HACCP APPLICATION TO FOOD MANUFACTURING AND PROCESSING

What is HACCP?

- Hazard Analysis and Critical Control Points (HACCP) is a process control system designed to identify and prevent biological, chemical or physical hazards in food production. HACCP was initially integrated into European legislation in 1993, by Council Directive 93/43/EEC.

Seven Principles of HACCP System:

- Conduct a hazard analysis;
- Identify critical control points (CCPs);
- Establish critical limits for each critical control point;
- Establish critical control point monitoring requirements;
- Establish corrective actions;
- Establish record-keeping and documentation procedures;
- Establish verification procedures.

Hazard analysis

- The purpose of the hazard analysis is to develop a list of hazards which are of such significance that they are reasonably likely to cause injury or illness if not effectively controlled.

  For example, a hazard can be caused by:

- Insufficient removal of organic matter. Organic residues hamper the efficiency of disinfectants;

- Insufficient removal of detergents contaminates the foodstuffs;

- Residues of detergents may react with disinfectants, thus reduce the efficiency of disinfectants;

- Wrong combination of dilution, contact time and temperature;

- Disinfectant is too old (incorrect concentration of disinfectant).

Identify critical control points

A critical control point (CCP) is defined as a point, step, or procedure which control can be applied and, as a result, a food safety hazard can be prevented, eliminated, or reduced to an acceptable level.

Examples of critical control points may include:

- Cleanliness after cleaning processes (remainders of foodstuffs, remainders of detergents);
- Wrong concentration, processing time, and temperature during application of disinfecting agents;
- Quality of equipment (breaking, abrasion particles);
- Personnel hand hygiene.

Establish critical limits for each critical control point

A critical limit is the maximum and / or minimum value to which a biological, chemical or physical hazard must be controlled at a critical control point to prevent, eliminate, or reduce to an acceptable level the occurrence of a food safety hazard. Critical limits must be specified and validated for each critical control point.

Examples of critical control points may include:

- Exposure time, pH, concentration of disinfecting agent

Establish critical control point monitoring requirements

- Monitoring is a planned sequence of observations or measurements to assess whether a critical control point is under control.
- **Examples of monitoring** may include:
- Regular visual inspection of cleanliness;
- Regular checks of sanitizer concentrations;
- Regular checks of disinfectant residuals;
- Regular checks of parameters to obtain the quality of rinsing water;
- Regular checks of personal hand hygiene.

Establish corrective actions

- Corrective actions are those actions to be taken when monitoring results show that a critical control point has deviated from its specified critical limit or target level. Specific corrective actions must be developed for each critical control point.

- **Corrective actions may include:**

- Repetition of a cleaning or disinfection;

- Use of different cleaning technologies;

- Discard products which have expired;

- Higher frequency of hand disinfection procedures.

Establish record-keeping and documentation procedures

The HACCP system requires a record-keeping system for all critical control points. Logs and charts used for record-keeping must be simple and accessible.

Documentation examples are:

- Hazard analysis, CCP determination, Critical Limits determination

Record examples are:

- CCP monitoring, deviations and associated corrective actions, verification of procedures

Establish procedures for verifying the HACCP system is working

- **Validation** ensures that all hazards have been identified and that if the HACCP plan is properly implemented these hazards will be effectively controlled.

- **Verification** is defined as those activities, other than monitoring, that determine the validity of the HACCP plan and that the system is operating according to the plan. Verification procedures may include such activities as review of HACCP plans, CCP records, critical limits and analysis. Verification should be carried out by someone other than the person responsible for monitoring and corrective actions.

Conclusion

Monitoring activities are necessary to ensure that the process is under control. Use Delta-CT's test strips to check the values of CCP.