

Title Control of senescence in cut shoots of *Asparagus densiflorus* 'Myriocladus'
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Abstract

Studies on the postharvest performance of florist greens clearly lag behind those on cut flowers, although all these greens when used in flower arrangements should stay fresh at least as long as the flowers. Our previous findings have shown that the vase life of cut shoots of *Asparagus densiflorus* 'Myriocladus' can be extended by a 24 h pulse conditioning with gibberellic acid ($0.25 \text{ mmol}\cdot\text{dm}^{-3} \text{ GA}_3$) or with the Dutch commercial preservative Chrysal SVB[®] from Pokon & Chrysal. In the present study we report on experiments to evaluate the effects of these treatments, as well as the preservative Chrysal RVB[®] on various senescence parameters. GA_3 and both preservatives were applied as a 24 h conditioning treatment, after which shoots were placed into vases with distilled water. Shoots treated with water served as controls. Total proteolytic activity and cysteine protease activity, as well as changes in contents of soluble proteins, free amino acids and proline were determined during vase life. An increase in the proteolytic activity was observed during senescence of control shoots, with a concomitant decrease in soluble proteins and accumulation of free amino acids and proline. Pulsing the shoots with GA_3 or Chrysal SVB[®] significantly delayed the rate of changes in these typical senescence symptoms. On the other hand, in shoots treated with Chrysal RVB[®], which earlier was found unsuitable for asparagus, the proteolytic activity and protein content were similar to water controls, while free amino acids and proline contents were more or less abundant, respectively. The results presented in this study clearly show that GA_3 or Chrysal SVB[®] can exert their positive effects in extending the display life of cut *A. densiflorus* 'Myriocladus' shoots, by delaying several senescence-related processes in their cladodes.