

Oxygen trick could see organic costs tumble

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A simple, cheap treatment using just oxygen could allow growers to store organic produce for longer and go a long way towards reducing the price of organic fruit and vegetables, reports Lisa Richards in *Chemistry & Industry*.

Currently UK shoppers have to pay twice as much for some organic products. Organic apples, for example, are around double the price of conventionally grown apples in Sainsbury's, Waitrose and Tesco.

One of the major contributing factors affecting the price is the short shelf life of organic produce. Conventional produce can be treated with inexpensive chemicals to aid preservation. But these cannot be used for organic produce, as by definition no artificial chemicals are used during processing.

‘With some organic fruit and veg, there can be large losses [during storage],’ Claudia Ruane, spokes person for Abel & Cole organic produce retailers told C&I. Ruane explained that although many organic farms do have reasonably sophisticated refrigeration units, there are very expensive and used only for brief storage before collection. ‘These are important and costly but if paying out for these facilities can ensure a whole crop is not rejected by a retailer because it is a little limp or dehydrated, then it is a cost that has to be absorbed,’ she said.

Edna Pesis and her team at the Volcani Center, Israel, have devised what they expect to be an effective and cheap technique to keep apples in cold storage for longer. A simple week long pre-treatment with low levels of

oxygen at 20°C was shown to prevent scald formation - a type of chilling injury associated with prolonged cold storage. Pesis said that 90% of the treated apples were 'saved from the scald problem in addition to other physiological diseases,' after eight months of cold storage. (Journal of the Science of Food and Agriculture DOI: 10.1002/jsfa2873). 100% of untreated apples were lost after eight months.

Pesis says that the technique can be tweaked for use with avocados, tomatoes and other organic produce.

Although price is an issue, organic produce is becoming more and more attractive to the consumer because of increasing evidence that it may be the healthier option. Organic peppers for example have been found to have 33% and 26% higher levels of vitamin C and phenolic compounds, respectively, than conventional peppers (JSFA DOI: 10.1002/jsfa2966). A recent study also revealed organic kiwifruit to be healthier than conventional (DOI 10.1002/jsfa.2820; C&I Issue 8 March 2007).

Source: Society of Chemical Industry

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