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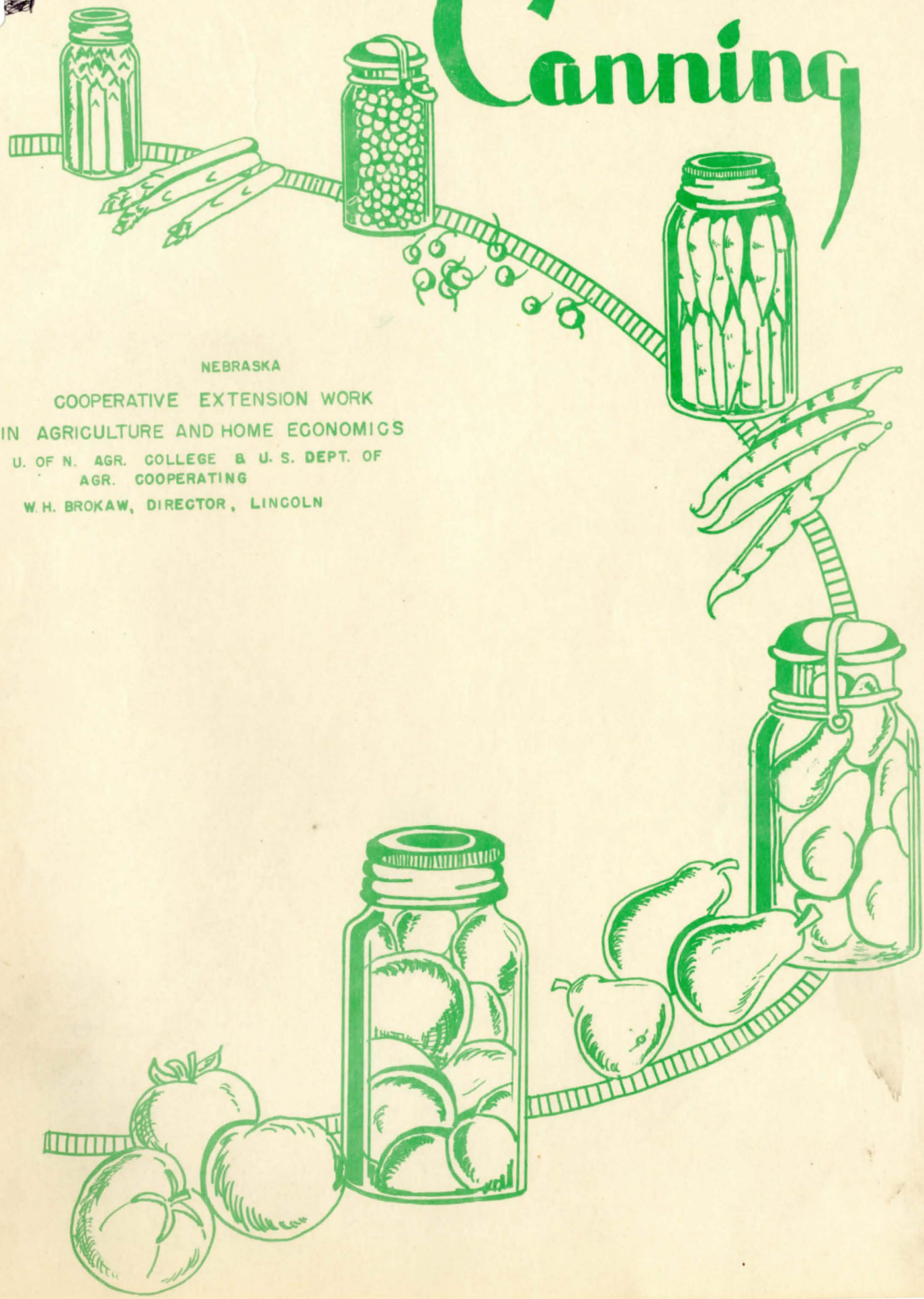
HELPS FOR HOME Canning



NEBRASKA
COOPERATIVE EXTENSION WORK
IN AGRICULTURE AND HOME ECONOMICS
U. OF N. AGR. COLLEGE & U. S. DEPT. OF
AGR. COOPERATING
W. H. BROKAW, DIRECTOR, LINCOLN

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Ext. Cir. 9942 Revised

Helps for Home Canning

SECTION I

QUESTIONS AND ANSWERS ON CANNING

FRUITS AND VEGETABLES

1. WHAT CAUSES PEACHES AND PEARS TO TURN DARK BROWN?

   This dark brown color may be due to one or more of the following reasons:
   - a. Enzymes in the fruit are not destroyed because processing time is too short
   - b. Fruit is exposed to air too long before packing
   - c. Fruits canned without sugar usually do not have as good color as when sugar is added
   - d. Change in color also occurs as a result of overcooking or overprocessing

