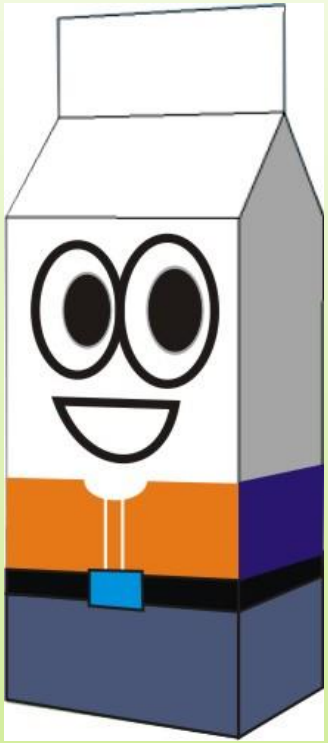
OVERVIEW OF PACKAGING



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SPECIFIC LEARNING OBJECTIVE

After learning, the participants are able to understand:

(1). The meaning of packaging .

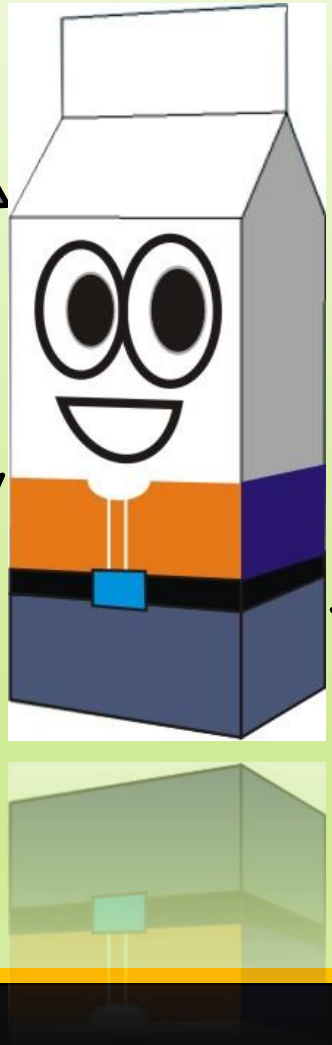
(2). The packaging function

(3). The caracteristisc to consider in the display packaging.

(4). The packaging for fruit and vegetable.

What is Packaging ?

Is one way in the process of providing a good and hygienic food for the moment until the consumers is still in good condition



Product which contain other poduct

Combined science, art and technology to protect the product

Something to protects a product from the interaction of substances around it so that it can maintain product quality

Food Packaging

http://www2.dupont.com/Packaging_Resins/en_US/whats_new/article05282009c.html

http://www.brown-machine.com/food-packaging-thermoforming.html

http://www.thedailygreen.com/healthy-eating/latest/wasteful-packaging-for-food

Food Packaging - Definition

- **Food packaging**

"Is the science, art, and technology of enclosing or protecting food products for distribution, storage, sale, and use" (Soroka, 2002)

Packaged Foods

http://www.brown-machine.com/food-packaging-thermoforming.html]

Packaged Foods

http://www.diwinprint.com/Packaging.html

Plastic bottles - Juices

http://www.freshplaza.com/news_detail.asp?id=9674

What are the Functions of Food Packaging ?

- Physical protection - Shock, Compression , Temperature, etc.
- Barrier protection - Increase shelf life
- Protect nutritional and sensory characteristics
- Containment or agglomeration - small items grouped together

Physical protection

http://www.squidoo.com/packaging-

Ground beef

http://www.google.com/imgres?q
food+packaging

Fruits & Vegetables

Nitrogen flushed - Chips

http://www.barefoodsnacks.com/index.php/
food_service/product/p/kettle_cooked_chips/

Polythene

http://www.labelmaster.com/shop/shipp
ng/
poly-bags/2-mil-poly-bags

What are the Functions of Food Packaging ? contd..

- - Information transmission - Labelling and Regulatory
- - Marketing – Attract and encourage kids and adults
- - Security – Tamper-evident, Tracking and Surveillance
- - Convenience - Handling, Distribution, Re-use, Display and Sale
- - Portion control – Suitable size for individual households

Labeling

http://elifoundation.org/

Marketing

http://valuethemeal.blogspot.com/2010_06_01_archive.html

http://www.tamperevidentlabels.com/TEL/Stop-Signed-Shaped-Templates.aspx

Microwaveable Vegetables

http://www.health.com/health/article/0,,20410419,00.html

What are the Functions of Food Packaging ? contd..

Contain the product and keep it intact

Examples:

- Liquid products do not leak and dry materials do not spill out
- Special design packaging that is shaped especially to contain a particular food

E.g. Egg cartons

http://www.mavenofsavin.com/2010/04/


http://www.apartmenttherapy.com/hy/slinks/green-tour-harbinger-

PACKAGING CLASSIFICATION

Packaging can be classified based on several ways, namely:

1. Classification of packaging based on frequency of use:

a. **Disposable packaging**, which is packaging that is immediately disposed of after use. Examples of plastic wrap for ice, candies, wraps made of leaves, cartons of fruit juice drinks, hermetic cans.

