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Ecodesign in food packaging

UNIT 11: Modified atmosphere packaging

Quiz and Assignment

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Quiz

- 1) For meat, chicken, bakery and similar products for meat, chicken, bakery and similar products the process of changing the atmosphere in the packaging follows:

A. Reduce the amount of oxygen (O₂) by moving it from 20.9% in air to 0% to slow the growth of aerobic organisms and prevent oxidation reactions. Removed oxygen can be replaced by nitrogen (N₂), inert gas or carbon dioxide (CO₂), which can reduce pH or inhibit bacterial growth. Carbon monoxide can be used to preserve the red color of the meat.

B. To ensure the breathing of the food, O₂ must penetrate into the pack and CO₂ is removed.

C. Use materials with good barrier properties.

Answer A

- 2) Modified Atmosphere Packaging (MAP):

A. Use laminated aluminum foil and PE foil for packaging.

B. Use multiple layers of laminated or extruded plastic.

C. Can use active materials and objects to resolve passive MAP deficiencies.

Answer C.

- 3) The small concentration of O₂ leads to:

A. Preventing the growth of microbial flora.

B. Avoiding Dehydration.

C. Reduce breathing rate.

Answer C.

- 4) The oxygen transmission rate, also called "OTR" for a plastic film, is:

A. Approx. 3-5 times lower than CO₂ and about 5 times less for N₂.

B. Five times higher for CO₂.

C. Five times higher for N₂

Answer A.

- 5) In the gas scrubbing process:

A. Remove the incoming air by causing a depression of the atmosphere inside the packaging and then fill the package with the desired gas mixture with this depression. The packaging is then sealed.

B. Replacing air inside the MAP is carried out by a direct current with the desired gas mixture. This gas stream dilutes air from the atmosphere surrounding the food product. The packaging is then sealed.



C. Air is removed from the inside by pressing and then the package is sealed.

Answer B

6) Thermoforming machines make the modified atmosphere by:

- A. Vacuum compensated and sealing
- B. Washing of gases with overpressure and sealing.
- C. Vacuum chamber with preformed trays.

Answer A.

7) Gas washing, filling and closing machines make:

A. A sealed pouch that is filled with the packaged food, whereupon the necessary gas mixture is introduced through a tube.

B. A tray filled with packaged food from which the air is removed by depression, after which it is filled with the required gas mixture and is sealed.

C. A bag that is filled with the packed product and then sealed.

Answer A.

Assignment

1. Briefly describe the Modified Atmosphere Packaging (MAP) processes, the advantages and disadvantages of MAP and the reasons for the MAP approach to the economy.

