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]