

Tinting: an Art of Imparting Colours to Flowers

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SUMMARY

In nature, not all flowers are found coloured. Many of them, particularly those bearing fragrance are white in colour like tuberose, carnation etc. They generally do not bear pigments that impart white colour to flower petals. Hence, In order to increase the value and appeal of flowers along with fragrance, the flowers have to be tinted artificially. Tinting is value addition technique colouring white flowers artificially through pigmented vase solution. Imparting colours to flowers with food (edible) dyes improves the visual appeal of these flowers and increase their economic value. This technique provides a great range of colours and enhances the aesthetic sense. For decorative purpose where a particular colour is desired, tinting of white flower is an easy way of obtaining the color of interest. Hues of flower colour depend on type and concentration of dyes, duration and methods of tinting.

INTRODUCTION

Flowers are the wonderful creations of the nature and are one of the most beautiful gifts of nature and they are integral part of human life even before humans could find speech and alphabets for the dissemination of their ideas and feelings. Different flowers and their colours have played a very vital role in communicating a human feeling, emotion and thought since centuries and this is continued even after man has found verbal language to communicate and even today these flowers and their colours communicate our feelings and emotions with more impart than words. For example, roses convey and represent love, daffodil for regards etc. Similarly each colour has its own meaning to convey and represent. For example, roses are the most symbolic of all flowers, and they come in a variety of colours. Red represents love and passion, whereas white represents purity and innocence. Pink, on the other hand, represents elegance and grace, whereas yellow represents warmth and joy; however, not all colours are available in all flowers. So, in order to have a flower of our preferred colour, they must be tinted.

Tinting is an important value addition technique in flower crops where colour pigments are absent or light or dull. It enhances the aesthetic beauty of fresh flowers and increase their economic value. Tinting can be done with natural flowers by adding artificial colours or food colouring agents. The coloured inflorescences of the cut flowers with edible dyes enhance the appearance and appeal the arrangement to be more attractive. It can also provide a great variety of colours for aesthetic beautification. For decorative purpose where a particular colour or flowers of two colour is expected, then we can think of tinting for white coloured flowers. Certified synthetic food colours are less expensive and lead to minimum health hazards by imparting an intense and uniform colour (Sowmeya *et al.*, 2017).

Objectives of tinting

To produce unusual flower colours: There is always a high demand for particular flower of varieties of colour. Costumer preference for particular flower colour also keeps on changing with time and fashion.

To get higher economic returns: Tinted or dyed flowers are in great demand for various occasions and are sold at high prices in the market can add value up to 5 to 10 times (Kumar *et al.*, 2015).

To improve value of flowers: Aesthetic value of fresh and dry flowers is enhanced through tinting by making available various beautiful and unusual shades of flowers

Tinting process:

The process of tinting or dyeing the flower involves the theory of capillary action. Due to transpiration, the cut end of the stem absorbs more water to replenish the water that was lost. Once absorbed by the cut stem, water and everything it contains, including the dye, travel through the plant through the xylem. Different colouring chemicals like Bromocresol blue, Bromocresol green, Eosine red, Phenol red (Kumari and Deb, 2018) food dyes

like Orange red, Tetrazine red, Lemon yellow, Apple green, Phalsa blue (Patil and Dhauk., 2008) etc. are used for tinting flowers. Food colours are anionic and safe and better for tinting flowers. Dyes are available in both liquid and powder form. They are water soluble and are used to systematically dye fresh cut flowers that can be used freshly or as a dried or preserved product. Generally the concentration of the solution is 0.1-0.2%. The flowers are allowed to stand in this solution, overnight. After the desired colour is achieved, the tinted spikes are removed and washed thoroughly with water and then after placed in plain water. These tinted flowers can then be stored at 4-5°C for three days in dry cold storage after appropriate packaging. Actually, the period of tinting varies depending on the flower, the type and concentration of the dye used, the method of tinting, the length of the spike, and the desired colour intensity and pattern.

Tinting and dyeing flowers are accomplished through the methods of translocation, immersion and spraying. The intensity of colour induction will be greater along the floret margins than in the middle of the lamina. Tinting time for smaller flowers like candytufts and lady's lace is one to two hours. Tuberoses and Gerberas with herbaceous stems are also tinted within a few hours. Flowers with woody stems require more time to tint. Creating multiple shades in a single flower is possible by first immersing the flowers in one solution for a day and then transferring them to a solution of a different colour later. This will result in the tips of one color's flower petals and the bases of another color's flower petals.

Methods of application:

Tinting is applied through

- Stem dipping (Examples: carnation tuberose, gerbera)
- Dipping the flowers heads (Example: daisies)

Tinting through stem dipping is done with adding food grade dye solution with appropriate chemicals in a bucket of warm water of 41°C. The flowers to be tinted (usually white coloured) are allowed to stress overnight in packing house at 18°C to increase the rate of solution uptake. Dying is stopped before the flowers reach the desired colour, because dye still in the stem is flushed into the flowers by vase solution.

Tinting through flower heads dipping is carried through tinting solution containing aniline dyes dissolved in isopropanol. The head of the flowers are dipped in a dye solution and shaken to remove surplus solution and placed on a rack to dry



Tinting through stem dipping



Tinting through flower heads dipping

Flower crops suitable for tinting

Potential flower crops suitable for tinting are tuberose, candytuft, lady's lace, white varieties of gladiolus, roses, carnations, chrysanthemums, orchids, etc.



Tinted Tuberose



Tinted Rose



Tinted Carnation



Tinted Gypsophila



Tinted China aster



Tinted Chrysanthemum

Considerations for tinting flowers

- White flowers are best for dyeing because they achieve a single shade of the colour. Colored flowers can be chosen if one wishes to have multicoloured flowers. However, lighter shades, such as light pink, cream, and so on, should be preferred.
- For the best results, use freshly cut and opened flowers. They must be fully opened and developed.
- Using warm water promotes better colour absorption than cold water.
- Using a sharp knife, cut the flowers under water to prevent air bubbles and tissue damage from clogging the cambial layer of the stem.
- For better postharvest quality, tinting can be combined with pulsing treatment.
- While tinting, flowers should be placed at room temperature and optimum relative humidity should be maintained as these factors influence the intensity of colour induction in the flower.
- Stopping irrigation two days before harvesting improves flower colour.
- Tinted flowers should not be placed in clear water for more than 24 hours because the water will begin to wash the colour out of the petals, resulting in uneven patterns.

CONCLUSION

Tinting of flowers is an easy method to have brilliantly and uniquely coloured flowers at our disposal, anytime for any occasion. This technique of value addition in flowers has given chances to make the best use of the white coloured flowers by giving them novel hues and colour patterns. Tinting is usually done at the retailer level, however, if farmers adopt this technique at farm level and impart various colours to flowers it will increase value of the produce and fetch good price in market which in turn earn higher returns with this value addition technology.

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