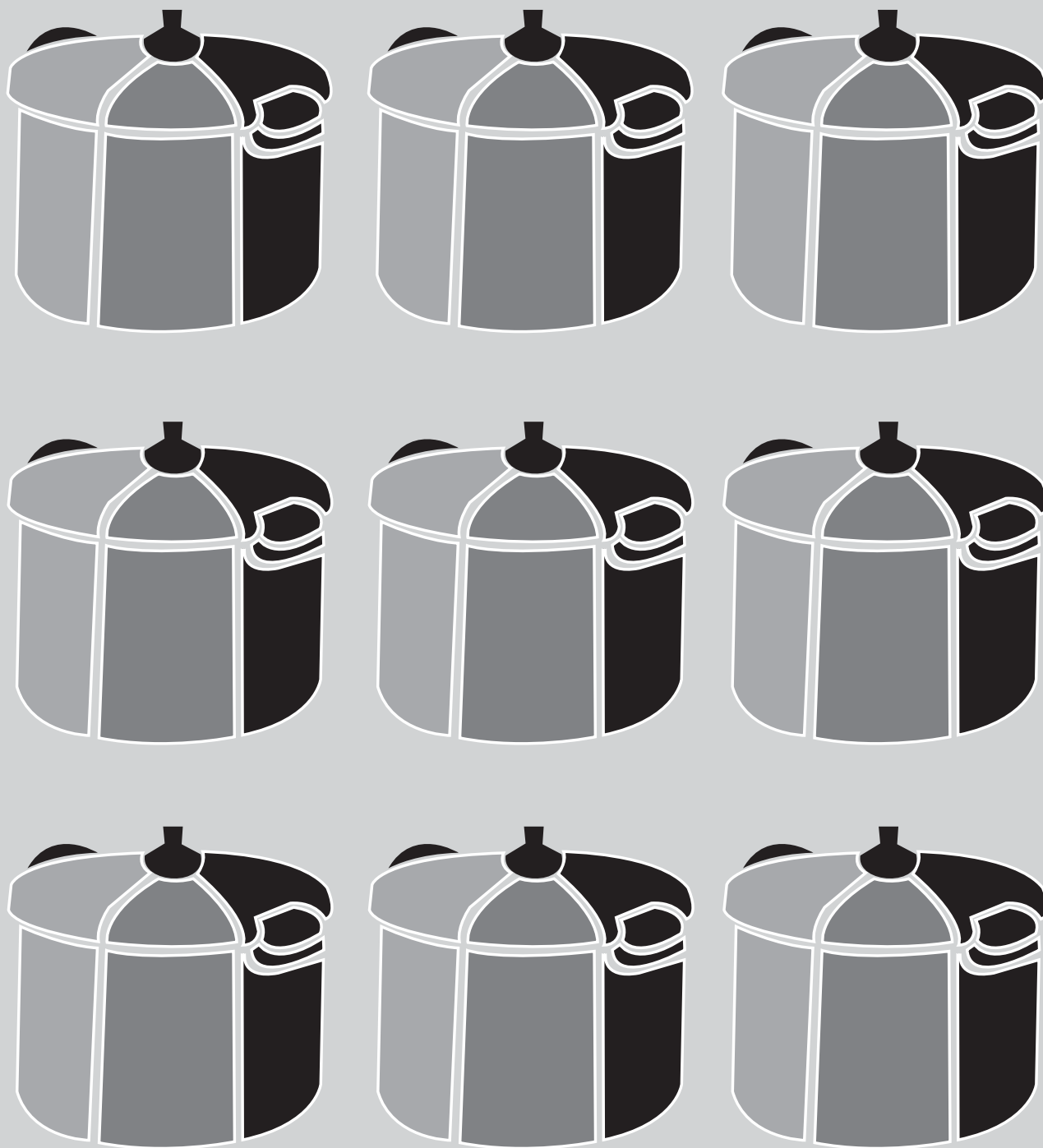


# using and caring for your pressure canner



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Before you buy a new or used pressure canner, check to see that it has all these features:

- Instruction manual
- Rack for jars
- Lid that can be locked or clamped down tightly
- Accurate pressure gauge to register the amount of steam in the canner
- Vent port that can be opened and closed to exhaust air from the canner
- Replacement parts available from the company
- Safety fuse

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Trade names — To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

# using and caring for your pressure canner

Pressure canning is the only recommended method for canning meat, poultry, seafood, and vegetables. Using boiling water canners for these low-acid foods poses a real risk of botulism poisoning.

