

Title Causes of quality loss of cut flowers - a critical analysis of postharvest treatments
Author U. van Meeteren
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Abstract

Temperature is one of the most important factors in the postharvest phase to control quality losses, yet temperature is still poorly managed, partly because its effects are not always understood well. Temperature affects both physiological (development and senescence of flowers, wound responses at the cut stem end) and physical (water loss, condensation/drying) processes involved in quality loss. Moreover, pathogens like *Botrytis* (germination rate of conidia) and growth of bacteria are affected by temperature. Handling, like placing flowers in water during transport or keeping them dry, re-cutting of stems or not, will interact with some of the processes affected by temperature. A previous simulation model, based on temperature effects on the rate of senescence and on the development of *Botrytis* infection, was extended by including the effects of temperature and handling on the water balance of the cut flower. Some outcomes of simulations of temperature combinations and handling in hypothetical chains are demonstrated. They showed that the effects of temperature in the chain can be largely overruled by properties of the crop or by the handling of the flowers. The model is meant to find and understand the critical points in postharvest cut flower chains. Most of the parameters are based on limited available data from literature or preliminary experiments. Moreover, the model is not validated. For these reasons, in its present status the model should not be used to predict vase life of cut flowers for practical purposes.