

1-MCP (or 1-methylcyclopropene)

1-MCP, known commercially as Smartfresh™, is registered for use with pears in Australia. It is applied to fruit after harvest to slow down ripening. It does this by blocking ethylene receptors on the fruit, thereby inhibiting the ripening effects of ethylene gas. Specific recommendations for use are only available for cultivars Packhams and Williams.

Care should be taken when using MCP with Packhams as this cultivar tends not to ripen after application. 1-MCP does not protect against high CO₂ injury, low temperature damage or fungal pathogen development. Scald symptoms and yellowing were inhibited in Williams pears with 1-MCP but care is needed to ensure optimal application rate is applied, as 1-MCP can significantly inhibit post-storage ripening. The effects of MCP are not readily reversed by application of ethylene, and it is not clear what the best combination of MCP application conditions and storage conditions are to ensure optimum storage and ripening of pear fruit. Delay of softening during storage and associated incomplete ripening after storage can be a problem.

Further information

These Australian and international sites may be useful for growers. However they are intended as an information source only. Any specific recommendations may be outdated or irrelevant for Australian conditions and growers should seek local advice.

Australian Resources

[Smartfresh Recommendations for CA stored Packhams in Australia \(pdf\)](#)

[Smartfresh Recommendations for CA stored WBC pears in Australia \(pdf\)](#)

[Smartfresh Recommendations for RA stored WBC pears in Australia \(pdf\)](#)

Beth Mitcham, Jim Mattheis, Jenny Bower, Bill Biasi and Murray Clayton (2001) Responses of European Pears to 1-MCP. *Perishables Handling Quarterly* 108: 16-19.

Ekman, J.H., Clayton, M., Biasi, W.V., Mitcham, E.J. (2004). Interaction between 1-MCP concentration, treatment interval and storage time for 'Bartlett' pears. *Postharvest Biol. Technol.* 31, 127–136.

Villalobos-Acuna, M., Biasi, W., Flores, S., Mitcham, E. (2010). Pre-harvest application of 1-MCP influences fruit drop and storage potential of 'Bartlett' pears. *HortScience* 45(4): 610-616.