Botulism is caused by a toxin produced by bacteria called *Clostridium botulinum*. These bacteria are very hard to destroy at boiling-water temperatures (212°F at sea level). At the higher temperatures of a pressure canner, they are easier to destroy. Home pressure canning recommendations are based on processing food at 240°F. All low-acid food should be processed at this temperature.

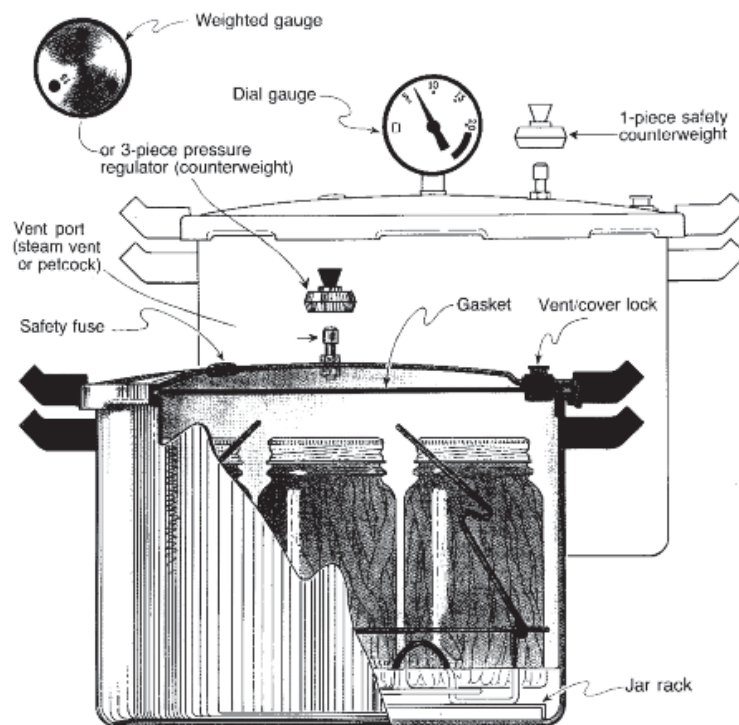
At sea level, a weighted gauge canner operated at 10 pounds pressure per square inch provides an internal temperature of 240°F. A dial gauge canner operated at sea level, however, must be operated at 10.5 pounds pressure to reach 240°F. We recommend operating dial gauge canners at 11 pounds pressure at sea level because it is easier to monitor this pressure on the gauge. Higher pressures are needed to attain 240°F at altitudes above sea level.

At a temperature of 240°F, the time needed to destroy bacteria in low-acid canned food ranges from 20 to 160 minutes. The exact time depends on the kind of food, the way it is packed into jars, and jar size. The exact times provided in recipes for specific foods have been determined by laboratory research. Be sure to use them!

## Canner types

A pressure canner is a specifically designed metal kettle with a lockable lid used for heat processing low-acid food. Those made before the 1970s were heavy-walled kettles with clamp-on or turn-on lids; they continue to be popular today. Redesigns of pressure canners since the 1970s have resulted in lightweight, thin-walled kettles, mostly with turn-on lids.

All pressure canners have a jar rack, dial or weighted gauge, vent port (steam vent) to be closed with a counterweight or weighted gauge, and a safety fuse (fig. 1); some have an automatic vent/cover lock. Many pressure canners have gaskets or sealing rings made of rubber or a similar material to prevent steam from escaping between the lid and the kettle rim. Others form a tight metal-to-metal seal with the use of clamping mechanisms.



