

Controlled atmosphere storage of fruits and vegetables

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Appropriate production practices, careful harvesting, and proper packaging, storage and transport all contribute to good produce quality. Controlled atmosphere (CA) storage involves altering and maintaining an atmospheric composition that is different from air composition (about 78% N₂, 21% O₂, and 0.03% CO₂) generally, O₂ below 8% and CO₂ above 1% are used. Atmospheric modification should be considered as a supplement to maintenance of optimum ranges of temperature and RH for each commodity in preserving quality and safety of fresh fruits, ornamentals, vegetables and their products throughout postharvest handling. Benefits of CA include i) Retardation of senescence (including ripening) and associated biochemical and physiological changes *ie.*, slowing down rates of respiration, ethylene production, softening and compositional changes ii) Reduction of sensitivity to ethylene action at O₂ levels < 8% and/or CO₂ levels > 1% iii) Alleviation of certain physiological disorders such as chilling injury of avocado and some storage disorders, including scald of apples iv) CA can have a direct or indirect effect on postharvest pathogens (bacteria and fungi) and consequently decay incidence and severity. For example, CO₂ at 10 to 15% significantly inhibit development of botrytis rot on strawberries, cherries, and other perishables. Low O₂ (< 1%) and/or elevated CO₂ (40 to 60%) can be a useful tool for insect control in some fresh and dried fruits, flowers, and vegetables and dried nuts and grains. Detrimental Effects of CA includes i) Initiation and/or aggravation of certain physiological disorders such as internal browning in apples and pears, brown stain of lettuce, and chilling injury of some commodities. ii) Irregular ripening of fruits, such as banana, mango, pear, and tomato, can result from exposure to O₂ levels below 2% and/or CO₂ levels above 5% for > 1 mo iii) Development of off-flavors and off-odors at very low O₂ concentrations (as a result of anaerobic respiration) and very high CO₂ levels (as a result of fermentative metabolism). iv) Increased susceptibility to decay when the fruit is physiologically injured by too low O₂ or too high CO₂ concentrations.

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Organic foods: An investment for health

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Consumer awareness for health and safety has been a key factor that influences consumer preference for organic food. The day to day experienced deterioration in human health motivates consumers to buy organic food as insurance and/or investment in health. Organic food which is produced without using conventional pesticides, fertilizers is a better option to choose for consumer. The increasing awareness for the importance of high quality food & nutrition, rising income, working women are few of the factors providing impetus for growth of Organic Food Market. Healthy life style is triggering factor for attitude towards organic foods and today's generation is known to be socially conscious and environment-friendly henceforth this attitude directly influences the purchase decision. The characteristics of organic food may therefore be an input into the consumer's demand function for good health while the price of organic food becomes the cost of the investment in good health. The consumer is ready to pay premium prices for the Nutritional (high fiber, minerals & vitamins etc.) and the value attributes (such as taste, aroma, physical appeal etc.) of organic foods particularly in Metro Areas where disposable income is increasing with increasing no. of working professionals. However, due to shortage of supply the prices are higher. If the supply is regulated with easy availability of Organic Foods then the demand will be increased exponentially & will lead to affordable pricing. Thus, Organic foods will certainly prove to be the "Food For Thought" in changing times..

Biography

Sneha Chawla is a graduate in B.Sc. (App.Sc.) Food Technology and Gold Medalist in MBA (Agri & Food Business) from Amity University, Noida. She is currently working as Agri Business Faculty in Amity Institute of Organic Agriculture. Her area of interest is in Research in Field of Consumer Behavior for Food Products, Food Marketing and Rural Marketing etc. She is a certified professional for Food Safety and quality Management Systems (FSMS/QMS) from SAI Global and Six Sigma Green Belt from BSI. She has also undertaken academic projects with industries like Britannia Industries, Mother Dairy pvt. Ltd., New Delhi, Nirula's Pvt. Ltd.

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