

HACCP 101 Part I - An Introduction

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What does HACCP stand for?

HACCP (pronounced “hassap”) is an acronym for Hazard Analysis Critical Control Point. HACCP is a straightforward, systematic and logical system designed to control endproduct safety through the prevention of problems.

HACCP focuses on safety issues and does not deal with product quality, work practices, or non-food products.

How is HACCP applied?

HACCP is applied through a series of seven principles. These principles can be summarized as follows:

- Review your process from raw material to final product.
- Decide where hazards could occur that would lead to a safety issue in the final product.
- Identify control mechanisms for each hazard you have identified.

- Determine monitoring methods for each control mechanism.
- Decide what will be done if monitored control exceeds determined safety limits.
- Review the HACCP plan to ensure that it is and continues to work effectively.
- Write everything down and keep accurate records in an orderly fashion so that they can be found when needed.

Where did HACCP come from?

HACCP has been around in some form for nearly 40 years. It was originally designed for the manned space program in the US in a joint effort by the Pillsbury company, the US army laboratories, and NASA. The safety of food products at this time (and in some cases today) was based on microbiological testing of finished food products. However, it was recognized that only testing 100% of the finished product could *ensure* safety - obviously a nonviable approach. Instead they adapted an engineering concept known as Failure, Mode and Effect Analysis which evaluated what could potentially go wrong at each stage in an operation along with possible causes and effects before establishing effective control mechanisms. Likewise, HACCP looks for hazards or what could go wrong that could result in an unsafe final food product.

The HACCP process went through a number of revisions in the 1970s and 1980s. In 1985, the National Research Council published a report that strongly endorsed the adoption of HACCP by the food industry. Over the years the National Advisory Committee on Microbiological Criteria for Food (NACMCF) in the US and the International Codex Alimentarius Committee on Food Hygiene developed a consensus from diverse opinions concerning HACCP application. This led to the adoption of the current seven HACCP principles that are accepted throughout most of the world.

These principles are:

- Principle 1. Conduct a *Hazard Analysis*.
- Principle 2. Determine the *Critical Control Points* (CCP).
- Principle 3. Establish *Critical Limits* for the preventive measures associated with each identified CCP.

- Principle 4. Establish *Monitoring* requirements for each Critical Limit.
- Principle 5. Establish *Corrective Actions* to be taken when monitoring indicates a deviation from the established Critical Limit.
- Principle 6. Establish procedures that *Verify* the HACCP system is working correctly.
- Principle 7. Establish effective *Record-keeping* procedures that document the entire HACCP system.

Is HACCP required for the food industry?

There are two industries that are currently under mandatory HACCP inspection in the US. The US Food and Drug Administration (FDA) established HACCP-based inspection for the seafood industry in December of 1997. The US Department of Agriculture Food Safety and Inspection Service (USDA-FSIS) introduced HACCP-based inspection for the meat and poultry industries in January of 1998. By January 2000, all USDA-inspected meat and poultry facilities will be inspected using the principles of HACCP.

The FDA has proposed mandatory HACCP for the juice industry, however, a final ruling has not yet been published.

Most fresh-cut processors have established HACCP programs on a voluntary basis recognizing this system provides the best assurance of producing a consistently safe product. It is becoming increasingly common for customers to require documented HACCP programs from their suppliers. This, more than any regulation, will drive the adoption of HACCP in the food industry.

What do I need to do before establishing a HACCP program in my facility?

Senior management support is critical to a successful HACCP plan.

HACCP builds on a strong program of Good Manufacturing Practices (GMPs). These can be found in the Code of Federal Regulations 21 CFR 110. All food processing establishments must operate under current GMPs. Trying to establish a HACCP program without having GMPs under control is a wasted effort. GMPs include sanitation of equipment and facilities and employee hygiene.

Establishing a company recall plan is not covered by GMPs but is advisable. Many identified hazards can be eliminated or reduced by having effective, documented GMPs in place.

Written sanitation operating procedures are mandated by the USDA for the meat and poultry industries and is a good practice for all food industries. Having written standard operating procedures ensures that things get done right the first time every time and can make training much easier.

Establish a HACCP team consisting of a variety of experts (in knowledge and experience) in quality assurance/technical, production, sanitation, engineering or equipment maintenance. Additional expertise may be provided from within the company or from external sources. Examples of additional expertise or knowledge include suppliers or supplier quality assurance, research and development, distribution, microbiology, toxicology, and statistics.

A HACCP consultant may be useful in establishing a HACCP program but the company HACCP team should be fully involved in developing the program. HACCP is not effective as a binder on a shelf, it must be implemented and faithfully carried out.

If HACCP is a new concept for you or your company it is advisable to get some training in this area. Many HACCP courses are available - they usually last from 2 to 4 days. Some companies offer in-house training of employees.

References/Suggested Reading:

Mortimer, S. and C. Wallace. 1994. HACCP. A practical approach. Chapman & Hall, New York.

Stevenson, K.E. and D.T. Bernard (ed.). 1995. Establishing Hazard Analysis Critical Control Point programs A workshop manual. The Food Processors Institute, Washington, D.C.