**Fig.1. Modern pressure canners have a number of safety features and either dial gauges (rear) or weighted gauges (front).**

Canners with 16- to 23-quart capacity (volume of the kettle) are common and hold seven quart jars for canning. The smallest canner that can be used safely is one that will hold at least four quart jars. Use of pressure saucepans with smaller capacities is not recommended. The **weighted gauge** is a small round weight or disk that is placed on the vent port to control internal pressure. Weighted-gauge pressure canners exhaust tiny amounts of air and steam each time the gauge rocks or jiggles during processing. They control pressure precisely and need neither constant watching nor checking for accuracy during processing. The sound of the weight rocking or jiggling indicates that the canner is maintaining the recommended pressure.

The single disadvantage of weighted-gauge canners is that they cannot correct precisely for higher altitudes. At altitudes above 1,000 feet, they must be operated at canner pressures of 10 pounds per square inch instead of 5, or 15 pounds per square inch instead of 10.

The **dial gauge** is attached to the cover and has a needle to point to the amount of pressure inside the canner. Remember to have your new dial gauge tested before you use it. Dial gauges also should be checked for accuracy before use each year.

If your dial gauge reads high or low by more than 2 pounds when tested at 11 pounds of pressure, it should be replaced. If the reading is off by less than 2 pounds, follow the recommendation of the person testing your canner (see “Dial Gauge Inspection and Accuracy,” page 13).

Low readings cause overprocessing. If a gauge is reading lower than it should, you can make adjustments to avoid overprocessing, but they are not essential to safety. Gauges that read high cause underprocessing and may result in unsafe food. Every pound of pressure is necessary to reach the canner temperature needed for producing safe food. Accurate gauges and adjustments

are therefore essential when a gauge reads higher than it should. Gauges may be checked at many county extension offices; contact the pressure canner manufacturer for other options.

## **Safety features**

The **vent port** (steam vent) lets air out of the canner and releases steam as needed. On weighted-gauge pressure canners the weight on the vent controls the escape of air or steam. Generally, dial-gauge pressure canners have a petcock attached to the vent. A petcock releases steam and air when open and holds the steam when closed.

The **safety fuse, safety plug, safety release plug, or overpressure plug** is an important safety feature of pressure canners. These are thin metal inserts or rubber plugs designed to release pressure from the canner if the temperature or the pressure becomes dangerously high. Metal alloy plugs melt when the pressure gets too high or the canner boils dry. Composition-type plugs are blown out by excessive pressure. Both can be easily and inexpensively replaced. Do not pick at or scratch plugs when cleaning lids.

The **metal rack** is another safety feature of the pressure canner. The rack keeps jars off the bottom of the canner and prevents jar breakage.

The **Underwriters' Laboratories (UL) seal** means that your pressure canner has passed certain standardized tests for fire, electric shock, and related causes of accidental injury. When buying a new pressure canner, check for the Underwriters' Laboratories seal.

## **Caring for your pressure canner**

### ***The canner***

Before each use, wash the canner with hot, soapy water then rinse and dry it. Do not use strong alkalis such as sodium hydroxide or lye, scouring powder, or baking soda because they darken and stain aluminum.

Cool an aluminum canner gradually. Sudden changes of temperature may cause the canner to crack or warp.

Never leave water or food in a canner; it may absorb flavors and odors. Also, aluminum is porous and will pit.

After each use, wash the pressure canner with hot, soapy water then rinse and dry it. Use fine steel wool to remove particles from difficult-to-clean areas.

You can remove hard-water stains on aluminum with a solution of water and cream of tartar:

1. For each quart of water, mix in 1 tablespoon cream of tartar.
2. Pour enough solution into the canner to cover the discoloration. Do not fill the canner more than two-thirds full.
3. Seal the canner and bring the pressure to 10 pounds.
4. Remove the canner from the heat, and let it stand 2 to 3 hours.
5. Empty the canner, and scour its surface with fine steel wool. Wash the canner with soapy water then rinse and dry it.

