

How the several types of MIPs effect the design of your Cannabis Facility

Which MIPs? First, consider branding, margin, competition and differentiation, customer demand and sales potential, functionality, product presentation, packaging and shelf appeal. A sub-lingual strip and a cannabis beer are two different worlds!

If you are a smaller artisanal producer whose volumes don't warrant semi-industrial equipment such as multi-head conveyORIZED depositors or 16' chocolate cooling tunnels. There are only a handful of multi-state operators that plan for volumes of perhaps 60,000 gummies/shift or 8,000 bars/shift, at which point the industrial food manufacturing equipment is justified.

The next decisions are often based on who you have on your team, either as Chef, Chocolatier, or Baker. There are skills to making quality MIPs and some producers have access to sophisticated chefs who know what they want and the recipes and equipment they need. Many, however, don't.

General Equipment types: Table-top equipment for the most part, cabinets for chocolate or gummy cooling and other such chocolate or confectionary equipment easily obtainable for the craft confection or chocolate industry: Savage Bros, <https://www.savagebros.com/> , TCF <https://www.tcfsales.com/products/c265-edibles-equipment/> or several similar suppliers.

Gummies

- no allergens and little dust
- robust kill-step (temperature required to achieve microbiological lethality)
- low water activity and high sugar content = increased stability and mitigation of microbiological growth
- Most of the wetted-parts of the equipment can be loaded into a dishwasher
- The trick is to get the best bite, flavor and mouthfeel that provide adequate shelf life in the retail package.

Key considerations:

- If feasible, "sugar" the gummies and manually fill into jars, or fin-seal or flow wrap the gummies while still in the MIPs room. Otherwise, you will need to protect the exposed products that move into a packaging room for primary and secondary packaging.

Equipment requirements:

- Typically, electric cook kettles, table-top depositors and gummy curing cabinets or rooms

Taffies (Also generally applies to mints and hard candies)

- no allergens (almost always) and little dust
- robust kill-step
- low water activity and high sugar content = increased stability and mitigation of microbiological growth

Key Considerations:

- taffy pulling and twist wrapping equipment can be harder to clean, raising food safety concerns

Equipment requirements:

- Similar to gummies, but needing additional processing and packaging equipment such as cooling tables, taffy pullers and twist wrappers.

Chocolates

- Table top melting/tempering units that deposit into a mold are reasonably inexpensive and simple to use.
- There is no kill-step: Melting of chocolate pastilles or bars is not hot enough to act as a microbiological lethality step. This requires upstream preventive controls for ingredients.
- As the chocolate product line expands to include panned products, filled chocolates and other presentations, your need for more sophisticated product developers and operators increases.
- Chocolates bring in more allergens including soy, milk, tree-nuts, peanuts, and perhaps wheat. This effects design, operation, scheduling and sanitation in significant ways.

Key Considerations:

- Sanitation, room design, the mechanical systems need closer attention.
- Requires specialized employee/advanced training – Advanced skill is required to obtain a high-quality, consistent product that provides snap, gloss, branding impressions in the bar, dose consistency
- A carefully design allergen control program
- Dose consistency may be more challenging that other MIPs. Inclusions complicate this.
- A good chocolate cabinet is highly recommended to ensure a quality product.
- Moisture: chocolate abhors water. Room needs to be perfectly clean and dry. One option is to run chocolate products in the MIPs room on Monday, when the room is very dry and clean. Or build a dedicated chocolate room adjacent to your main MIPs room

Equipment requirements:

- Equipment requirements: chocolate melters, tempering units, depositors, molds, cooling cabinets, primary packaging equipment such as fin-seal or flow wrap.

Baked goods

- relatively simple and easy to bake
- Brownies are the G.O.A.T. of the cannabis world!

Key Considerations

- More microbiological risk: The bio load of the raw materials is greater and the chance of recontamination after the baking kill step needs to be managed. One potential solution is to purchase pasteurized eggs and heat-treated flour.
- Allergens risks (eggs, gluten, wheat, soy, peanuts, tree nuts, coconut, etc.) are probably the highest of all MIPs.
- Importantly, it is critical to avoidance of allergen cross contamination into the gummies, taffies and chocolates made other days of the week.
- Here also, close attention is required to room design, mechanical systems and strict sanitation procedures that are validated and verified.

Equipment requirements:

- Mixers, ovens, sheet pans, rolling stock, dishwashers

Special topic: The Importance of a ware wash room:

- Have a separate adjoining room for washing of equipment and utensils.
- Maintain at negative pressure relative to MIPs room
- Directly vent the dishwasher to reduce overall humidity.
- Most of these Hobart or Douglas commercial washers don't have a dry cycle, so there are a few tricks to allow shelving to be located in that same room so that clean equipment can dry. Do not dry clean equipment in the operating MIPs room.

In conclusion:

There are many details to understand in room design, product and personnel flow, equipment selection and food safety. Experienced process designers, architects with experience not only in commercial kitchens but also in industrial food manufacturing, and process and packaging vendors who have experience beyond legacy marijuana will help a Cannabis enterprise succeed and anticipate changing regulatory requirements and market conditions.