



Albacore Tuna Canning the Catch



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Master Food Preserver

The Master Food Preservers of Humboldt and Del Norte Counties

are a group of trained, dedicated volunteers who work as non-paid staff members of the University of

California Cooperative Extension (UCCE) to conduct food safety and preservation public service activities in various communities throughout the counties. All information disseminated to the public is research-based, scientific methods of preserving foods at home safely that are approved by the University of California. Additionally, an MFP Volunteer cooperates with and assists other Cooperative Extension staff, helps prepare for and organize specific educational events, and adheres to the Affirmative Action policies of UCCE.

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Albacore tuna is not only a relatively inexpensive source of protein that is high in Omega-3 fatty acids—it is delicious! We, the Master Food Preservers of Humboldt and Del Norte Counties, hope that you venture out to the local marinas to meet the fascinating and friendly men and women who fish the open waters and bring back this wonderful and bountiful resource for us. Considered a “best choice” (Buy first, they’re well managed and caught or farmed in ways that cause little harm to habitats or other wildlife) by the Monterey Aquarium Seafood Watch, albacore is readily available in the late summer and early fall.

Albacore is the species of tuna most commonly caught off the California coast. Unlike its southern relatives (yellowfin, bluefin, and skipjack tuna), albacore is a white meat tuna with solid flesh. While other species of tuna are caught with nets, albacore is caught by trollers who pull feathered lures through the water, or by pole and line fishermen who use live bait to attract the fish to the surface. Most albacore is sold to canneries, however, frozen albacore is available to consumers during late summer and fall from seafood markets or fishermen selling at the docks.



Buying and Storing Albacore

Albacore is usually caught 20-2,000 miles offshore, so fish are frozen at sea. Most commercial fishermen bleed the fish after they are caught. If fish are not bled when caught they can have a stronger flavor. If you are concerned about this you should ask the fisherman if the fish you are buying were bled. Fish can weigh up to 60 lbs., but those preferred by consumers are 8-25 lbs. About 50% of the whole albacore can be utilized for food and a 10 lb. albacore will yield about 5 lbs. of meat. The yield should be even greater with a larger albacore, since the proportion of edible meat increases with albacore size.

Thawing Albacore

The best way to thaw your tuna is to wrap it in a plastic bag or covered container and store it in the refrigerator until the fish is almost, but not completely, thawed. Raw flesh which is partially frozen is easiest to cut. If you need to thaw the fish more rapidly, it can be placed under cold running water. Refrigerate all fish until you are ready to pack in jars.



Filleting the Fish into Loins

Albacore have four boneless, white meat “loins,” which are removed during cleaning. Many people will ask the fishermen to loin the fish for them. The fishermen are able to complete this process very quickly as they are very skilled with their knives, and waste very little meat. Because they are working with fish that have been flash frozen on board their ship, they are able to loin the fish while there are ice crystals in the meat—so that when you prepare your fish you will be starting with the highest quality tuna. They also dispose of the carcass for you—many use it as crab bait, otherwise it is loaded into bins and picked up for use as fertilizer. If you purchase whole frozen fish, you will need to loin it yourself.

Refreezing Loins

Loins may be refrozen for later use if they still contain ice crystals or are very cold. First wrap tightly with plastic cling wrap, then wrap again with freezing weight foil or freezer paper. Freeze quickly and store at 0°F or lower. The lower the temperature, the longer the storage life of the frozen fish.

Canning Raw Tuna

- 1** Cut tuna loins into length of pint or ½ pint jars. Do not use quarts.
- 2** Pack tightly leaving 1" headspace. If desired, you can add ½ tsp. salt or soy sauce, 1-3 tbsp. oil per ½ pint. You can also add up to ½ tsp. of any of the following: lemon juice, jalapeno peppers, garlic, bay leaf, black pepper, dill weed, red pepper flakes, or other spices/herbs. Remember a little goes a long way—start small and make notes about the flavor for next year's canning.
- 3** Run a plastic knife around the inside of the jar to align the tuna and remove air pockets. This allows firm packing of fish and helps with even heat distribution during processing.
- 4** Wipe rim carefully, making sure sealing edge is free of particles of fish, oils, spices, or other flavorings. Place new lids and rings on jars, tighten to finger tight (do not overtighten), and process immediately.

Tuna is a low-acid food and must be processed under pressure to insure that there is no survival of any botulism spores which can grow and produce a toxin.



Using a Pressure Canner

Follow these steps for successful pressure canning:

- 1** Put 2 to 3 inches of hot water in the canner. Some pressure canners require that you start with even more water in the canner. Always follow the directions for your specific canner. Place filled jars on the rack, using a jar lifter. When using a jar lifter, make sure it is securely positioned below the neck of the jar (below the screw band of the lid). Keep the jar upright at all times. Tilting the jar could cause food to spill into the sealing area of the lid. Fasten canner lid securely.
- 2** Leave weight off vent port or open petcock. Heat at the highest setting until steam flows freely from the open petcock or vent port. While maintaining the high heat setting, let the steam flow (exhaust) continuously for 10 minutes.
- 3** Place the weight on the vent port or close the petcock. The canner will pressurize during the next 3 to 5 minutes.
- 4** Start timing the process when the pressure reading on the dial gauge indicates that the recommended pressure has been reached, or when the weighted gauge begins to jiggle or rock as the canner manufacturer describes.
- 5** Regulate heat under the canner to maintain a steady pressure at or slightly above the correct gauge pressure. Quick and large pressure variations during processing may cause unnecessary liquid losses from jars. Follow the canner manufacturer's directions for how a weighted gauge should indicate it is maintaining the desired pressure.



