

# THE BASIC HACCP GUIDE

On the cutting edge of technology....Oregon's Seafood Processing  
Did you know...

- HACCP was first developed for use in America's space program.
- HACCP is a prevention plan, not a test program.
- HACCP was scrutinized and endorsed by both industry and regulators.
- HACCP is the application of common sense and scientific principles to food preparation.

## What is HACCP?

Hazard Analysis Critical Control Point (HACCP) is a food safety system based on prevention. Prevention is essential for food safety because testing every product for bacteria, chemical and foreign object contamination is impractical, time consuming, and cost prohibitive. HACCP consists of identifying food safety hazards that are reasonably likely to occur in your food process, creating controls to prevent the hazard, and then monitoring those controls. It can be applied to every product and process using the processor's operational knowledge, common sense and food safety science. As a result, HACCP may be adapted to any type of food production and any size of facility without significant capital investment.

The state of Oregon has adopted the federal HACCP requirements as part of Oregon's seafood processing rules. To find out more about Oregon's requirements, please contact the Division of Food Safety, Oregon Department of Agriculture at the number or address listed on the back page of this guide. This simple easy to read brochure will help explain the seven principles of HACCP and get you started on developing your own HACCP plan.

## Why is HACCP necessary?

Seafood, like other foods, may become contaminated if not handled, processed or stored properly. However, seafood is unique in that some types may contain or develop naturally occurring hazards that can threaten human health. The federal Food and Drug Administration (FDA) and Department of Agriculture (ODA) are now requiring a HACCP plan of seafood processors to ensure food safety to the maximum extent possible.

## Training

State and federal regulations require approved HACCP training for at least one person in your HACCP plan development. You may want to train only one member, your whole staff, or hire someone who is already trained in HACCP. In any scenario, the person(s) trained in HACCP will assist in developing, reassessing, and reviewing the Hazard Analysis and HACCP plan. Contact numbers are on the back page of this guide.

## Getting started...

By completing these five recommended steps prior to the planning process, you'll save your company a lot of time and effort.

**First, get your HACCP resource team together.** In addition to the one HACCP trained person, who do you want involved? You may include an outside expert. But most importantly: Who is your operations expert? Who is familiar with the flow of your processing? How about the experts on your equipment ?

**Second,, describe what you process and how you process it.**

Sound easy? It is.

**Third, list all ingredients and raw materials used in your process .** Again, very straightforward. Just be sure to include everything.

**Fourth, make a process flow diagram** . Simple boxes and arrows will do fine. Be sure to describe your operation from the moment the first ingredient hits the receiving door to the time the product is shipped out.

**Fifth, be in compliance with FDA's Good Manufacturing**

**Practices .** Good Manufacturing Practices (GMP's) are already required by the FDA and may be incorporated into your HACCP plan, in part or whole.

ODA requires a written sanitation plan based on FDA's GMP. Keep in mind, a state sanitation plan and compliance with FDA's GMP are required even if no HACCP plan exists.

# The HACCP Plan

## 1. Hazard Analysis and Identification.

List the natural hazards associated with the species you process. What naturally occurring hazards are associated with the species you process? FDA has developed "Fish and Fishery Products Hazards and Control Guide," a guide of species and the hazards normally associated with them including toxins, microbiological growth, and chemical contamination. You'll want to consult this guide. See the back page of this brochure for more information. List all of the biological hazards associated with your ingredients and process and at what point in the process each hazard exists. Remember, you are identifying what hazards are reasonably likely to occur. First, examine your ingredients. Raw product may be compromised before being received at the processing facility. As a result, processors must consider and control for hazards that exist at the time of receipt. Consider dry ingredients involved in your process, such as flour or cornmeal. Can these or other ingredients be contaminated before or after being received at your facility? What about hazards associated with untreated water, such as microbiological contamination? Second, examine your process. At what point is pathogen growth possible on the raw or finished product? What about pathogen growth while the product is being processed? Consider shellfish hazards, time/temperature abuse hazards, and finished food hazards such as microbiological growth with inadequate drying or inadequate cooking. What hazards are possible after ingredients are combined with raw product, such as pathogen growth in batter? What type of pathogen growth is encouraged by the packaging type? Examine all food processes such as pasteurization, cooling and packaging for possible pathogen growth. Can mishandling affect the safety of your food? Recontamination is a serious health threat. Inanimate objects, employee contact, and raw food contact, including splash or condensation drippage can be sources of bacteria, and their potential to recontaminate your food product should be carefully considered. Identify all the physical hazards that can affect the safety of your food. Examine the possibility of contamination of food product by foreign objects. Consider broken machine parts, machine oils or grease, employee objects, such as jewelry, and any other physical contamination. Identify chemical hazards that may affect the safety of the product. Consider any color of food additives used in you processing. Some additives are harmful to human health if misused. Other have been

linked to severe allergic reactions, including death. List any additives that you use in your process, when they are used, and what controls you have to make sure they are kept within acceptable limits.

## 2. Critical Control Points

At what point can a procedure be applied to prevent, eliminate or reduce the hazard? Any area or procedure in which a hazard could result in an unacceptable human health risk is a critical control point. The points you select can match the efficiency of your process, just as long as they are the points needed to keep food safe. You'll find these are common sense, for example, keeping food properly refrigerated and cooking it at adequate temperatures.

## 3. Critical Limits

Establish the minimum or maximum limit needed to prevent, eliminate or reduce the hazard to an acceptable level. A critical limit is the point where corrective actions are needed to ensure the hazards are being controlled and that your food product is safe. The limits may be as unique as your process, but need to incorporate food safety science, such as proper refrigeration and cooking temperatures.

