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# Innovation Spotlight: Frito-Lay Compostable Snack Packaging at Coachella Music Festival

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# **Sustainable Packaging Marketing Trends**

- Consumers expect brands to show leadership on environmental issues
- Consumers expect transparency to make informed decisions through responsible on-package claims
- Biodegradable or Compostable Packaging
  - Prevents packaging from harming the environment
- Recyclable Packaging
  - Be separable, labelled correctly, and clean
- Less is More
  - Using less material to reduce waste, while maintaining the same physical properties of the package
- Replacing Virgin Plastic
  - Implementing the use of recycled polymers to reduce the amount of virgin plastic being used today



# **Myths of Compostable Packaging**

- Myth: Compostable packaging can break down anywhere
  - Environment is IMPORTANT!!
- Myth: "Biodegradable" is the same as "compostable"
  - "Compostable" provide nutrients to the soil within a certain timeframe
- Myth: All bioplastics are compostable
  - Bioplastics are plastics that are made from biological substances
- Myth: There's no point creating compostable packaging when commercial composting infrastructure isn't yet widely available.
  - Innovation happens at the beginning of the product life-cycle and flows down the line to waste management industries



# **Different Compostable Options**

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# Industrial Compostable

- Certifications for industrial compostable come from both TUV (Europe) and BPI (US)
- Breaks down in 6 months at ~60°C
- Must be collected, similar to mechanically recyclable films
- Often considered to be "noisier" than conventional films



# Home Compostable

- Certification for home compostability is only available for Europe (TUV). BPI has not developed a certification for the US
- Breaks down in less than 12 months at ~30°C
- Limited availability of home compostable films in the market today
- Expected to be softer, and therefore "quieter" than industrial compostable films



# **Goal of This Project**

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- Provide a laminated flexible package that is certified <u>industrial compostable</u> while maintaining important barrier and sealing properties
- Five different SKUs
- New graphics, specific to the Coachella event
  - Confirmation that ink systems are within the required limits for compostability



# **Barrier Properties**

- PLA (industrial compostable film) is hygroscopic, meaning that it will absorb moisture from the air
- Ideal for dry foods
- Metallization is the ONLY barrier



# **Seal Strength Properties**

- Lower seal initiation temperature
- Broad seal window on CPG equipment
- Higher seal strength compared to HSS OPP
- Lower heat resistance than conventional films



# **Overcoming Challenges**

#### • New film:

- Working out the kinks
- Consistent communication within the supply chain

#### • Narrow operating window on converting equipment:

- Temperature, toughness, scratch resistance, etc.
- Attention to detail when laminating

#### • Operator engagement:

- Educating operators on the project
- Operators are often the most experienced

#### • Limited access to composting facilities:

- Working with government
- Educating the public



# Advantages and Disadvantages to Compostable Packaging

### **Advantages**

- Proven to be a great solution for contained events (i.e. music festivals, sporting events, etc.)
- As more home compostable films options become available, this may lead to less "noisy" structures
- Most compostable films are also bio-based
- Reduced carbon footprint
- No need to wash away food contamination before composting. Unlike recycling.

# **Disadvantages**

- Limited infrastructure of industrial compost sites
- Much more expensive than other most other sustainable options
- Compostable films tend to be noisier than noncompostable film options
- Raw materials for compostable applications are in short supply
- No current standard for home compostability in the United States

## **IT WORKS!**

- Encased a Coachella compostable package with compostable starter soil
- Placed in oven set to 60°C (140°F)
- Observed and added water weekly
- 3 weeks at these conditions is estimated to be ~3 months in an industrial composting facility



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# **Success for ALL!**

- As in the Coachella package, we have seen the most success in closed loop venues and festivals.
  - This allows the package to be sold, consumed, and disposed of in the same location
  - Easier to manage the separation of the compostable packaging
- Frito-Lay is taking a "Tesla-like" approach to sustainability. They invite anyone and everyone (competitors and non-competitors) to use this compostable package.
- It is more important for the overall environment and cost of materials if everyone joins in, rather than going at it alone.
- SUSTAINABILITY IS A COLLABORATION, NOT A COMPETITION!



# **Ideal End Goal**

- Home Compostable and Marine Degradable
- Extrusion lamination development
  - Increased laminator speeds
  - Opportunity for reducing cost
- Compostable AND Recyclable
  - -Improvements in advanced recycling



**Thank You For Your Time!** 

# Questions?

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