

A Self-Guide to HACCP Management for Small Seafood Dealers, Packers and Processors

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REASSESSING YOUR HACCP PLAN

The hard part is over. You spent a great deal of time writing a Hazard Analysis & Critical Control Point (HACCP) seafood safety plan that was right for your business. You or your employees are maintaining records on all of your critical control points (CCPs), and you assume your plan is working properly — but is it? To be confident you have a safety program that will control the biological, chemical or physical hazards associated with your seafood, ask yourself these questions:

◆ Are you seeing frequent correction actions during the weekly review of your monitoring records?

◆ Do some corrective actions often occur at the same CCP?

◆ Have you made any changes to your production process?

◆ Are you offering new seafood or value-added products since your HACCP plan was first written?

◆ Has new information on food hazards or control measures been publicized that would affect how you process or distribute your seafood?

Reassessing your HACCP plan at least

once a year will assure you that you are using the right control measures to prevent or reduce the risk of hazards that could cause serious illness or injury to your customers.

Resources for Reassessment

When you first wrote your HACCP plan, you had to compare your control methods to the latest scientific or regulatory information on your fishery products to be sure you were using the best methods to manage food safety problems.

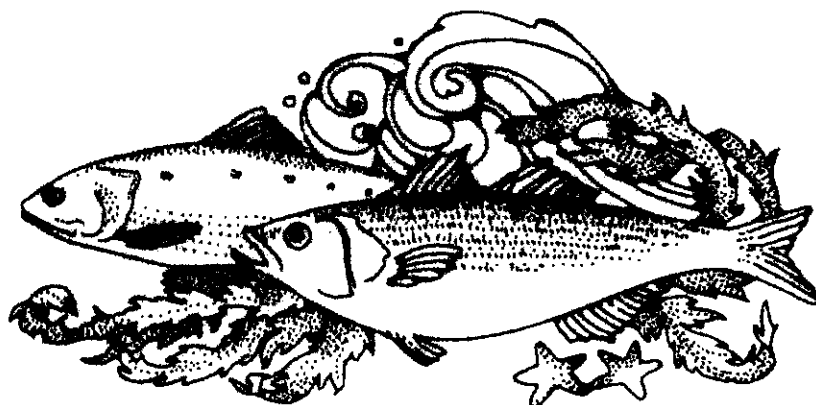
The HACCP regulation requires you to reassess your food safety plan once a year.

The best resource to help you reassess your HACCP plan is the Food & Drug Administration's (FDA) *Fish &*

Fishery Products Hazards & Control Guide.

This manual provides step-by-step instructions for identifying the bacterial, chemical and physical hazards that are likely to occur in fish and fishery products at harvest, during processing and under certain storage conditions.

If you do not have this guide, you can obtain the latest copy by contacting North Carolina Sea Grant, North Carolina State University, PO Box 8605, Raleigh, NC 27595-8605 or call 919/515-9101. Although the guide is updated, the latest



copy may not address all seafood hazards.

Regulatory agencies expect businesses to be alert to new food safety issues. To help processors get the latest information on seafood safety hazards, visit the FDA Web site: www.fda.gov/ and follow the link to foods.

You can also talk to your state or federal inspector, North Carolina Sea Grant specialist or North Carolina Cooperative Extension specialist about seafood hazards and control measures.

Seafood Hazards

Certain kinds of bacteria and chemicals can make seafood unsafe to eat. Physical hazards such as glass shards, wood bits or metal fragments in seafood also can hurt your customers. HACCP regulations require seafood processors to regularly monitor and maintain records on these hazards:

Sulfites. Many harvest vessels use sulfites to prevent black spots on shrimp. Sulfite-sensitive people may experience severe breathing problems if they are exposed to this chemical. The FDA permits the use of sulfites, but such shrimp must be labeled "Contains Sulfites."

Histamine. Tuna, Spanish mackerel and bluefish are three kinds of histamine-producing fish. Histamine poisoning — a common illness associated with seafood — is caused by temperature abuse. Bacteria make an enzyme that reacts with natural components in the fish flesh to produce histamine. The most severe symptoms of histamine poisoning are nausea, vomiting, abdominal cramps and breathing problems.

Cooking does not destroy histamine. The only way to control bacteria growth is to immediately ice down a catch at harvest and keep your fish below 40 F during storage.

Disease-causing bacteria. Ready-to-eat foods such as crabmeat and smoked fish can be eaten by the consumer without having to be cooked. Raw foods spoil long before they become a health threat to people because the harmless bacteria responsible for spoilage grow more quickly on

food than do disease-causing bacteria.

Cooking destroys both spoilage and harmful bacteria. However, cooked food that comes in contact with raw food or with utensils and equipment used to process raw food can become contaminated with harmful bacteria or *pathogens*.

Pathogens commonly cause nausea, vomiting, diarrhea, cramps, fever, chill and, in rare cases, death. If spoilage bacteria are absent, pathogens will grow quickly, particularly if food is held between 40 and 140 F for longer than four hours. Remember the absence of spoilage in cooked food does not necessarily mean that food is safe to eat.

Viruses and Marine Algae Toxins. Pollution from untreated sewage is a prime source of harmful viruses. Seafood dealers need to know they are selling shellfish that has been harvested from state-approved waters.

Because oysters may be consumed raw, they are a potential food safety hazard. Viruses are responsible for hepatitis A and certain stomach illnesses. Most viral illnesses are destroyed by cooking, but some viruses are resistant to heat.

Shellfish harvested from waters contaminated with marine toxins produced by certain kinds of algae are also a threat to people. In the United States, paralytic, neurotoxin, diarrhetic and amnesic shellfish poisonings are illnesses related to clams, mussels and oysters harvested from waters infested by algal blooms.

