THE 7 PRINCIPLES OF HACCP AS APPLIED TO THE SHELLFISH INDUSTRY

HACCP IS COMPOSED OF 7 PRINCIPLES TO IDENTIFY AND CONTROL THE HAZARDS SYSTEMATICALLY:

CONDUCT A HAZARD ANALYSIS

The first step is to identify the potential hazards that can be introduced in the product. These hazards can be associated with the species used as well as hazards associated with the finished product, packaging used and method of distribution. For example, the hazards of concerns associated with filter-feeders such as oysters or clams can originate from the harvest environment and may include pathogenic bacteria, natural toxins and environmental contaminants. Because oysters and clams can be distributed whole as well as shucked, we must also consider what can happen during distribution that may affect its safety, such as temperature abuse that can allow for growth of pathogenic bacteria already present in the product.

IDENTIFY CRITICAL CONTROL POINTS (CCPS)

A CCP is a step in the process that is critical for controlling the hazards identified in the previous step. A common CCP for the shellfish industry is the transit or receiving step. In this step the hazards related to natural toxins, environmental chemicals and growth of pathogenic bacteria are reasonably likely to occur if controls are not in place. Harvesting tags and proper temperature during transit are examples of controls that can be applied here.

ESTABLISH CRITICAL LIMITS

The next step is to establish limits for the control of the hazard identified at the CCP. For example, maintaining an ambient or internal product temperature of 45°F or below during transit and storage of shellstock, defines a limit that is critical for the safety of the product. Exceeding this limit puts that product at risk and will trigger an immediate corrective action of all affected product. Another example of a critical limit will be to only accept shellstock that comes with tags.

ESTABLISH MONITORING PROCEDURES OF THE CRITICAL LIMIT

For each processing step that was identified as a CCP in which a critical limit has been established, the processor must describe procedures detailing what needs to be checked every time shellstock is received, stored or shipped as well as provide the documented assurance that the critical limit has been consistently met.

For example, monitoring that shellstock are always received with tags or a similar shipping document ensure that they are collected from waters approved for harvesting, that the harvester has a license and/or has a shellfish dealer certification from the Virginia Department of Health, Division of Shellfish Safety and that the product received is properly identified. Checking shellstock incoming temperature ensures that temperature control is maintained and that abuse did not happen during transit and storage. If temperature is not controlled during transit and/or storage, the pathogenic bacteria normally present in the shellstock can increase to levels that may cause illness to consumers.

PRINCIPLE 5

ESTABLISH CORRECTIVE ACTIONS

If during monitoring products failed to meet the critical limit established, then a corrective action must be taken. Corrective actions include detailed procedures to follow in the event that a critical limit is not met. The purpose of corrective actions is to ensure that unsafe products do not reach the consumer and that the process that caused the deviation is corrected so future problems are prevented.

For example, if shellstock was received above the critical limit of 45°F, then there was a failure that would require corrective action. The corrective action would evaluate the time and temperature that product was outside the critical limit and decide if product is safe or not. If safety cannot be assured, then the product may have to be disposed of or used for another purpose.

PRINCIPLE 6

ESTABLISH VERIFICATION PROCEDURES

The HACCP plan must be accurate at controlling the hazards and verified that is being followed. Examples of verification activities include weekly review of monitoring and corrective action records, monthly check of ambient delivery truck temperature, daily and/or weekly accuracy checks of thermometers and verification of current status of the shellstock shipper by checking the Shellstock Shippers List (ICSSL).

These verification activities need to be performed by a HACCP trained person with sufficient experience and understanding of how the HACCP system works. To obtain help with these activities, you can contact the Virginia Seafood AREC.

PRINCIPLE 7

ESTABLISH RECORD-KEEPING AND DOCUMENTATION PROCEDURES

A record-keeping system gathers all the records that provide evidence that critical limits have been met, and appropriate corrective actions and verification procedures have been taken. These records can help line managers and business owners keep track of the historical documentation their food production processes and corrective actions implemented. Record keeping can also help provide proof of consistent HACCP compliance. Examples of records used to support the HACCP plan include, shellfish receiving logs, truck pre-chilling records, cooler storage temperatures logs, shellstock tags, and accuracy checks of thermometers.

RESOURCES

- **Seafood Network Information Center** is designed to assist the seafood industry and regulators implement seafood HACCP procedures.
- **FDA Seafood Hazard Guide**
- **National Shellfish Sanitation Program NSSP Guide for the Control of Molluscan Shellfish Model Ordinance**
  Sanitation
  Training curriculum
  Hazard Guide for Aquaculture products