AgriCos e-Newsletter
ISSN: 2582-7049
Volume : 01 Issue : 05 September 2020 Article No: 18

New Flowers Suitable For Drying and its Drying Techniques

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SUMMARY

Dried and preserved ornamental products offer a wide range of qualities like novelty, longevity, aesthetic properties, flexibility and year round availability. Dry flowers are essential export items both in Indian and International markets and Indian export basket composed of 71% dry flowers which are exported to mainly USA, Japan, Australia, Russia and Europe. 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, barks, lichens, fleshy fungi, mosses etc. In addition to native and naturalized- plants number of cultivated plants especially flowering annuals Viz., Amaranthus, button daisy, celosia, dahlia, gomphrena, marigold, pansy, paper flower, salvia, straw flower, statice, bells of Ireland, etc. and other leading flowers like carnation, chrysanthemum, rose and lotus can be grown for dehydration. The beauty and fresh look of flowers can be retained only for a few days even when some flower preservatives or chemicals are used to prolong the shelf life.

INTRODUCTION

Floriculture occupation has become a lucrative business in many parts of the world. Cut flower is one of the main components of floriculture trade. Shelf-life of cut flower is restricted for few days. Despite the use of best flower preservatives for improvement of keeping quality and enhancement of vase life, the cut flowers cannot be kept for a long time. Non- availability of flowers during demand is another crisis.Rural and hilly areas are covered with different types of colourful flowers and foliage at different seasons round the year and all these are wasted under natural process. The entire seasonal colourful vegetations can be converted into value added products by using dehydration technique. Dehydration technology can also be exploited for dehydration of promising colourful cut flowers in its original colour and shape for long term enjoyment and for commercial utilization of unutilized/underutilized plant species. 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, barks, lichens, fleshy fungi, mosses etc (Desh Raj 2003). In addition to native and naturalized- plants number of cultivated plants especially flowering annuals Viz., Amaranthus, button daisy, celosia, dahlia, gomphrena, marigold, pansy, paper flower, salvia, straw flower, statice, bells of Ireland, etc. and other leading flowers like carnation, chrysanthemum, rose and lotus can be grown for dehydration A number of drying techniques such as air drying, sun drying, press drying, embedded drying, microwave drying, freeze drying, molecular sieve drying and cryo-drying, preservation techniques and value addition of dry flowers discussed in details

New Dried Flower in Global Market

Following are the ten important new dry flowers in international as well as national floriculture market. Description of each flowers are given below. Helichrysum, Helipterum, Limonium, Nigella, Gomphrena, Gypsophila, Delphinium, Celocia.

Helichrysum : *Helichrysum bracteatum* commonly called as everlasting flower or Strawflower belong to family Asteraceae native to Australia. Dried flower are used for winter decoration Flower are cut at half open stage before the yellow center are showing and are kept in hanging position. Air drying suitable for this flower.

Helipterum : Commonly called as Acroclinium, Immortelles or Everlasting flower belong to family Composite and originated from Australia. Actually the genus *Helipterum* include both Acroclinium and Rhodanthe. *Acroclinium roseum* bears rose colured flower and *Acroclinium roseum var. album* white colour flower. Flower are pure white, pink and shade of rose with bright golden yellow and dark colour centers. It is used for cut as will as dried flower.

Limonium : Common Name : Statice or Sea Lavender , Family : Plumbagiaceae Genus Limonium is native to Europe, Asia and Canary Island. Statice is a popular for garden decoration and cut flower. The dry flower are also used for indoor decoration.

Nigella :*Nigella damscena*, Common Name : Love in mist or Fennel flower Origin : Europe Finely cut foilage and attractive semi double white, deep blue or rose coloured flowers which remain surrounded by leaves. The persistent stigma in the seed pods resemble horns and used for decoration.

Gomphrena : *Gomphrena globosa*, Common Name: Globe Amaranth Origin : India. It is a rugged looking annual flower are round and clover like or button like in shade of white, orange, magenta, purple, rose and pink. Everlasting flower even the dried flowers look nice.

Gypsophila: *Gypsophila elegans* commonly called Babys breath Family: Caryophyllaceae. A dwarf, slender, lance shaped, gray leaved annual, bearing cluster of small white or pink flowers. Flower look like sprays of mist and are extensively used for flower arrangement and bouquets.