2. HOW CAN FADING OF CANNED FRUITS AND VEGETABLES BE PREVENTED?

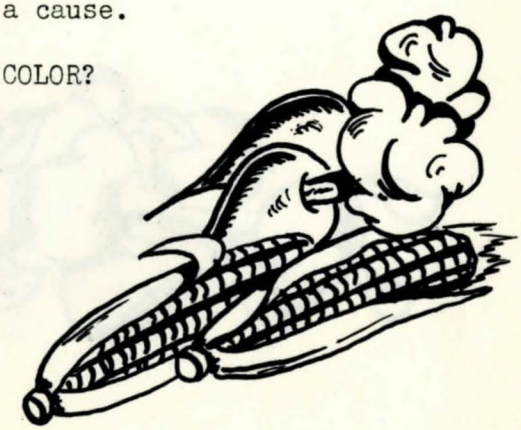
   Some varieties of fruits are more susceptible to loss of color than others. Always observe the following precautions:
   - a. Store in a cool dark place
   - b. Use thoroughly ripe fruit; and syrup--not water
   - c. Avoid overcooking
   - d. Use either glass or R (sanitary) enamel lined tin cans for red foods

3. WHAT CAUSES CORN TO TURN BROWN DURING PROCESSING?

   This occurs when a high temperature is used. The high temperature causes carmelization of the sugar in the corn. It may also be caused by some chemical, such as iron, in the water used in canning.

4. WHAT CAUSES THE WHITE SEDIMENT IN CANNED BEETS?
   The minerals in the water may sometimes be a cause.

5. WHY DO CANNED BEETS SOMETIMES HAVE A FADED COLOR?
   The color of beet fibre is white and the juices give them a red color. In canning, this color can best be preserved by precooking beets with two inches of the stems and all of the roots left on, as this helps to retain the juice. Certain varieties are redder than others.



6. WHAT CAUSES FRUIT TO FLOAT?

Heavy syrup may cause the fruit to float. It may also float if the fruit has been packed raw. This can be avoided by precooking before packing.

7. HOW CAN STRAWBERRIES BE CANNED TO PREVENT FLOATING AND TO RETAIN THEIR ORIGINAL COLOR?

By precooking for five minutes in syrup, then allowing the berries to stand in the syrup for a few hours before packing in jars and processing. After canning, store jars in a dark place to retain the color of the berries.

8. WHY DO TOMATOES FLOAT?

They may be overprocessed, packed too loosely, or canned when over-ripe. Cold pack tomatoes practically always float. There is no objection.

9. WHAT CAUSES TOMATO JUICE TO SEPARATE?

This is merely due to the law of gravity. There is no objection to this separation.

10. WHAT CAUSES CLOUDINESS IN CANNED FOODS?

Cloudiness may be caused by:

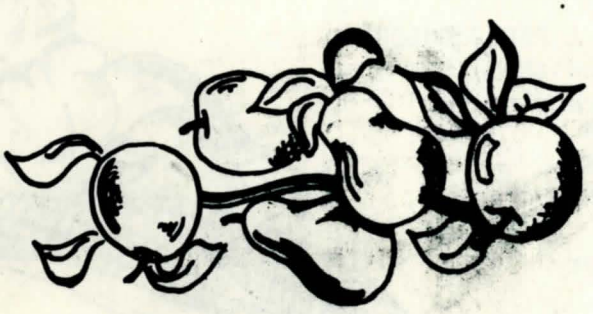
a. The residue from a starchy vegetable
b. Spoilage due to micro-organisms
c. Product being crushed, bruised, over-mature, or overcooked.

11. HOW CAN THE ATTRACTIVE GREEN COLOR OF GREENS BE RETAINED DURING PROCESSING?

It is impossible to retain the attractive, bright green color found in fresh vegetables, since the long time needed for processing destroys it.

12. HOW FULL SHOULD JARS BE PACKED WITH VEGETABLES?

For most packs the water should be 1/2 inch below the top of the jar. Fill jars to 1/2 inch from the top except when canning corn, peas, and lima beans, which require one inch head space.



13. WHY IS THE HOT PACK METHOD BETTER THAN THE COLD PACK WHEN THE COLD PACK SEEMS SO MUCH EASIER?

Heating or precooking vegetables and fruits, then packing hot, speeds the processing and helps insure the keeping. Precooking also shrinks the food, helps get more into the jars. Have ready enough hot juice to cover the food immediately in the jar. This juice or liquid helps keep fruits or vegetables from turning dark in the jar.

