Title How important are bacteria for the vase life of cut gerbera flowers?

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Abstract

The vase life of cut flowers is mainly determined by the rate of development (including senescence), water relations (water uptake and transpiration) and *Botrytis* infection. Here we present the effect of temperature on the growth rate of bacteria and the fresh weight development of cut gerbera flowers. This is accomplished by controlling the vase water temperature independently from the air temperature. Air and water temperature combinations used were 15/15, 15/22, 15/28, 22/4, 22/22, 22/28, and 28/28 °C (air/water). In order to have the same transpiration rate, the water vapour deficit was kept at 0.92 kPa at all air temperatures. Other factors studied were the effect of cultivar and of a bactericide in the vase water. Bacteria numbers in the vase water were measured during vase life as well as fresh weight of the flowers. Water temperature and cultivar greatly affected the growth rate of bacteria. The effect of cultivar was correlated to the amount of sugars that were leaking out of gerbera flower stems into the vase water. Although the various treatments (water temperature, cultivar, and bactericide) affected the growth rate of bacteria, there was not always a clear correlation with fresh weight loss of the flowers. Vase life was mainly affected by air temperature.