

Chapter 13: Sources of Information on Preparing HACCP Plans

Overhead 1

Objective:

In this module, you will learn:

- What sources of information exist to help you identify seafood safety hazards and establish control measures.
- How to use the *Fish and Fishery Products Hazards and Controls Guide* to identify hazards and establish control measures.

Overhead 2

Sources of Information:

- Seafood processors
- Government inspectors
- Trade associations
- Suppliers and buyers
- Sea Grant/Cooperative Extension
- Publications
 - Fish and Fishery Products Hazards and Control Guide*
 - Compliance policy guides
 - Import alerts
 - National Shellfish Sanitation Program manuals
 - U.S. Department of Agriculture
 - Model Seafood Surveillance Project (National Marine Fisheries Service)
 - Seafood Safety (National Academy of Sciences)
 - Morbidity and Mortality Weekly Report (Centers for Disease Control and Prevention)
 - Recommended International Code of Practice (CODEX)
 - Food Safety Enhancement Program (Agriculture Canada)
 - Quality Management Program (Fisheries and Oceans Canada)

Explanatory Note:

Although not required by the seafood HACCP regulation, it is advisable to maintain HACCP plan supporting documentation described in this chapter.

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Sources of Information on Seafood Hazards and Control Measures

Appendix III introduced the hazards that are common in fish and fishery products. It also provided some information about how these hazards can be controlled. You will need to perform a hazard analysis to decide whether these or other hazards are reasonably likely to occur in your products. Also, control measures need to be devised that make sense for your operations. To do this, gather information from a variety of sources and choose the information that best applies to your situation. Some of the most useful sources are described in this chapter.

- ***The Seafood Processor***

You and your employees know your operation better than anyone. Experience is an excellent source of information. You may already have knowledge about hazards that can affect your product, and you may have already implemented suitable controls.

- ***Government Inspectors***

Federal, state and local inspectors that visit your plant can be a good source of information. Inspectors may point out potential hazards, but it will usually be your responsibility to implement effective control measures.

- ***Trade Associations***

Trade associations can also provide useful information. Trade journals often provide general information on potential hazards and controls. Articles on specific processes or products also can be useful. Some trade organizations provide services such as consulting, educational programs and publications that can help identify hazards and control measures.

- ***Suppliers and Buyers***

Suppliers of cleaning materials, processing equipment and packaging materials can provide information on potential hazards and control measures. A buyer's specification may point to a hazard in one of your products. For example, a buyer may require a *Salmonella*-free product. It is important to note, however, that not all buyer's specifications relate to safety.

- ***Sea Grant/Cooperative Extension***

Many universities have Sea Grant or Cooperative Extension programs. These programs provide continuing education and technical assistance to industry. Extension specialists and agents can assist in identifying potential hazards and control measures. For a listing, visit <http://seafood.ucdavis.edu/organize/org-sg.htm>

- ***Publications***

Textbooks, government publications and scientific literature provide general and specific HACCP information. These publications usually include a list of references that can be used to get further information.

Scientific journals are available in most libraries, especially university libraries. Summaries of information from scientific journals are also available in FDA, Sea Grant and other publications. Following is a listing of organizations that produce publications that may be helpful.

- ***U.S. FDA Fish and Fishery Products Hazards and Controls Guide***

This guide was developed to help seafood processors identify and control hazards in their operations. The guide provides information on seafood hazards and suggested control measures that can be incorporated into seafood HACCP plans. The guide was also developed as a tool that regulators can use to assist them in evaluating seafood processors' HACCP plans.

- Available as bound manual from University of Florida, IFAS-Extension Bookstore, P.O. Box 110011, Gainesville, FL 32611-0011.

- Available as electronic source on FDA website,
<http://vm.cfsan.fda.gov/~dms/haccp-2.html>

- ***FDA Compliance Policy Guides (CPGs) and Import Alert***

The FDA CPGs provide information on FDA compliance policy. The FDA Import Alerts are notices from FDA headquarters to district offices concerning new or unusual problems affecting import products. The CPGs and import alerts can be obtained by contacting: FDA, Freedom of Information (HFI-35), 5600 Fishers Lane, Rockville, MD 20857.

