

APPLICATION OF HACCP PRINCIPLES FOR THE MEAT INDUSTRY

GUIDANCE SHEET NO: 17

IMPLEMENTATION OF HACCP IMPORTANCE OF TRAINING & WRITTEN PROCEDURES



IMPLEMENTATION OF HACCP IS A CHALLENGE FOR MANY FOOD-BUSINESSES

Implementation of HACCP is a major challenge for most food businesses. In some cases' significant investments must be made to bring facilities up to the required standard. However, the greatest challenge is lack of knowledge and expertise in-house do identify and develop procedures for management of potential food safety risks. A study of meat processors in Turkey highlighted the main problems with HACCP implementation faced by the meat industry (see table 1).

Table 1. HACCP implementation problems identified by the Turkish meat industry

Problem with Implementation of HACCP	% of Meat Processors
Lack of appropriate standard operating procedures	92.2%
Lack of training for factory personnel	91.3%
Lack of knowledge of HACCP	83.5%
Staff turnover	80.9%

Adapted from Bay *et al* (2007). Difficulties for implementation of HACCP in food businesses in Turkey. *Food Control*, **18**(2), pp: 124-130.

The findings from the Turkish study match those from studies in the European Union and United States of America that concluded that the major problems for HACCP implementation could be summarised as:

- Lack of knowledge / training in HACCP;
- Absence of clear written procedures for use by workers.

This guidance sheet provides advice on the preparation of written procedures and provision of training for factory personnel on HACCP and practical aspects of food safety management.

STANDARD OPERATING PROCEDURES

It is essential to have clear written work instructions for workers that cover aspects of the operation of the HACCP system. There are two main types of written instruction:

(1) **Standard Operating Procedures (SOP's)** – which deal with general aspects of the HACCP system not directly involved with sanitation and hygiene.

(2) **Sanitation Standard Operating Procedures (SSOP's)** - which deal with critical aspects of the HACCP system required to ensure sanitary conditions of surfaces and product to prevent contamination / cross-contamination within the factory.

STANDARD OPERATING PROCEDURES (SOP's) & SANITATION STANDARD OPERATING PROCEDURES (SSOP's)

Validation Development of SOP's and SSOP's is the responsibility of individual businesses but all SOP's and SSOP's should be as simple and clearly written as possible and include the following:

- Title;
- Purpose;
- Scope;
- Work instruction including names of persons responsible for carrying out the work instruction;
- Monitoring who will be responsible for monitoring and how frequently will the procedure be verified;
- Corrective actions (if something goes wrong);
- Record Keeping (what records to keep & who is responsible);
- Date & name of persons implementing, reviewing, revising the procedure.

EXAMPLES OF STANDARD OPERATING PROCEDURES

You may create as many SOP's as you like but it is best to keep the HACCP system as simple as possible with the minimum amount of procedures necessary to ensure food safety. As a minimum, SOP's are required for:

- Calibration of thermometers, pH meters, water activity meters, weighing balances etc (as appropriate);
- Reival and storage of meat and other ingredients;
- Tempering / thawing of frozen materials;
- Cooking, smoking, cooling, drying or fermentation processes required as part of production;
- Storage of finished products;

SANITATION STANDARD OPERATING PROCEDURES

There are two types of SSOP's:

(1) **Pre-Operational SSOP's** – These cover sanitation procedures that take place before processing begins.

(2) **Operational SSOP's** – These cover sanitation procedures that take place during processing.

PRE-OPERATIONAL SSOP's

Pre-operational SSOP's cover routine sanitary procedures that must be completed before production starts. These include:

- Cleaning, sanitation and disinfection of contact surfaces, facilities, equipment and utensils;
- Must include instructions for equipment disassembly and re-assembly;
- Which cleaning, sanitation and disinfection agents to use;
- How to prepare the cleaning, sanitation or disinfection agent, concentration required, dilution factor and any specific safety instructions such as avoiding mixing with other chemicals;
- How to apply including what equipment to use, contact time, removal etc.

OPERATIONAL SSOP's

Operational SSOP's cover sanitary procedures that must be completed to create a sanitary environment for production, storage and handling of meat and poultry products, includes:

- Cleaning, sanitation and disinfection of contact surfaces, facilities, equipment and utensils during production;
- Mid-shift / shift changeover clean-up procedures;
- Employee hygiene including hand-washing;
- Product handling requirements for raw and cooked product areas of the factory.

EXAMPLES OF SSOP's

As a minimum, SSOP's are required for:

- Pre-operational sanitation of surfaces, facilities, equipment and utensils.
- Potable water supplies.
- Operational sanitation of surfaces, facilities, equipment and utensils.
- Temperature control (also pH & water activity if appropriate).
- Control of waste-water, dust and fly /pest management.
- Worker hygiene.
- Monitoring and corrective action logs (records of monitoring and corrective actions).

TRAINING OF PERSONNEL

Staff involved in food production are a potential source of microbiological, chemical and physical hazards through poor personal hygiene, behaviour, poor work practices or failures to follow instructions. Staff need:

- Clear work instructions (SOP's & SSOP's) and;
- Sufficient training and supervision so that they can handle food safely.

WHY IS TRAINING IMPORTANT?

