

#### Abstract:

The ripening and aging of many fruits and vegetables is controlled by ethylene. Ethylene is produced by the plants themselves and is also found in the environment. AgroFresh Inc., a Rohm and Haas Company, is commercializing the SmartFresh™ System to modulate the effects of ethylene. This unique technology works by diffusing nL/L concentrations of 1-methylcyclopropene (1-MCP) in a storage room to make fruit less susceptible to ethylene responses associated with quality loss. The result is that freshness is maintained, which translates to higher quality produce for the consumer. In the case of apples, 1-MCP is released inside standard apple storage rooms using the proprietary SmartFresh™ System. Among the challenges has been demonstrating that 1-MCP is released completely and diffuses quickly to treat all of the fruit uniformly in a commercial environment. We have already successfully treated commercial apple storage rooms as large as 3500 m<sup>3</sup> (about 900,000 kg of apples). This paper discusses the treatment technology, results confirming the complete and uniform release and diffusion of 1-MCP in commercial storage facilities, and efficacy on a commercial scale.