

Good Manufacturing Practices and HACCP

Good Manufacturing Practices- Plant, Facilities and Grounds

- Construction – cleanable, covered, contamination, ventilation
- Plumbing
- Waste disposal
- Lights, toilets, hand washing facilities

Good Manufacturing Practices – Plant, Facilities and Grounds

Litter

Waste

Weeds

Drainage

Roads

Good Manufacturing Practices- Equipment and Utensils

- Refrigeration/temperature control
- Cleanable surfaces
- Sanitation, written protocols and (daily) inspection records
- Toxic compounds storage, handling

Good Manufacturing Practices- Operations

- Sanitary handling of products and materials throughout
- Protect food from introduction of foreign matter, microbes, other contaminants
- Thermal process must be adequate
- Refrigeration, heating systems must function to keep food out of the 'danger zone'

Good Manufacturing Practices – Ingredients

- Ingredient handling inspection (at receipt), storage, records
- Contaminated ingredients – can kill microbes with heat treatment, but can't “blend down” toxin contaminated materials
- Rework – protect against contamination, identified, can't result in production of an adulterated food

Good Manufacturing Practices – Other Factors

- Process controls must be verified and monitored
- Warehousing – must be sanitary, controlled access
- Distribution – trucks/common carriers are a problem

Good Manufacturing Practices- Personnel

Disease Control

Cleanliness – hands, foreign objects

Education and training

Good Manufacturing Practices- Product

Ingredients

Water

Packaging

HACCP

Hazard Analysis Critical Control Point

Food safety is best guaranteed through “process control” and not by “end –product testing”

HACCP

1. Conduct a *hazard analysis*. Determine which hazards are “significant.” Determine preventive measures for each hazard

Physical hazards

Micro/biological hazards

Chemical hazards

2. Determine *critical control points* = point in process where loss of control may result in an unsafe product
 - these involve measurements you can take quickly (*e.g.* Temperature, time, pH, flow)
3. Establish *critical limits* for each critical control point

HACCP – 7 principles

4. Establish critical control point monitoring plan. Procedures and records
5. Develop corrective action plan when monitoring shows that deviation from a critical limit has occurred.

HACCP – 7 principles

6. Establish effective record keeping system
7. Establish verification program [to show that HACCP system is working]