

# Effects of treatments with nigerosylmaltooligosaccharide, glucose and sucrose on the vase life of cut snapdragon flowers

Kazuo Ichimura, Masayasu Takada and Koichi Ogawa

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## Abstract

Nigerosylmaltooligosaccharide (Nmo) has different degrees of polymerization (DP) of nigerosyl oligosaccharides and maltooligosaccharides. We investigated the effects of treatments with Nmo, glucose, sucrose, and their combinations on the vase life of cut snapdragon (*Antirrhinum majus*) flowers. To apply these sugars, the cut ends of flower spikes were dipped into these sugar solutions. Treatment with 30 g L<sup>-1</sup> Nmo promoted bud development, resulting in flower opening at the upper part of the spikes. The Nmo treatment also extended the vase life of cut snapdragons more than glucose and sucrose treatments when vase life was evaluated as the time to when all flowers wilted. However, there were few open flowers, flowers were smaller and aurone levels were lower in the Nmo treatment, suggesting that treatment with Nmo alone is not sufficient for improving the vase life of cut snapdragons. Combined treatments of Nmo with glucose and sucrose increased the number of open flowers and significantly extended vase life more than treatment with glucose or sucrose alone. The deleterious effects of Nmo, such as the reduction in flower size and suppression of pigmentation, were alleviated by these combined treatments. Nmo was fractionated using a carbon celite column into DP2, DP3, DP4, and DP> 4. Spike length was significantly increased by fractions DP4 and DP>4, suggesting that oligosaccharides containing these fractions largely contribute to the development of spikes. In conclusion, Nmo is a readily available oligosaccharide that could be used in the manufacture of preservatives to improve the vase life of cut snapdragons.