

Abstract:

The red colour in apple peel is caused by anthocyanin pigments and is a major part of consumers' choice of apples. 'Rome' apple fruit were bagged with double lined paper bags in the orchard several months before harvest. This prevented any preharvest anthocyanin development. A factorial experiment using 1-methyl cyclopropene (MCP) and storage under fluorescent light at 20°C was conducted on preclimacteric apples. Peel colour, chlorophyll fluorescence and internal ethylene were measured for 28 days after harvest. Light was shown to be absolutely essential for the development of peel anthocyanins. All bagged apples stored in the dark did not develop full colour. Bagged fruit stored in the dark and treated with MCP remained green for the entire experiment whilst those bagged fruit without MCP treatment showed some red colouration and chlorophyll degradation. Bagged apples stored in the light, which did not receive MCP treatment, began to develop colour within one day, where MCP treated fruit produced some colour, but never to the same extent as fruit not treated with MCP. Colour development was also enhanced in control (non-bagged) fruit stored in the light but not those stored in the dark. Further work is continuing on the regulation of anthocyanin production.