



- Enough refrigerated coil surface to minimize the difference between the coil and air temperatures.

Commodities should be stacked in cold rooms with spaces between pallets and room walls to ensure good air circulation. Storage rooms should not be loaded beyond their limit for proper cooling. In monitoring temperature, commodity temperature rather than room temperature should be measured. Cooling slows down the plant activity thus bud opening and senescence and eventual death is delayed on pre-cooled roses. This is essential due to the long journey from Kenya to Holland and eventually to respective customer destinations across the world. Pre-cooled flowers have less problems with postharvest

related diseases e.g. botrytis and over maturity complaints among the customers. The quality is preserved by reduced chances of dehydration thus longevity in the vase. Despite the high installation costs, there is still a lot that needs to be done to uphold the high quality of roses to end consumer. Staff awareness and training form some of the basic ideas that need to be developed to achieve the ever rising consumer demand for better quality.



By George Njogu-Postharvest Manager-Kongoni R. Farm

produce and without doubt has the greatest impact on the deterioration of produce in post-harvest life. The higher the storage temperature of fresh produce, the greater is its rate of respiration. The rate of deterioration of horticultural produce increases two to three-fold with every 10°C increase in temperature. Temperature control may be done by one of the following methods of cooling: evaporative cooling, room cooling or forced air cooling. Cold storage facilities should be;

- Well engineered and adequately equipped.
- They should have good construction and insulation, including a complete vapor barrier on the warm side of the insulation.
- Strong floors .
- Adequate and well-positioned doors for loading and unloading .
- Effective distribution of refrigerated air.
- Sensitive and properly located controls.



Application of Modified Atmosphere Packaging for Fresh Fruits & Vegetables.

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Fruits and vegetables are living, respiring and perishable products with active metabolism even after harvest from the parent plant. Nearly all products are packaged at some point in their life cycle. When packaging vegetables and fruits the gas atmosphere of package is not air (O² – 21%; CO² – 0.01%; N² – 78%) but consists usually of a lowered level of O² and a heightened level of CO². This kind of package slows down the normal respiration of the product and so prolongs the shelf life of the product.

The key to keeping these packaged products fresh for a long duration is to reduce the respiration rate without harming the quality of the product (its taste, texture and appearance). In general, respiration rate can be reduced by keeping the

temperature low, having lower concentrations of oxygen in the packaging atmosphere and increased levels of carbon dioxide. However, excessively high levels of carbon dioxide can damage some varieties of products. The storage life and quality of fruits and

carbon dioxide) to provide an optimum atmosphere for increasing the storage length and quality of produce. Modified atmospheres can be achieved by using modified atmosphere packaging (MAP).

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vegetables can be extended by modifying the atmosphere surrounding products. A modified atmosphere can be defined as one that is created by altering the normal composition of air (21% oxygen and 0.03%

ways to package food to help it stay fresher for longer on the shelf. New technology such as modified atmosphere packaging can provide more options, but it can also provide an environment for pathogens to grow!

MODIFIED ATMOSPHERE PACKAGING:

Plastic films are widely used in packaging, and continue to grow in use as more and more applications switch to flexible packages such as modified atmosphere packaging (MAP). In these packages, plastic films may be used alone or in combinations to serve the basic packaging functions of containment, protection, communication and utility in the delivery of quality products to the consumer. Modified atmosphere packaging (MAP) is a packaging technique used to extend the shelf life of fresh food. The types of food stored this way include vegetables, salad greens, pasta, meat, fruit, cheese, seafood and bakery products, such as sandwiches. It (MAP) is an

