

Seafood References

This seafood reference is provided to assist those segments of the retail and food service industry that deal with seafood. It is suggested that the tables that follow be used during the hazard analysis procedural step.

Table 1. Natural Toxins¹ in Seafood

Natural Toxins	Type of fish (species)	Control
Paralytic Shellfish Poisoning (PSP)	Molluscan Shellfish N.E. and N.W. coastal regions of N. America	NSSP approved waters (tags) ² (FDA ICSSL listing)
Neurotoxic Shellfish Poisoning (NSP)	Molluscan Shellfish harvested along coast of Gulf of Mexico	NSSP approved waters (tags) ² (FDA ICSSL listing)
Diarrhetic Shellfish Poisoning (DSP)	Molluscan Shellfish	NSSP approved waters (tags) ² (FDA ICSSL listing)
Amnesic Shellfish Poisoning (ASP)	Molluscan Shellfish N.E. & N.W. coasts of N. America	NSSP approved waters (tags) ² (FDA ICSSL listing)
Ciguatera Fish Poisoning (CFP)	fin fish from extreme S.E. U.S., Hawaii, Subtropical and Tropical areas: barracuda amberjack horse-eye jack black jack other larger species of jack king mackerel large groupers large snappers	Purchase from approved sources: • get fish from areas that are not subject of an adverse advisory, or • get fish from a reef area known to be monitored for toxicity and not covered by an adverse advisory.
Gempylotoxin, a strong purgative oil (can cause severe diarrhea)	Escolar	FDA recommendation: Escolar should not be marketed in interstate commerce
Eetrodotxin	Puffer Fish or Fugu, usually from Indo-Pacific ocean, however some noted from Atlantic Ocean, Gulf of Mexico and Gulf of California	Illegal to import or receive (exemption: an agreement with one N.Y. importer)

¹ Fish and Fishery Products Hazards and Controls Guide, Third Edition, June 2001

²The tags must contain a unique state issued "certification number" specific for each certified dealer. If the firm is engaged in interstate commerce, this number appears in FDA's Interstate Certified Shellfish Shippers List.

Table 2. Fish Considered to be Scombrototoxin-Forming Species¹

Toxin Formation	Species - Market Names	Control
Scombrototoxin formation as a result of time/temperature abuse	Most scombroid poisonings from tuna, mahi-mahi and bluefish. Other species are: Amberjack or yellowtail Anchovy Bluefish Bonito Escolar or Snake Mackerel Gemfish Herring (not River herring) Jack Jobfish Kahawai Mackerel (not Atka) Mahi-Mahi Marlin Pilchard or Sardine Sardine Saury Shad & roe Shad, Gizzard Snapper (Pristipomoides ssp) Sprat or Bristling Trevally Tuna Wahoo	Buy from approved federally inspected suppliers. They are required to receive, hold, and process using a HACCP system. Check for an adequate quantity of ice or other cooling media. If not, a federally inspected supplier or directly from a fishing boat, check for the following at receipt: - an adequate quantity of ice or other cooling media - the time the fish were caught (from the vessel or supplier) - See * information below

¹ Fish and Fishery Products Hazards and Controls Guide, Third Edition, June 2001

* FDA Recommended HACCP Controls for Histamine – Quick reference

Secondary Processor (Controls at receipt)

Transport records OR Adequate Ice/cooling media
 (< 40 °F throughout transit) surrounding product at delivery

Processing/ Storage

Fresh (not previously frozen) ≤ 4 hrs @ > 40 °F if any exposure is > 70 °F ≤ 8 hrs @ > 40 °F if NO exposure is > 70 °F
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Previously frozen ≤ 12 hrs @ > 40 °F if any exposure is > 70 °F ≤ 24 hrs @ > 40 °F if NO exposure is > 70 °F
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Table 3. Common Parasites in Seafood¹

Parasites ²	Type of fish/species likely to be used in menu items that will not be cooked	Control
Nematodes or roundworm Cestodes or tapeworms Trematodes or flukes	Sea bass Capelin & roe Cod Flounder - Dab - Fluke Grouper Halibut Herring Jack Jobfish Kahawai Mackerel Monkfish Mullet Chilean Sea Bass Ocean Perch Plaice Pollock Rockfish Sablefish Salmon & roe (aquacultured and wild) Seatrout Sole Sprat/Bristling Trout/steelhead/rainbow Tuna, small Turbot Wolfish	Purchase from a processor, require the raw fish to have been: • Frozen and stored at -4 °F (-20 °C) or below for 7 days; or • Frozen at -31 °F (-35 °C) or below and stored at -31 °F (-35 °C) for 15 hours; or • Frozen at -31 °F (-35 °C) or below until solid and stored at -4 °F (-20 °C) for 24 hrs. Freezing can be done in your operation if it is done in accordance with the Food Code, Chapter 3.

¹Fish and Fishery Products Hazards and Controls Guide, Third Edition, June 2001

²Some food products that have been implicated in human parasitic infection are: ceviche, salmon roe, green herring, undercooked grilled fish, lomi lomi, sashimi, drunken crabs, poisson cru, sushi, cold smoke fish