Sea Grant
NEW YORK

Seafood Guide 2

Enhancing Seafood Safety and Marketability

Taking steps to control deterioration of seafood at the time of harvest until sold will not only help to ensure the safety of your seafood, but also maintain quality while extending the shelf-life. This is especially important to consider for those who are not processing their products and not directly subject to the Seafood HACCP regulation.

Selling Wholesale

Wholesale buyers are looking to source wholesome and safe seafood that meets specific safety requirements, which often requires proper sourcing and handling by you, the producer. They will require specific information and assurances from producers that potential seafood safety hazards are controlled. It will be important for producers to understand what these hazards are and how to ensure they are controlled to better market their products.

Selling Direct to Consumers

When selling whole fish directly to consumers extra care should be taken to ensure hazards, typically controlled by the processor's and retailer's food safety plans, are addressed. It will be important to show you are harvesting and handling your fish safely to build trust and to avoid getting your loyal patrons sick. Ensuring you can convey to buyers that potential food safety hazards are controlled will increase the marketability of your products.

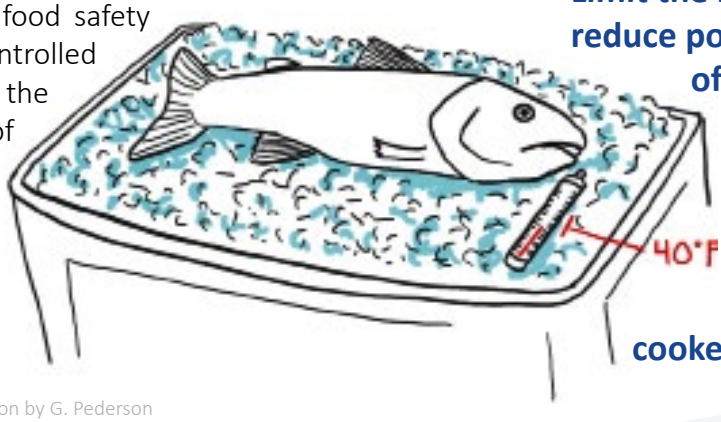

Illustration by G. Pederson

Histamine

Some species of fish (i.e. tuna, bluefish, and marlin) contain high levels of the amino acid histidine, which are broken down into histamine by bacteria that naturally occur in the marine environment and on the skin and gills of marine fish. Histamine is toxic to humans, when high levels form in fish it can cause illness when consumed. Once histamine forms it cannot be destroyed by heat during cooking. Histamine formation must be prevented with strict temperature controls from harvest to consumtion.

Pathogens

Disease causing bacteria and viruses known as pathogens are found naturally in the environment and in/on the gut, gills and skin of fish and humans. While cooking would typically destroy these pathogens, consuming raw or partially cooked seafood can result in illness when pathogens are present.

Controlling Histamine and Pathogens

The best ways to control pathogen growth and histamine formation, on the boat or farm, and provide your customers with high quality safe products are highlighted below.

Maintain sanitary conditions and practice good hygiene

Limit the handling of fish/shellfish to reduce potential contamination or spread of bacteria and viruses

Temperature controls to ensure fish/shellfish is cooled quickly and maintained at an internal temperature below 40°F until cooked and/or consumed.

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Parasites

Parasites can live in the flesh of various species and can infect humans if consumed alive. The cooking process would typically destroy these parasites, but when consuming raw, additional measures to prevent illness must be taken.

Controlling Parasites

To ensure parasites are not consumed, be sure to make it clear to buyers that seafood that will be consumed raw should be frozen to destroy potential parasites and prevent illness. Proper freezing is necessary to ensure parasite destruction.

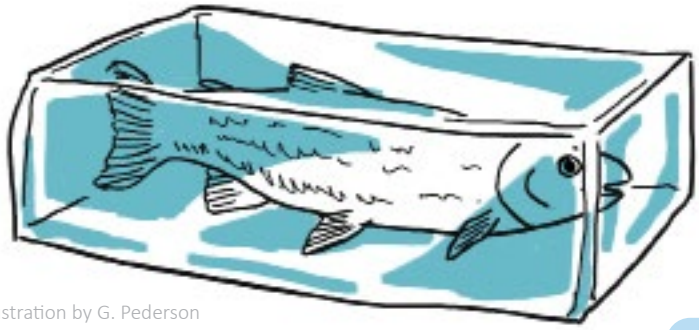

Illustration by G. Pederson

Adequate Freezing to Control Parasites includes:

-4°F FOR 7 DAYS

-31°F FOR 15 HOURS

Environmental Chemicals

Different industrial chemicals including heavy metals and pesticides can be present in both marine and freshwater environments. These chemicals can accumulate in the fat of the edible tissue of fish to levels that could cause health problems. This is typically more of a concern in aquaculture ponds, freshwater, and nearshore environments. Aquaculture feed can be another route of contamination.

Controlling Environmental Chemicals

While these are typically controlled by regulatory closures, fishing restrictions, and water quality standards outlined in commercial permits, providing detailed catch/harvest logs, feed analysis, and water quality tests are some ways to assure buyers that your products are safe.

Aquaculture Drugs

Aquaculture drugs can be used on a farm to control disease and parasites, affect production and growth, and sedate fish. If aquaculture drugs are used, it will be important to make it clear to buyers that they were used properly to minimize the risk of harmful drug residues in the edible portion of the fish. There are very few aquaculture drugs approved for use in fish sold for food in the U.S. A list of approved aquaculture drugs can be found on the FDA Website linked in the additional resources.

Controlling Aquaculture Drugs

To best market your harvest, ensure drugs are used as prescribed only when necessary and provide proof of proper use (i.e. abiding by prescribed withdrawl periods), or product testing, to certify that there is little to no risk of harmful drug residues to consumers.

Additional Resources

The US Food and Drug Administration's Bad Bug Book
www.fda.gov/food/foodborne-pathogens/bad-bug-book-second-edition

The US Food and Drug Admininstration's Fish and Fishery Products Hazards and Controls Guidance
www.fda.gov/food/seafood-guidance-documents-regulatory-information/fish-and-fishery-products-hazards-and-controls

List of Approved Aquaulture Drugs
www.fda.gov/animal-veterinary/aquaculture/approved-aquaculture-drugs

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