



Canning Fish in Quart Jars

FNH-00126

Please read this entire publication before you begin to can your fish. Also, note the directions under the "Processing" section that are different for quart-sized jars.



HANDLING THE CATCH

In the field

When you catch fish, handle the fish with care to avoid bruising and exposure to sun or heat. Bleed the fish immediately after catching to help increase storage life. Remove viscera (internal organs). Rinse fish and keep iced, refrigerated or frozen.



GETTING STARTED

Contact your local Cooperative Extension Service office for current canning information.

A video titled *Canning The Catch* is available for checkout at most district Extension offices and the Extension Communications office located on the University of Alaska Fairbanks campus in Fairbanks.

Preparing the fish

If the fish is frozen, thaw it in the refrigerator before canning. Rinse the fish in cold water. You can add vinegar to the water (2 tablespoons per quart) to help remove slime.

For most fish, remove the head, tail, fins and scales. It is not necessary to remove the skin. You can leave bones in most fish because the bones become very soft and are a good source of calcium. For halibut, remove the head, tail, fins, skin and the bones. Refrigerate all fish until you are ready to pack in jars.

Equipment

Be certain that you have all the equipment needed to produce a safe, good tasting canned product.

A pressure canner is required for processing fish. The high temperatures reached under pressure are necessary to ensure a safe product.

Re-read and follow directions for your canner. If you no longer have an instruction manual, write the manufacturer for a new copy.

Your pressure canner must be in good condition. Replace the gasket and safety plug if necessary. Be certain the vent or petcock is clean and open.

If you have a dial pressure gauge, have it checked for accuracy before the canning season begins. *Dial pressure gauges may be checked at your local Cooperative Extension Service office.*

For pressure processing fish, the 1-quart straight-sided mason type jar is recommended. The researched times for canning fish in quart-size jars are new, so read the directions carefully with special attention to the section titled "Processing."

It is a good idea to complete a trial run with your canner. Use 2 - 3 inches (about 3 quarts) of water in the canner. Put the canner through a short canning cycle, according to the manufacturer's instructions, to be certain you are familiar with the sound of the weighted gauge or with reading the dial gauge.

Jars should be washed in hot soapy water and rinsed before you use them. Check the rims of jars and discard any that have nicks or cracks.

Use two-piece, self-sealing lids.

Prepare the jar lids and rings according to the lid manufacturer's directions. Lids should be purchased new each year. Rings are reusable if they are not bent or rusty.

An acrylic or hard wood cutting board is recommended to cut down on bacterial contamination. Knives should be sharp. Cutting boards and knives should be washed regularly in warm, soapy water and rinsed thoroughly.



PACKING THE JARS

Cut the fish into jar-length filets or chunks of any size.

If the skin has been left on the fish, pack the fish skin out for a nicer appearance — or skin in for easier jar cleaning.

Pack solidly into clean 1-quart jars leaving 1-inch headspace (the unfilled space between the jar sealing edge and the top of the food or its liquid).

If desired, run a plastic knife around the inside of the jar to align the product; this allows firm packing of fish.

For most fish, no liquid, salt or spices need to be added, although seasonings or salt may be added for flavor (1 - 2 teaspoons salt per quart, or amount desired).

For halibut, add up to 4 tablespoons of vegetable or olive oil per quart jar if you wish. The canned product will seem moister. However, the oil will increase the caloric value of the fish.

Carefully clean the jar sealing edge with a damp paper towel; wipe with a dry paper towel to remove any fish oil.

Attach jar lids and rings. Follow the manufacturer's guidelines for tightening the jar lids properly.

If the rings are too loose, liquid may escape from the jars during processing, and seals may fail. If the rings are too tight, air cannot vent during processing, and food will discolor during storage. Over-tightening may also cause lids to buckle and jars to break.



PROCESSING

Add at least 3 quarts of water to the pressure canner so that there is 2 - 3 inches of water covering the bottom. Put the rack in the bottom of canner. Place closed jars on the rack according to the instructions provided with your pressure canner. Fasten the canner cover securely, but do not close the lid vent.

PLEASE READ CAREFULLY: The directions for quart jars are different from pint and half-pint jars at this point; please read this boxed section carefully. It is critical that the following processing directions are followed exactly:

Heat the canner on high for 20 minutes. If steam comes through the open vent in a steady stream at the end of 20 minutes, allow it to escape for an additional 10 minutes. If steam does not come through the open vent in a steady stream at the end of 20 minutes, keep heating the canner until it does. Then allow the steam to escape for an additional 10 minutes to vent the canner. This step removes air from inside the canner so the temperature is the same throughout the canner. **The total time it takes to heat and vent the canner should never be less than 30 minutes. The total time may be more than 30 minutes if you have tightly packed jars, cold fish or larger sized canners.**

Close the vent (use a hot pad or mitt) by shutting the petcock or by placing the weighted gauge on the vent. There are three positions or sections on a weighted gauge, depending on the canner manufacturer. For most pressure canning, the weighted gauge should be adjusted for 10 pounds of pressure.

Turn the heat on high. When the pressure reads 11 pounds per square inch (psi) on the dial gauge or the 10-pound weighted gauge begins to jiggle or rock, adjust the heat to maintain a steady pressure and begin timing the process.

Write down the time at the beginning of the process and the time when the process will be finished.

