

### Abstract:

Although much attention has been paid to the physiological processes associated with dormancy release during cold treatment of tulip bulbs, all analyzed metabolic processes have thus far not been sufficient criteria for measuring efficient low temperature treatment. The aim of this work was to analyze changes of endogenous flavonoids levels in leaves and anthers during cooling of tulip bulbs. The flavonoids are present as glycosides in leaves and anthers. During bulb cooling the leaf content of quercetin and kaempferol (after hydrolysis) substantially increased (in comparison to uncooled bulbs stored at 17°C). The anther content of quercetin and apigenin greatly increased during storage of bulbs at high temperature and was low in cooled bulbs. The level of kaempferol in anthers was higher in cooled than in uncooled bulbs. The possible role of these changes in dormancy release is discussed.