

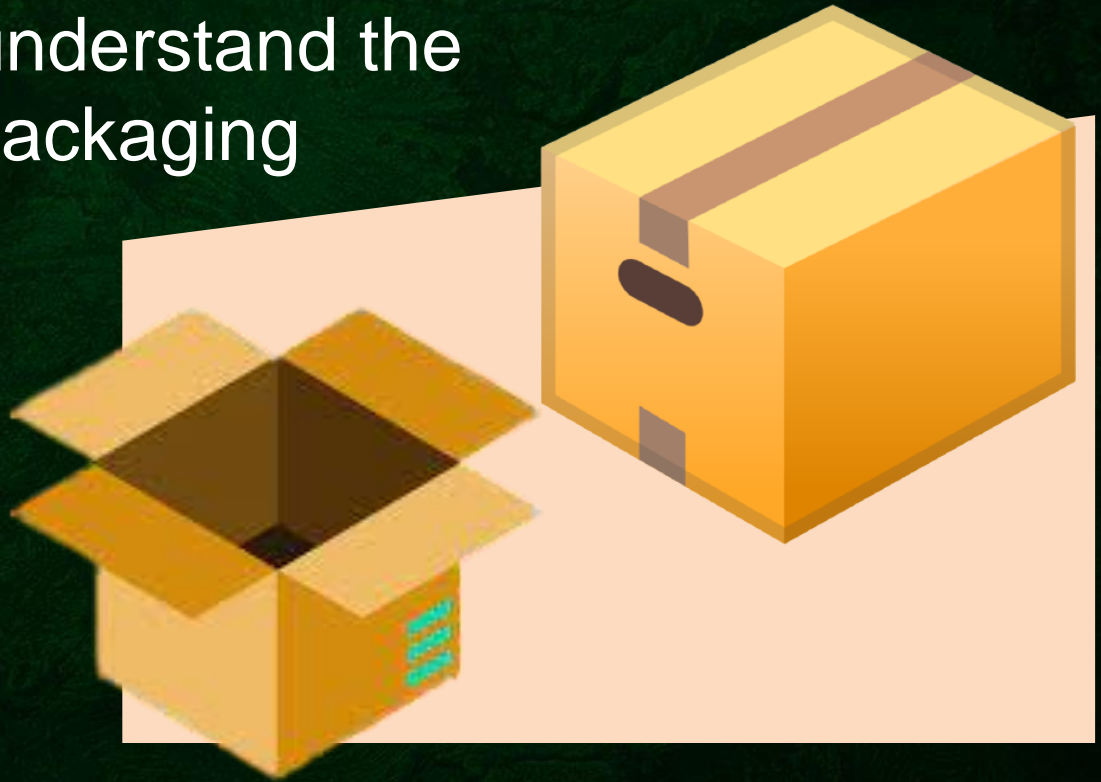


Type of Packaging



LEARNING OBJECTIVE

1. Participant were understand the important of material packaging.
2. Participant were understand the type of material packaging



Packaging Materials



consumer segment



Natural



Handicraft



Modern



What kind of food
packaging materials can
be made of?

Packaging Materials



Plastics



Glass



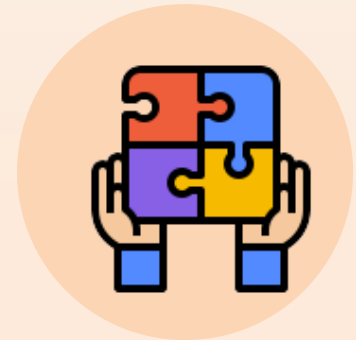
Papers and Carton



Cans



Bamboo and
woods



Combinations

Packaging Materials



GLASS

See-through

Strong, warm-up resistant and unformed

Non-translucent gases, liquids and solids

Reusable



Best protection against contamination





Disadvantages



Protection





Economy Round Jars



Paragon Jars



French Square
(or Victorian)
Jars



Standard Spice Jar



Hexagon jar



Mason Jars



Straight-Sided Jars

Styles of Glass Jars



Boston Round Bottle



Wine Bottles

Styles of Glass Bottle



Woody Bottles



Liquor Bottles



Sauce Bottles



Olive Oil Bottles – Marasca (Square) and Dorica (Round)

Food Cans



Food Canning - Method of preserving food in which the food contents are processed and sealed in an airtight container



Tin Canning Food



Plastics

Plastics are used in many types of food packaging and containers for a variety of reasons – they help protect foods from damage, provides food safety and extends the freshness of foods.