### ***Canner lid***

Thoroughly clean the edges of the lid, and keep it free from food.

Do not immerse the lid of a dial-gauge pressure canner in water. Water can make the gauge rust or corrode.

Do not tip the lid of a dial-gauge canner upside down when it is hot. Moisture may collect in the gauge.

Small steam leaks between the lid and kettle of a canner will not interfere with processing if the correct pressure can be maintained. If there are small leaks, you may need to put extra water into the canner before processing so it will not boil dry.

If the lid sticks or the canner leaks steam, try rubbing the edges of the lid and kettle with a small amount of cooking oil before sealing. If large amounts of steam escape, check the gasket. A gasket that is worn, stretched, or hardened should be replaced.

### ***Gaskets and sealing rings***

Handle canner lid gaskets carefully and clean them according to the manufacturer's directions. Nicked or dried gaskets will allow steam leaks during pressurization of canners.

After each use of the pressure canner, remove the gasket and wash it in warm, sudsy water. Rinse, dry, and replace the gasket in the lid.

Gaskets on older-model canners may require a light coating of vegetable oil once per year. Gaskets on newer-model canners are prelubricated and do not need oiling. Check your canner's instructions if you don't know whether your gasket has been prelubricated.

Some gaskets can be reversed after a period of time to ensure a tighter seal. A gasket that is worn, stretched, or hardened should be replaced with a new one.

Inexpensive replacements are available at most local hardware stores or household appliance centers. They can also be ordered from the canner manufacturer.

### ***Petcock, vents, and weights***

Be sure the petcock, vents, and weights are clean. Take off removable petcocks and wash and dry them. Occasionally, soak these parts in vinegar and then wash and dry them. You can further clean the vent port or petcock opening by drawing a string or narrow strip of cloth through it. Be sure to put all parts back together correctly.



### ***Replacing parts***

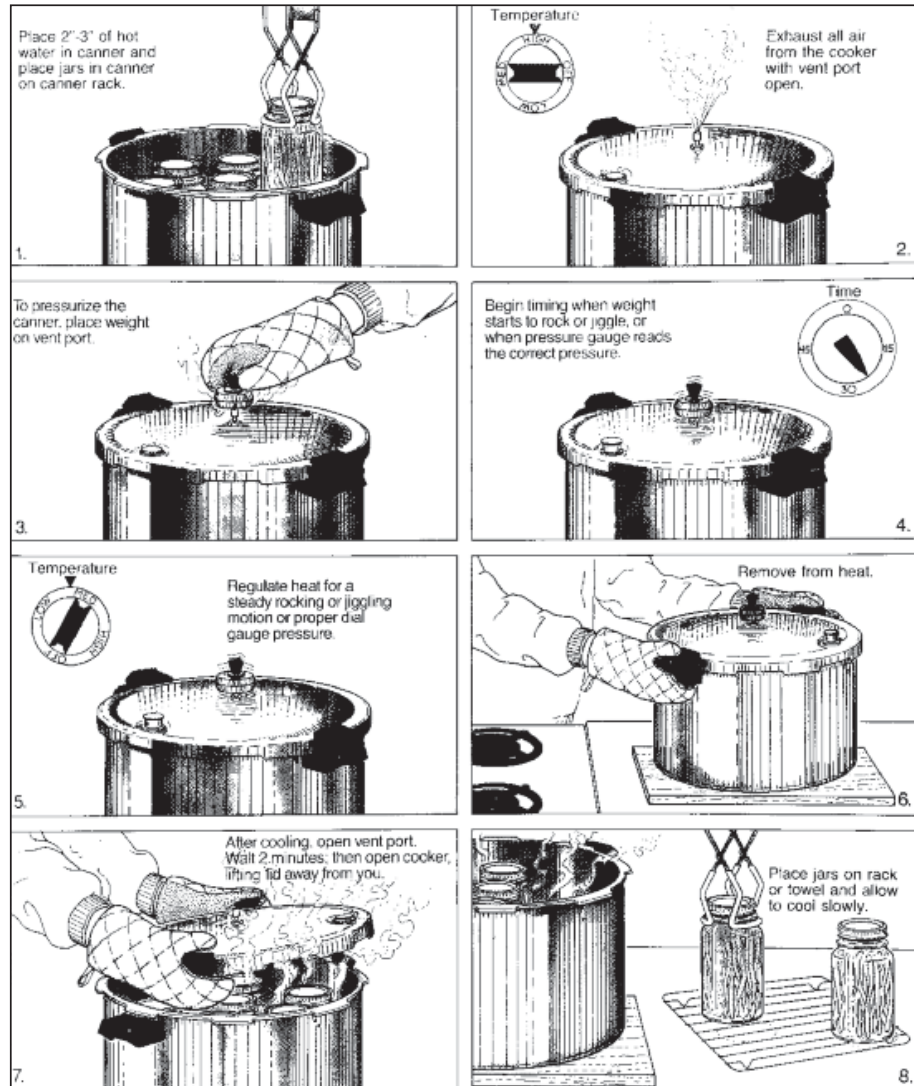
Replacement gauges and other parts for canners are often available at stores offering canning equipment or from canner manufacturers. When ordering parts, give your canner model number and describe the parts needed.