14. WHEN CANNING A MIXTURE OF VEGETABLE JUICES MADE UP OF THE JUICE OF TOMATOES, ONION, CELERY, PARSLEY, AND OTHER GARDEN VEGETABLE JUICES, IS IT SAFE TO CAN THIS JUST LIKE PLAIN TOMATO JUICE IS CANNED?

No. Mixed vegetable juice is not acid enough to can like pure tomato juice. In general, mixed vegetable juices need processing as all non-acid vegetables do--30 to 40 minutes in a pressure cooker, or 3 hours in the boiling water bath.

15. IF A JAR DOES NOT SEAL AND MUST BE RE-PROCESSED, DOES IT HAVE TO BE PROCESSED THE FULL LENGTH OF TIME?

Just what shall be done with the unsealed jar will depend upon the cause. If the lid is at fault and product is a fruit, simply replace lid with a new one and process in water bath until product reaches boiling point. If it is a vegetable or meat it should be reprocessed approximately one-fourth to one-third the regular processing period. If jar is defective any product should be repacked. It is doubtful if this will be profitable since the reprocessing would need to be approximately the same length of time as a normal period for that particular food. Few foods will stand up under such treatment.

16. WHAT EFFECT DOES OVER-PROCESSING HAVE UPON FRUITS AND VEGETABLES?

Over processing causes shrinkage, loss of color, and destruction of the natural flavor and texture.

17. WHAT IS THE SAFEST AND SUREST METHOD FOR PROCESSING NON-ACID FOODS?

By using a pressure cooker with a reliable gage.

LIQUIDS

18. IF LIQUID DOES NOT COMPLETELY COVER CANNED VEGETABLES AND FRUITS, WILL THEY SPOIL?

If correct procedures have been followed when the vegetables and fruits were canned, loss of liquid will not cause spoilage. However, discoloration may result.

19. WHAT CAUSES LACK OF LIQUID IN CANNED FRUITS AND VEGETABLES?

Lack of liquid may be caused by one or more of the following conditions:

a. Having jars too full, so liquid boils out during processing. If liquid does boil out, do not open jar to replace it. The fact that a jar is not filled will not affect the keeping qualities.
b. Too loose a pack.
c. Allowing pressure in pressure cooker to fluctuate or sudden lowering of temperature at end of processing period. Petcock should not be opened until indicator on pressure cooker gage goes back to zero.
d. Leaving jars in cooker too long after the indicator on gage reaches zero. Open petcock as soon as the zero point is reached.
e. Too high a temperature or too rapid boiling.
f. Air bubbles not released before processing.
g. Unsealed containers not kept covered with boiling water in the boiling water bath, or containers tipping in the processing vessel.
h. Insufficient precooking of food. The food will swell and force the liquid out; or the food may absorb the liquid.

JELLIES

20. WHAT CAUSES CRYSTALS TO FORM IN JELLY?

Too high a percentage of sugar or under-cooking as with added pectin. However, in grape jelly, crystals of cream-of-tartar may occur. These may be prevented with the use of part plum or apple juice in grape jelly; or by canning the grape juice and storing until the crystals have separated, and later using the liquid for jelly making. Allowing the grape juice to settle for several hours, or over night, will allow the cream-of-tartar crystals to settle to the bottom.

21. CAN SYRUP OR HONEY BE USED TO REPLACE PART OF THE SUGAR IN JELLY MAKING?

Yes. However, for either syrup or honey, cook the mixture slightly beyond the jelly stage.

For syrup, replace up to 1/4 the sugar called for with an equal measure of corn syrup. For example, if the recipe calls for 3 cups of sugar, use 3/4 cup corn syrup and 2 1/4 cups sugar.

When using honey replace up to 1/2 the sugar called for with an equal measure of honey.

It is possible to make jelly with larger proportions but the flavor of the product is not as good.

For additional information see Circular 9950.

22. WILL FRUITS WHICH LACK ACID MAKE JELLY WITHOUT ADDED ACID?

No. Three ingredients are essential -- pectin, acid, and sugar, in their proper proportions.

PICKLES AND CATSUPS

23. WHAT CAUSES HOLLOW PICKLES? SOFT PICKLES? SHRIVELED PICKLES?

Hollow pickles may be due to:

a. Faulty development of cucumbers.
b. Letting cucumbers stand too long after gathering before brining.
c. Not keeping well covered while brining.

