ISEKI - Food 2

INTRODUCTION OF PACKAGING

- **Packaging** is the science, art and technology of enclosing or protecting products for distribution, storage, sale, and use. Packaging also refers to the process of design, evaluation, and production of packages.

- Packaging is heavily integrated into our daily lives
- the main use for packaging is protection of the goods inside,
- packaging also provides us with a recognizable logo, or packaging

Packaging Sector is an Important Global Industry

- representing about 2% of the Gross National Product (GNP) of the developed countries
- Packaging industry is about 345 million euros worldwide (Europe represents 1/3)
- 50% of this market is packaging for food

FOOD PACKAGING HAS DEVELOPED STRONGLY DURING RECENT YEARS;

✓ Designing and manufacturing of packaging materials is a multi- step process and,

✓ involves careful and numerous considerations to successfully engineer the final package with all the required properties.

- product safety,
- shelf-life extension,
- cost-efficiency,
- environmental issues,
- and consumer convenience

- ✓ Innovative modified- and controlled-atmosphere packaging,

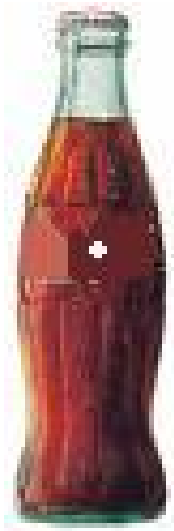
- ✓ active and intelligent packaging systems

are being developed, tested and optimized in laboratories around the world

Packaging of a product affects every aspect of its design and performance,

- Flavor,
- Integrity,
- shelf life,
- minimizing damage resulting from microbial attack,
- safety
- cost
- and brand image

- Not only focusing on developing economic and effective packages for protecting the food products,
- But also on the aesthetic value of the packages.



FUNCTION OF PACKAGING

After such as drying and freezing processes, packaging control the product exposure to the effects of oxygen, light, water vapor, bacterial and other contaminants

- Passive role; protecting and marketing the product
- Active role; processing, preservation and in retaining the safety and quality of foods throughout the distribution chain

Packaging plays an important role in the whole food chain “from field to consumer’s table”

- The primary function of food packaging is

  - minimize the transfer of heat and light energy

  - prevent gas transfer from outside to inside and *vice versa*

  - prevent the physical damage by external force or pressure and the contamination of dust and foreign elements

- The secondary function is to facilitate distribution of the product to the consumer

- Other functions are;
  - Communication
  - Dispersing and dispensing
  - Unitization

THE MAIN MARKETING CONSIDERATIONS FOR A PACKAGE ARE:

- the brand image and style of presentation required for the food
- flexibility to change the size and design of the containers
- compatibility with methods of handling and distribution, and with the requirements of retailers.

THE FOOD MANUFACTURER'S OBJECTIVE IS;

- ✓ to design an optimized package which satisfies all legislative, marketing and functional requirements sufficiently,
- ✓ and fulfils environmental, cost and consumer demands as well as possible
- ✓ Foods are dynamic systems with limited shelf-life and specific packaging requirements

DESIGN OF A FOOD PACKAGE

- What are the basic functions required?
- How does the food affect pack choice?
- What are the cost constraints?
- What are the environmental impacts?

