

Methods for Drying Flowers - Investigating Techniques and Ingenious Applications of Dried Flowers

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Introduction

Dried flowers are natural blooms that hold long-lasting value and can be cherished for an extended period. "The process of drying flowers" involves preserving them by eliminating moisture. Dried flowers are simply dehydrated botanical elements and parts of plants. This category of dried flowers encompasses anything that has been dried, including blossoms, petals, buds, stems, roots, fruits, and leaves. Dried and preserved ornamental items offer numerous advantages, such as novelty, durability, visual appeal, versatility, and year-round availability. These naturally affordable and lasting dried or dehydrated floral items are accessible all year long. Commonly used flowers and foliage in drying techniques include Allium, Anemone, Carnation, Chrysanthemum, Daffodil, Freesia, Lily, Marigold, Narcissus, Pansy, Eucalyptus, Sweet William, and Zinnia.

Significance of drying flowers

1. The practice of drying flowers and foliage expands gardening activities without needing costly tools or extensive training, allowing for an array of designs to be created without sophisticated skills.

2. When carefully stored, packaged, and handled, dried ornamental plants can remain marketable for longer periods than fresh flowers, which quickly deteriorate and lose their quality. Dried plant materials make for unique interior decorations, are long-lasting, and require minimal maintenance.

3. Compared to fresh flowers, dried versions are more economical, renewable, and environmentally friendly.

Types of drying

1. Press drying
2. Water drying
3. Sun drying
4. Air drying
5. Embedded drying
6. Hot air oven drying

7. Micro wave

8. Freeze drying

Special preservation techniques

1. Coluring
2. Glycerine method
3. Skeletonizing

Press drying

Press drying involves placing plant materials between layers of absorbent paper, pressing or weighting them until they are fully dried, which takes at least five to ten days. Suitable papers include newspapers, phone directories, blotter paper, and tissues. This method requires harvesting flowers at the right stage, laying them on newspaper, and covering them with another piece of paper, although this may alter the flowers' shape. Suitable materials for pressing include Candytuft, Phlox, Chrysanthemum, Pansy, Rose, Daisy, Statice, Zinnia, Ferns, Silver Oak, Blue Gulmohar, Thuja, and Cockscomb.

Water drying

Water drying is effective for delicate petals that may break easily during drying. Flowers are harvested with some lower leaves removed and placed in a container with a few inches of water. The container should be kept in a warm, dry, dark area for 7-10 days, away from direct sunlight. Flowers such as hydrangeas, cornflowers, baby's breath, and a few others are quite effective when dried using water.

Sun drying

involves placing plant materials in a container filled with sand as a drying medium and exposing them to sunlight daily for rapid dehydration. In India, many flowers are dried in the sunlight. The flowers are pushed into the sand and sun-dried for one to two days. Flowers like Marigold, Rose, Poppy, Zinnia, Chrysanthemum, Acroclinium, Carnation, and Globe Amaranth can be sun-dried.

Air drying

Air drying is the most widely used and traditional method. This technique is very

straightforward and does not require additional tools. It is typically employed to dry crisp flowers. Flowers and leaves are harvested when they are immature, typically at the fourth stage, with lower parts of the plant being removed. Bunches are tied with thread and hung from a rope to maintain their shape; otherwise, they may become twisted. A well-ventilated, low-temperature space is ideal for air drying. Crisp-textured flowers, such as *Acroclinium*, *Delphinium*, oregano, *Rumex*, *Holmskioldia*, *Cock's comb*, *gomphrena*, paper flower, straw flower, chives, and artichoke, are suited for this method.