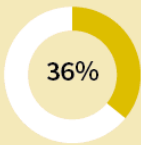

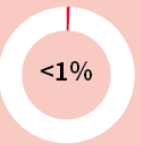
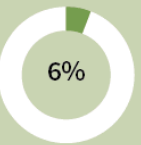
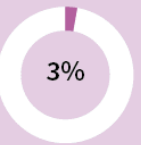
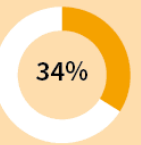


























Plastic containers

















Different types of plastics used in food packaging



You may have seen the number 1 through 7 on the bottom or side of a plastic packaging container. This number can also provide guidance for consumers who want to recycle plastic containers.

Polymer Name	POLYETHYLENE TEREPHTHALATE	HIGH-DENSITY POLYETHYLENE	POLYVINYL CHLORIDE	LOW-DENSITY POLYETHYLENE	POLYPROPYLENE	POLYSTYRENE	All other plastics, including acrylic, fiberglass, nylon, polycarbonate, and polylactic acid (a bioplastic)
Resin Identification Code							
Abbreviation	PET or PETE	HDPE	PVC	LDPE	PP	PS	OTHER
Recyclable?	Commonly Recycled	Commonly Recycled	Sometimes Recycled	Sometimes Recycled	Occasionally Recycled	Commonly Recycled (but difficult to do)	Difficult to Recycle
Percentage Recycled Annually	 36%	 30-35%	 <1%	 6%	 3%	 34%	 Low
How Long to Decompose Under Perfect Conditions	 5-10 Years	 100 Years	 Never	 500-1,000 Years	 20-30 Years	 50 Years	Majority of these plastics: never Polylactic acid: 6 months
Maximum Temperature	 70°C (158°F)	 120°C (248°F)	 70°C (158°F)	 80°C (176°F)	 135°C (275°F)	 90°C (194°F)	Polycarbonate: 135°C (275°F) Polylactic acid: 150°C (302°F)
Brittleness Temperature	 -40°C (-40°F)	 -100°C (-148°F)	 -30°C (-22°F)	 -100°C (-148 °F)	 0°C (32°F)	 -20°C (-4°F)	Polycarbonate: -135°C (-211°F) Polylactic acid: 60°C (140°F)
Toxicity Level							
Most Commonly Leached Toxin(s)	Antimony Oxide, Bromine, Diazomethane, Lead Oxide, Nickel Ethylene Oxide, and Benzene	Chromium Oxide, Benzoyl Peroxide, Hexane, and Cyclohexane	Benzene, Carbon Tetrachloride, 1,2-Dichloroethane, Phthalates, Ethylene Oxide, Lead Chromate, Methyl Acrylate, Methanol, Phthalic Anhydride, Tetrahydrofuran, and Tribasic Lead Sulfate, Mercury, Cadmium, Bisphenol A (BPA)	Benzene, Chromium Oxide, Cumene Hydroperoxide, And Tert-butyl Hydroperoxide	Methanol, 2,6-di-tert-Butyl-4-Methyl Phenol, and Nickel Dibutyl Dithiocarbamate	Styrene, Ethylbenzene, Benzene, Ethylene, Carbon Tetrachloride, Polyvinyl Alcohol, Antimony Oxide, and Tert-butyl Hydroperoxide, Benzoquinone	BPA, BPS, as well as all other toxins mentioned



 PETE	 HDPE	 PVC	 LDPE	 PP	 PS	 OTHER
soft drink bottles, mineral water, fruit juice containers and cooking oil	milk jugs, cleaning agents, laundry detergents, bleaching agents, shampoo bottles, washing and shower soaps	trays for sweets, fruit, plastic packing (bubble foil) and food foils to wrap the foodstuff	crushed bottles, shopping bags, highly-resistant sacks and most of the wrappings	furniture, consumers, luggage, toys as well as bumpers, lining and external borders of the cars	toys, hard packing, refrigerator trays, cosmetic bags, costume jewellery, audio cassettes, CD cases, vending cups	an example of one type is a polycarbonate used for CD production and baby feeding bottles
						

Paper Packaging

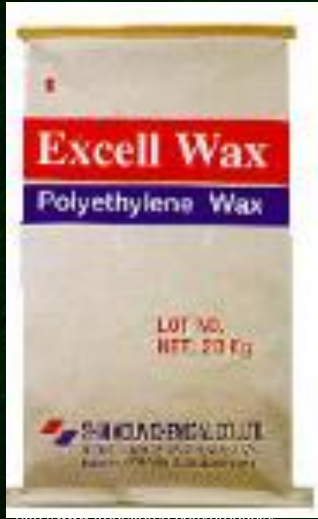




**Advantages : Economical, Collapsible, Versatility,
Excellent handling, Printable, and
Recyclable.**

**Disadvantages: Porous, Poor barrier properties to
oxygen, and easily got damaged.**

Paper Packaging



<http://www.tradecore.com/products/Polyethylene.html>



<http://www.manufacturer.com/business/search?isnew=all&type=SellLeads&arg=t4&keywords=Frozen+Food&start=11>

