

## Drying Flowers

Even with the increased popularity of plastic and fiber flowers (silk for example), many people still prefer "the real thing" preserved in a lifelike manner. Flower preservation has become a popular hobby. Flowers such as marigolds, zinnias, goldenrod, yarrow, roses and hydrangeas are readily available and the costs of additional materials needed are relatively inexpensive when compared to that of other hobbies.

You can preserve colored fall leaves, magnolia leaves (for wreaths) and mistletoe (for holiday decorations) with glycerin, giving them a very natural appearance. Many people like to preserve the flowers from a wedding bouquet.

Preserving flowers and foliage can be fun year round. Some of the more common methods employed to preserve flowers and foliage are covered below.

### Flowers

Many materials have been used to preserve flowers, some more successfully than others. These include sawdust, washing powder, talcum powder, alcohol, cornstarch, silica gel, cornmeal, borax, sand, antifreeze and even kitty litter! No one material can be considered the best because what may prove best for one flower may be an inferior material for another flower. In addition, it is important to realize that there is a certain amount of expertise involved. People may become skilled using a certain technique, while others may get poor results using that same method with the same flower species.

Except for microwave drying, the methods employed involve slowly drying freshly cut flowers in a manner that results in preserving them in a lifelike manner relative to color, form, flexibility and texture. This may be accomplished in several ways:

**Pressing:** This may still be the most popular or familiar method of preserving flowers. The plant material is placed between the pages of a book, which is closed and weighted. Special devices called plant presses give excellent results. Violets, pansies, larkspur and ferns preserve well when pressed in this manner. Material preserved with this method can be arranged in framed displays.

**Air-Drying:** Expose the flowers to warm, dry air in a dark location. This is the oldest and simplest method, and is commonly referred to as the "hang and dry" method, a method name somewhat misleading because some flowers are air-dried on wire racks (peonies for example). It was the method used here in America by the English colonists. The majority of the flowers in the dried arrangements displayed at Williamsburg, Mount Vernon and other historic houses were preserved in this manner. The plant material to be dried is collected, tied, and simply hung upside down in a warm, dark, dry place. The darkness helps preserve the flower color. Flowers dried in this manner should be cut just before being fully open.

Examples of flowers that preserve well by this method are baby's breath, cattail, statice, celosia, dock, goldenrod, heather and pussy willow. Flowers dried in this manner are extremely stiff once dried. Blue and yellow flowers retain their colors when air dried, but pink flowers fade. Roses and peonies shrink somewhat when air-dried.

**Desiccants:** Embedding the flowers in a granular, desiccating material is probably the most commonly used method and many consider it the best all around method. Several materials may be used, and they vary in cost and the results that they produce. It is important to use the correct procedure when covering the flowers so that their form will be

maintained. To cover a flower, put about an inch of desiccating material at the bottom of the container; cut the flower stem to about a half an inch and stick this into the center of the material at the bottom to hold the flower. Next, pour the desiccating material along the perimeter of the container, away from the flower, building up a continuous mound of about an inch. Then tap lightly on the container and the material will move to the flower, not altering the form of the petals (in other words, the material will not weigh down the petals as it would if it were just poured on top of the flower). Continue adding the material, tapping on the container, etc. until the flower is completely covered. Lastly, add an inch of the material above the top of the flower.

**A Couple of "Borax Methods":** This involves burying the flowers in a mixture of borax and white cornmeal (2:1) or borax and sand (2:1). These methods result in flowers that are less stiff than those preserved with the "hang and dry" method, but the particles tend to cling to some flowers. Also, in some cases, the sand, because of its rough edges, may produce small holes in the petals.

These methods are "trial and error" because the flowers can be burned if embedded too long. About 10 days is the average if cornmeal is used, and about 16 days of drying is needed if sand is used.

**Silica Gel:** This may be used with sand alone or with the borax methods just described. Its designation is a misnomer for it is not a gel; it is granular. The material can absorb about 40 percent of its weight with water. It is not cheap, compared to the materials mentioned above. It is appropriate for quick-drying flowers and for drying flowers with closely packed petals such as roses. When silica gel is used, the container should be sealed for maximum effect. The flowers will dry in about a week. The commercial material contains fine as well as coarse granules, which, in some cases, produce very small punctures of the petals. Silica gel may be oven-dried (at 300 °F) and reused. It is blue when dry and light pink when it has absorbed water.

**Oolitic Sand:** Most connoisseurs of the art of preserving flowers agree that the best material available for achieving excellent results is oolitic sand, a material found along the Great Salt Lake in Utah.

Oolitic sand is heavy, which puts steady pressure on the flower while it's drying; it is smooth therefore, it doesn't injure the flower; it is hollow, which enhances its ability to absorb water; and it has a relative high pH, which helps to preserve the flower's color. It may be reused.

**Common Sand:** Clean sand can be treated to produce a product similar to oolitic sand. Builders sand or play sand should first be washed thoroughly. Put the sand in a bucket of water with a couple of squirts of liquid dishwashing detergent. Stir it and pour off the water. Then, continue to add fresh water (pouring it off, adding some, etc.) until the added water remains clear. Then, dry the clean sand. For quick drying, it may be placed in a 250 °F oven on a cookie sheet.