Soft pickles are usually due to:

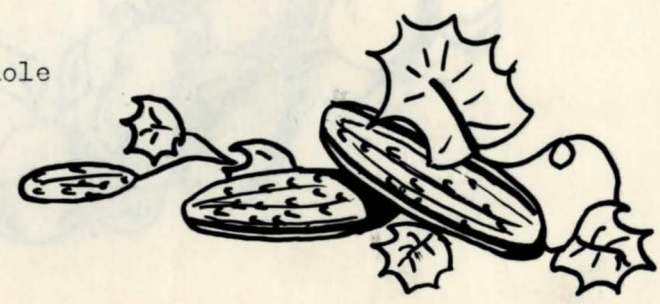
a. Not keeping them covered with brine.
b. Keeping in brine that is too weak.
c. Using vinegar that is too weak.
d. Overcooking in the vinegar.

Shriveled pickles are often due to:

a. Placing product at once in a very strong salt, sugar, or vinegar solution.
b. Not allowing product to plump long enough before cooking in strong vinegar or sugar solution.
c. Brined pickles frequently shrivel.

24. HOW CAN A CLEAR RED COLOR INSTEAD OF BROWN BE OBTAINED IN HOMEMADE CATSUPS?

Select firm red tomatoes. Use whole spices rather than ground spices. Cook rapidly and do not cook too long.



PRESERVES

25. IS IT ADVISABLE TO ADD VINEGAR, LEMON JUICE, OR CREAM-OF-TARTAR TO NON-ACID VEGETABLES OR MEAT TO SHORTEN THE LENGTH OF TIME IN PROCESSING?

No. Small amounts of acid help to insure keeping, but processing time should not be shortened. The addition of acid may also change the flavor of the product slightly.

26. SHOULD CANNING POWDERS BE USED IN HOME CANNING?

No. The use of canning powders or chemical preservatives such as salicylic acid, sodium benzoate, and "canning powders" should be avoided in home canning any kind of food. These chemicals vary in their effects on the human body, some being more harmful than others. Therefore, the safe way for the home canner is to process the foods adequately with heat and not to use chemical preservatives. These are banned in commercially canned foods by the United States Food and Drug Administration. Since it is possible to can successfully without them, why use them?

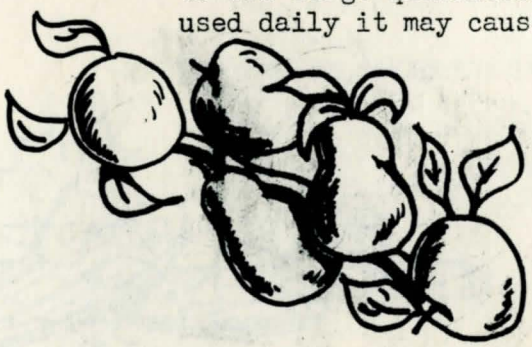
USING LESS SUGAR FOR CANNING

27. HOW CAN THE AMOUNT OF SUGAR USED IN CANNING FRUIT BE REDUCED?

Fruits may be canned without sugar. Light to medium sugar syrup may be used in place of heavy sugar syrups. If desired, substitute up to half the sweetening called for in the syrup with an equal amount of honey, or up to 1/3 the sweetening called for with an equal amount of corn syrup. (See Circular 9950).

28. SHOULD SACCHARINE BE USED IN PLACE OF SUGAR FOR CANNING FRUITS AND MAKING PICKLES?

No. Not unless the saccharine is added at the time the fruit is served because saccharine when heated will acquire a bitter flavor. The Council on Foods and Nutrition tells us that it is not advisable to use large quantities of saccharine. If more than 1.5 grams are used daily it may cause gastro-intestinal disturbances.



29. SHOULD SORGHUM BE USED IN CANNING FRUIT?

The pronounced flavor of sorghum is likely to cover up the delicate fruit flavor.

FOOD VALUES OF CANNED FOODS

30. DOES THE CANNING OF FOOD DESTROY VITAMINS?

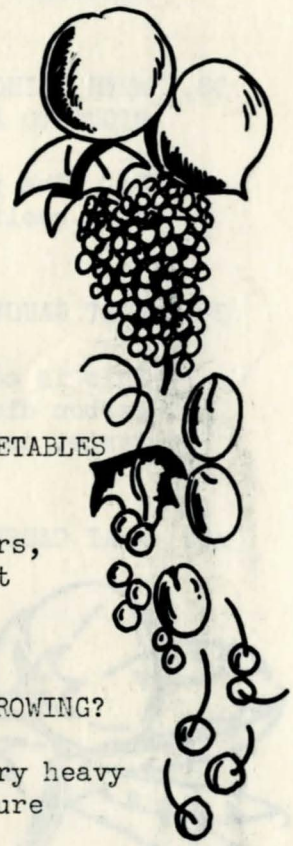
The method of canning foods affects the vitamin content to some extent. With the possible exception of Vitamin C, there may be no serious loss during the canning process, though of course when foods are removed from the cans and reheated before serving there may be further loss of vitamins C and B.