Mc Donalds – Paper pack



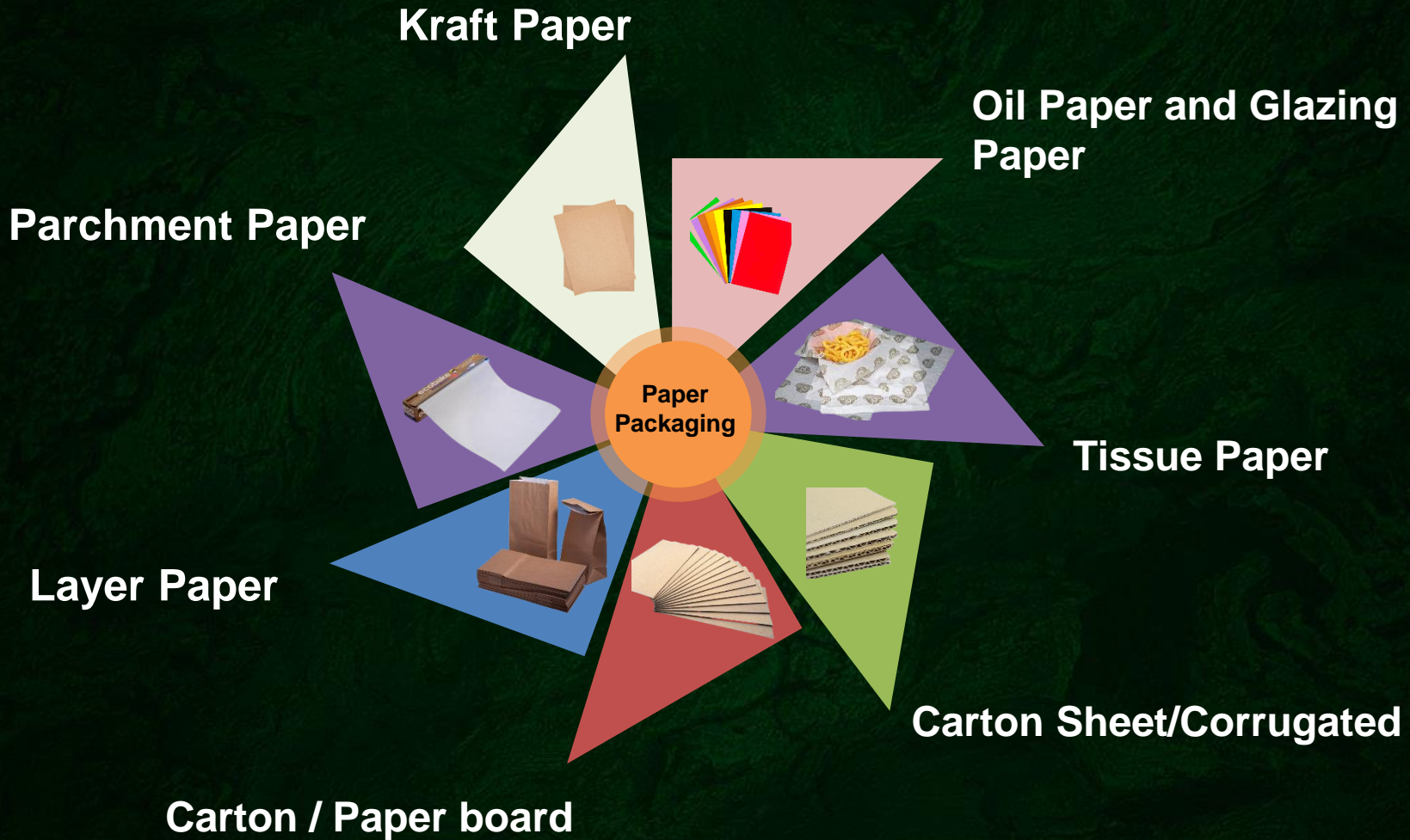
http://tertiustjiong.com/?page_id=50

Fish - Packaging



<http://www.greenpackaging.com/files/default/files/Hukkanen.jpg>

Type of paper packaging



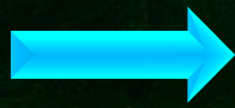
KRAFT PAPER



Very strong brown Color
Cheap;
For sack bags and wrappers



OIL PAPER AND GLASIN



Slightly brownish-colored
Slippery surface. Somewhat
translucent Resistant to oil,
fat, and water



