

Application of controlled or modified atmosphere for extension of shelf life of fresh products

P. Sharayei and Z. Hamidy Isphahany

Dept. of Food Science, College of Agriculture, Tarbiat Modarres University, Tehran.

Demand for agricultural fresh products is increasing because they have high value of nutrition and the current growing demand for "near fresh" quality and shelf - stable products has spurred the development of many innovative processing and preservation techniques.

Applications of CA/MA is caused either increase storage-Life or decrease waste. At the 19th scientists discovered that elevated CO₂ or reduced O₂ can delay catabolic reactions of fresh products and reduce growth aerobic microorganisms.

Two type of atmosphere are used comerically .

1) Modification of oxygen and carbon dioxide levels to give a total concentration which is the same as oxygen in normal air (21%) (CAS, MAS) 2) reduction in the total concentration of carbon dioxide and oxygen to 4-5% (CAS).

Generally , application of CA/MA not only for storage but also package fresh products is caused : reduction of respiration rate, lowering of ethylene production, extension of shelf-life with retention of quality attributes and conserving energy by excluding energy-intensive processes (e.g. freezing , thermal sterilization).