

Aussies Study Ethylene Levels In Fruits, Veggies

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An extensive 3-year study of ethylene levels in fruit and vegetable holding areas by the Center for Food Industry Research and Development, University of Newcastle, Australia suggests that there is no safe level of ethylene that does not cause a deleterious effect on postharvest life. These include wholesale markets, distribution centers, supermarket retail stores and domestic refrigerators.

The storage rooms at the distribution centers that held both climacteric and non-climacteric produce were predominantly in the high range. The ethylene levels thus suggest that the average loss of potential postharvest life, while non-climacteric produce is held in the wholesale markets or distribution centers, is substantial at 25-30%. If 5 PPB is assumed to be the lowest possible ethylene concentration that can be achieved in a postharvest situation, then holding any non-climacteric fruit and vegetable in 5 PPB ethylene will generate 100% of its possible postharvest life. The percentage loss in postharvest life at any higher ethylene concentration can then be calculated from the regression equations. Findings show that the percentage loss in postharvest life at 20°C for the 7 non-climacteric produce examined in the study ranged from 25-46%.

Although produce may only spend a small proportion of their postharvest life in each marketing situation, the effects of elevated ethylene levels are cumulative. The end result successive levels of moderate ethylene levels throughout marketing can be a very short life in the hands of the consumer. The industry should be seeking to minimize the impact of ethylene on produce at ALL stages of the marketing chain. The extended market life that would arise from a reduction in ethylene levels during marketing can lead to consumers having greater confidence in the purchase of fruit and vegetables with a resultant increase in sales volume and/or price.