Alternately, you may purchase the Import Alerts Manual and the Compliance Policy Guides Manual from: U.S. Department of Commerce, Technology Administration, National Technical Service (NTIS), Sales Desk, 5285 Port Royal Road, Springfield, VA 22161 (Phone: 703/487-4650). In addition, the import alerts can be obtained on the World Wide Web at <http://www.fda.gov> (then under FDA Activities click on Imports, where you will find information on current Import Alerts).

- ***FDA National Shellfish Sanitation Program (NSSP) Manuals***

The NSSP is a cooperative federal/state/industry program established in 1925 to ensure the safety of molluscan shellfish. The program is described in the *National Shellfish Sanitation Program Manual of Operations*, Parts I and II. Part I is entitled "Sanitation of Shellfish Growing Areas," and Part II is entitled "Sanitation of the Harvesting, Processing and Distribution of Shellfish." The manuals are available from FDA regional offices.

- Additional information

- <http://www.issc.org>

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- ***U.S. Department of Agriculture (USDA) HACCP***

The USDA Food Safety and Inspection Service conducted a 1990 study to determine how to implement the HACCP system in meat and poultry inspection operations. The project resulted in the development of model HACCP plans. Two generic HACCP models deal with refrigerated foods and cooked sausage. They are available from: USDA, Food Safety and Inspection Service, Washington, DC 20250. For additional USDA information visit <http://www.fsis.usda.gov/>

- ***National Marine Fisheries Service (NMFS) Model Seafood Surveillance Program (MSSP)***

The NMFS developed the MSSP in response to a Congressional mandate to “design a program of certification and surveillance to improve the inspection of fish and seafood consistent with the hazard analysis critical control point system.” As a result of this project, NOAA/NMFS developed HACCP models for 14 types of products and for wholesalers/distributors/seafood auctions and fishing vessels. These models include product safety, plant/food hygiene and economic fraud hazards. They may be obtained from: National Marine Fisheries Service, P.O. Box 1207, Pascagoula, MS 39568. Web site for HACCP manual, visit <http://seafood.nmfs.noaa.gov/manual.html>

- ***National Advisory Committee on Microbiological Criteria for Foods (NACMCF)***

NACMCF provides advice and recommendations to the secretaries of the Department of Agriculture and the Department of Health and Human Services concerning the development of microbiological criteria used to evaluate the safety and wholesomeness of food, including criteria for microorganisms that indicate whether food has been processed using GMPs. Web address: <http://www.usda.gov/>

- ***National Academy of Sciences (NAS)***

The NAS received its congressional charter in 1863, which established it as a private, nonprofit organization designated as an official advisor to the federal government on science and technology matters. Its members include experts from many disciplines, including scientists, engineers, doctors, lawyers and corporate executives. The *NAS Seafood Safety* publication provides a good source of information about seafood hazards. NAS publications can be obtained from the National Academy Press (phone:800/624-6242).

- ***Centers for Disease Control and Prevention (CDC)***

The CDC is responsible for characterizing risk factors and prevention strategies for diseases that impact on public health. In addition, the CDC assists local health agencies in epidemiologic investigations of foodborne illness outbreaks. Certain diseases are reported to the CDC by state epidemiologists. The *Morbidity and Mortality Weekly Report* contains summaries of this information. It can be obtained by contacting CDC at: *Morbidity and Mortality Weekly Report*, Mailstop C-08, CDC, 1600 Clifton Road N.E., Atlanta, GA 30333 (Phone: 404/332-4555).

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- ***Codex Alimentarius (CODEX)***

The Codex Alimentarius Commission is sponsored by the Food and Agriculture Organization and the World Health Organization of the United Nations. Its purpose is to facilitate international trade by establishing uniform food standards. The commission has developed many standards and guidelines, including *Recommended International Code of Practice for Fresh Fish*. Information may be obtained from the U.S. Coordinator for Codex Alimentarius, USDA, Food Safety and Inspection Service, Washington, D.C. 20250.

- ***Canadian Food Inspection Agency***

The agency has developed a Food Safety Enhancement Program (FSEP), a HACCP-based program for food manufacturing operations. Guidance manuals for the FSEP, including *Guidelines and Principles for the Development of HACCP Generic Models*, are available from Agriculture Canada, Food Protection and Inspection Branch, 59 Camelot Dr., Nepean, Ontario, Canada K1A 0Y9. Web site:

<http://www.inspection.gc.ca/english/ppc/psps/haccp/haccpe.shtml>

- ***Fisheries and Oceans Canada Quality Management Program (QMP)***

This HACCP-based program is designed for seafood processing plants. Publications are available from Fisheries and Oceans Canada, Inspection Directorate, 200 Kent St., 7th Floor, Ottawa, Canada K1A 0E6 (phone: 613/993-6930).