PARCHMENT PAPERS



Resistant to fat, able in use of label making, packing butter and cheese



TISSUE PAPER



TISSUE PAPER

- light
- Very porous



LAYERED PAPER



- ETetrSurface laminated by plastic, aluminum foil, wax, etc.
- Usually made bags / boxes
- A pack example



CARTON



- ☐ **Thickest paper**
- ☐ **For the manufacture of boxes with various shapes**

CARTON SHEET / CORRUGATED



- ☐ **CARTON SHEET**
Consists of corrugated parts whose 2 sides are covered with cardboard
- ☐ **Can dampen vibration/pressure**

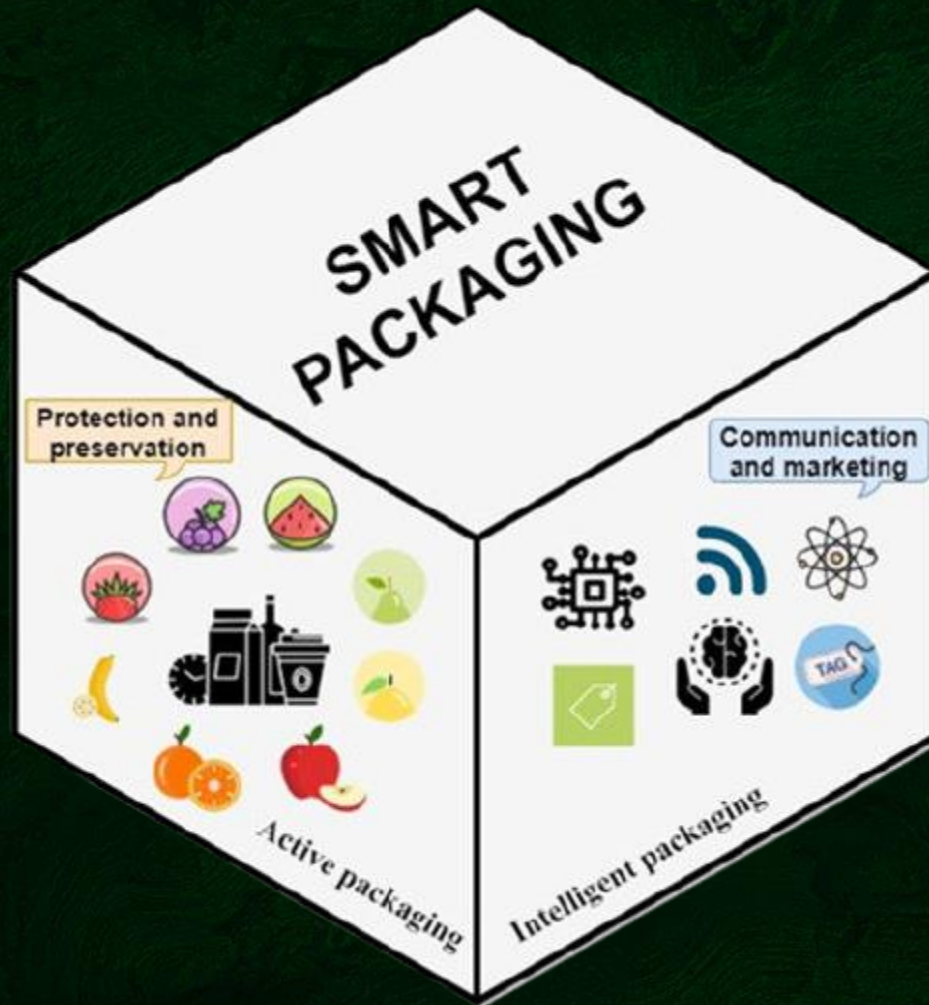


WOOD PACKAGING

1. Recyclable
2. Can be used over and over again
3. The shape is thick and wide, it requires a large place
4. Able to withstand products from impact in transportation