31. HOW CAN VITAMIN C VALUES BE PRESERVED?

Can foods very soon after they are gathered. "Two hours from the garden to the can" is the rule. Precooking foods for a short time, packing them hot and processing them in the containers helps to preserve the Vitamin C values to some extent.

32. ARE MINERALS LOST IN CANNING?

No, providing the liquid in which they are precooked is used to fill the containers, and provided the entire contents of the jar are served. The liquid should not be thrown away since it contains both minerals and water soluble vitamins.



SPOILAGE

33. WHAT CAUSES CANNED FOOD TO SPOIL?

The growth of microorganisms known as molds, yeasts, and bacteria.

34. WHAT ARE THE SIGNS OF SPOILAGE OF NON-ACID VEGETABLES AND MEATS?

Cloudiness, mushiness, putrid and abnormal odors, and gases. Botulinus spoilage, however, is not always visible.

35. IS IT SAFE TO USE FOODS UPON WHICH MOLDS ARE GROWING?

Molds may be removed and the food eaten. A very heavy growth usually affects the flavor and the texture enough to make it unpalatable.

36. WHAT ARE THE MOST COMMON MISTAKES WHICH LEAD TO SPOILAGE OF CANNED PRODUCTS?

Spoilage of canned products is most frequently due to one or more of the following mistakes?

a. Use of incompletely sterilized jars in open kettle canning. Two examples of incomplete sterilization are: touching of inside of jar or lid, or wiping edge with cloth after sterilization.
b. Too short a processing period.
c. Too low a pressure in the pressure cooker to obtain high enough temperature to kill the spores of microorganisms.
d. Packing such foods as corn or meat too tightly so the heat does not penetrate readily.
e. Imperfect seal.
f. Use of stale, unsound, or overmature products.
g. Canning too much material at one time or too long delay between the steps in canning.
h. Improper storage, including storage room which is damp or too warm.
i. Failure to cool jars promptly after processing.

37. DOES IODIZED SALT USED IN CANNED VEGETABLES CAUSE SPOILAGE?

No information is available to indicate that iodized salt causes spoilage.

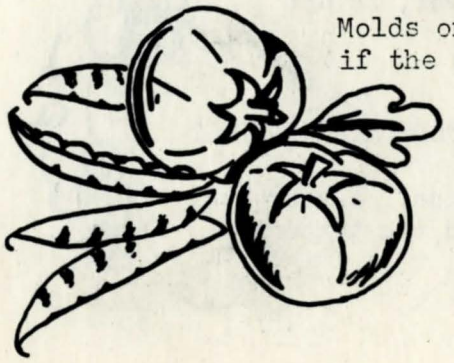
38. WHEN USING THE BOILING WATER BATH METHOD OF PROCESSING, IS IT ALL RIGHT TO ALLOW THE JARS TO COOL IN THE WATER?

No. The product will be overcooked and spoilage may result due to slow cooling.

39. WHAT CAUSES CANNED FRUIT TO FERMENT?

This is caused by yeasts which use the sugar, and produce alcohol and carbon dioxide. The product should be discarded as it has a sour taste, sometimes a cheesy odor, and is diminished in food value.

40. WHAT CAUSES MOLD TO FORM ON JELLIES AND PRESERVES?



Molds on jellies and preserves may form during storage if the seal made by the paraffin or other sealing device is not good or has been broken so air can enter. Occasionally jelly on the inside of the glass above the paraffin may start to mold and as the mold grows it may break the paraffin seal and continue growing on the top of the jelly. Sometimes the jelly may "weep" under the paraffin and if the seal becomes broken the presence of the moisture may favor the development of mold.

41. WHAT CAUSES "FLAT-SOUR" IN PEAS, ASPARAGUS, CORN, LIMA BEANS, AND GREEN BEANS?

"Flat-sour" sometimes develops in foods before they are canned. For example, if large quantities of vegetables like corn, peas, or string beans are gathered and allowed to stand in a large mass over night so that heating occurs in the interior of the mass, "flat-sour" develops and will be canned with the product.

Microorganisms which cause "flat-sour" are not always destroyed in processing, so if jars are placed too close together when removed from processing so that they cool too slowly, flat sour may develop.

42. WHEN NON-ACID VEGETABLES CONTAIN DANGEROUS TOXINS, ARE THERE ALWAYS VISIBLE SIGNS OF SPOILAGE?

Usually, but not always.

