

Summit County 4-H
Winter Gardening Club----Forcing Bulbs
Next Class---Tuesday, March 20th, 4:30pm, County
Commons

We will do two plantings with bulbs, one in water and one in soil.

Bring to class on March 20th to plant your bulbs

1. A CLEAN transparent glass or transparent plastic bowl to hold your bulbs.
2. For those who are over 8 years old please REMEMBER your RECORD BOOKS so we can update all your information.
3. Everyone should REMEMBER to bring his/her BUDDING GARDENERS book.
4. Everyone should bring his/her three ring notebook so we can check to see if you have all the information from the classes you attended. You might want to make a cover for your notebook with the title Winter Gardening Club. You can create your cover by drawing or making the cover page on the computer.

4-H will provide:

1. Bulbs for planting
2. A pot for planting some bulbs in soil (or you can bring your own)
3. Gravel
4. Planting soil

A History of Bulbs

Until about 600 years ago, plants for food, medicine, dye, and other practical reasons were generally grown in gardens in Europe. When trade began between Western Europe and the Ottoman Empire in the late 16th century (we are now in the 21st century) Europeans discovered beautiful gardens of highly developed and cultivated tulips and hyacinths. It was as if they had discovered a new world.

Europeans began to change their traditional approach to gardening. They began to think of their gardens as places of enjoyment rather than just as practical plots for growing necessary goods and medicines. The tulip reached Europe around 1554 and many types of bulbs arrived after that from places like Turkey and the Balkans. Soon the bulb craze overwhelmed Europe. People could not believe that such exotic beauty should flower from such homely humps and could be grown so easily. To this day, Holland remains the world center of the bulb industry.

Because bulbs are very easy to transport, they have been an important part of the American garden since the time of the earliest settlers. By the 1600s, Dutch settlers who lived in Long Island in New York and in New Jersey each grew a bed of tulips. English settlers brought many bulbs to Virginia.

Forcing Bulbs

Tricking bulbs to bloom – Forcing a plant means making it bloom at a time or under conditions that are not natural. When you “force” bulbs, you simply provide the fall and winter conditions that simulate those they would have if they were planted in the ground, but you encourage them to bloom earlier by providing them with heat and light sooner than nature would.

Bulb forcing can bring the bright colors of spring indoors during the winter. Daffodils, tulips, hyacinths, crocuses, paperwhite narcissuses, and other spring flowering bulbs can be forced indoors.

The normal life cycle of hardy spring blooming bulb:

1. Dormancy, which happens naturally after blooming.
2. Development of the small feeder roots that the bulb needs to absorb moisture and nutrients so it can bloom well the following spring.
3. A chilling period, to initiate the biochemical activity that starts the development of the flowers
4. Exposure to light and warmth that results in the growth of leaves, buds, and flowers.

Once the bulbs have been chilled for at least the minimal amount of time required, they can be brought into a warm light environment to begin the actual forcing.

Types of Bulbs

True Bulbs

Inside a true bulb is a tiny, fully formed plant encased within fleshy scales. If you slice vertically through the bulb at planting time, you will see a miniature plant with tiny flower buds, stem, and leaves that have been forming all through the summer. If a bulb is cut in half crosswise, the scales look like rings.

(narcissus, tulips)

Corms

A corm is a stem that is modified into a mass of storage tissue. The top of the corm has one or more growing points –“eyes”—which usually are visible if you look closely.

(crocus, gladiolus)

Tubers

The underground tuber is a solid mass of stem. Toots and shoots grow from growth buds (eyes) scattered over the surface.

(cyclamen, potatoes)

Tuberous Roots

These storage units look like tubers, but are really swollen roots rather than stems. During growth they produce fibrous roots that take in moisture and nutrients.

(begonia, dahlias, sweet potato)

Rhizomes

Rhizomes are actually thickened, branching storage stems. They grow laterally just along or slightly below the surface of the soil. Roots develop on the lower surface. Buds growing along the top of the rhizome produce the new plants during the growing season.

(bearded iris, lilies-of-the-valley)



Forcing Spring Flowering Bulbs to Bloom Indoors

Purchase bulbs from a local garden center when they arrive in the fall. Large high quality bulbs are needed because the bulbs contain the immature flowers and food required to produce flowering plants. Bulbs recommended for forcing are Crocuses, Daffodils, Hyacinths, Paperwhite Narcissus, and Tulips.