Trends in Food Packaging

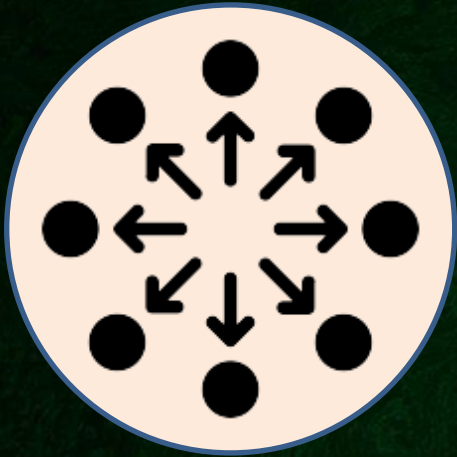


Actives packaging

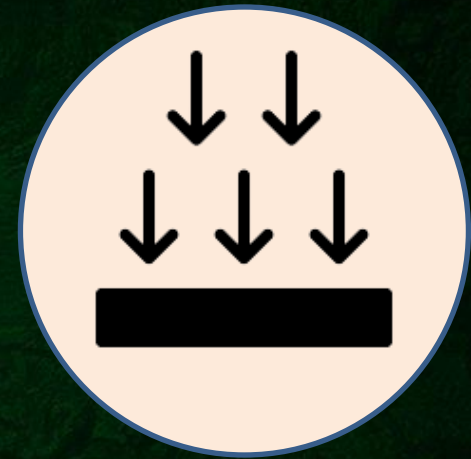


This type exists in the food packaging industry

Scavenging/absorbing systems



Releasing systems



Oxygen Absorber



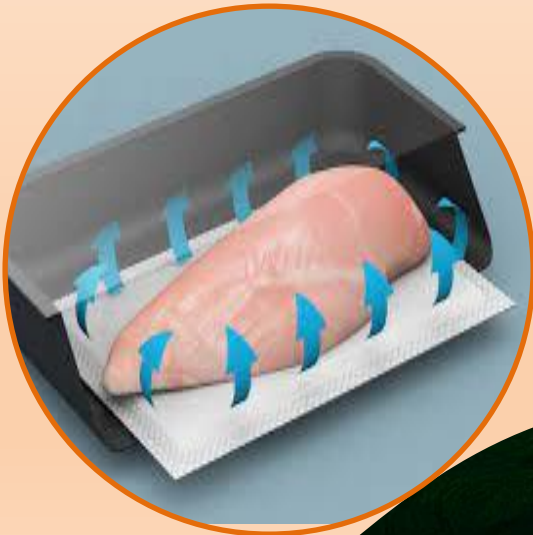
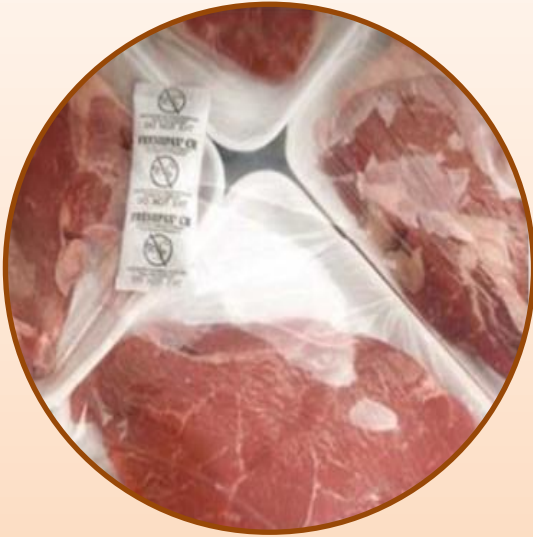
Moisture Absorber



Anti Microbial



Carbon Dioxide Emitter



Self Heating Packaging



Smart / Intelligent Packaging



Smart packaging is designed to be able to monitor the condition of the packaged food or the environment around the food

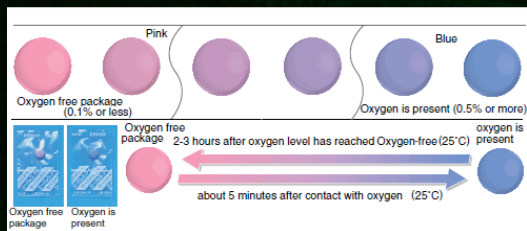
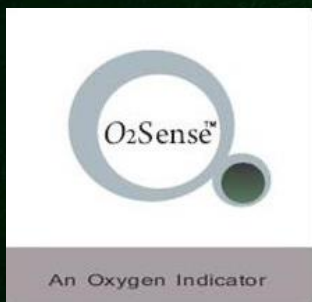
Time-Temperature Indicator (TTI)



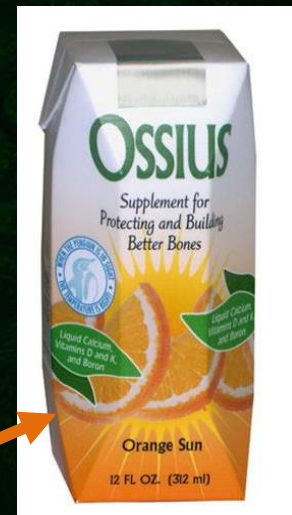
Freshness Indicator and Sensor



Gas Indicator (oxygen indicator)



Thermochromic Inks



What is an Edible Coating ?

- Thin layer that is deposited on the surface of a food and can be consumed with the food product



Not coated

Film coated

What are The Advantages of Edible Films and Coatings?