## **Using your pressure canner**

Some stovetops or heat sources may be inappropriate for pressure canning. Both Presto and Mirro pressure cooker/canners are not designed to be used on an outdoor liquid propane burner or on a gas range over 12,000 BTUs because excessive heat will warp the canner bottom. Mirro pressure cooker/canners are not designed to be used on a flat top (glass or ceramic) range because they have concave bottoms. On a flat top range, a large area of the bottom will be out of contact with the heat source, preventing the transfer of heat and the buildup of pressure.

### ***Steps for successful pressure canning***

1. Put 2 to 3 inches of hot water in the canner (fig 2). When canning fish or other foods with a long processing time, add additional water (a total of 4 to 5 inches) to be certain the canner does not boil dry. Place filled jars on the rack, using a jar lifter. Fasten canner lid securely.
2. Leave the weight off the vent port or open the petcock. Heat on high heat until steam flows from the petcock or vent port.
3. Maintaining high heat, exhaust steam for 10 minutes and then place the weight on the vent port or close the petcock. The canner will pressurize in the next 3 to 5 minutes.
4. Start timing the canning process when the dial gauge indicates the recommended pressure or when the weighted gauge begins to jiggle or rock.



**Fig. 2. Steps for using your pressure canner.**

5. Regulate the heat under the canner to maintain a steady pressure at or slightly above the correct gauge pressure. The correct gauge pressure must be maintained for the entire processing time. If the pressure drops below the target pressure, reset your timer and process for the entire recommended processing time. Quick and large pressure variations during processing may cause jars to lose liquid. Generally, weighted gauges on Mirro canners should jiggle about two or three times per minute. On Presto canners, the weighted gauge should rock slowly throughout the

process. Always read the manufacturer's instruction sheet for how to check for proper pressure.

6. When the timed process is over, turn off the heat, remove the canner from the heat if possible, and let the canner cool enough to lose pressure. *Do not try to hurry the cooling process.* Forced cooling may result in spoilage. Cooling the canner with cold running water or opening the vent port before the canner is fully depressurized may cause jars to lose liquid and to fail to seal. Forced cooling may also warp the lids of older-model canners, causing steam leaks.

Pressure loss in older canners should be timed. Standard-size heavy-walled canners require about 30 minutes when loaded with pints and 45 minutes when loaded with quarts. Newer thin-walled canners cool more rapidly and have vent locks. These canners are depressurized when their vent lock pistons drop to a normal position.

7. After the canner has lost pressure, 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. Remove jars with a lifter, and place them on a towel or cooling rack. Allow the jars to cool undisturbed at room temperature for 12 to 24 hours.

