The Rise of Cannabis in the Food Industry

Food Safety Summit
May 11, 2023
Agriculture

• Cultivation
• Harvesting and Trimming
• Drying and Curing might be “Processing”
  • The importance of water activity
• Trimming of dried flower
Immature Plants  Vegetation Stage  Flowering Stage
Harvested Cannabis

- Final step in the growth cycle
- “Batch size”
- Flower final destination
- Shake/trim final destination
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Flow Diagram of Edible Manufacture
Never assume.

• Cannabis-infused edibles are not food or dietary supplements.
• GMPs are required by a few states.
• Delaware does not classify a tincture as an edible.
• Oklahoma originally did not require testing or seed-to-sale tracking in 2019. Mandated testing started April 2020. Tracking started May 2022.
• Just because a state has legalized does not mean the state code is written and implemented.
• New state code can become effective immediately.
Washington State Legislature: Marijuana-Infused Edibles (MIE)

• (4) The department will not approve an MIE for commercial sale if it is a potentially hazardous food. The following non-exhaustive list includes foods prohibited as MIEs:
  • (a) Any food that must be temperature controlled (frozen, refrigerated, hot holding) for food safety;
  • (b) Foods that required acidification to assure food safety (for example, ready-to-drink tea and barbecue sauce);
  • (c) Foods that must be retorted or pasteurized to assure food safety;
  • (d) Dairy products of any kind such as butter, cheese, ice cream, or milk;
  • (e) Fruit or vegetable juices, except shelf stable concentrates;
  • (f) Oils and vegetable butters;
  • (g) Pies containing egg such as pumpkin or custard;
  • (h) Dried or cured meats;
  • (i) Jams, jellies, and related products with sugar to fruit ratio less than provided by 21 C.F.R. Part 150.
A cannabis facility has food defense on steroids.

- Potential characteristics of a cannabis facility
  - No business sign
  - Maybe address number on the building
  - Completely and securely fenced
  - Locked outer front door
  - Cameras on all sides of building
  - Picture ID at reception
  - Escort at all times
  - No dead spots with cameras
  - Armed security guards at Receiving and entrance; Armed security guards in tandem for transportation
Extraction is Processing

- Oil-soluble cannabinoids are extracted from the plant material with a solvent.
  - Hexane, butane
- Food-grade solvents
  - Ethanol
  - Supercritical CO2
- Broad spectrum extract, Distillate, Isolate
- Dilution with MCT oil for dosage
Cannabis-Infused Edible Manufacturing

- Create a supply chain preventive control for the cannabis extract
- Substitute for oil or butter in a recipe
- Most edibles are low $a_w$, ready-to-eat, shelf-stable
  - Bot toxin is a hazard identified by the city of Denver in extract or tinctures
Packaging and Labeling

- Opaque
- Tamper-evident
- Child-resistant
- Not appealing to minors

- Do not use Nutrition Facts or Supplement Facts unless approved in the state code.
- Display
  - Dosage
  - Nutritional information
  - Allergen declaration
Dispensaries are for Retail Sales

- Similar to the pharmacy experience; medical card
- Armed security
- Budtender
- Glass display cases to see the product
- Often cash only
- Leave with sealed bag
Cannabis Laboratories

- Third-party lab
- Testing at multiple steps of every batch of edibles
  - Hold and release
  - More expensive than what the food industry pays
  - Small sample size
  - Submission of one packaged product
Laboratory Analysis

• **Cannabinoids**
  • THC, CBD and more!

• **Terpenes**

• **Chemical Analysis**
  • Pesticides
  • Heavy metals
  • Residual solvent
  • Mycotoxins
  • Aflatoxin

• **Microbial Analysis**
  • Aerobic Plate Count
  • Total Yeast and Mold Count
  • *Staphylococcus aureus*
  • Shiga-toxin producing *E. coli*
  • *Aspergillus* Count
Thank you!

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