NEW DESIGN & TECHNOLOGY IN PACKAGING

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The Global Partnership for Safe and Sustainable Agriculture
SPEAKERS:

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“Green” Packaging

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Plastic Waste Facts

- The average American throws away approximately 185 pounds of plastic per year.
- Plastic accounts for around 10 percent of the total waste we generate.
- Annually approximately 500 billion plastic bags are used worldwide. More than one million bags are used every minute.
- Virtually every piece of plastic that was ever made still exists in some shape or form (with the exception of the small amount that has been incinerated).

Solutions

- Recycle. If you must use plastic, try to choose #1 (PETE) or #2 (HDPE), which are the most commonly recycled plastics. Avoid plastic bags and polystyrene foam as both typically have very low recycling rates.
- Seek out alternatives to the plastic items that you rely on.

Source: D’Alessandro, Nicole. 22 Facts About Plastic Pollution (And 10 Things We Can Do About It) for details please refer to the extended version of the article available on the website of EcoWatch; www.ecowatch.com
Environmentally Friendly Alternatives of Packaging Materials

- Bioplastics
- Biodegradable
- Compostable
- Recyclable

*Controversial topics as specifications, standards and processes are being developed.
Bioplastics

- Definition - made from natural materials, such as corn starch, potato starch, sugar cane, cellulose
- Made from renewable resources. Some bioplastics look virtually indistinguishable from traditional petrochemical plastics.
- Bioplastics can be designed to be biodegrade/compostable.

Examples
- Polylactide acid (PLA) and Cellulose
- Resin companies are using Excess Potato Starch (waste stream) to produce resins that can be utilized in packaging.
- Sugar Cane is being refined to produce LLDPE and HDPE that process and perform like traditional fossil fuel variants
Biodegradable Additives

- Definition - Degrading naturally in the environment.
- Biodegradable plastics are made from traditional petrochemicals and specific **additives** which are engineered to break down more quickly
  
  Examples
  - Photodegradable & oxydegradable – grocery bags
Compostable

- Must have scientific evidence that the materials in the item break down, or become part of, usable compost in a safe and **timely manner** in an appropriate composting facility or home compost pile.

- Derived generally from renewable raw materials like starch (e.g. corn, potato, tapioca etc) and cellulose.
  - Example – Polylactide acid (PLA) and cellulose.
Recyclable

- **Plastic recycling** is the process of recovering scrap or waste plastic and reprocessing the material into useful products.

- Resin Identification Code (**RIC**)—identify the plastic resin out of which the product is made.

**Examples**

- **PET #1**—(R-PET, PCR)
  - Bottles, trays, film, clothing, building materials

- **HDPE #2**—Thermoformed bottles
  - Tables, roadside curbs, benches

- **Agricultural plastics**—mulch film, drip tape and silage bags are being recycled into much larger products for industrial applications, plastic composite railroad ties.
Recyclable

- Resin & technology improvements - PE/PE laminate is similar to OPP/PE laminate. This “new film” has created a New designation. (Recycle Ready or Store Drop Off Recycling that has designed end of life use.)
Packaging requirements

Marketing
- Gloss
- Haze/Clarity
- Stiffness
- Anti-fog
- Puncture resistance
- Flex crack resistance

Shelf life
- OTR
- WVTR
- Protection
- Distribution

Production
- Machine Set-up
  - Seal temp.
  - COF
- Machine-ability
  - Hot tack
  - Seal integrity
What films do you choose?

Paper
PP
PET
Bioplastics
PE
PLA
Thank You!
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