Title Modified atmosphere packaging of fresh produce: Current status and future needs

Author Sandhya

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Abstract

Fresh produce is more susceptible to disease organisms because of increase in the respiration rate after harvesting. The respiration of fresh fruits and vegetables can be reduced by many preservation techniques. Modified atmosphere packaging (MAP) technology is largely used for minimally processed fruits and vegetables including fresh, "ready-to-use" vegetables. Extensive research has been done in this research area for many decades. Oxygen, CO_2, and N_2, are most often used in MAP. The recommended percentage of O_2 in a modified atmosphere for fruits and vegetables for both safety and quality falls between 1 and 5%. Although other gases such as nitrous and nitric oxides, sulphur dioxide, ethylene, chlorine, as well as ozone and propylene oxide have also been investigated, they have not been applied commercially due to safety, regulatory, and cost considerations. Successful control of both product respiration and ethylene production and perception by MAP can result in a fruit or vegetable product of high organoleptic quality; however, control of these processes is dependent on temperature control.