Contoh Kemasan Gelas

Contoh Kemasan Metal

PACKAGING CLASSIFICATION Conti.....

b. Packaging that can be used repeatedly (multitrip), for example: beverage bottles, syrup bottles. Repeated use of packaging is associated with the level of contamination, so cleanliness must be considered.

PACKAGING CLASSIFICATION Conti.....

c. Packages or containers that are not disposed of or returned by consumers (semi-disposable), but are used for other purposes by consumers, for example bottles for drinking water at home, biscuit tins for crackers, jam containers for pepper and others. The use of packaging for other purposes is related to the level of toxicity.

2. Classification of packaging based on the structure of the packaging system (product contact with packaging):

a. Primary packaging, namely packaging that directly accommodates or wraps food ingredients. For example milk cans, drink bottles, tempeh wrappers.

Picture : Primary packaging

b. Secondary packaging, namely packaging whose main function is to protect other groups of packaging. For example, carton boxes for milk containers in cans, wooden boxes for wrapped fruit, and so on.

Sencondary Packaging

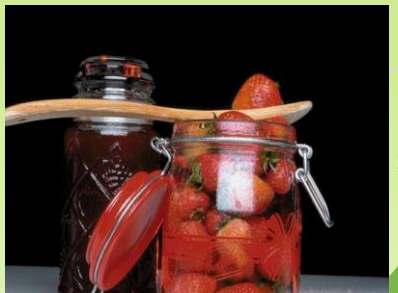
c. Tertiary packaging, quartet is packaging to pack after primary, secondary or tertiary packaging. This packaging is used for protection during transport. For example, an orange that has been wrapped, put in a cardboard box then put in a box and after that into a container.

Tertiary Packaging

3.Classification of packaging based on the rigidity of packaging materials:

a. Flexible packaging is a packaging material that is easy to bend without cracking or breaking. For example plastic, paper and foil.

b. Rigid packaging is packaging material that is hard, rigid, does not withstand bending, breaks when bent, is relatively thicker than flexible packaging. For example wood, glass and metal.



3.Classification of packaging based on the rigidity of packaging materials:

c. Semi-rigid/semi-flexible packaging is a packaging material that has properties between flexible packaging and rigid packaging. For example, plastic bottles (milk, soy sauce, sauce), and containers of pasta-shaped materials.

Product Packaging Requirements

1. Not Toxic

- The purpose of not toxic here is the material used to cause packaging does not harm human health directly or indirectly.

2. Match Packaged Products

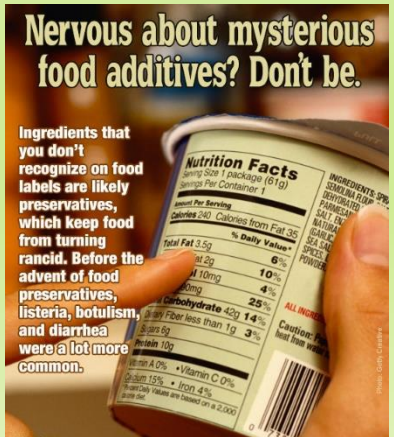
- Product packaging must match the product, if it is not fit then the packaging will harm the product. For example, fruit products that should be made transparent so that consumers can see the freshness of the fruit, even not made transparent.

4. Able to Prevent Counterfeiting

- Packaging is also useful to be a safety and prevent counterfeiting. If irresponsible parties want to counterfeit the product, consumers can easily recognize it through packaging.

5. Ease of Opening and Closing

- Most consumers will prefer products that take advantage of packaging that is easy to open, such as drinks in plastic packaging compared to glass bottles.



6. Ease and Security of Removing Contents

- The ease and safety in removing the contents contained in the product packaging certainly needs to be considered.

7. Ease of Disposal

- Used packaging is garbage and the ease of disposal of packaging waste becomes very important in the present. For example, packaging from plastic materials.

8. Size, Shape, and Weight

- This packaging size relates to the next handling process, whether in storage, distribution, or ways to entice consumers to want to buy. In most packaging has been in accordance with existing needs.




9. Appearance and Printing

- Product packaging would be better if it brings an attractive appearance when reviewed in all aspects, both in terms of materials, aesthetics, or decoration.

10. Low Cost

- One way that can be used to maintain products sold forever affordable by the purchasing power of consumers is to lower the cost of packaging to the limit of packaging.

11. Special Terms

There are many certain conditions that must be considered in making packaging and this is tailored to the needs of each. For example, the weather where the target marketing whether tropical, sub tropical, humidity, and so forth.

FRUIT AND VEGETABLE PACKAGING

WHY IS THE FRUIT MUST BE PACKED ?