None of these toxins are fully destroyed by cooking, freezing, salting or smoking. Harvesting your shellfish from state-inspected waters is a seafood safety control measure that significantly reduces the risk that your seafood will be contaminated with life-threatening viruses or toxins.

Parasites. These are small roundworms or tapeworms that are transmitted to humans through raw or undercooked seafood. Parasites are considered a hazard only in fish that the processor knows will be served raw or mildly

cooked such as sushi, sashimi or cold-smoked fish.

Reassessment

The only way to demonstrate that you are controlling seafood hazards is through written records kept on CCPs. Maintaining records may seem a burden, but detailed documentation is your best assurance *and your proof* that you are safely handling your seafood. If a consumer should ever claim that one of your products made them ill, you will have the paperwork to show that the seafood in question was properly handled. The FDA wants you to reassess or re-evaluate your HACCP plan annually to determine that:

- ◆ Your CCP monitoring records have been properly maintained.
- ◆ Your HACCP plan is controlling your seafood safety hazards. Frequent corrective actions at one or more CCPs can signal that your control measures need to be replaced or your critical limits need to be adjusted.
- ◆ Your manufacturing process has been revalidated when you alter a cook cycle for your ready-to-eat seafood or have upgraded your production line with new cookers, smokers or steam boilers.
- ◆ You have considered food safety controls when offering new kinds of seafood, or you are selling processed seafood such as crab cakes.

A reassessment should include an in-plant inspection and a review of your HACCP records.

When you reassess your operation, walk through your facility and compare your manufacturing process against the flow diagram made in your first HACCP plan. Has anything changed?

For example, one year ago, you were selling fish, live crabs and oysters to restaurants. Today you also are wholesaling shrimp. Now you will need a HACCP plan to exclude sulfite-treated shrimp or to ensure that

you are properly labeling containers of sulfite-treated shrimp.

If you plan to expand your business with value-added seafood products, you should be aware of any hazards that can contaminate your manufacturing process. You may need a HACCP plan to control potential food safety problems.

A crab processor who has just started wholesaling battered and breaded crab cakes may need a HACCP plan to prevent the growth of pathogens in the batter.

Raw ingredients are always a potential source of pathogens. Fresh eggs, for example, can be a source of the pathogen *Salmonella*. If you use raw eggs to form crabmeat patties, you may risk contaminating your product with harmful bacteria. To avoid this, you could use pasteurized eggs — which, like milk, have been heat-treated to kill pathogens.

If you replaced an old crab cooker or smokehouse with newer equipment, you will need to have a process authority test or revalidate your cook cycles to make sure your seafood is receiving the proper heat treatment to kill pathogens in ready-to-eat products such as fresh crabmeat and smoked fish.

You also will need to revalidate your cook process if you made substantial repairs to or replaced the boiler that provides steam to your crab cooker or pasteurization tank. Your new process validation letter should be filed with your other HACCP-related records.

Whether you are selling a new kind of seafood or processed seafood, conduct a hazard analysis to decide if you need more CCPs in your operation. If you do, your HACCP plan must be changed to include the new CCPs as well as the verification steps and records to manage and document them.

If you are not selling new seafood, making new products or using new equipment, your plant inspection should confirm that your CCPs are being monitored properly.

Watch your employees — especially new hires — test CCPs and fill out the monitoring

forms. Make sure they are taking measurements and recording information correctly. Ask your employees if they know their HACCP duties and if they understand why they are required to routinely fill out records. Your employees will better comply with your HACCP requirements if they are aware of the hazards that could injure or make your customers ill.

When you reassess your documentation, you should spot check the following HACCP records:

- ◆ CCP monitoring records;
- ◆ Corrective action reports;
- ◆ Results of rapid chemical tests for sulfite or histamine;
- ◆ Letters of guarantee from your seafood suppliers;
- ◆ Equipment calibration records;
- ◆ Sanitation control records;
- ◆ Employee training records; and
- ◆ Cooker validation records.

Since you or a HACCP-certified employee should be reviewing records at least weekly, you do not need to examine every HACCP document. The number and kind of records you check is up to you. One approach could be to select a couple of records randomly, or you may concentrate on documents in which you know you have had record-keeping problems. Check to see that:

- ◆ Corrective actions have been performed whenever monitoring indicated a deviation.
- ◆ Corrective actions clearly explain how a product made during a deviation was handled. Was the seafood salvaged or destroyed and why?
- ◆ Monitoring equipment has been calibrated and cookers have been validated.
- ◆ Records bear the signature or initials of the employee assigned to monitor a CCP as well as the time and date the employee's observations or measurements were taken.
- ◆ Records have been signed or initialed and dated by a HACCP-certified reviewer.

When you have finished your reassessment, write down your observations. List the people

involved in the reassessment and note the records that were reviewed. Indicate any steps you will take to correct problems you uncovered or changes you will make to your HACCP plan. Keep your reassessment report with other HACCP documents.

Your HACCP plan will change when your business sells new products or has to observe new food safety control measures. A yearly reassessment will keep you current on food safety issues and enhance the quality of your products as you strengthen your seafood safety program.

References

The first four HACCP publications can be ordered through North Carolina Sea Grant, 919/515-9101.

HACCP: Hazard Analysis and Critical Control Point Training Curriculum; 3rd Edition, 1998. National Seafood HACCP Alliance, North Carolina Sea Grant, Raleigh, NC. UNC-SG-98-07.

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Hazard Analysis and Critical Control Point: Model Safety Plans for Small Seafood Dealers, Packers and Processors. North Carolina Sea Grant, Raleigh, NC. UNC-SG-99-01.

Federal Register, Vol. 60 No. 242, Monday, Dec. 18, 1995, Rules and Regulations, pages 65197-65202.

— Barry Nash and Dave Green



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