

Title Effect of polyamines on postharvest longevity of cut carnations (*Dianthus caryophyllus* L.), 'Pax' and 'Tabor'

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Citation Abstracts of 7th International Postharvest Symposium 2012 (IPS2012). 25-29 June, 2012. Putra World Trade Centre (PWTC), Kuala Lumpur, Malaysia. 238 pages.

Keywords Putrescine; spermidin; ethylene; sucrose; HQS; cut carnation; vase-life

Abstract

Carnation (*Dianthus caryophyllus* L.) is one of the most important cut-flowers grown worldwide. In cut-flower production, the attention is being paid to improvement of postharvest vase life. Carnation is highly sensitive to exogenous ethylene and its vase life is normally short without the use of preservatives treatment. Polyamines are aliphatic amines that are ubiquitous in all living organisms and regulate a broad spectrum of physiological processes. These compounds are anti-senescence ingredient that competes with ethylene in using from common precursor, SAdenosyl methionine (SAM). The onset of flower senescence can be significantly delayed by treatment with inhibitors of ethylene biosynthesis. Ethylene accelerates many senescence phenomena, e.g. flower senescence of carnations but polyamines tend to have protective effects. In this experiment, exogenous application of two polyamines (Putrescine and Spermidin) on the longevity of two cut carnation varieties, 'Pax' and 'Tabor' were studied. Cut carnations were harvested and held under standard environmental conditions, and treated with different concentrations of polyamines including 0, 1, 5 and 10 m μ , all with 4% sucrose and HQS, in vase solution. Vase-life, relative fresh weight (RFW), solution uptake, electrolyte leakage (EL) and chlorophyll content were the traits evaluated during the experiment. The results indicated that exogenous application of putrescine at the rate of 5m μ improved the vase life of 'Pax' variety up to 7 days compared with control. In 'Tabor' variety, Spermidin at 1 m μ had the best results and increased longevity up to 3 days compared with control.