

**Title** *Leonotis leonurus* as a potential new crop for cut flower production: a postharvest perspective  
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### Abstract

The large and successful Israeli flower export is based on introduction of new floricultural crops, according to the market trends and requirements. One of this new crops successfully introduced to Israel is *Leonotis leonurus*, which has attractive orange flowers with a decorative shape. Although it is easily grown in various regions, its postharvest life is limited due to improper flower opening and rapid senescence and abscission accompanied by color fading. Therefore, the aim of this work was to develop appropriate postharvest treatments, based on the use of sugars and ethylene inhibitors, for improving flower quality during storage and air transport. Our results show that *Leonotis* cut flowers respond positively to sugar treatments, applied either by a 24-h pulsing or as a continuous treatment in the vase solution. The ethylene action inhibitor, 1-methylcyclopropene (1-MCP), was found to be the most effective ethylene inhibitor in *Leonotis* cut flowers, which protected the flowers from ethylene effects for at least six days. Based on these findings, an optimal postharvest treatment was developed for *Leonotis* cut flowers, including pre-treatment with 1-MCP (0.2 ppm/2 h) combined with a 24-h pulsing in a solution of 10% sucrose and 0.2% 8-hydroxyquinoline citrate as preservative, followed by addition of 1.5% sucrose to the vase solution. This treatment inhibited flower senescence and abscission and prevented color fading. Consequently, a prolonged longevity of 12 days with fully open flowers was obtained after a 48-h air transport simulation. These postharvest treatments can enable a successful export of *Leonotis* cut flowers by air transport from Israel.