Embedded drying

This technique is excellent for preserving the shape, color, and size of petals. Once the flowers have fully matured, they are picked and placed in a desiccant such as silica gel, sand, sawdust, borax, perlite, or a combination of these materials. This process typically takes between 4 to 14 days, influenced by the thickness of the plant material, and requires good air circulation. A desiccant is a substance that has a strong affinity for moisture and is used as a drying agent. Desiccants support the flowers from all angles, helping them maintain their original shape, color, and size over a long period. The desiccant used must be very fine, with particle sizes ranging from 0.02 to 0.2 mm. Plants suitable for this method include *Gerbera*, *Rose*, *Chrysanthemum*, *Marigold*, *Dendrobium*, *Gladiolus*, and *Dianthus*.

Hot air oven drying

In this technique, containers are placed in a hot air oven set to temperatures of 40-60°C after the embedding process is finished. The material dictates the necessary temperature and duration for drying. While higher temperatures can speed up the dehydration process, they can also cause quicker degradation of pigments such as chlorophylls, carotenes, xanthophylls, and anthocyanins. *Chrysanthemum*, *Delplungum*, *Gerbera*, *Gomplarena*, *Helichrysun*, *Marigold*, and *Zinma* are flowers suitable for hot air oven drying.

Microwave drying

This rapid drying method generates less heat. It operates by agitating water molecules in the organic material using microwave energy to remove moisture. Drying takes about 5 to 10 minutes in the microwave. Once the process is completed, the flowers are taken out and left at room temperature for a set time to allow

any remaining moisture to evaporate thoroughly. Flowers that respond well to this method include *Lilies*, *Roses*, *Violets*, *Zinnias*, and *Dahlias*.

Freeze drying

This technique of freeze drying consists of lowering the temperature of the materials and then removing all moisture using a vacuum. It is currently the most effective method available for preserving flowers. This modern vacuum technique typically requires around four weeks, depending on the type of flower. Water vapor is collected in a separate chamber, and the dried flowers are gradually warmed to room temperature. Generally, this process takes 15 to 17 days for roses and 10 to 12 days for other flower types. Popular flowers that are dried through this method include roses, carnations, bridal bouquets, and pansies.

Special preservation techniques

Skeletonizing: This process involves the removal of soft tissue by soaking the material in water or an alkali solution for a duration of 7 to 10 days. Leaves with a heavy texture are particularly suited for this technique. The leaves are boiled for 40 minutes in 250 ml of water with two tablespoons of lye. A paintbrush is used to clean and remove the decayed tissue. The leaves are then rinsed in cold water to eliminate any remaining tissue and dried. Various dyes can be employed to quickly and easily color the material for enhanced appearance. This technique can be used for gifts, greeting cards, scrapbooks, collages, paper crafts, stamping, and for decorating wedding or birthday cards. For example, peepal leaves are often used.

Glycerine method: It's preferable to apply glycerine preservation to leaves rather than flowers. In this technique, the moisture within the leaf is substituted with an aqueous glycerine solution. Combine glycerine and warm water in a container that is 4 to 5 inches deep, using a 1:2 ratio. The drying process can take between 4 days and 2 weeks. As it dries, the foliage will develop an olive or bronze hue. This method produces remarkably high-quality outcomes.

Coloring

A procedure for artificially enhancing the colors of flowers using either natural or synthetic dyes. This technique enhances the visual appeal of flowers and is useful for crops that lack vibrant color, especially light or dull white flowers. Food dyes such

as bromocresol green, bromocresol blue, ammonium purpurate, and phenol red are employed for this purpose. Suitable flower crops include tuberose, spider lilies, candy tuft, white ixora, jasmine, chandni, and white varieties of gladiolus, carnation, rose, and orchid. The resulting hue from tinting is influenced by the concentration of the chemicals and the duration of treatment. There are two primary methods for artificially coloring flowers: dipping the flower heads (common for daisies) or the stem absorption method (used for carnations, tuberose, and gerbera). Typically, flowers that have been tinted through stem absorption retain color well.

Conclusion

The ideal drying method varies based on the particular product, the quality desired, available resources, and the objectives of the processing. Scientists keep investigating and refining drying methods to boost efficiency, lower energy use, and preserve or improve the quality of products, particularly for heat-sensitive foods and materials.

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