

# Dry Flower Technology



सीएसआईआर-हिमालय जैवसंपदा प्रौद्योगिकी संस्थान  
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Flowers continue to be an integral component of human life. Every occasion involves flowers, from greeting to funeral, from birth to death. Fresh flowers are the most beautiful but also expensive and perishable. On the other side, dried flowers are enduring, adds on aesthetics and available through out the year. In the new era of eco-consciousness, use of natural products like dry flowers and their parts has become the premier choice of the masses in their lifestyles for interior decoration. Preserving plant materials in a dried form is not a new idea; it has been considered an art for hundreds of years. The dried ornamental products offer a wide range of qualities like novelty, longevity, aesthetic properties, flexibility, eco-friendly, inexpensive and year-round availability. The market for the dry flower has grown exponentially as consumers have become “eco-conscious” and choose dry flowers as alternative to fresh flowers. Presently, dried flowers and other plant parts is a rupees hundred crore industry in India. Indian export of flowers is composed of 71% dry flowers exported mainly to USA, Japan, Australia, Russia, and Europe. India is one of the major exporters of dry flowers to the tune of 5 percent world trade in dry flowers. This Industry shows growth rate of 15% annually. Easy availability of products from forests, possibility of manpower available for labour intensive craft making and availability of wide range of products throughout the year are the reasons for development of dry flower industry in India. The range of dried flowers and other attractive plant parts is quite extensive, namely stems, roots, shoots, buds, flowers, inflorescences, fruits, fruiting shoots, cones, seeds, foliage, bracts, thorns etc. Different decorative floral craft items like cards, floral segments, candles, wall hangings, landscapes, calendars, potpourris etc. could be made by using dried flowers or foliage. Future prospects of the dry flower industry are expected to contribute a lot to the country's economy in comparison to the fresh cut flowers and other live plants.

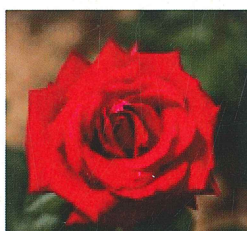
## Commonly used flowers for drying



Strawflower



Statice



Rose



Larkspur



Gazania



Globe amaranth



Hydrangea



Gypsophila



Chrysanthemum



Pansy

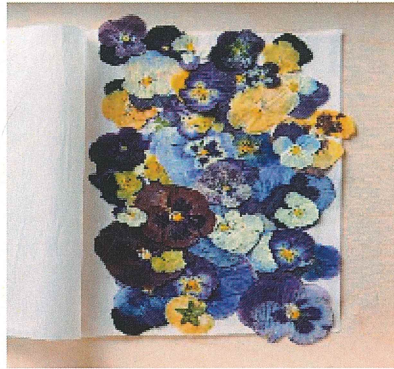
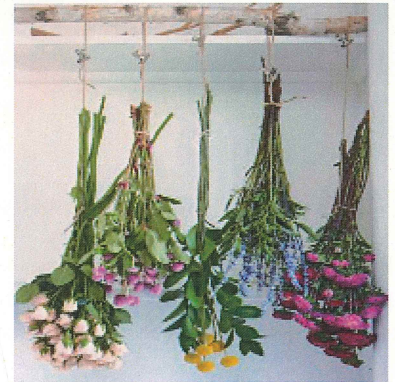
## Tips for collecting flowers

- Avoid collecting plants when they are wet or moist.
- Use a sharp knife or pruning shears to cut flowers and plant materials.
- Select plant materials that are without insect or disease problems.
- Place stems in water while harvesting to prevent wilting.

# Techniques of flower drying

## Air drying

Air drying is very easy and common method of flower drying where plant materials are attached to rope/wire and are kept in hanging position either in dark or in the sun for quick drying. Air drying requires a warm clean dark and well ventilated area with low humidity.



## Press drying

One of the most popular methods for drying flowers is to put them under pressure, to remove the moisture out while leaving the color of the flowers and structure intact. In press drying, the flowers and foliage are placed between the folds of newspaper sheets or blotting papers giving some space among flowers. These sheets are kept one above the other and corrugated boards of the same size are placed in between the folded sheets so as to allow the water vapour to escape.

## Embedded drying

In embedded drying, the water content of the flower is completely absorbed by the surrounding desiccant material. The commonly used desiccants are silica gel, borax, sand, corn meal etc., which remove moisture from the flowers more rapidly than air-drying besides retaining the flowers in their natural form.

## Microwave drying

This method is very fast for drying which generates less amount of heat. It works on the principle of liberating moisture by agitating water molecule in organic substances with the help of microwave. For drying it takes 5-10 minutes in microwave depending upon plant material to be dried.



## Hot air oven drying

Temperature plays an important role in drying of flowers and other plant parts and specimens are kept at controlled temperature conditions for a specified period of time in hot air oven. The drying temperature also varied from species to species and plant to plant.



## Freeze drying

Technically, freeze drying technology is the only process of preservation which removes moisture in such a way that the flowers maintain their original shape, texture and colour better than other methods. Freeze drying relies on the principle of sublimation, whereby ice held under conditions of partial vacuum and low temperature will evaporate on heating without going through a liquid phase. Bridal bouquets could be preserved without any damage by the technique of flower drying.

## Glycerin drying

A fantastic way to preserve flowers is to use glycerin. The flower absorbs the glycerin, replacing its water content with it. This method of drying keeps the flowers supple and bright. Many types of foliage have been successfully preserved by either immersing leaves or placing crushed stems in a 33 per cent glycerol solution.

At CSIR-IHBT, Palampur we have standardized the drying process for various cut flowers and foliages and come out with beautiful value added products. Apart from adding value to cut flowers and foliages this technology also make use of the flower parts and foliages which mostly goes unitized or waste. Various dried flower products developed at CSIR-IHBT, Palampur includes greetings cards, wall hangings, potpourris, floral candles, flower arrangements, paper weights etc.

### Glimpse of various dry flower products developed at CSIR-IHBT, Palampur



Wall hangings



Greeting cards

Flower arrangements



Paperweight



Potpourris



Candles

### **Packaging, handling and storage of dry flowers**

Dry flowers are very fragile and brittle in nature, so they should be handled with utmost care. Dried plant material should be protected from moisture throughout the marketing channel by placing a small quantity of silica gel at the bottom to absorb moisture. Different containers like glass desiccators, tin boxes and cartons wrapped with plastic sheets or wax paper are used for storage. Dried material should be protected from direct sunlight, place in warm, dark and well-ventilated area. Dried ornamental plant material should be stored separately and proper label should be fixed outside with complete description of the product kept inside, which will be very helpful during handling, transportation and marketing.

### **Women empowerment and employment generation**

Value addition of dry flowers is a helpful agenda in uplifting the gross income of economically weaker sections of the society as well as in the empowerment of the women. A cottage-scale industry based on floral craft can come up for self employment of unemployed youths and for earning money to the housewives as well as rural women through this creative occupation. We at CSIR-IHBT have standardized and simplified the technique in such a way that any group of people including uneducated rural men/women can learn it within two to three days. We have also organized several training-cum-workshops to train the rural women in drying techniques and dry flower products development. We are also encouraging women, un-employed youth to form self groups and adopt dry flower product development as an alternative for their livelihood generation.



**Training programmes organized by CSIR-IHBT, Palampur**

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