

Invited keynote lecture

POSTHARVEST QUALITY OF CUT LILY FLOWERS: A SURVEY

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The main symptoms that limit the vase life of cut lily inflorescences are leaf yellowing and tepal wilting. Lack of bud opening and bud abortion are other parameters that can affect the quality of vase life. In some Oriental hybrids the leaves show abscission.

Leaf yellowing is often aggravated by treatments with sugars. It can be prevented or alleviated by treatments with hormones, in particular with a mixture of the gibberellic acids GA₄₊₇, combined with benzyladenine, a cytokinin.

Tepal wilting is hastened by relatively low tepal carbohydrate levels. It can be delayed, by preventing the other parts of the cut inflorescence to act as a sink for carbohydrates. In a few cultivars tepal wilting can be delayed by a pulse treatment in which the inflorescence stems were placed in an aqueous sucrose solution. Tepal wilting is apparently not regulated by ethylene. In a few cultivars ethylene hastens wilting, but it is here been hypothesized that this effect might be due to advanced abscission and the associated xylem blockage by tyloses.

Lack of flower opening is apparently mainly due to lack of carbohydrates as it is alleviated by treatment with sugars. Inhibition of flower opening can also be induced by ethylene, for example ethylene produced as a result of stress.

A relatively short period of cold storage often drastically increases the number of buds that do not open. It also hastens tepal wilting, aggravates leaf yellowing, and in some hybrids promotes leaf abscission. Several lily hybrids seem therefore chilling-sensitive. Exceptions (cultivars that are chilling resistant) have been found among the Asiatic hybrid group. The negative effects of cold storage be alleviated by sugars. They are also often alleviated by a previous treatment with the gibberellic acids GA₄₊₇, with or without benzyladenine.