IMPORTANT: If at any time pressure goes below the recommended amount, bring the canner back to pressure and begin the timing of the process over, from the beginning (using the total original process time). This is important for the safety of the food.

6 When the timed process is completed, turn off the heat, remove the canner from heat if possible, and let the canner depressurize. Do not force-cool the canner. Forced cooling may result in unsafe food or food spoilage. Cooling the canner with cold running water or opening the vent port before the canner is fully depressurized will cause loss of liquid from jars and seal failures. Force-cooling may also warp the canner lid of older model canners, causing steam leaks. Depressurization of older models without dial gauges should be timed. Standard-size heavy-walled canners require about 30 minutes when loaded with pints. Newer thin-walled canners cool more rapidly and are equipped with vent locks. These canners are depressurized when their vent lock piston drops to a normal position.

7 After the canner is depressurized, remove the weight from the vent port or open the petcock. Wait 10 minutes, unfasten the lid, and remove it carefully. Lift the lid away from you so that the steam does not burn your face.

8 Wait 5 minutes before removing jars with a jar lifter, and place them on a towel, leaving at least 1-inch spaces between the jars during cooling. Let jars sit undisturbed to cool at room temperature for 12 to 24 hours.



NOTE: Be careful when moving and lifting filled jars. Do not tilt. Do not be tempted to pour off the water that is on top when you are lifting them out of the canner. The water on top of the hot jars will evaporate very rapidly. If you tilt the jars, food may become lodged between the glass rim and the sealing compound preventing proper sealing. Some authorities recommend removing jars immediately from the canner.



Researchers counted the additional 5 minutes as part of the processing time when they tested recipes and, may help you avoid a steam burn. However, if left in the hot water too long, jars will fail to seal and spoilage will result. Whatever you decide, do not leave the jars in the hot water any longer than 5 minutes.

Recommended process time and pressure for pints and half pints of tuna in a **dial-gauge pressure canner** depending on the elevation of canning location:

100 minutes

0-2,000 ft. elevation: 11 lbs.

2,001-4,000 ft. elevation: 12 lbs.

4,001-6,000 ft. elevation: 13 lbs.

6,001-8,000 ft. elevation: 14 lbs.

Recommended process time and pressure for pints and half pints of tuna in a **weighted-gauge pressure canner** depending on the elevation of canning location:

100 minutes

0-1000 ft. elevation: 10 lbs.

Above 1000 ft. elevation: 15 lbs.

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 should be removed for storage.

If a jar did not seal (lid bulges or does not curve down 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 be enjoyed immediately or stored in the refrigerator or freezer.

NOTE: Glass-like crystals of magnesium ammonium phosphate sometimes form in canned tuna. 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.

Storing the Canned Tuna

Wash the jars with warm water and dish soap, label contents and processing date. Include information about added spices, salt or soy sauce, or oil. Store jars in a cool, dry, dark storage area.

For best quality, home-canned food should be used within one year.

Smoking Tuna for Canning

Many people enjoy the flavor of smoked albacore tuna. For long-term storage, smoked fish must be frozen or canned.

Soaking fish in a strong pickling salt solution (brine) before smoking will give a good surface texture and retard surface spoilage. For each 2-3 pounds of prepared fish, dissolve 1 cup salt in 7 cups water. Soak thick pieces of fish ($\frac{1}{2}$ inch at the thickest point) for about 5-10 minutes. Larger, thicker pieces will need 30-45 minutes of soaking. If you want less salt in the finished product reduce brining time and smoke for no longer than 1 hour. Process immediately after smoking.

Small commonly available smokers without thermostats are suitable to smoking fish that will be canned. Fish prepared for canning doesn't have to reach the internal temperature required for ready-to-eat products, which is 160°F for at least 30 minutes.

Heat isn't needed to smoke fish for canning, although some heat will help promote drying. The temperature of home smokers will vary depending upon the type of smoker and external conditions and will generally reach at least 130° and up to 160°F. These temperatures are high enough to dry the fish if air flow isn't severely restricted.

Smoke only the amount of fish that you plan to can that day. Smoke fish for up to 2 hours, depending on the level of smoke flavor desired. As little as 15 minutes can result in a delicate smoke flavor.

Follow the same canning procedures as for fresh or frozen albacore described in this manual.

For more complete instructions, see *Smoking Fish at Home—Safely*, November 2009, PNW 238, A Pacific Northwest Extension Publication, available online.

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Photos courtesy of Kathryn Vanderpool of the F.V. Pursuit; Jennifer Bell with tuna loining performed by Candee Mooslin of the F.V. Blue Dolphin; and Christina Lewis, Master Food Preserver Training Program Coordinator.

