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Evaluation of the best stage of harvest and pulsing solution for enhancing the vase life of Bird-of-Paradise

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ABSTRACT : The effect of different harvesting stages *viz.*, harvesting two days prior to commercial stage of harvest(S_1), commercial stage of harvest(one floret opened stage – S_2) and two days after commercial stage of harvest (two floret open stage – S_3) and pulsing treatments P_0(distilled water), P_1(5% sucrose + 200ppm 8HQS + 150ppm citric acid), P_2(10% sucrose + 200ppm 8HQS + 150ppm citric acid) P_3(15% sucrose + 200ppm 8HQS + 150ppm citric acid) for 48 hours was studied for better water relation and enhanced vase life of Bird-of-Paradise cut flower. It was observed that the flowers harvested at commercial stage and pulsed with 10% sucrose + 200ppm 8HQS + 150ppm citric acid for 48 hours had highest cumulative uptake of water, cumulative ratio of uptake of water and loss of water, less cumulative physiological loss in weight and highest vase life of (16.00 days). The cost effectiveness of floral preservatives used in the pulsing solution was also studied. Among which, the pulsing treatment 15 per cent sucrose + 200ppm 8HQS + 150ppm citric acid recorded maximum additional cost to additional vase life ratio (2.53).

KEY WORDS : Bird-of-paradise, Stage of harvest, Pulsing solution, Vase life

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Bird-of-paradise (*Strelitzia reginae* Ait.) a newly emerging cut flower, grown in the regions experiencing moderate subtropical climate. The flower got its name from its unusual appearence, which resembles the head of a brightly colored tropical bird. It is also called as crane flower. The genus *Strelitzia* belonging to the family Musaceae, includes about five species which are perennial herbaceous evergreen plants. They are *S. nugusta, S. reginae, S. kewensis, S. nicoli, S. candida*. Out of these, *S. reginae* is grown commercially for cut flower production which grows up to a height of 90cm. Bird-of-Paradise occupies a pride place in the garden and for vase arrangements. Senescence of cut flowers is generally attributed to the depletion of food and water, however, in ethylene insensitive flowers oxidative stress has also been suspected as one of the major cause of senescence. Post harvest senescence of many cut flowers can be delayed by harvesting the flowers at proper stage and by providing them with sugars and other biocides through pulsing or holding treatments. However, the stage of harvest and optimum concentration of pulsing treatments differ widely between the species. Therefore, the present investigation was undertaken to find out the effect of stage of harvest and pulsing solution for extending the vase life of Bird-of-Paradise.

RESEARCH METHODS

The investigation was carried out during November, 2010 and December, 2010 at the Department of Horticulture, Gandhi Krishi Vignana Kendra, University of Agricultural Sciences, Bangalore. Bird-of-Paradise cut flowers were harvested at three different stages *i.e.*, two days before commercial stage of harvest(S_1), commercial stage of harvest(one floret opened stage – S_2) and two days after commercial stage of harvest (two floret open stage – S_3). Immediately after harvest, the basal portions of the cut flowers were immersed in a bucket containing 6" tap water and were brought to the laboratory for imposing the treatments. The basal portion of the flowers were cut again under water and a uniform stem length of 60 cm was maintained. These flowers are placed in pulsing solutions comprised of P_0(Distilled water), P_1(5% sucrose + 200ppm 8HQS + 150ppm citric acid), P_2(10% sucrose + 200ppm 8HQS +