

Abstract:

The maximum ethylene level that can be permitted in storage rooms, without causing damage to tulip bulbs, is not exactly known. Therefore, a zero-tolerance for the presence of ethylene during storage of tulip bulbs is common practice. This results in excessive ventilation and coherent large energy costs. It is questioned whether this is always necessary. In different phases of the storage period the critical levels of ethylene were determined. Bulbs of eight economically important cultivars ('Apeldoorn', 'Christmas Marvel', 'Leen van der Mark', 'Monte Carlo', 'Negrita', 'Prominence', 'White Dream' and 'Yokohama') were exposed to various ethylene levels. In the first experiment bulbs were exposed to ethylene for two days shortly after harvest. Only in the cultivar 'Apeldoorn' this resulted in gummosis. In two subsequent experiments later during storage, bulbs were exposed to various ethylene levels during five weeks. Bulbs were investigated on visible internal damage, flower quality and bulb production. Damage depended on applied ethylene level, cultivar and period of storage. Research will be continued to define tolerable ethylene levels, taking into account the cultivar and the developmental stage of the bulb.