The factory personnel are the people who will implement the HACCP system and ensure delivery of a safe product to the customer. If the personnel lack the necessary knowledge of food safety risks and how to manage them in their working environment, they will be unable to implement the HACCP system effectively. If the HACCP system is not working properly the risk of unsafe products leaving the factory and harm coming to customers is likely to increase.

Analysis of food safety incidents in meat processing units using causal chain analysis often shows a clear link between failures in the training and instruction provided to factory personnel and a serious food safety incident experienced by the business. Some practical examples are summarised in table 2.

Table 2. Failures in training/instruction can result in serious food safety risks

Problem	Effect	Outcome
Inadequate instruction	Poor personal hygiene by food handlers	Increased chance of contamination of food products by food poisoning bacteria (such as Salmonella).
Insufficient instruction, training or supervision	Unhygienic work practices	
Lack of awareness of importance of hygiene measures (such as cleaning & disinfection)	Poor working practices and food safety problems go unreported and uncorrected.	Food safety hazards identified by the business are not controlled and increased chance of contamination of food products by food poisoning bacteria (such as Salmonella)
Lack of knowledge of HACCP principles	Ineffective food safety management system	

Adapted from: Graffham, Personal Communication – Troubleshooting of food safety incidents in several meat processing units using causal chain analysis.

DELIVERY OF INSTRUCTION AND TRAINING

Attendance on a formal training course is not usually a legal requirement. The methods of instruction and / or training are for the food business to decide. Structured training should be to a standard that is equivalent to the appropriate level of the National Occupational Standard in Food Safety for the sector (where available). Operators may deliver training in-house or use external resources.

In-house - training material may be developed in-house, or by external advisors, while training may be delivered in-house by appropriately qualified staff or by external trainers. In-house training can be adapted to reflect company practices and procedures.

External – May be provided by further education centres or other agencies authorised to provide food hygiene courses.

Whichever option is chosen, the trainer should be adequately qualified to deliver the type of training that is required.

COMPETENCE LEVELS

Identify the requirements for food safety and hygiene training for each position in the company and how that training will be delivered.

Make sure that new employees' responsibilities do not exceed their level of food safety competence by assessing their skills against the requirements for the job and arrange for training needs to be met.

All new staff should be considered untrained unless they can produce evidence of previous training such as examination certificates.

BASIC TRAINING AND INSTRUCTION

Before new staff handle food, give all food handlers (including temporary staff) sufficient instruction to achieve a basic understanding of food safety principles and the companies' personal hygiene and health procedures. Soon after starting work food handlers should be made aware of:

- Procedures to keep chemical hazards such as cleaning materials from contaminating food products;
- Precautions and checks to avoid physical hazards such as glass or metal from contaminating food products;
- Sources of microbiological contamination and practices to minimize the spread and growth of bacteria, including cleaning, disinfection and temperature controls;
- How to check for signs of pest activity.

Staff who do not handle food but who may enter production areas such quality controllers, store-keepers, production managers, cleaners, engineers and maintenance staff should all be given basic instruction in food and personal hygiene procedures.

JOB-SPECIFIC TRAINING

Provide adequate training and / or instruction on the specific tasks that staff are required to perform, as soon as it is practicable to do so. It is recommended that informal training is given within four weeks and any formal training within three months of starting work. Staff must achieve the required standard of hygiene before being left to handle food unsupervised.

On-the-job tuition - by a competent member of staff may be the most effective method of teaching staff the correct hygienic and safe procedures and how to use equipment in such a way as to avoid contamination of meat.

Staff working in storage, packaging or food dispatch areas - are likely to need additional training in:

- Good housekeeping practices, Temperature controls, Packaging controls, Pest control procedures, Vehicle hygiene.

Supervisors and / or managers - should have a sufficient level of training to enable them to provide appropriate instruction and supervision of food-handlers and to make decisions based on sound knowledge of food safety principles and practices.

SUPERVISION OF NEWLY TRAINED PERSONNEL

New and inexperienced staff must be supervised until they are competent to handle food safely. Ask staff to demonstrate their knowledge and understanding and observe their behaviour and working practices over a period of time.

The level of supervision required will depend on the nature of the work and the level of staff training and competence. Staff undertaking complex or technical tasks may require constant oversight while learning new skills, while others performing simple, perhaps repetitive, tasks may only need a regular check in case there are queries or problems.

REFRESHER TRAINING

Refresher training / instruction may be needed when there are significant changes in working practices, procedures, equipment or legislation, or if current practices are found to be inadequate.

The company food safety training programme may need to be amended to suit changing needs of the business and when problems are identified.

Refresher training is likely to be necessary at least every two or three years depending on job function.

TRAINING RECORDS

Keep a written record of each individual's training to show they have received appropriate instruction / training in food hygiene matters commensurate with their work activity. The training records should include information on:

- Trainee's name;
- Date(s) / duration of training / instruction;
- Type / level of training;
- Subjects covered;
- Confirmation of attendance (such as a copy of the course register);
- Formal outcome (for example, test results, certificate / qualification awarded) if applicable.

TRAINING IN APPLICATION OF HACCP PRINCIPLES

Make sure that at least one person in the business has sufficient training in the application of HACCP principles to develop and maintain the HACCP based procedures in the factory.

Make sure that other staff (for example supervisors or managers) with responsibility for maintaining the factories HACCP-based food safety procedures have received appropriate training.

All food handlers will benefit from HACCP awareness training to help them understand food safety hazards and the importance of effective operation of the factories HACCP system.