## 4. Monitoring

Establish reliable measuring and frequency of measurements at critical control points. Address what will be measured, how it will be done, who will do it, and how often the critical limit will be measured. Again, sophisticated machinery is not always the answer; a reliable measurement may be your facility manager checking the refrigerator temperature twice a day and recording the day, time, and temperature with his or her initials on a record in a three ring binder. This information can help you and your staff see and correct a trend before any product is compromised.

## 5. Corrective Actions

What will you do if a critical control limit is above and/or below acceptable levels? Depending on what hazard exists, you may have to

test, recook, rework, or destroy the product. Identify what you will do if any of the critical limits are exceeded or not met.

## 6. Record Keeping

The records you'll need will depend on your process, but they should at least include your sanitation records, HACCP plan, records of monitoring and corrective measures, verification procedures and importer verification records. This may be the most crucial part of your HACCP plan. By creating a historical record, the ability to pinpoint any problem with your food product will be easy. With good record keeping you'll be able to analyze your overall operation, and as a result improve the overall quality of your product. To make this work, you must practice "positive record keeping," which means documenting your monitoring activities when you are in compliance with critical limits as well as instances when you limits are exceeded or not met. Records should include the facility's name, day and time of record, who is recording the information, and the product identification and code. The length of time you'll need to retain these records varies, depending on your product, one year for refrigerated product, and two years for frozen shelf stable or preserved products.

## 7. Verification

At least once a year, verify that your HACCP plan adequately controls food safety hazards and that it is being implemented effectively. Any deviation from a critical limit is an excellent opportunity to review the HACCP plan and ask, "Is our plan still valid?" "Why and how did the deviation occur?" Also revisit your HACCP plan anytime there is any change to your process or operation, including a change in raw materials or new machinery.

## Special Considerations in HACCP Planning

These areas deserve special consideration in your HACCP planning.

### Imports

Anyone importing fish or fishery products into the United States must also follow HACCP regulations. There are two ways to verify that the imported product was processed under a HACCP system; import from countries with a US Seafood inspection equivalency or provide written verification procedures (outlined by FDA). In either case the U.S. Owner or consignee who imports and offers the food for sale is responsible to ensure that the food product is in compliance with HACCP regulations. State how you ensure that any imported products in your processing comply with HACCP regulations.

### Smoked Fish

Smoked fish and fishery products have the potential to develop botulism during shelf life if not processed correctly. Botulism is one of the most poisonous natural toxins and as a result is an extreme hazard to human health. This potential has led FDA to specifically address smoking processes in HACCP planning. State how your processing controls will prevent the development of the botulism toxin over your product's shelf life.

### Shellfish

Shellfish present a unique challenge in HACCP planning. Because shellfish are filter feeders, the toxins in the growing area waters concentrate in their intestines. Raising the hazard potential even higher, most consumers eat the entire shellfish, either raw or partially cooked. As a result, guaranteeing that shellfish are from a clean growing area is crucial in reducing the hazards to human health. Explain how you verify that the product is received exclusively from approved waters.

### Economic integrity issues affecting your

## product

Although HACCP doesn't require processors to consider quality issues, they are still under regulation by the FDA and the state. Therefore you may want to consider incorporating quality controls into your HACCP plan in part or whole. Some product quality issues for consideration are correct species representation, grade, size, proportion, breeding, accurate packaging, and labeling.

## Sanitation Standard Operating Procedures

FDA and the State of Oregon also require sanitation standard operating procedures (SSOP) for every food processing facility. The written plan consists of monitoring and recording procedures such as: the safety of water used in processing, the condition of food contact surfaces, prevention of cross contamination, maintenance of sanitary facilities, protection of food packaging and food contact area from chemical, physical and biological contaminants, proper labeling, storage, and use of toxic substances, and control of employee health conditions. You may include these procedures into your HACCP plan, however, the SSOP and monitoring records must be kept separately.

## Review Process

FDA and ODA require that the analysis and plan be available to them on-site, and will review them during the inspection. The department may ask that you submit a copy of the plan for review and comment, although routine submission is not required. However, if you determine that you do not need a HACCP plan because no hazards exist, then the Hazard Analysis needs to be submitted for department review.

*Questions?*

HACCP is only one aspect of the department's seafood processing requirements. For a full understanding of the state's requirements, please contact us at:

Sea Grant Communications  
Oregon State University  
Administration Services A402  
Corvallis, OR 97331-2134

Oregon Department of Agriculture  
635 Capitol Street NE  
Salem, OR 97301-2532  
503-986-4720

### *Training*

Association of Food and Drug Officials Certified Training Course for  
Seafood Processors  
P.O. Box 3425  
York, PA 17402  
Denise D. Rooney, Executive Administrator  
phone: 717-757-2888  
Fax: 717-755-8089

### *Electronic Resources*

USDA Fish and Fishery Products Hazard and Control Guide:  
[Http://vm.cfsan.fda.gov/~dms/haccp-2.html](http://vm.cfsan.fda.gov/~dms/haccp-2.html)

USDA HACCP training programs and resource database:  
[Http://www.nal.usda.gov/fnic/foodborne/haccp/index.shtml](http://www.nal.usda.gov/fnic/foodborne/haccp/index.shtml)

Food and Drug Administration HACCP information:  
[Http://vm.cfsan.fda.gov/~lrd/haccpsub.html](http://vm.cfsan.fda.gov/~lrd/haccpsub.html)

Seafood Network information center:  
[Http://www-seafood.ncdavis.edu](http://www-seafood.ncdavis.edu)