- ❖ - Biodegradable
- ❖ - Extend shelf life
- ❖ - Can be consumed with the packaged product
- ❖ - Convenient application by dipping, brushing, spraying etc.
- ❖ - Localized application and control release of active ingredients
- ❖ - Cost effective
- ❖ - Various food and non-food applications



<http://www.ysap.org/updates/?p=154>

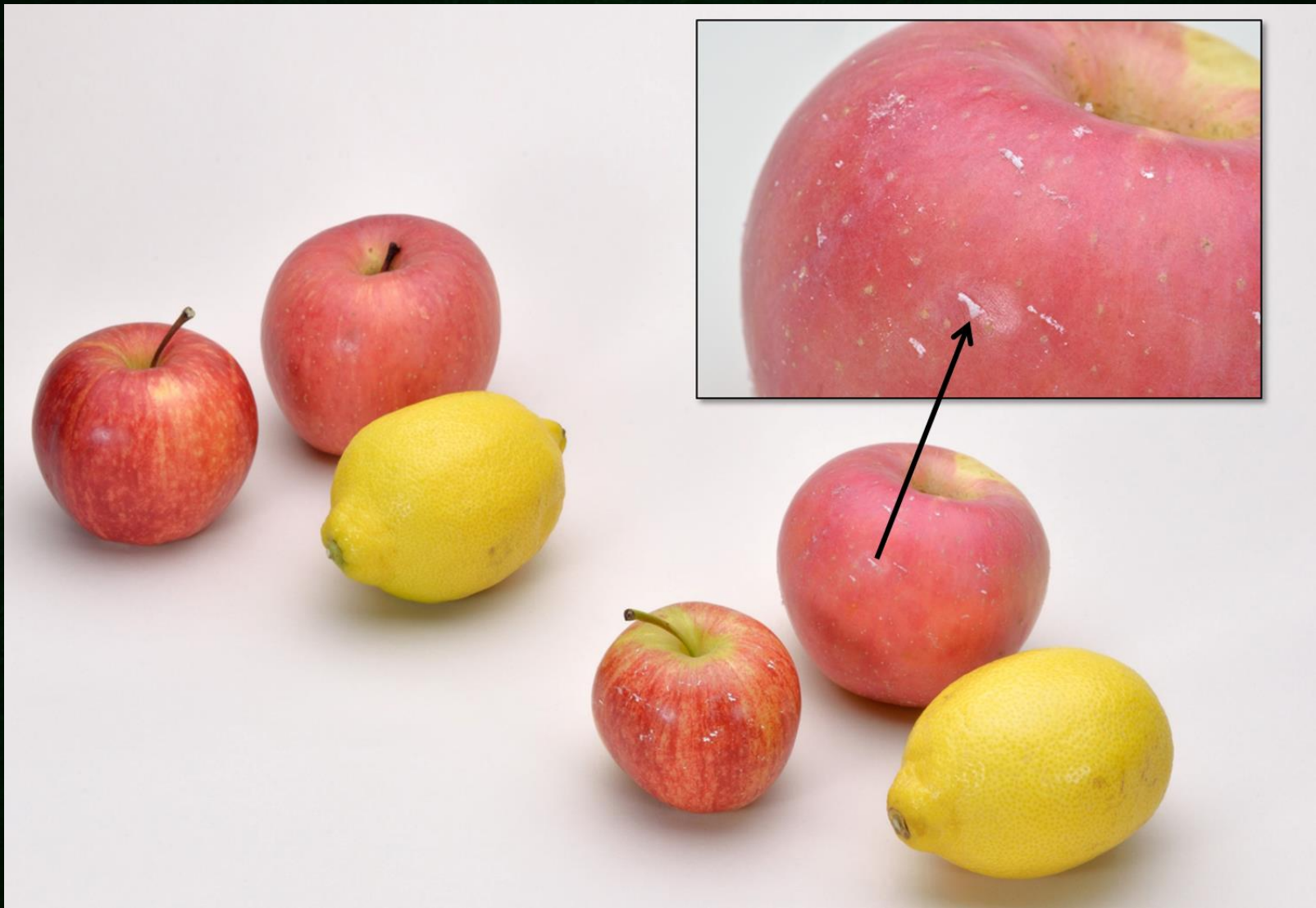


http://3.bp.blogspot.com/_yRRSFagnbeQ/SyiS6g-ei-

WAX COATING

- According to Pantastico : wax coating is an effort to delay maturity that aims to extend the shelf life of horticultural products.





