

Abstract:

'Braeburn', 'Gala' and 'Elstar' are very important apple (*Malus x domestica*) cultivars in the Styrian fruit production. 'Gala' has a good storage potential and an excellent shelf-life behaviour whereas fruit quality of 'Elstar' after storage is not satisfactory because of excessive fruit softening. 'Braeburn' is very susceptible to physiological disorders in the field and during storage. The storage potential of 'Braeburn' apples is limited by the development of a typical browning disorder within the fruit flesh called "Braeburn browning disorder" (BBD). The aims of these investigations were to prevent physiological disorders and to reduce quality losses during storage and shelf-life by using 1-MCP. 1-MCP applications effectively retarded softening on all varieties relative to the controls. Additionally the contents of titratable acid were higher in 1-MCP treated fruits. 1-MCP is a perfect agent to prevent quality losses during storage but is not able to reduce physiological disorders on Braeburn; the opposite effect was obtained by the 1-MCP treatments. The incidence of BBD increased dramatically.