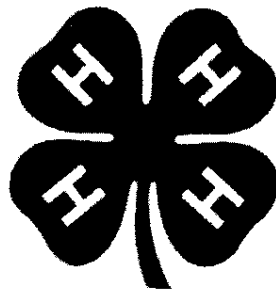
The bulbs we are using needed a period of chilling prior to forcing. Bulbs can be stored in a cool basement, unheated garage, or old working refrigerator at a temperature between 35-48 degrees F. It is during this chilling period that the bulb grows roots in preparation for the foliage and flowers in the spring.

Planting Bulbs in Soil

1. Almost any container is suitable as long as there is a drainage hole and the container is twice as deep as the bulbs to be planted.
2. Partially fill the container with potting soil.
3. Gently place the bulbs on the soil surface. Don't press them into the soil. The pointed side of the bulb should face upwards. Generally plant in groups of 3 or 5 as close together as possible without touching each other or the pot.
4. Adjust the soil level until the bulb tips are even with the rim of the container.
5. Add additional potting soil until the bulb tips show just above the soil surface. Leave about $\frac{1}{2}$ inch between the soil surface and the rim of the container.
6. Water the newly planted bulbs.

Caring for Forced Bulbs

1. Place the container in a location (50 to 60 degrees F) that receives low to medium light. Leave the container in this area until the shoots turn green, usually 4 to 5 days. Then move the container to a brightly lighted (60 to 65 degrees F) location.
2. Keep the soil moist, but never soggy.
3. Rotate the pots One-quarter turn every few days to keep the foliage and stems upright.
4. On the average, bulbs will flower in 3 to 4 weeks.
5. After the plant blooms, move it to a cooler place in the house and the blooms will last a longer period of time.
6. After flowering, remove the spent flowers and place the plants in a sunny window. Water regularly until the foliage begins to yellow. Then, 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 and then store them in a cool, dry place until fall planting. Most forced bulbs, tulips, narcissus, crocus, and hyacinths are not likely to ever flower satisfactorily again. Daffodils are an exception if you follow the directions above.



Forcing Bulbs in Water

Hyacinths, crocus, and narcissus can be forced in water.

1. Fill a shallow container with 1 to 2 inches of washed gravel or stones. (We are using a transparent glass or plastic container so we can see the roots grow.)
2. Place the bulbs pointed side up on the gravel or stones.
3. Place enough gravel or stones over or around the bulbs to hold them in place. Leave the top 1/3 of the bulb showing.
4. Add just enough water to bring it to the base of the bulbs and always keep the water at this level. Do not immerse the bulbs in water, only the basal (root) plate should be in water.
5. Keep the bulbs in a cool, dark room to ensure root growth.
6. After the roots appear, move the bulbs to a sunny location.
7. When the plants begin to flower, remove the plants from direct sunlight and place them in a cooler part of the room to prolong the life of the blooms.
8. Discard the bulbs after the blooming period is over.



Straight-Up Blossoms

An article appeared in *The Washington Post* newspaper on November 30, 2006 in reference to growing paperwhite narcissus. Paperwhites tend to grow tall in a bowl of pebbles and water and then tip over.

The recipe to help steady them is as follows:

Start the bulbs in plain water until the roots begin to show and the stems are about two inches tall.

Drain the water and replace it with a booze-water mix: **one part liquor to seven parts water** for a roughly 5 percent alcohol solution. Add the same solution each time you water.

Don't use wine, beer, or flavored liquors. These are too sugary.

Rubbing alcohol also works but the ratio for the mix is **one part rubbing alcohol to ten parts water**. If the mix is too alcoholic, the bulbs may die.

The booze-water mix stunts the plant's growth without affecting the size or production of flowers.

The booze treatment is newly proven by researchers at Cornell University. The researchers believe it works by reducing water uptake in the plant cells.

However, older methods are still valid. The cause of most paperwhite woes is that they are kept in rooms which are too warm or too dark. Warmth makes the bulbs grow rapidly and the flowers are short lived. Inadequate light makes the bulbs stretch for the light and they grow too tall. Put the paperwhites in a bright room where the temperature is about 60 degrees. Also, when you plant paperwhites deeper, either in pebbles and water or in soil, they will have more support.

