HACCP Principle 3: Establishing Critical Limits

Dennis Burson
University of Nebraska
Definition:

- The maximum or minimum value to which a physical, biological, or chemical food hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level the occurrence of the identified food safety hazard.
Critical Limits and CCPS

• For each CCP, a Critical Limit is established to signify whether a CCP is “in” or “out” of control.
Exceeding Critical Limit Indicates

- Existence of direct health hazard.
- Direct health hazard could develop.
- Product not produced under conditions assuring safety.
Setting Critical Limits

- May require consultation with experts.
- Should be based on research.
  - published and *reviewed* research papers
  - in plant studies
Parameters for Critical Limits

- Time
- Temperature
- Water activity (Aw)
- pH
- Salt concentration
- Weight
- Visual evaluation
Critical Limits

- Are already established for many Critical Control Points in the USDA regulations.
  - Time and temperature for ground beef.
  - Zero tolerance for fecal contamination.
Critical Limits

- If the agency has a regulation on a critical control point, must use the regulation, even if strict compliance with regulation is not necessary for safety.
Steps in Establishing Critical Limits

- For each Critical Control Point
  - Determine if there is a regulatory critical limit (or find one based on scientific evidence.)
  - If there’s no regulatory critical limits, you may have to obtain assistance from outside HACCP experts.
  - File letters or other documentation for critical limits you had to determine (for validation).
417.1 Definitions

- Critical Limit: The maximum or minimum value to which a physical, biological, or chemical hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level the occurrence of the identified food safety hazard.
HACCP Compliance Checklist Form 5000.1

- The HACCP plan does not list the critical limit to be met at each CCP (417.2 (c) (3)).
417.2 Hazard Analysis and HACCP Plan

- (c) The contents of the HACCP plan.
  - (3) List the critical limits that must be met at each of the critical control points. Critical limits shall, at a minimum, be designed to ensure that applicable targets or performance standards established by FSIS, and any other requirement set forth in this chapter pertaining to the specific process or product, are met.