

# APPLICATION OF HACCP PRINCIPLES FOR THE MEAT INDUSTRY

## GUIDANCE SHEET NO: 15

### ESTABLISH A MONITORING SYSTEM PRINCIPLE 4



#### MONITORING SYSTEMS

Monitoring is a planned sequence of measurements or observations at critical control points to ensure that the critical limits are continuously maintained. The purpose of monitoring is to confirm that the critical limits are being continuously achieved and to detect any loss of control (deviation) to enable effective corrective action to be taken.

Procedures for monitoring should be established and all relevant staff should be trained in the appropriate methods as well as in the appropriate recording of results. The nature and frequency of monitoring will depend on the critical limits that are subject to the monitoring and the likelihood of any anticipated changes.

#### NATURE OF MONITORING

Monitoring can be made by taking appropriate measurements using analytical devices or by making visual observations. For example, temperature measurement using a thermocouple or visual observation of colour changes in the meat.

#### METHOD OF MONITORING

Monitoring procedures may involve either in-line or off-line systems. In-line systems involve the taking of measurements during the process and may be either continuous, such as using an in-line thermometer or non-continuous for example by inserting a temperature probe into food.

Off-line systems may involve the taking of samples for rapid testing for example to determine pH or Aw using calibrated meters.

All monitoring equipment must be calibrated and working correctly.

## FREQUENCY OF MONITORING

The frequency of monitoring events will depend on a number of factors, these include:

- Nature of the product. The frequency of monitoring may be reduced if the products are all of a uniform size;
- Nature of the process for example monitoring may be reduced for automated processes compared with manual ones.
- Nature of production - Monitoring may be carried out per batch and hence the size and number of batches produced during a day may influence the frequency of monitoring.
- History of previous checks: Once an initial frequency of monitoring is established it will be possible to either increase or reduce down the frequency depending on the results obtained.

## DEVELOPING A MONITORING SYSTEM

When developing a HACCP monitoring system you should consider:

**1. What monitoring activities are going to take place at each CCP?** You should specify whether you intend to undertake a series of observations or measurements or a combination of both and whether these will be in-line or off-line.

**2. Specify how frequently the monitoring activities are to be carried out.** For non-continuous in-line and off-line monitoring you should specify a frequency for the measurements or observations to take place. For example, "every 30 minutes" or "every batch" or "at the end of the cooking process". For in-line monitoring systems the frequency of manual checks, if required, should be specified.

**3. Define how the monitoring activities will be carried out.** You may prefer to refer to a work instruction where the methodology of monitoring is clearly explained. Such methods should include details of the equipment to be used.

**4. Who is responsible for monitoring actions at each CCP?** The responsibilities for undertaking monitoring should be clearly defined and those responsible must have received adequate training in the relevant procedures. Thought should be given to who is best placed to regularly perform monitoring tasks. Larger businesses may have quality assurance staff to oversee monitoring but production operators may be in a better position to reliably perform these functions.

**5. State the name and job title of the deputy, if applicable.**

**6. Where are the results of monitoring recorded?** Reference should be made to any documents, online systems or log books where the results of monitoring are recorded.

**7. Will the monitoring records be checked and signed off by anyone?**

It can be helpful for monitoring records to be signed off by a person who is not directly involved in the monitoring process.

## **DOCUMENTATION AND RECORD KEEPING**

Record who is to carry out each monitoring activity (specify job title or name). Ensure they are competent to do this and that their training is appropriate to the task being performed.

There should be a detailed description of precisely how to carry out the monitoring (normally given in a standard operating procedure and work instruction).

Persons responsible for monitoring must have the knowledge and authority to take the prescribed corrective action if the critical limit is not achieved. Direct action is essential to avoid delays, the person monitoring must be able to initiate the corrective action, it is not sufficient for them to report to higher authority who then initiate the corrective action.

Records of training and competency assessment of all personnel involved in monitoring should be maintained.

Document what control parameter (i.e. temperature, flow, pH) is to be assessed, how the monitoring is going to be carried out and the frequency at which it is to be performed.

For the frequency state if it is continuous or discontinuous. If discontinuous state exactly how often the monitoring will be performed. Ensure that this is adequate to confirm control.

Monitoring systems should be supported by specifications, procedures and work instructions.

Monitoring records should include the date and time the activity was carried out and actual result. All records and documents associated with monitoring CCPs must be signed by the person(s) doing the monitoring and, where possible, by another nominated person who is responsible for reviewing the monitoring results (typically this would be a manager).

## **COMMON PROBLEMS WITH MONITORING SYSTEMS**

Monitoring checks are not carried out as often as planned. This may be because the monitoring frequency is unrealistic or because staff have not been given the correct or clear instructions.

Monitoring records are incomplete or inaccurate. This may be because staff are relying on memory rather than recording results at the time of the check.

Monitoring checks are confused with control measures (A monitoring device tells you what is happening but does not control the process). For example, a pH meter will tell you the pH of a fermented sausage but it will not change the pH. The pH can only be changed by varying the duration and temperature of the fermentation process.