Once the sand is dry, weigh 15 pounds and place it in a medium-hot oven on a cookie sheet until it is evenly heated throughout. Remove the heated sand from the oven and stir into it 3 tablespoons of melted paraffin wax, using a large spoon. After it's cooled, add 1 tablespoon of bicarbonate of soda and 1 tablespoon of fine silica gel, distributing these throughout. The wax smooths the sharp edges of the sand (but reduces its absorbency); the soda raises the pH (which preserves color); and the gel increases its absorbency. Like oolitic sand, this may be reused.

How much sand is needed? A 1-pound coffee can hold 4 pounds of sand, which is enough to dry one rose.

Often, dried materials lose some of their original colors. A practical approach to restoring colors to dried flowers is chalking them with a camel's hair brush. The best grade of soft chalk can easily be grated on waxed paper and stored in plastic bottles for long-term use. Colors can be mixed to obtain exact hues. Once chalked, the flowers can be moisture-proofed with a spray like hair spray.

**Water-Drying:** Believe it or not, some flowers dry well if placed in water! The stems of the flowers are initially placed in a couple of inches of water, then the water is allowed to evaporate and be taken up by the cut flowers. The container and flowers should be in a dry, warm and dark location. Hydrangeas, yarrow, bells-of-Ireland and celosia dry well with this method.

## Foliage

Dried foliage can seemingly last forever. There is a dried laurel Roman head-wreath at the British Museum that is over 2,000 years old! Foliage may be preserved like flowers by air-drying or burying the foliage in a desiccant; however, there are other methods more appropriate for foliage preservation.

**Heat Pressing:** Press with a warm iron. Placing the foliage between two pieces of waxed paper and pressing the wax paper with a medium hot iron easily preserves the flexibility and the fall colors of foliage. New pieces of waxed paper must be used for each pressing.

**Glycerizing:** Allow the stems to take up and translocate a glycerin/water mixture. This is ideal for magnolia and mistletoe. Mature leaves work best, but younger leaves can be preserved, too. Some ivies, mahonia, eucalyptus, boxwood, beech, camellia, oak and rhododendron also do well if allowed to absorb glycerin. Using mature leaves, mash the stem ends of each branch with a hammer and place the stems in a warm mixture of glycerin/water (1 glycerin: 2 water, by volumes). Branches of mature leaves should be no longer than 18 inches, including the part of the stripped stem that is in the container of glycerin/water. It is important to remember that the cut branches will take up the glycerin/water mixture, so more of the mixture must be added to the container to replace that which has been taken up. Keep the solution depth at about 6 inches. After crushing the stems, some hobbyists place the plant material in a salt solution (1 tablespoon table salt/ gallon water) for 24 hours before placing them in the glycerin solution, reporting that this increases the uptake rate of the glycerin solution. If younger leaves are used however, they should be submerged completely in a 1:1 glycerin/water solution (vol./vol.), then washed once done.

You'll know the process is complete when the entire leaf turns golden brown. It may take two to three weeks before all the foliage is done. The leaves remain flexible, and wreaths made from glycerized magnolia leaves can remain beautiful for many years. Glycerin can be obtained from your local pharmacist. Unfortunately, it is not cheap. Request the technical grade of glycerin; it is less expensive than the laboratory grade.

In addition to their use in dried arrangements, dried foliage on floral picks make excellent wreaths. (See Wreaths on the world wide web at <http://www.clemson.edu/psapublishing/pages/hort/ec696.pdf>).

## Microwave Drying

Flowers with thick petals, such as magnolia and hyacinth, do not dry well in a microwave. For microwave drying, select flowers just before they are fully opened. Fully opened flowers will often lose their petals after microwave drying. Foliage dries exceptionally well in a microwave oven.

During drying, the flowers must be supported so that they dry in their normal form. A borax/sand mixture or kitty litter will do, but silica gel works best. Cover the flower(s) as described above under desiccants. Use a setting of 4 (that's about 300 watts) if the microwave oven has about 10 settings. If the microwave oven has a defrost setting, use that (about 200 watts). It takes about two and a half minutes to dry flowers in a half-pound of silica gel.

The best way to determine the length of time required is to employ a microwavable thermometer, which contains no metal. Place the thermometer into the silica gel about a half-inch from the covered plant material. Make sure that you can read the thermometer from outside the oven. When the temperature of the silica gel reaches about 160 °F, it is done! You do not have to be concerned about the strength of the oven (its setting) or the length of time to have it on. Actually, some flowers need to be heated to 170 °F, others to only 150 °F, but these are exceptions. For most, it is 160 °F.

When the container of dried flowers or foliage is removed from the microwave oven, place a lid (slightly cracked) on it, and allow it to sit for about 24 hours before carefully uncovering the flowers.

In alphabetical order, the following are just a few of the flowers that can be dried successfully in a microwave: African daisy (Gerbera), African marigold, astilbe, buttercup, chrysanthemum, cosmos, daffodil, daylily, delphinium, foxglove, goldenrod, hollyhock, hydrangea, larkspur, lilac, pansy, rose, sedum, tulip, witch hazel and zinnia.

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