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Guidance for Parasite Destruction for Raw & Undercooked Fish Products

1. Why is parasite destruction necessary?

All living organisms, including fish, can have parasites. Parasites are a natural occurrence, not contamination. They are as common in fish as insects are in fruits and vegetables. Parasites are killed during the cooking process and therefore do not present a health concern in thoroughly cooked fish.

Parasites become a concern when consumers eat raw, undercooked or lightly preserved fish such as sashimi, sushi or ceviche. Freezing, as required by the 2013 FDA Model Food Code, kills any parasites that maybe present.

2. What raw and undercooked fish does parasite destruction apply to?

Parasite destruction applies to all raw and undercooked fish except those listed in regulation 3-402.11(B) (see below). The 2013 Food Code defines "fish" as: (1) "fresh or saltwater finfish, crustaceans and other forms of aquatic life (including alligator, frog, aquatic turtle, jellyfish, sea cucumber, and sea urchin and the roe of such animals) other than birds or mammals, and all mollusks, if such animal life is intended for human consumption; (2) "includes an edible human food product derived in whole or in part from fish, including fish that have been processed in any manner."

Fish that do not require parasite destruction include:

- Molluscan shellfish: any edible species of fresh or frozen oysters, clams, mussels, and scallops (or scallop product consisting only of the shucked adductor muscle);
- Tuna of the species *Thunnus alalunga*, *Thunnus albacares* (Yellowfin tuna), *Thunnus atlanticus*, *Thunnus maccoyii* (Bluefin tuna, Southern), *Thunnus obesus* (Bigeye tuna) or *Thunnus thynnus* (Bluefin tuna, Northern);
- Farm raised fish, such as salmon, that: A) if raised in open water, are raised in net-pens; B) are raised on land in ponds or tanks; C) have been fed formulated feed (i.e. pellets) that contain no parasites. Documentation is required;
- Fish eggs that have been removed from the skein and rinsed.

3. What are the requirements for parasite destruction?

Except for fish listed before in regulation 3-402.11(B), fish that are served raw or partially cooked must be subjected to parasite destruction by freezing. There are three acceptable time/temperature methods to accomplish parasite destruction (3-402.11(A) of the 2013 Food Code). All methods require that documentation or records be kept on site (see question #4 below) and available for review during the food establishment inspection.

The three acceptable time/temperature methods are:

1. Fish shall be frozen and stored at a temperature of -4°F (-20°C) or below for a minimum of 168 hours (seven days) in a freezer.
2. Fish shall be frozen at -31°F (-35°C) or below until solid and stored at -31°F (-35°C) or below for a minimum of 15 hours.
3. Fish shall be frozen at -31°F (-35°C) or below until solid and stored at -4°F (-20°C) or below for a minimum of 24 hours.

4. What records do I need to keep?

Fish that are treated for parasites (frozen) by the food establishment:

Records documenting the freezing temperature and time to which the fish were subjected must be maintained at the food establishment for 90 days beyond the time of service or sale as per 3-402.12(A).

Fish treated for parasites (frozen) by the supplier: A written agreement or statement from the supplier that the fish was frozen solid to one of the time/temperatures as specified in 3-402.11 may be substituted for the records specified in 3-402.12(A).

Fish that are farm raised (not treated for parasites): A statement from the supplier stating that the fish were raised and fed as specified in 3-402.11(B)(4) shall be retained at the food establishment for 90 calendar days beyond the time of service or sale of the fish.

5. Where can I get more information?

The FDA's "Fish and Fisheries Products Hazards and Controls Guidance" document contains detailed information regarding risks and hazards associated with seafood processing. Chapter 3 contains tables with types of fish and their associated hazards. You can read more about parasite destruction in Chapter 5.

<https://www.fda.gov/downloads/food/guidanceregulation/ucm251970.pdf>

The FDA Food Code 2013 can be found here:

<https://www.fda.gov/downloads/Food/GuidanceRegulation/RetailFoodProtection/FoodCode/UCM374510.pdf>