PROCESSING TIMES

Weighted Gauge Pressure Canner (10 pounds of pressure)

Quart Jars: 160 minutes (2 hours and 40 minutes)

(At altitudes above 1,000 feet, use 15 pounds of pressure)

Dial Gauge Pressure Canner (11 pounds of pressure)

Quart Jars: 160 minutes (2 hours and 40 minutes)

(At altitudes of 2,001 - 4,000 feet, use 12 pounds of pressure; at 4,001 - 6,000 feet, use 13 pounds of pressure; and at 6,001 - 8,000 feet, use 14 pounds of pressure)

For safety's sake, you must have a complete, uninterrupted 160 minutes (2 hours and 40 minutes) at a minimum pressure of 11 pounds pressure for a dial gauge or 10 pounds pressure for a weighted gauge.

If the pressure drops below 10 or 11 pounds of pressure, the timing must begin again from zero minutes. If the pressure rises above 10 or 11 pounds of pressure, lower the heat on the stove but do not begin timing again.



COOLING DOWN

At the end of the processing time, slide the canner away from the heat so it can cool.

Let the pressure drop to zero pounds of pressure naturally; weighted gauge canners usually have a lid lock that drops when zero pounds of pressure are reached.

Wait one more minute, then using a hot pad or mitt, slowly open the vent on dial gauge canners or remove the weighted gauge.

Open the canner and tilt the lid far-side-up so the steam escapes away from you.

Carefully remove jars with a jar lifter or tongs and place on a cloth or newspaper covered table away from drafts. **DO NOT TIGHTEN LID RINGS.** The sealing compound is hot and soft and the jar lids are still sealing. Most two-piece lids will seal with a "pop" sound while cooling.



CHECKING THE SEAL

After 12 hours, the jar lids should be sealed (lids curve downward in the middle and do not move when pressed with a finger). Lid rings are not needed on stored jars; you may remove them. Wash and store for later use.

If a jar did not seal (lid bulges or does not curve downward in the center and moves when pressed with a finger), remove the lid and check the jar sealing edge for tiny nicks. If needed, change the jar, add a new, properly prepared lid, and reprocess within 24 hours using the same processing time.

Food in unsealed jars may also be stored in the freezer. Adjust headspace to allow for expansion of frozen food.



STORING THE JARS

Wash the jars, label with contents and processing date. Store jars in a cool, dry storage area.

***Note:** Glass-like crystals of magnesium ammonium phosphate (common name *struvite*) sometimes form in canned salmon. There is no way for the home canner to prevent these crystals from forming, but they usually dissolve when heated and are safe to eat.*

**FOR SAFETY'S SAKE
HEAT HOME CANNED FISH BEFORE EATING!**

- Do you know if the dial gauge on your canner is reading accurately?
- Do you know when the rocking or jiggling weight is signaling properly?
- Did you follow the USDA Cooperative Extension recommendations for pressure processing this food?
- Was this preserved food a gift? If it was, do you know if the USDA Cooperative Extension Service recommendations for pressure processing this food were followed?

Due to the risk of botulism, it is extremely important that you answer "yes" to all of these questions and that the fish was pressure canned according to the recommendations in this publication. An added measure of safety is obtained if you heat home-canned fish according to the following directions:

1. Open the jar of fish. Check the contents. If fish smells bad or if you see gas bubbles, **THROW CONTENTS AWAY!** Do not taste!*
2. If fish smells and looks good, insert a meat thermometer into the center of the fish. Cover the jar loosely with foil.
3. Preheat oven to 350° F. Place jar in a glass baking dish to catch any spills and to keep the jar even on the rack.
4. Remove jar from the oven when the meat thermometer registers 185° F. This heating takes about 30 minutes.
5. Allow the jar to stand at room temperature for about 30 minutes, to let the heat distribute evenly.
6. Serve the fish hot or chill for later use.

* *Before you throw it away, detoxify the food, so eating spoiled foods will poison neither humans nor pets. To detoxify, carefully remove the lid from the jar. Place the jar of food and the lids in a saucepan. Do not remove food from the jar. Add enough water to cover the jars. Boil for 30 minutes and then cool. Drain water and dispose of food and lid. The jar may be reused.*

Research on food preservation is an ongoing process. The U.S. Department of Agriculture and the Cooperative Extension Service continuously apply new research findings to their recommendations for food preservation techniques. The guidelines in this publication may be revised at any time additional knowledge is gained that may increase the margin of safety or improve the quality of home preserved products. Please consult your local Cooperative Extension Service annually for updated information.

About this publication: Original research for quart jar processing times was carried out by Kristy Long, Ph.D., Foods and Home Economics Specialist for the Cooperative Extension Service, University of Alaska Fairbanks and Chuck Crapo, Ph.D., Seafood Quality Specialist for the Fisheries Industrial Technology Center, University of Alaska Fairbanks.

Revised, with the addition of quart jar processing times, in May 2004 by Kristy Long, Ph.D., Foods and Home Economics Specialist, Cooperative Extension Service-UAF. This publication was peer reviewed by Cooperative Extension Service faculty: Sheryl Stanek, Linda Tannehill, Roxie Dinstel, Lucy Bayles, Marci Johnson and Bret Luick. A special thanks to Rieta Walker of Homer, Alaska, for her at-home testing of the directions and the come-up times.

Externally reviewed by Val Hillers, Ph.D., R.D., Extension Foods Specialist, Washington State University.

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