

HACCP Principle 4 – Establish CCP Monitoring Procedures

FSKN I 15E

Chennai, India

February 2-4, 2011

HACCP Principles

- Principle 4.
 - Establish CCP monitoring requirements. Establish procedures for using the results of monitoring to adjust the process and maintain control.



Definition of Monitoring

“The act of conducting a planned sequence of observations or measurements of control parameters to assess whether a CCP is under control.”

Monitoring

- The purpose of monitoring is to:
 - Track the operation of the process and enable the identification of trends toward a critical limit that may trigger process adjustments
 - Identify when there is a loss of control (a deviation at a CCP)
 - Provide written documentation of the process control system

Types of Monitoring

- Observations
- Measurements
- Continuous and Discontinuous



Examples of Monitoring Activities

Measurement of:

- Temperature
- Time
- pH
- Moisture level
- Flow rate

Visual observation:

- Fruit culling/sorting
- Sieve Screen integrity

Examples of How Critical Limits and Control Measures Can Be Monitored

- Timer
- Thermometer
- pH meter
- Scales
- Water activity meter
- Chemical analytical equipment

Monitoring Procedures

- Identify who (job position)
- What is to be monitored
- How it is to be monitored
- When, how often (frequency)
- Where it is monitored
- Documents that CLs are met

Monitoring and Sampling

- Continuous inspection
 - Automated equipment, sensors, supervision
 - Monitor CCPs
 - Temperature
 - Time
 - pH
 - Moisture
 - Provides assurance that all products produced have met criteria for acceptability

Monitoring and Sampling

- Discontinuous inspection / **attribute sampling**
 - Used to:
 - Test ingredients (raw materials)
 - Troubleshoot out-of-control CCP
 - Spot check continuous system
 - Statistical sampling of product lot for a defect
 - Probability of detection related to defect level of sampled lot
 - Limited assurance

Staff Responsible for Monitoring

- The staff shall have clearly defined responsibilities.
- The staff responsible for specific monitoring activities should be designated in the HACCP plan (title, not name).
- Must be adequately trained to perform the monitoring procedures and to prepare the monitoring records.
- Follows clearly delineated procedures.
- Is responsible for documentation of monitoring activities, and signs or initials the monitoring records.

Monitoring Records

- Must include:
 - Actual monitoring information
 - Date and time the activity took place
 - Signature or initials of person conducting the monitoring procedure.

Monitoring Example

Critical Control Point (CCP)	Hazard(s)	Critical Limits	Monitoring				Corrective Action	Verification	Record keeping
			What	How	Frequency	Who			
CCP 1 Culling	Patulin	No more than 1% by weight rot after culling	Rot in 5000 g sample	Cut rot and weigh rot	Twice per production run	QC staff			
CCP 2 Screen	Metal inclusion	Screen is intact	Integrity of screen	Visual	Daily Pre-op and post-op	Production employee			
CCP 3 Pasteurizer	<i>E. coli</i> O157:H7 and <i>Cryptosporidium parvum</i>	$\geq 160^{\circ}\text{F}$ for ≥ 6 s	1. Temp. of juice 2. Set pump speed to 5 to deliver ≥ 6 s	Temp. recorder Visual check of positive displacement pump at set speed	Continuous recording with hourly visual check of record. Visual daily check of MIG thermometer Daily at beginning of production	Pasteurizer operator Pasteurizer operator			

Summary

- Each CCP should have defined
 - the best monitoring procedure available under the given circumstances
 - the frequency of monitoring
 - the decision criteria for acceptable and unacceptable control at CCPs

Acknowledgements

This material was developed with financial support from the:

- United States Agency for International Development – Michigan State University – Indian Horticulture Development Alliance (IHDA) project, and
- Italian Development Cooperation under the project UE/GLO/09/017 Establishment of an Agribusiness Solutions, Traceability and Upgrading Excellence Centre in Egypt.



License to Reuse



- © 2011 Michigan State University and United Nations Industrial Development Organization, original at <http://www.fskntraining.org>, licensed using Creative Commons Attribution-Share Alike 3.0 Unported (CC-BY-SA).
- To view a copy of this license, visit <http://creativecommons.org/licenses/by-sa/3.0/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA.