

POST-HARVEST DEVELOPMENT OF CUT TULIP FLOWERS

Maarten Benschop and A.A. de Hertogh,
Department of Horticulture, Michigan State University,
East Lansing, Michigan, U.S.A.

The post-harvest growth of the tulip after forcing constitutes an important phase of the developmental cycle of this bulb species. In this investigation, several aspects related to senescence have been studied. They include the normal senescent growth characteristics of the entire cut flower, the growth of the last internode and perianth and specific studies on the influence of the floral organs and leaves on water uptake and growth of the last internode.

The studies reveal that the internodes and perianth of all cultivars of tulips tested continue to elongate after harvesting. The extent of the total growth of either a class or color range provided no basis for classification.

It was found that the greatest increase in growth occurred in the last internodal region. This internode accounted for an overall average of 52% of the total growth. The range of growth varied from a low of 43% to a high of 81%.

An analysis of the growth of the perianth revealed that the greatest increase occurred within the first 24 hours. The growth during this time period accounted for approximately 45% of the total increase. This increase was observed only when the flowers were cut in the bud.

Experiments were also conducted to determine the influence of the leaves and floral parts on the growth of the last internode. When no floral organs were excised, no consistent effect of the removal of the leaves was observed. The removal of the entire flower inhibited the growth of the internode. Also, when the whole flower was excised, the removal of the leaves enhanced the elongation of the internodes. By removal of specific floral organs, it was found that the gynoecium exerted the greatest effect. It also appears that the perianth has some effect. There was no interaction between these organs. The androecium does not appear to exert any influence.

Benschop 70

Benschop 70

Total water uptake was found to vary from cultivar to cultivar. The removal of the leaves as well as the flower decreased water uptake. Of all the floral parts, the perianth appeared to influence water uptake to the greatest extent.