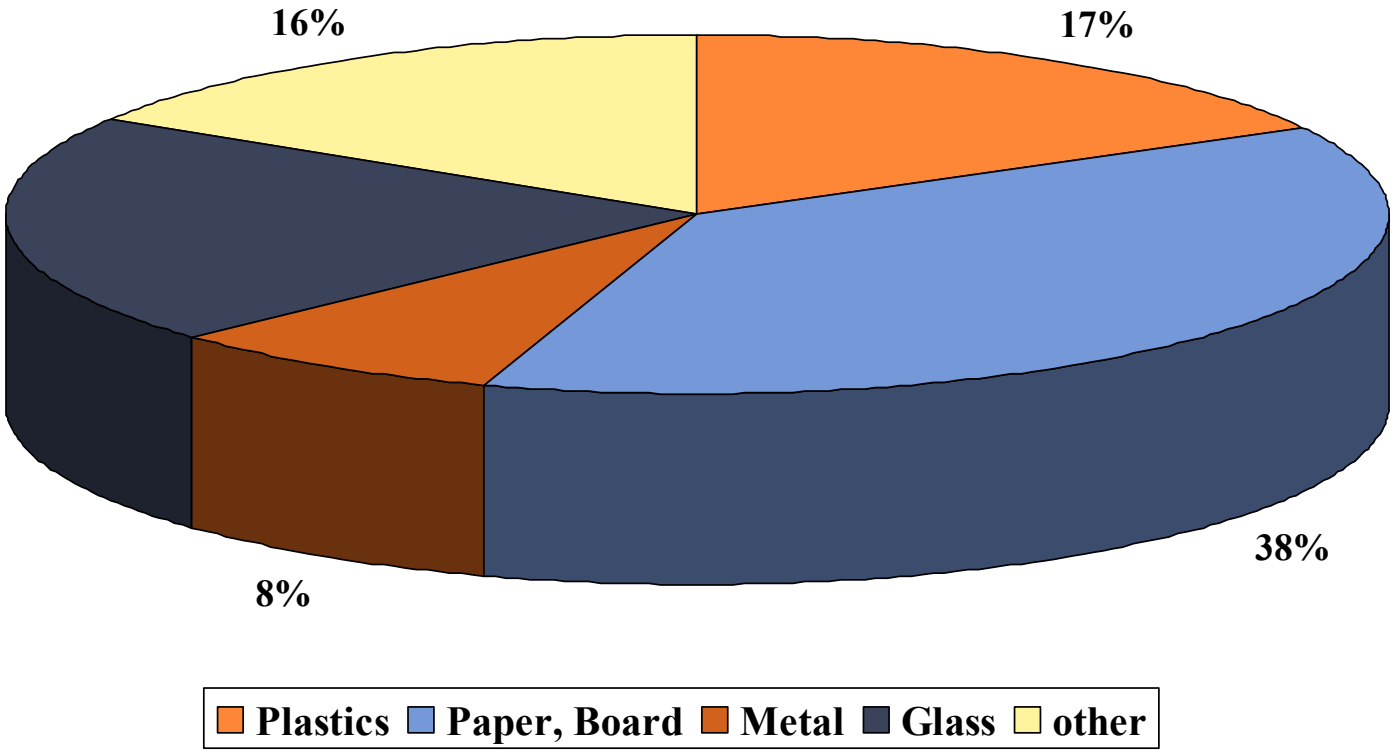
MATERIALS USED AS FOOD PACKAGING

- Paper and board (35%)
- Glass (10%)
- Metal (20%)
- Ceramic
- Plastics (30%)
- Composites
- Regenerated cellulose films

Aseptic Package Materials

- Plastics are the most common material used for aseptic packaging
- Glass, metal, etc.

Packaging by Medium



Selection Criteria for Packaging Materials

- Product Protection
- Convenience
- Sales Appeal and Package Decoration
- Product Package Compatibility
- Packaging Machinery
- Package Sealing Efficiency
- Package Strength
- Statutory Requirements
- Material Availability
- Cost

Food packaging techniques

- Vacuum packaging
- Moderate vacuum packaging
- Active packaging Edible coatings and films
- Modified atmosphere packaging
- Aseptic packaging
- *Primary, secondary and tertiary packaging*
- *Combination materials*

Packaging Systems

- Systems for gable-top paperboard cartons
- Systems for plastic bottles,
- Systems for plastic cups
- Form in Line.
- Preformed Bottles.
- Plastic Bottles.
- Gable-Top Paperboard Cartons
- Tetra Pak wedge
- Bag in box
- Stick pack

FUTURE PACKAGING DEVELOPMENTS

- ✓ Polymers with more desirable properties
- ✓ New packs and formats
- ✓ Environmental sustainability
- ✓ More cost-effective functionality

Greater use of:

– Modified atmosphere packaging (MAP)
– Edible films and coatings
– Active and intelligent packaging

THE FUTURE OF FOOD PACKAGING

- Compostable biopolymer plastics have the potential to gain a significant percentage of the plastic food-packaging market share in the next 10 years.

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