Computer-Accessible Information Sources

- ***FDA's Home Page***

The FDA home page Internet address is: <http://www.fda.gov>. From there, you can easily locate consumer education materials, industry guidance, bulletins for health professionals and other documents and data from FDA's centers and offices. The World Wide Web enables you to download and print the documents you want. In addition, FDA's Office of Seafood maintains a question-and-answer document regarding HACCP issues. Web address: <http://vm.cfsan.fda.gov/~dms/qa2haccp.html>

FDA seafood information is located on the Center for Food Safety and Applied Nutrition (CFSAN) home page. Use the search option found on the FDA home page to find CFSAN.

- ***Regulatory Fish Encyclopedia: <http://www.cfsan.fda.gov/~frf/rfe0.html>***

- ***AquaNIC***

AquaNIC (Aquaculture Network Information Center) is a gateway to electronic resources on aquaculture. AquaNIC is maintained at Purdue University, West Lafayette, Indiana. Access to AquaNIC is free. Information on AquaNIC can be viewed on your computer monitor, downloaded

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via modem or sent to your e-mail address. AquaNIC also contains an image directory that holds hundreds of pictures, short videos and slides in a variety of common image formats. AquaNIC is linked to other aquaculture databases on the Internet. Information on accessing AquaNIC can be obtained from Purdue University. Web address: <http://aquanic.org>

• **USDA**

USDA Food and Nutrition Information Center has a database on training programs and resource materials. Web address: <http://www.nal.usda.gov/fnic/foodborne/haccp/index.shtml>

• **Seafood Discussion Group (Mailing List)**

An Internet seafood discussion group has been established to facilitate seafood technology information exchange. The National Seafood HACCP Alliance sends network subscribers new information on seafood HACCP implementation, upcoming seafood technology meetings and other seafood technology information. Subscriptions are free and available to anyone with access to e-mail. To subscribe, address your request to listproc@ucdavis.edu and in the message text write only: subscribe seafood (your first name) (your last name).

<http://seafood.ucdavis.edu/listserv/listinfo.htm>

Information on the seafood discussion group can be obtained from: Robert J. Price, Extension Specialist, Seafood Products, Food Science and Technology Department, University of California, One Shields Ave., Davis CA 95616 (phone:530/752-2194, e-mail: rjprice@ucdavis.edu).

• **SeafoodNIC (<http://seafood.ucdavis.edu>)**

SeafoodNIC (Seafood Network Information Center) is a Web database containing information on the National Seafood HACCP Alliance plus seafood-related guidelines and regulations, sanitation information, organizations, publications, and meetings. SeafoodNIC is linked to other seafood databases on the Internet. Information on the SeafoodNIC discussion group mailing is on <http://seafood.usdavis.edu/listserv/listinfo.htm>

• **Compendium of Fish and Fishery Processes, Hazards, and Controls**

The compendium includes sections on seafood processes and controls, plus biological, chemical and physical hazards and controls. It provides the seafood industry with information on documented seafood process parameters, federal guidelines and tolerances for seafood contaminants, bacterial-growth parameters and recommended hazard-control operations. The compendium will assist the seafood industry in developing effective HACCP plans by providing scientific information on food-safety hazards and controls. It is available for viewing or downloading on the Internet. Web address: <http://seafood.ucdavis.edu/haccp/compendium/compend.htm>

• **Selected Additional References**

FDA/DHHS. 1994. "Proposal to Establish Procedures for the Safe Processing and Importing of Fish and Fishery Products," Government Printing Office, Washington, DC 20402 (202/512-2357), Jan. 28, 1994. Federal Register, pages 4142-4214. http://www.access.gpo.gov/su_docs/aces/aaces002.html - 1) from the "individual database" scroll down and highlight "Federal Register, Volume 59 (1994)," 2) in the search terms box, type the terms, processing importing fish, 3) hit the submit button and then select the corresponding article.

