

**Title** Preservative techniques for exchanging internal moisture to make a processed flower having natural pigments

**Author** Hiroaki Ito, Takahiro Hayashi, Masaki Hashimoto, Katsuro Miyagawa, Saori Nakamura, and Susumu Yazawa

**Citation** Abstracts of 27th International Horticultural Congress & Exhibition (IHC 2006), August 13-19, 2006, COEX (Convention & Exhibition), Seoul, Korea. 494 pages.

**Keywords** postharvest; processed flower; preserved flower; LogP; pigment

### **Abstract**

A 'preserved flower' is made from a real flower by exchanging internal moisture with preservative, so its ornamental life exists over several years. Its appearance looks like a real flower than the more traditional dried flower in terms of flower color, texture and tissue flexibility. However, natural pigments are lost in this preservative process, so flower color is achieved by using artificial coloring materials. Therefore invention of a processed flower having natural pigments will contribute to diversifying processed flowers. A preservative technique for exchanging internal moisture to enable processed flower to retain natural pigments has been developed. A velvet blue carnation variety 'Moondust' was used; its blue color is due to delphinidin. The method consists of two processes. In the first process, cut flowers were immersed into preservatives (LogP: octanol/water partition coefficient is approx, from -0.271 to 0.344) to exchange internal moisture. For example, ethanol, acetone, 1-propanol, 1-butanol, 1,4-dioxane, ethanol/1-butanol=1:1 mixed solution is preferred embodiment to successfully exchange internal moisture, to suppress tissue shrinkage and to suppress natural pigments disappearance. In the second process, a fast drying treatment was used to suppress rapid tissue shrinkage. Absolute humidity is one reason for rapid tissue shrinkage. For example, silicagel embedding is embodiment. This method can be applied to other plant materials. Flowers processed by this method retain natural color the research is required to overcome these issues.