



**Spring bulbs** that are forced to flower in midwinter are special attractions. A pot of flowering bulbs for a birthday or other special occasions are a wonderful gift to give or receive.

Forcing is not the best term to describe the process. Manipulating, influencing and cajoling are probably more descriptive. Actually, flowers cannot be forced. What you're doing is simulating the natural conditions that cause bulbs to bloom. The end results are flowers that bloom months before the usual cycle.

Perhaps you have tried to force spring bulbs in the past, only to watch weak stems flop over, or have the flowers drop just before opening. This is common, and is most often caused by lack of an adequate cool period. The majority of spring blooming bulbs need 12 to 16 weeks of 45F temperatures after potting to develop roots strong enough to support plants and flowers. Home gardeners lacking special facilities may have a tough time supplying this cool period. A closet or cupboard is rarely cold enough. Even outdoors, sufficient cold does not occur until mid-October to November in many areas.

The secret of forcing is planting early enough to allow plenty of time for strong root systems to develop, with cool temperatures during that period.

### Four Stages of Growth

Growth of spring bulbs and corresponding temperatures can be divided into four stages. Duplicate these natural conditions and bulbs will bloom earlier than normal.

**Stage One** is dormancy, or near dormancy. This is when bulbs are planted. **Stage Two** is root growth. Light is not necessary for this stage and temperatures should be in the 45F range. If temperatures approach freezing roots cease to grow. When temperatures go above 55F top growth may begin prematurely. **Stage Three** is when top growth begins. Light should be strong, but temperatures should be cool. After 2-3 weeks at stage three, move into warmer 75F temperatures and watch the sight of healthy flowers unfolding, which is **Stage Four**.

One of the best ways to maintain a temperature near 45F during the rooting stage is to bury potted bulbs in a trench. Be sure water drains away from the trench. Cover pots with a soft, non-compacting material such as vermiculite, hay, bark mulch or peat moss. A simpler method is to build a raised bed in the coolest part of the yard, ideally out of direct sunlight. Set pots of bulbs inside



and cover with a coarse material such as shredded bark. If the covering material is kept moist, evaporation reduces temperatures around bulbs by 10-15F.

When the time arrives and roots are mature enough to support top growth, lift a couple of pots and examine the roots. If roots are emerging from the bottom of the pot, the bulb is ready to bring out to warmer temperatures. If you cannot see the roots, turn the pot upside down and tap it gently until the bulb and soil slip out. If the roots are not developed place the bulb and soil back in the pot and return to the rooting area.

## Hydroponics Flowers

Some bulbs store so much food all they need is water to bloom. Hyacinths, Crocus and Narcissus are well adapted for hydroponic culture. Colchicum species, does not even require water to bloom. When brought into normal room temperature the bloom cannot be stopped. Because it requires no care or effort from the gardener it makes a great gift. Everyone seems to enjoy watching its daily growth ending with a luster of beautiful flowers.

Hyacinths and Crocus are commonly grown in jars made especially for water culture. Clear glass jars are commonly used so you can watch the roots develop.

Paperwhites, Chinese sacred lilies and 'Soleil D'Or' varieties of Narcissus grow well in low bowls filled with gravel. Use plenty of gravel so roots have something to hold onto, because plants become top heavy. Keep the water level below the bulb base once roots start to grow.

Paperwhites for Christmas are normally started about the middle of November. By starting at the end of October and planting at 2 to 3 week intervals you can have a succession of blooms. Chinese sacred lilies naturally bloom later, and 'Soleil D'Or' later still. After growth of Narcissus begins, do not leave them in the dark. They will stretch for light until they topple over.

Keep Hyacinths, Crocus and Muscari in a cool, dark place until roots are well developed and top growth is under way. Bring them into light when the buds on Crocus are a couple of inches tall. Hyacinth buds should be about 4 inches tall with flower buds showing through leaf sheaths.



## Blooms by Occasion

### Paperwhites for Christmas Bloom

**Pre-cooling:** Not necessary

**Planting time:** Third week of November

**Dark root growth period:** Not necessary

**Light top growth period:** Not necessary

Bring indoors right after potting, ideally to a cool location. Low light promotes weak top growth that may topple. High heat forces top growth at expense of roots. If grown in water and gravel, use enough gravel to support roots.

### Daffodil for January

**Pre-cooling:** Not necessary

**Planting Time:** Last week of September

**Dark root growth period:** 15 weeks

**Light top growth period:** 2 weeks

Bring indoors when buds are well formed, just before they open.

### Daffodil for Christmas

**Pre-cooling:** Keep bulbs in the vegetable compartment of the refrigerator at above freezing temperatures until planting date.

**Planting time:** Last week of August

**Dark root growth period:** 15 weeks

**Cool light growth period:** 3 weeks

Bring indoors when buds are well formed, just before they open.

### Tulips for Valentines

**Pre-cooling:** Not necessary

**Planting time:** First week of October

**Dark root growth period:** 16 weeks

**Light top growth period:** 3 to 4 weeks

Bring indoors when buds are well formed, just before they open.

### Tulips for Mothers Day

**Pre-cooling:** Not necessary

**Planting time:** Second week of December.

**Dark root growth period:** 16 weeks

**light top growth period;** 3 weeks

Bring indoors when buds are well formed, just before they open.

### Hyacinth for Valentines Day

**Pre-cooling:** Not necessary

**Planting time:** First week of October

**Dark root growth period:** 13 weeks

**Light top growth period:** 2 weeks

Bring indoors when buds are well formed, just before they open.

### Crocus for January

**Pre-cooling:** Keep in refrigerator, above freezing, until planting date.

**Planting time:** Second week of September

**Dark root growth period:** 16 to 17 weeks

**Light top growth period:** 3 weeks

Bring indoor when buds are well formed, just before they open.

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