43. WHAT CAN BE DONE SO THAT NON-ACID VEGETABLES MAY BE USED WITH CONFIDENCE IN REGARD TO THEIR SAFETY?

They may be brought to a boil quickly and boiled actively in a covered vessel for five to ten minutes before they are tasted. This will destroy the botulinus toxin if there is any present.

44. WHAT ARE THE PRINCIPLE CAUSES FOR SPOILAGE OF TOMATOES?

Spoilage of tomatoes is most frequently due to:

a. Use of over-ripe tomatoes.
b. Too short processing period.
c. Imperfect seal.
d. Delay in carrying out the steps of the canning process.
e. Storage in too light or too warm a place.
f. Contamination of tomatoes with spore bearing microorganisms, which are not destroyed in processing.

45. HOW LONG CAN CANNED FOOD BE KEPT?

If properly processed, it will keep several years under the right conditions. However, the quality is generally better if it is used within the first year after canning.

46. ARE CANNED FOODS SPOILED IF THEY FREEZE?

Freezing does not cause canned foods to spoil unless the seal is broken. Examine the jar for leakage.

47. CAN CANNED FOODS BE STORED IN THE TOP SHELF OF THE KITCHEN CUPBOARD?

Yes, if they are kept dry, and the shelf is ventilated and moderately cool.

EQUIPMENT

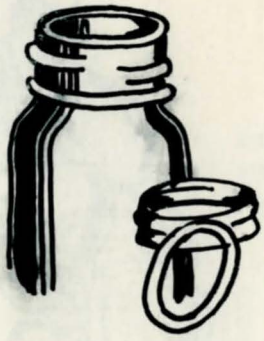
JARS AND LIDS

48. IS IT NECESSARY TO STERILIZE JARS AND LIDS BEFORE CANNING?

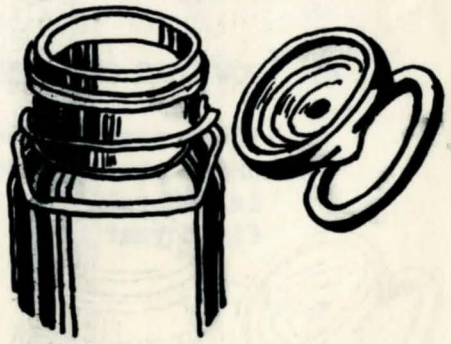
It depends upon the canning method:

a. If open kettle method is used jars should always be sterilized. Wash the jars and lids in soapy water, and rinse in warm water. Place a rack or cloth in bottom of kettle or shallow pan. Use 1 or 2 inches of water in pan. Invert jar and keep water boiling 15 to 20 minutes. Keep jars hot until needed.

b. If food is processed in the jar by either boiling water bath or pressure cooker method, jars need not be sterilized before filling, but they should be clean and hot. Prepare lids that have a sealing composition by pouring boiling water over them. Allow to stand until used. Dip jar rubbers into boiling water and place on the jars before filling.



Sketch #1. Shoulder seal, Mason screw lid, with separate rubber



Sketch #2. Glass lid, separate rubber, wire bail

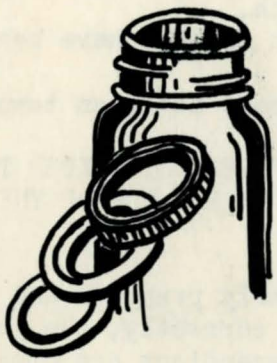
49. HOW ARE THE PARTIAL AND COMPLETE SEALS MADE?

Consult the following table:

Sealing Jars

Type of Lid	Partial Seal	Complete Seal
Shoulder Seal		
Regular Mason screw lid, with separate rubber. (See Sketch #1)	Place rubber, then lid. Tighten lid, then turn back one-fourth of an inch.	Turn lid until tight.
Glass lid with separate rubber. Wire bail and side clamp, on jar. (See Sketch #2)	Place rubber, then lid. Snap bail into place and leave side clamp up.	Snap side clamp down.
Top Seal		
Glass disk with separate rubber and screw band. (See Sketch #3)	Adjust rubber carefully on glass disk, place on jar. Place the screw band, tighten, then turn back one-fourth of a turn.	Turn the screw band until tight. When the product is completely cold the screw band may be removed.
Metal disk with composition gasket and screw band.* (See Sketch #4)	Place disk so that the gasket rests on edge of jar, place and tighten screw band.	Do not disturb after processing. A complete seal is formed as the jar cools. When the product is completely cold the screw band may be removed.

*Metal disks with composition gasket may be used on commercial jars with standard size opening and "63" size opening. Use a new metal disk to fit the jar. Hold in place with the original metal screw top lid instead of a screw band. Pry out paper lining or boil and scrape out sealing compound. Puncture the lid from the inside. When the product is completely cold the screw top lid may be removed.