WAX COATING

Table 1. Optimal wax emulsion concentration in some commodities Horticulture

Commodity	Optimal wax concentration (%)
Avocado	48
Apple	12
Chili	12
Orange	12
Potato	6
Alphonso Mango	6
Pineapple	6
Papaya	6
Plantain	9
Carrot	12

Table 2. The basic composition of wax emulsion 12%

Basic Materials	Composition
Bee Wax	120 gram
Trietanolamin	40 gram
Oleic Acid	20 gram
Hot water	820 gram

Sumber :Horticulture Research Center

Examples of Film Coated Edible Products



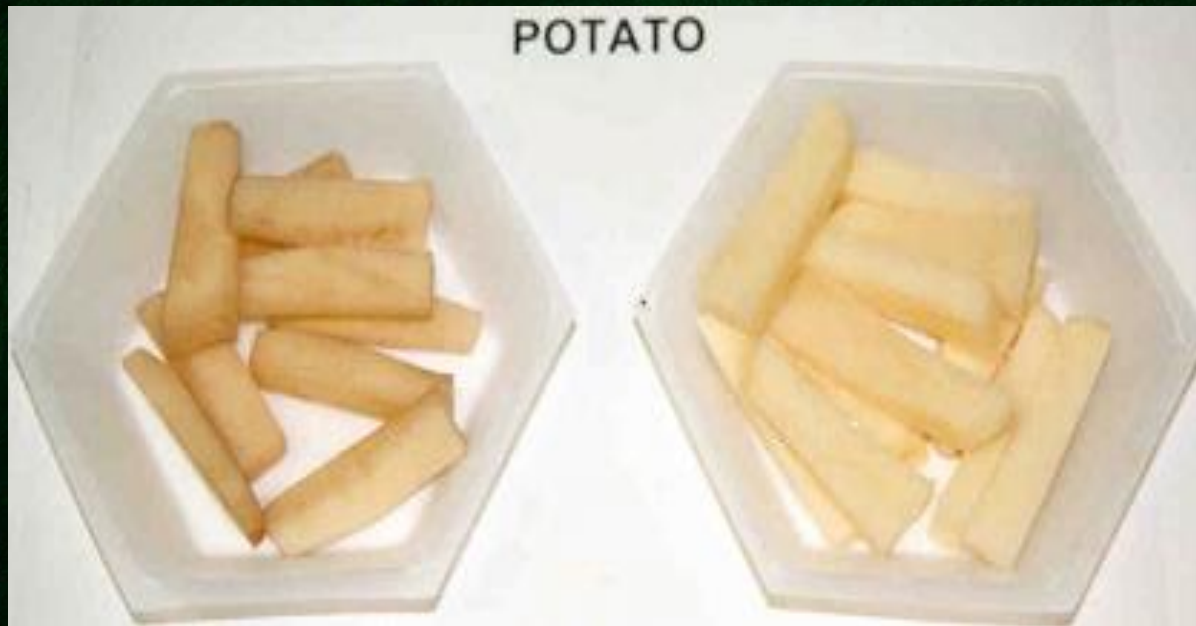
Edible Film Coating contd..



Not Coated

Film Coated

Edible Film Coating contd..



Not coated

Film coated

Edible Film Coating contd..



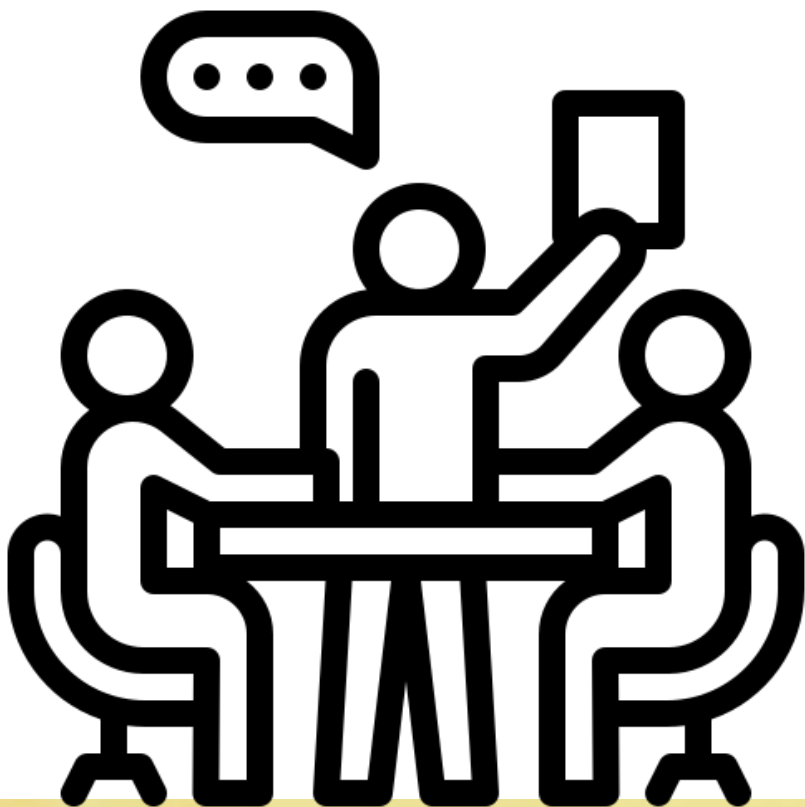
Not coated

Film coated



Not coated

Film coated



Thank you

fiadini17@gmail.com



Environment

Consumption



Sustainability is a balancing act



The Four R's



Reduce

Packaging design should use the minimum amount of material consistent with fulfilling their basic function. A reduction in material use will diminish further the need for reusing, recycling or recovering other value.