Celocia : *Celosia argentea* Common name: Cockscomb Origin : Tropical Asia. It has a branching growth habit and produce feathery flower spikes in pyramidal fashion resembling Ostrich plumes in various colours of silver, yellow, golden yellow, red and orange. The flower is good for cutting and can be dried for table decoration as the dried flower heads retain the colours for long time.

What is Drying?

Drying of flowers is a method of preservation of flowers or the method of removing moisture from the flowers. Dry flowers since ages have been integral part of every household décor. Dry flowers are nothing but dehydrated flower botanicals and parts of plants. Anything from flowers to petals, to buds, stems, roots, fruits and leaves in a dried form come under the domain of dry flower. These hydrated botanicals can be used in natural, dyed, bleached or preserved forms and its usage one's imagination and the sky is the limit.

Methods of Flower Drying

Air Drying

Air-drying is the easiest method of preserving flowers and plant materials. Many garden flowers and wild plants can be collected, tied together at the stem ends in loose bundles with rubber bands or pipe cleaners, and hung upside down in a warm, dry, dark area. With good air circulation, flowers take 1 to 3 weeks to dry completely. The room shall be well ventilated. This method requires very less inputs but takes long drying time. To reduce the drying time and to improve the quality of dried flowers, plant materials can be dried under tray dried or solar tray drier. Flower suitable for air drying are Helichrysum, Limonium, Acrolium, Rose, Carnation, Daises, Chrysanthemum etc.

Embedded Drying

To overcome the problem of petal shrinking, the flowers are dried in an embedding technique. The flowers or leaves are embedded in a drying medium, namely, silica gel or borax or white sand depending upon the plant material. Embedding in silica gel is perhaps the easiest and the best method of embedded drying of flowers (Bhutani, 1993; Dhatt et al, 2007; Desh Raj and Gupta, 2003). These materials cover flowers in such a way that the original shape of flowers is maintained properly.

Microwave Drying

Flowers are dehydrated within 5 – 10 minutes. Pots after taking out from micro wave oven are kept for two hours at room temperature for setting. Embedded flowers can be dried under microwave energy also. The plant material is embedded and then kept under the conventional microwave oven for 2-5 min for drying. The

drying time depends on the thickness of the plant material being dried. This method produces dried flowers of very god sensory quality with short time.

Pressing

A plant press is used to press the plant material in-between two absorbent materials like paper until it is dried. The pressed flowers are used to make 2D decorative items like greeting cards and wall hangings. The flowers and leaves are placed between the folds of newspaper sheets or blotting paper. Pressing is a method of preserving plants to use on pictures, stationery, place cards, etc. Flowers to press include: Aster, Bleeding heart, Buttercup, chrysanthemum, Columbine, Cosmos, Dahlia, Dogwood, English Daisy, Geranium, Larkspur, Lily-of-the-valley, Marigold, Pansy, Poppy, Rose, Sweet pea, Violet, and Zinnia.

Freeze Drying

Freeze drying plants and flowers typically results in the most natural-looking preserved materials. However, this approach requires specialized and expensive equipment and is best accomplished by professionals**.** The flowers are arranged in the specimen chamber, and then these are frozen unto -35^{o}C. By eliminating the water, the flowers dry up with life freshness and retain better integrity and more durability.

Glycerin Method of Preservation

In this method, the angular cut stem ends of berries and leafy material can be dried with their lower ends dipped in a mixture of 1:4 glycerine and water for 3 to 6 days for soft stems and 6 weeks for woody stems. After treating with glycerine, the plant material can be microwaved. *Flowers recommended:* Aspidistra, Hornbeam, Ivy, Hollyhock, Eucalyptus, Cotoneaster, Oaks, Oleander, Pittosporum, Maple, and Magnolia etc.

Polyset Drying

Humectants are used, Sugar and sugar alcohols (e.g. glycerol), Polyols (e.g. polythene glycol) Salts (e.g. KCL) Quaternary Ammonium Compounds (e.g. Comfort)

CONCLUSION

Dehydrated flowers have long lasting. Beauty and charm of fresh flowers can be retained only for a few days even by using some preservatives where dehydration of flower may play significant role. Most commonly available dry flower in Vidharbha and dry land area is Celocia, Amaranthus, Carthamus, Cosmos, Marigold and Flower of *Butea monosperma* etc. which is used for dried indoor decoration. Dehydrated flowers are good decorative items and which can be effectively utilized for making floral craft items, greeting cards, for arrangements in sealed glass/plastic containers, flower-vase, and potpourri etc.

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