Sketch #3. Glass disk, separate rubber, and screw band

Sketch #4. Metal disk, with composition gasket, and screw band.

50. HOW DEEP SHOULD THE WATER BE IN THE BOILING WATER BATH?

The water should be over the tops of the jars one to two inches.

51. IS IT NECESSARY TO HAVE A RACK IN THE BOTTOM OF A WATER BATH CONTAINER?

Yes, to insure complete circulation of boiling water, and to prevent breaking bottom of jar.

52. HOW TIGHT SHOULD THE LIDS BE SCREWED ON THE JARS BEFORE PROCESSING?

It depends on two things - the type of lid and whether the food is packed hot or cold. Lids with a metal top and composition gasket are always screwed "firmly tight" or as tight as the hand can conveniently screw the band without using any undue exertion or wrenches. A complete seal is not formed until the product cools after processing. With the other types of lids, if the product is packed cold, the jar should not be sealed completely before processing. If the hot pack is used and sufficient head space is allowed, the jars may be sealed completely.

53. WHAT CAUSES AN IMPERFECT SEAL?

An imperfect seal may be due to any of the following reasons:

a. Nicks in the jars or lids, collapsed lids, lids which do not fit, or composition gaskets that are too old.
b. Particles on the sealing surface.
c. Failure to adjust wire bail correctly.
d. Lifting the jars by the tops or carelessly inverting the jars after processing.
e. Tightening two piece metal jar lids before or after cooling.
f. Tightening other types of jars after the jars have cooled.

54. WHY DO JARS CRACK OR EXPLODE WHEN THEY ARE BEING REMOVED FROM THE COOKER OR AFTERWARDS?

Breakage may be due to one or more of the following reasons:

a. A draft or cold air striking the hot jar.
b. Setting hot jars on a hard, cold surface. Place them on wooden surface or on several thicknesses of cloth.
c. A small crack in the jar which may not have been detected when jar was tested.
d. Use of commercial jars which have not been tempered.

55. WILL JARS WITH TWO-PIECE SELF-SEAL LIDS KEEP THEIR SEAL IF THEY ARE STACKED ONE ON THE TOP OF THE OTHER IN A PRESSURE COOKER?

If good quality food is properly prepared and processed and the lids are used correctly, the jars may be stacked if certain precautions are observed. These precautions are to use a high rack above lower layer of jars or stagger the jars on the top layers so there will be good circulation of steam beneath and around each jar.

56. IS IT SAFE TO USE CANNED FOOD, WHEN THE ENAMEL LINING ON A FLAT DISK LID HAS PEELED OFF AND DROPPED INTO THE LIQUID?

The food is in no way impaired. The floating enamel is unsightly but not harmful. Just remove bits of enamel.

57. SHOULD JARS OF CANNED FOOD BE INVERTED TO TEST FOR LEAKS?

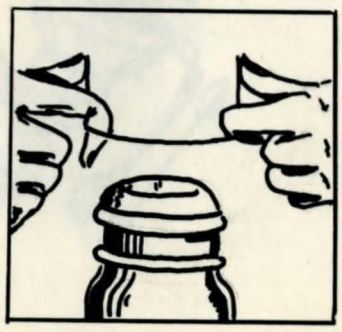
It depends on the type of the jar being used. Glass top jars which seal with a clamp or any jar with a rubber, except where the rubber makes the seal at the top of the jar, may be inverted. After they have been tested jars should not be left inverted to cool. Jars with a metal disk with composition gasket should never be turned upside down until the jar is cold.

58. HOW DO YOU TEST FOR A SEAL IN THE LACQUERED METAL TOP DISK WITH COMPOSITION GASKET?

After the product has cooled the disk should be curved inward, and no further testing is necessary. However, a clear ringing sound usually results if after cooling, the disk is tapped with a metal spoon and this is evidence of a seal. If any food touches the inside of the disk it will interfere with making the clear ringing sound even though the seal may be good. If the seal is defective it is necessary to use a new disk and reprocess the jar. (See Sketch on page 12)

59. HOW CAN THE BAIL WHICH FITS OVER THE GLASS TOP OF A JAR BE ADJUSTED?

Remove the bail and with the thumbs bend it down in the center. Then press the ends inward by holding the center of the bail firmly where it has been bent in the left hand, allowing the ends to stand up. With the palm of the right hand, bend in one end then turn the bail and bend in the other end enough that the bail will fit snugly on the jar. If the bail is too tight it can be loosened by reversing these directions for tightening. (See Sketch)



60. CAN THE METAL "FLATS" OR DISKS WITH A COMPOSITION SEALING MATERIAL BE USED A SECOND TIME?

No.