Recycle

Where practical, packaging should be collected & the materials recycled for further use



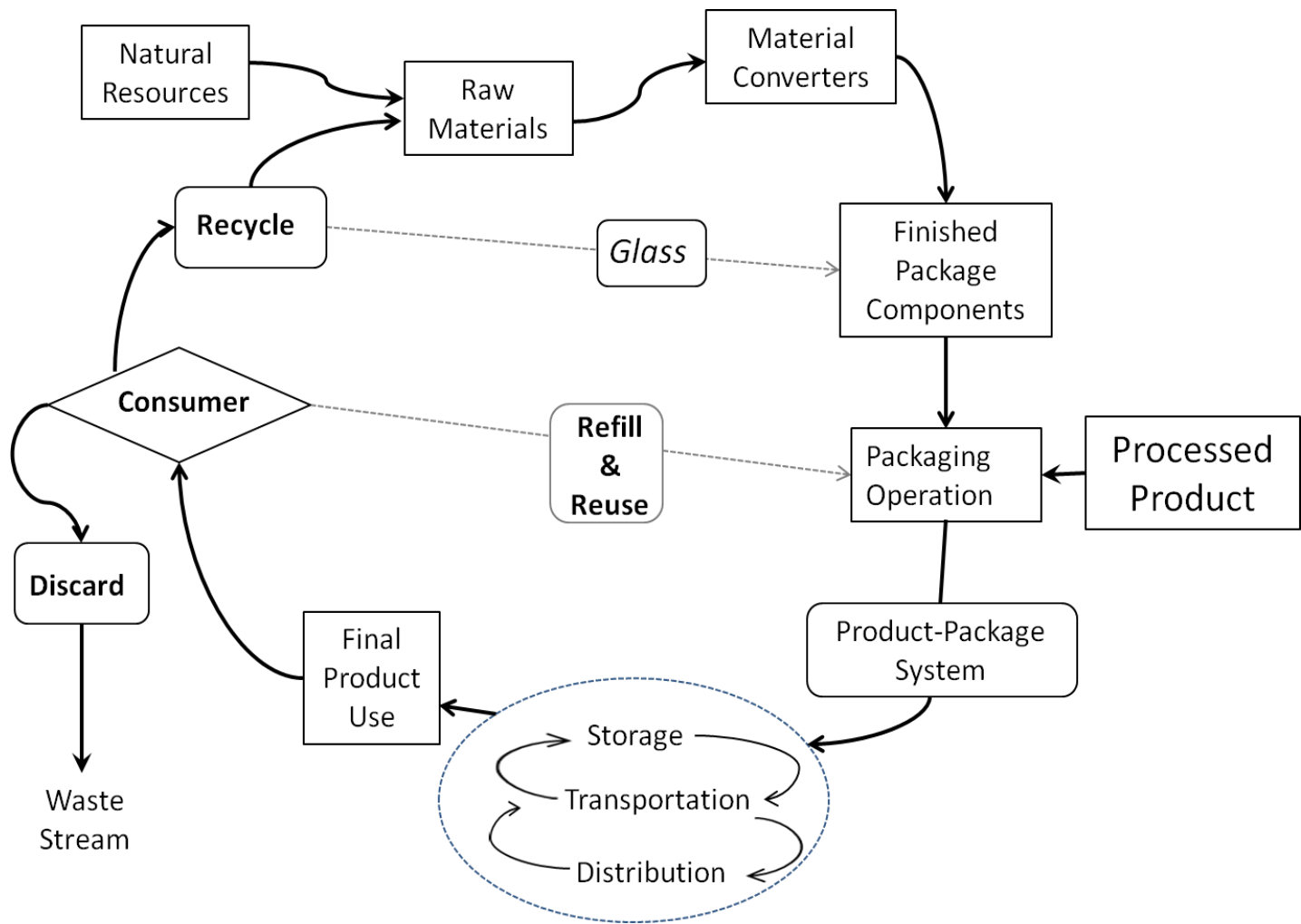
Reuse

Where practical, containers or packaging components should be reused.

Recover

Finally, before consigning packaging to a landfill, some thought it should be given to possibly recovering other value from waste.





(Talib, 2015)