

Abstract

Smart Fresh (1-MCP) prevents the ripening of fruit by blocking ethylene receptors and also prevents scald in the apples. Bramley's apple seedling is sensitive to both ethylene and scald. For successful long term storage, Bramleys must be dipped/drenched in DPA before storage and ethylene is scrubbed during storage. Due to the application of DPA, most growers also treat the apples with a fungicide added into the same dip. The use of 1-MCP eliminates the necessity of treating with DPA and uneconomical to then drench with a fungicide. Smart Fresh has been shown to work under local barn storage conditions up until December (three months). For an economic return on the use of Smart Fresh a much longer storage period is required and so in 2004 a large scale experiment was set up involving five local growers. Bins of Bramleys were treated with Smart Fresh (7 or 14 days after picking), DPA, or untreated and stored in non temperature regulated barns, or refrigerated at 4°C. The apples were sub sampled at monthly intervals from December 2004 through March 2005. Over the storage period Smart Fresh decreased the loss of quality as recorded by pressure tests, weight loss and colour loss. Smart Fresh treated apples in cold storage were of much higher quality in all respects over Barn stored apples. Where the application of Smart Fresh was delayed from seven to fourteen days after picking its effectiveness was reduced across all parameters measured.