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USE OF MODIFIED ATMOSPHERE PACKAGING LINE FOR LONG-TERM STORAGE OF AGRICULTURAL PRODUCTS

Abdullaev Dilmurodjon Dilshodjon o'g'li
Khamidova F.Yu
Tashkent State Agriculture University

Abstract

In this article, MAR protects food and fruit and vegetable products from oxygen and external moisture, oxygen does not prematurely age the product and does not cause moisture deterioration or encourage the growth of bacteria, in MAR machines it balances the atmosphere inside each package, i.e. removes O2 from the package and replaces it. This is done by inserting N2 so that pressure and volume are maintained appropriately without damaging the package or product.

Key words:Modified atmosphere packaging, shelf life, oxygen, inert gas ie N, fruits and vegetables, visual appeal, export, chemical additives, preservatives.

The main problem faced by food industry enterprises and exporting enterprises exporting fruit and vegetable products is the need to keep their products fresh for as long as possible. As globalized markets grow and consumers increase their demands for long-lasting food products, the need for innovative food preservation methods is becoming increasingly important for food manufacturers who want to stay relevant in a highly competitive market. An increasingly popular solution to food and fruit storage problems is the use of modified atmosphere packaging. Such a change in the immediate atmosphere inside the packaging of food and fruit and vegetable products significantly increases the shelf life.

This type of packaging is not used at all in Uzbekistan, it comes as an import from China and other countries, the field of application is expanding very much. All raw materials for production are found in Uzbekistan.

Modified atmosphere packaging (MAR) is a new type of packaging that has begun to develop in countries around the world. Modified atmosphere packaging (MAR) increases the quality and shelf life of the finished product during storage and transportation, which reduces the probability of damage several times, which

reduces financial losses. At the request of the customer, informational advertising information is applied on the outer surface of the modified atmosphere packaging.

Modified atmosphere packaging allows packaging of natural and unprocessed food and fruit and vegetable products to extend product shelf life. This increases the quality of the product image, texture and nutritional appeal. Because MAR does not require chemicals to maintain product freshness, it is more attractive. Improved processing and marketing of food and fruit and vegetable products thanks to modified atmosphere packaging. MAR provides consumers with fresh and tasty products. Modified atmosphere packaging works by sealing food and vegetables in a package containing a gas mixture that significantly slows the growth of microorganisms and the rate of oxidation. Under this control, the shelf life of food and fruit and vegetables without atmosphere is extended and the quality level of the product is more stable throughout the shelf life. A typical mixture of gases used for this purpose would be nitrogen, pure oxygen, and some mixture of carbon dioxide.

Modified atmosphere packaging is a control used to affect the environment inside the packaging by reducing the amount of oxygen. The goal is to preserve the freshness and quality of the food and fruits and vegetables contained in it for as long as possible. The main problem faced by food industry enterprises and exporting enterprises exporting fruit and vegetable products is the need to keep their products fresh for as long as possible. As globalized markets grow and consumers increase their demands for long-lasting food products, the need for innovative food preservation methods is becoming increasingly important for food manufacturers who want to stay relevant in a highly competitive market. An increasingly popular solution to food and fruit storage problems is the use of modified atmosphere packaging.

The advantages of modified atmosphere packaging for storage and transportation of food and fruit and vegetable products are as follows:

★ Longer shelf life compared to other traditional storage and packaging methods

- ★ Improve the visual appeal of packaged products
- ★ Keeping food and fruit and vegetable products fresh for a long time
- ★ Elimination of chemical additives, preservatives
- ★ Keeping the original flavors of the original food and fruit and vegetable products.

The innovative project being organized, along with meeting the needs of entrepreneurs in Uzbekistan, will localize the direction of modern and new style packaging of food and fruit and vegetable products, will effectively affect the increase of export potential. This allows to keep the food and fruit and vegetable products, which are becoming relevant in Uzbekistan, in a natural state for a long enough time. Residents of Fergana region are the leaders in exporting fruits and vegetables. This modified atmosphere packaging will further increase the export potential. Modified atmosphere packaging (MAR) is the practice of changing the internal atmospheric composition of a package to improve shelf life. There is a great demand for this technology for food and fruit and vegetable products. In food and fruit and vegetable products, oxygen is easy for lipid oxidation reactions. Oxygen also helps to maintain a high respiration rate of fresh produce. The conversion process usually reduces the amount of oxygen (O2) in the package cavity. Oxygen is replaced by nitrogen (N2), a relatively inert gas, or carbonic anhydride (CO2).

As the demand for fresh and healthy food and fruit and vegetables increases, suppliers need a way to meet this demand. This is where modified atmosphere packaging (MAR) comes into play. This packaging technology adjusts the ambient atmosphere surrounding food and vegetables by removing some of the oxygen and replacing it with a mixture of carbon dioxide and nitrogen.

Summary.

MAR protects food and fruit and vegetable products from oxygen and external moisture. This ensures that oxygen does not prematurely age the

product and does not cause moisture spoilage or encourage bacterial growth.

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