

Title Evaluation of 1-MCP on storage quality of Bramley's apple seedling under controlled atmosphere storage

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Citation ISHS Acta Horticulturae 857:319-324. 2010.

Keyword ethylene blocker; fungicides; SmartFresh

Abstract

SmartFresh (1-MCP) prevents the ripening of fruit by blocking ethylene receptors and also prevents scald in the apples. Bramley's seedling is sensitive to both ethylene and scald which both have to be controlled for successful storage. Accordingly the apples are dipped/drenched in DPA before storage and ethylene is scrubbed during storage. During the application of DPA, most growers simultaneously treat the apples with a fungicide. The use of 1-MCP eliminates the necessity of treating with DPA for scald control, but it is therefore expensive to then drench with a fungicide. However, Bramley's grown in Ireland are susceptible to canker eye disease (*Nectria galligena*) which can cause severe losses in long term storage. Growers normally spray for apple scab (*Venturia inaequalis*) disease control until mid July and then spray calcium for storage during August. A range of fungicide treatments designed to control storage diseases was applied during July/August (2003). The harvested apples were then treated with 1-MCP or the standard fungicide/DPA dip or left untreated and stored at 4°C at 9%CO₂ and 12% O₂. The apples were removed from storage in January, March and June (2004). The field applied fungicides had no effect on the subsequent storage decay of the apples. The 1-MCP treated apples were of significantly higher quality at the end of the storage period in relation to pressure and colour over both the standard and control treatments. However, the 1-MCP treated fruit had significantly higher levels of canker eye. 1-MCP gave the same level of control of scald as the standard fungicide/DPA treatment.