

Title Effects of cold storage on postharvest leaf and flower quality of potted Oriental-, Asiatic- and LA-hybrid lily cultivars

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Abstract

The effects of cold storage of mature potted plants on postharvest leaf and flower quality were investigated in several cultivars of three major groups (Oriental, Asiatic and LA) of hybrid lilies (*Lilium* spp.). Mature plants were stored in darkness at 3 °C for 2 weeks before placing them in a postharvest evaluation room (22 °C) and were compared with plants moved directly to the evaluation room. The efficacy of GA₄₊₇ plus benzyladenine (BA) treatments (applied just before cold storage) for preventing cold-induced postharvest disorders in each cultivar was also evaluated. In all cultivars, cold storage caused several adverse effects on postharvest quality, including accelerated leaf yellowing or browning, bud abortion and reduced flower or inflorescence longevity. Leaf abscission was observed only in Oriental-hybrids. Treatment with GA₄₊₇ plus BA significantly reduced these disorders and improved the overall postharvest quality after cold storage. While different cultivars differed greatly in their sensitivity to cold storage, all the cultivars benefited from GA₄₊₇ plus BA treatment. Experiments indicated that GA₄₊₇ plus BA treatments could be applied as early as 2 weeks before the mature bud stage without compromising the positive effects.