### ***Three serious errors in maintaining proper temperatures***

1. Internal canner temperatures are lower at higher altitudes and can result in underprocessing. To correct for altitude, operate canners at the increased pressures specified below for altitude ranges above 1,000 feet:

#### *Weighted-gauge pressure canner*

Sea level to 1,000 feet—use 10-pound weight

Above 1,000 feet—use 15-pound weight

#### *Dial-gauge pressure canner*

Sea level to 2,000 feet—11 pounds pressure on dial

2,001-4,000 feet—12 pounds pressure on dial

4,001-6,000 feet—13 pounds pressure on dial

6,001-8,000 feet—14 pounds pressure on dial

2. Air trapped in a canner lowers the temperature and results in underprocessing. The highest volume of trapped air occurs in processing raw packed foods in dial-gauge canners. These canners do not vent air during processing. To be safe, vent all types of pressure canners for 10 minutes before pressurizing them.
3. Dial gauges can be inaccurate. **Have your dial gauge checked each year before use.**

### **Storing your pressure canner**

Before storing your canner, make sure it is clean and dry. Air should reach the inside of the canner to prevent a stale odor from forming. Put crumpled papers inside the canner. Wrap the lid in paper or place it in a paper bag.

Turn the lid upside down in the canner instead of sealing the canner shut. If storage space is available, place the lid in a paper bag and store it right side up on a shelf.

# Dial gauge inspection and accuracy

This form can be used with a master gauge testing unit  
(Not for use with maximum thermometers)

Dial gauges should be checked for accuracy and overall condition every year prior to the beginning of canning season. If you use your dial gauge canner throughout the year, check it at the same time every year.

**DATE:** \_\_\_\_\_

**CONDITION OF GAUGE:**  Good  Rusty  Broken, cracked  
 Interior moisture  Cover too scratched to read

Comments: \_\_\_\_\_

## **ACCURACY OF DIAL GAUGE:** (*psi = pounds per square inch*)

When MASTER reads 5 psi, YOUR GAUGE reads \_\_\_\_\_ psi.

When MASTER reads 11 psi, YOUR GAUGE reads \_\_\_\_\_ psi.

When MASTER reads 15 psi, YOUR GAUGE reads \_\_\_\_\_ psi.

## **RECOMMENDATION:**

If your gauge reads high or low by two (2) pounds (psi) or less, you may use it with the following compensation: (check one)

- If your gauge reads up to two (2) pounds higher than the master gauge, you must add the amount of difference to the required pressure so you don't underprocess your food.

*For example, if the MASTER gauge reads 11 psi and your gauge reads 12 psi (1 pound higher than the master gauge), process at 12 psi when the instructions say 11 psi, or 13 psi when the instructions say 12 psi, or 7 psi when the instructions say 6 psi, etc.*

- If your gauge reads up to two (2) pounds lower than the master gauge, you may subtract the same amount it differs from the required pressure. (In this case, you may also use the pressure stated in the instructions for added safety.)

*For example, if the MASTER gauge reads 11 psi and your gauge reads 10 psi (1 pound lower than the master gauge), you may process at 10 psi when the instructions say 11 psi, or 11 psi when the instructions say 12 psi, or 5 psi when the instructions say 6 psi, etc.*

If your gauge reads high or low by more than two (2) pounds, replace.

**Note:** These recommendations for adjustment are based on information provided by National Presto Industries, 2002, in instructions for Presto Testing Unit 81288.

**Source:** National Center for Home Food Preservation, 5/07

***For more information***

Instructions for pressure canning specific foods are available in the following Pacific Northwest extension publications, available through extension offices of the University of Idaho, Oregon State University, and Washington State University:

PNW 172, Canning Vegetables

PNW 194, Canning Seafood

PNW 300, Canning Tomatoes and Tomato Products

PNW 361, Canning Meat, Poultry, and Game

PNW 450, Home Canning Smoked Fish

Complete listings of current PNW publications can be found on the following web sites:

<http://pubs.wsu.edu/>

<http://extension.oregonstate.edu/catalog/>

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