just above the soil surface. Leave about 1.2-inch between the soil surface and the rim of the container. Water the newly planted bulbs from the top or partially submerge the pots in a tub of water until the soil surface is wet. Finally, write the name of the bulb variety and planting date on a label and insert into each pot. Different types of bulbs can be planted in a single container for a colorful indoor display. For example, crocuses or grape hyacinths can be planted in a container with tulips or daffodils. The larger bulbs are planted first and completely covered with soil. The smaller bulbs are then planted on top of the larger bulbs.

## **Chilling**

After planting, the potted bulbs need to be exposed to temperatures of 40 to 45°F for 12 to 16 weeks. The bulbs will not bloom properly without the cold period. Critical root growth and flower development occur during this period. The best places for cold storage are a cool cellar, a refrigerator, or an outdoor trench. For best results, do not allow the bulbs to freeze, water the bulbs regularly throughout the forcing period, and keep them in **complete darkness**. If chilling in a refrigerator where apples or other fruit also are being stored, first place the potted bulbs in a plastic bag. Ripening fruit, such as apples, give off ethylene gas that can harm plant growth. During cold storage, remove the plastic bag containing the potted bulbs approximately once a month. Open the bag for 1 or 2 hours to allow for air exchange, then reseal the plastic bag and place it back in the refrigerator. Annual flowerbeds and the vegetable garden are possible sites for outdoor storage. Trenches should be at least 1 foot deep and wide enough to accommodate the containers. Place the pots in the trench, place soil around the containers, then cover with several inches of **straw**. After 12 weeks of cold storage, roots should be visible through the drainage holes. Also, yellow shoots should have begun to emerge from the bulbs. If the bulbs are at the proper stage of development after 12 weeks, move the containers to a warmer (50 to 60°F) location that receives low to medium light. Leave them in this area until the shoots turn green, usually 4 to 5 days. Then move them to a brightly lighted, 60 to 65°F location. Keep the plants well watered. On average, bulbs will flower 3 to 4 weeks after removal from cold storage. For a succession of blooms during the winter, remove a few pots from cold storage every 2 weeks.

## **After blooming**

Tulips, hyacinths, and most other spring flowering bulbs are usually discarded after forcing. Most don't bloom again when planted outdoors and attempts to force them again are usually unsuccessful. Daffodils, however, are an exception. Many forced daffodil varieties perform well when planted outdoors. Paper-whites are not hardy outdoors and should be discarded after flowering. Hyacinths forced in hyacinth glasses also should be discarded. The care after flowering is important if attempting to save forced bulbs. After flowering, remove the spent flowers and place the plants in a sunny window. Water regularly until the foliage begins to yellow. At this point, gradually withhold water until the foliage withers and dries. Carefully remove the bulbs from the potting soil, allow them to dry for 2 or 3 weeks, then store them in a cool, dry place until fall planting.

## Planting How-to



**1.** Choose a container that has drainage holes and is twice as deep as the bulbs to be planted.

**2.** Partially fill the container with potting soil.



**3.** Arrange the bulbs on the soil surface. Avoid injuring the bulbs; don't press them into the soil.



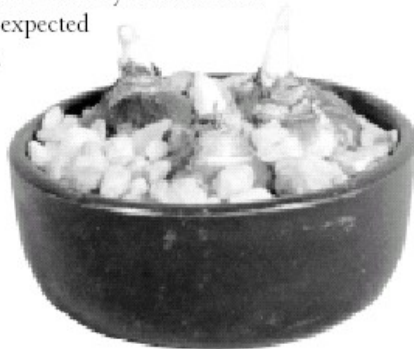
Plant flat-sided bulbs, such as tulips, with the flat side facing the edge of the container. This allows the first leaves to form a border around the edge of the pot. Tulips are more attractive when planted densely (about six bulbs per 6-inch pot).



**4.** Fill the container with the soil mix until bulb tips show just above the soil surface.

### Paperwhite narcissus

Paperwhite narcissus do not require a cold storage period to flower. They may be grown in potting soil or in a pebble-filled tray at 60 to 65°F. Flowers can be expected in 5 to 6 weeks.



### Hyacinths

Hyacinths are quite handsome when planted singly in a 4-inch pot, but also are attractive when planted in groups of 3, 5, or more. Daffodils, paperwhite narcissus, crocuses, muscari, and other bulbs are most effective when planted in groups of 3, 5, or more.

Pre-cooled hyacinth bulbs may be grown in water-filled, hourglass-shaped vases called hyacinth glasses.



## Bulbs recommended for forcing

### **Paperwhite (Narcissus) Variety/ Color**

Bethlehem/ ('Nony') creamy  
white, yellow cup

Galilee ('Gallilea')/ pure white

Grand Soleil d'Or/ yellow, orange  
cup

Israel ('Omri')/ creamy yellow,  
yellow cup

Jerusalem ('Sheleg')/ pure white

Nazareth ('Yael')/ soft yellow,  
bright yellow cup

Ziva/ pure white

### **Tulips Variety/ Color**

Angelique/ double, pink

Annie Schilder/ orange

Apricot Beauty/ apricot

Attila/ light purple violet

Bellona/ golden yellow

Bestseller/ coppery orange

Christmas Marvel/ cherry pink

Couleur Cardinal/ deep scarlet

Esther/ soft pink with lighter edges

Île de France/ cardinal red

Kees Nelis/ red-edged yellow

Leen van der Mark/ cardinal red-  
edged white

Merry Widow/ red-edged white

Monte Carlo/ double, yellow

Negrita/ reddish purple

Passionale/ lilac purple

Paul Richter/ scarlet red

Pax/ white

Peerless Pink/ pink

Princess Irene/ orange with purple  
flames

Shirley/ white-edged purple

### **Crocuses Variety/ Color**

Flower Record/ purple

Jeanne d'Arc/white

Mammoth Yellow /yellow

Pickwick/ white with blue  
stripes

Remembrance/ lavender

### **Daffodils Variety/ Color**

Barrett Browning/ white,  
orange cup

Bridal Crown/double, white,  
orange center

Carlton/ golden yellow

Dutch Master/ golden yellow

Flower Record/ white, orange-  
rimmed yellow cup

Geranium/ white, orange cup

Ice Follies/ white, creamy  
yellow cup

Las Vegas/ white, canary  
yellow cup

Mount Hood/ ivory white

Tête à Tête/ yellow miniature

Unsurpassable/ yellow

### **Grape Hyacinth (Muscari)**

#### **Variety/ Color**

Blue Spike/ double, blue

Early Giant/ deep blue

#### **Hyacinths Variety/ Color**

Amethyst/ lilac purple

Blue Jacket/ navy blue

Carnegie/ white

City of Haarlem/ soft primrose

yellow

Delft Blue/ porcelain blue

Jan Bos/ pinkish red

Lady Derby/ rose pink

L'Innocence/ ivory white

Pink Pearl/ deep pink

Professor de Hertogh/ bluish purple

Yellow Queen/ yellow