PURPOSE

RELATIONSHIP / LINKAGES

INTRODUCTION (1)

- Fruits = one of plant regeneration agent as a complete product of plant derived from sustainable development of the fusion of pollen with flower pistil.

Classification of fruit :

- according to occurrence : simple fruit, aggregate fruit, multiple fruit
- according to physiological character : climacteric fruit & non climacteric fruit

Characteristics of Fruit

Design of Packaging

INTRODUCTION (2)

Example of fruit according to occurrence :

No	Kind of Fruit	Examples
1	**Simple fruit**	cucumber, melon, banana, eggplant, pumpkin, avocado, guava …….. ect
2	**Aggregate fruit**	grape, rambutan, duku, menteng, salak ….etc
3	**Multiple fruit**	Pineapple, breadfruit, jackfruit, soursop





INTRODUCTION (3)

Example of fruit according to physiological characters :

No	Kind of Fruit	Examples
1	**Climacteric fruit**	Mango, papaya, sapodilla, durian, banana breadfruit …….etc
2	**Non climacteric fruit**	grapes, star fruit, orange, rose apple, water –melon, snake fruit





POSTHARVEST HANDLING IN PACKING-HOUSE (1)

PACKAGING (1)

REGULATIONS :

- **RI Law No. 7, 1996 : Foods**
- **Gov. Reg. No. 28, 2004 : Safety, Quality and Food Nutrition - Part V, Section 16-20**
- **Regulation of Head of National Agency of Drug And Food Control (BPOM-RI) NO. : HK 00.05.55.6497, 2007 about Material of Food Packaging**

Packaging : materials which are used to put or wrap food, either in direct contact with food or not

PACKAGING (2)

- ✓ **Purpose: to protect fruits from damage during distribution and marketing**
- ✓ **The success of the packaging:**
  - ❖ **The fruit is not injured**
  - ❖ **Facilitate the management of temperature**
  - ❖ **Prevent evaporation → water loss**
  - ❖ **Facilitate special treatment**
  - ❖ **Giving aesthetic value to attract consumers**

PACKAGING (3)

Types of packaging can be categorized based on

- **market destination (domestic or export),**
- **frequency of use (disposable, semi-disposable, multi trip)**
- **kind of product (pharmaceutical, chemical, food, etc),**
- **function (primary, secondary, tertiary,..... etc),**
- **material of packaging = properties of material stiffness**
- **treatment (MAP, VP)**
- **etc**

PACKAGING (4)

Types of packaging based on material of packaging

- **Bamboo Basket**
- **Wooden crate or box**
- **Carton boxes or corrugated cardboard**
- **Plastic basket**




PACKAGING (5)

MANGO :

- **Trial export to Hongkong**
- **Cultivar Gedong, DR = 85%**
- **Corrugated Carton Boxes = 4 kg**
- **Waxing (6%) + 500 ppm benomyl**
- **Temperature adaptation (15^{o}C, 24 h)**
- **Storage at 8^{o}C, RH = 70 – 80%**
- **Self life 4 weeks**

PACKAGING (6)

MANGOSTEEN :

- **Trial export (static)**
- **Degree of maturity : 110 days after blooming**
- **Plastic Boxes = 9 - 11 kg (net-foam + non net-foam)**
- **Waxing (6%) + 500 ppm pesticide + 100 ppm "hormon"**
- **Temperature adaptation (15^{o}C, 24 h)**
- **Storage at 9^{o}C, RH = 70 – 80%**
- **Self life 3 - 4 weeks**



PACKAGING (7)

SALAK (SNAKE FRUIT) :

- **Trial export to Malaysia**
- **Degree of ripening (70 - 80%)**
- **Immersing in natural pesticide**
- **Plastic Bags (LDPE) = 1 kg (MAP)**
- **Corrugated carton boxes = 10 kg**
- **Storage at 15^{o}C, RH = 70 – 80%**
- **Self life 3 weeks**

PACKAGING (8)

RAMBUTAN:

- **Trial export to Netherland**
- **Cultivar Binjai, Rapiah, Lebak Bulus**
- **Degree of ripening (70 - 80%)**
- **Anti Fog**
- **Plastic Bags (LDPE) = 1 kg (MAP)**
- **Corrugated carton boxes = 10 kg**
- **Temperature adaptation (15^{o}C, 24 h)**
- **Storage at 10^{o}C, RH = 70 – 80%**
- **Self life 3 weeks**

PACKAGING (9)

BANANA :

- **Experiment**
- **Cultivar Mas Kirana**
- **Degree of maturity = 80 – 90 days**
- **50 µL LCP (3 : 1)**
- **Plastic Bags (LDPE) = 1 kg**
- **Corrugated carton boxes = ± 5 kg**
- **Storage at ± 18^{o}C, RH = 70 – 80%**
- **Self life 7 weeks**

CONCLUSION

Fruit packaging is an activity related to the distribution of fruits to the consumer with quality and safety are maintained.

Thank You