Lee, J.S. and K.S. Hilderbrand Jr., 1992. "Hazard Analysis and Critical Control Point Applications to the Seafood Industry," ORESU-H-92-001, Oregon Sea Grant, Oregon State University, Corvallis, OR. <http://nsgd.gso.uri.edu/oresu/oresuh92001.pdf> (Requires Adobe Acrobat Reader)

Microbiology and Food Safety Committee, National Food Processors Association (NFPA). 1989. "Guidelines for the Development of Refrigerated Foods," NFPA Bulletin 42-L, 1989. http://www/nfpa-food.org/Pub_Catalog/pubcat00_alpha.pdf (Requires Acrobat Reader)

NACMCF. 1992. National Advisory Committee on Microbiological Criteria for Foods, Hazard Analysis, and Critical Control Point System Adopted March 20, 1992, (NAS), "HACCP: Principles and Applications," Van Nostrand Reinhold.

Subcommittee on Microbiological Criteria, Committee on Food Protection, Food and Nutrition Board, National Research Council, NAS. 1985. "An Evaluation of the Role of Microbiological Criteria for Foods and Food Ingredients," National Academy Press.

How to Use the Fish and Fishery Products Hazards and Controls Guide

Overhead 3

Preliminary Steps:

- General information
- Describe the food
- Describe the method of distribution and storage
- Identify the intended use and consumer
- Develop a flow diagram

Notes:

Instructor's Note:

Use Chapter 2 of the guide to explain the kind of assistance that it can provide for plan development. In particular, highlight the potential species-related and process-related hazards tables contained in Chapter 3, the sample plans at the end of each of the hazard chapters, and the appendices to the guide. It may be helpful to select a product of interest to the students to run through the process as an example.

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Overhead 4

Hazard-Analysis Worksheet

- Set up the hazard-analysis worksheet
- Identify the potential species-related hazards
- Identify the potential process-related hazards
- Complete the hazard-analysis worksheet
- Understand the potential hazard
- Determine if the potential hazard is significant
- Identify the critical control points

Overhead 5

Complete the HACCP Plan Form

- Set the critical limits
- Establish monitoring procedures
 - What?
 - How?
 - Who?
- Establish corrective action procedures
- Establish a record-keeping system
- Establish verification procedures

The guide is designed so that a processor or regulator can look up the fish species and finished-product form of interest and identify potential food-safety hazards. It is structured around the same hazard-analysis worksheet and HACCP plan form that has been used throughout this course. In this way, the user is lead through a series of decisions such as: whether a potential hazard is a significant hazard; what is the proper CCP; what critical-limit monitoring programs, corrective-action procedures and verification procedures are appropriate; and what records are necessary.

The recommendations included in the guide are not, for the most part, binding FDA requirements. Use of the guide in developing HACCP plans is not mandatory. The guide provides useful guidance, but seafood processors and importers are free to choose other control measures that provide an equivalent level of safety assurance to those listed in the guide. There may also be circumstances where a hazard identified in the guide may not apply to a product or species because of conditions specific to the processor.

Food-safety hazards can be introduced to a product because of the nature of the product (e.g., the species) or because of the way it is processed. The guide refers to the first type as species-related hazards. It refers to the second type as process-related hazards. The guide is set up in a way that

lets you look up the species of interest (among the more than 350 listed) in a table. The table lists the potential species-related hazards that FDA has reason to believe exist for each species. You can also find the finished product of interest in another table. This table lists the potential process-related hazards that FDA has reason to believe exist for each finished product form. Processors must control both types of hazards.

The guide then provides information to help processors and regulators decide if these potential hazards are reasonably likely to occur in any given circumstance. It further provides information about how the hazard might be controlled. These control options are not intended to be all inclusive. Rather they represent the mechanisms that FDA is aware of that should prove effective in eliminating or minimizing the risk of a hazard developing in a product. In particular, the guide provides information about critical limits that may be appropriate in certain circumstances. In some cases, the suggested critical limits are derived from existing tolerances or action levels. In other cases, they are derived from a review by FDA of the scientific and technical literature, conducted for the specific purpose of assisting in the development and review of HACCP plans.

You have been provided a copy of the latest edition of the guide along with your other training materials. You should use it as a reference tool during the practical exercise on the last day of the course.

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