61. CAN JAR RUBBERS BE USED A SECOND TIME?

Never use war time jar rubbers a second time. Pre-war rubbers may be tested to use on acid foods. To test an old jar rubber stretch it to twice its size. It should snap back to normal. Another test is to fold the jar rubber. If it does not crack, it may be used.

62. CAN A LID WITH CRACKED PORCELAIN LINING BE USED?

No, it should be destroyed as it is impossible to wash it clean or sterilize it completely. This leads to spoilage. If cracked lids are used for acid foods, the acid will attack the zinc, impair the flavor, and may eventually break the seal so that the food will spoil.

63. WHAT PRECAUTIONS NEED TO BE TAKEN WHEN USING COFFEE OR PICKLE JARS FOR CANNING?

Some of these jars require lids which seal at the top of the jar rather than on the shoulder because many of them have too narrow a shoulder to permit the use of a jar rubber. If the top seal is used, be sure the edge of the jar is uniform and allows lid to fit.

If the jar has a greater diameter than a standard jar, process for a correspondingly longer time.

64. WHAT KIND OF SCREW-BAND IS USED WHEN THE SIZE 63 METAL LIDS ARE PLACED ON JARS WITH SMALLER THAN STANDARD SIZE OPENINGS?

The original lid of the jar is used for a screw band. Pry out paper lining, or boil and scrape out sealing compound. Punch a small hole in the lid from the inside.

65. IS IT ADVISABLE TO CAN NON-ACID VEGETABLES IN 2 QUART JARS?

The canning of non-acid vegetables in half gallon jars is not recommended. Fruits and tomatoes may be canned in 2-quart jars if 5 minutes are added to the processing time for quarts.

66. CAN FRUIT JUICE BE CANNED IN BOTTLES INSTEAD OF GLASS JARS?

Yes, if Crown caps and a capping device to seal them is used. Ordinary corks do not seal juice safely.

67. IS OVEN CANNING SAFE?

Oven canning is not safe for foods that require a high temperature to kill microorganisms. Oven canning has caused serious accidents to persons and property. When jars seal during processing, steam builds up inside the jars and they may explode. The oven door may fly off--glass may fly out--you may be hit and seriously injured by flying pieces and your kitchen wrecked.

68. IS THERE ANY ADVANTAGE IN USING A VACUUM PUMP?

You would get the same result as you would by heating the product and packing it into the jar without processing. Neither one insures sterilization of the product.

69. HOW CAN THE OFF-FLAVOR FROM SYNTHETIC JAR RUBBERS BE OVERCOME?

To do away with any off-flavors due to synthetic jar rubbers, before using rubbers scrub well with soap and water, rinse, and boil 10 minutes in baking soda and water (1 Tbsp. to 1 quart water to 1 doz. jar rubbers.)

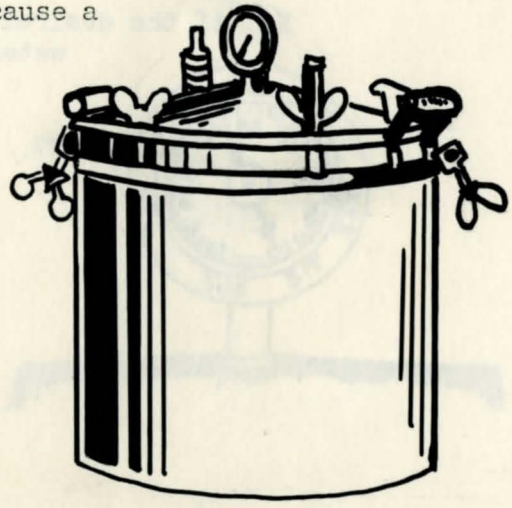
PRESSURE COOKERS

70. HOW OFTEN SHOULD THE SAFETY VALVE OF A PRESSURE COOKER BE CLEANED?

Wash and thoroughly dry safety valve after each use of cooker. Safety valves that are not well cleaned before and after the cooker has been used may stick and fail to release the steam, allowing the pressure to go too high and perhaps cause a serious accident.

71. AT WHAT PRESSURE SHOULD THE SAFETY VALVE OF A PRESSURE COOKER "BLOW-OFF" TO ASSURE SAFETY?

If the safety valve does not release steam at 22 to 25 pounds of pressure, it needs adjusting.



72. HOW LONG SHOULD STEAM BE EXPELLED FROM THE PETCOCK BEFORE PROCESSING FOOD?

After the steam begins to escape from the cooker, leave the petcock open from 4 to 7 minutes for a cooker that holds 4 one-quart jars. This time is the same for a cooker holding less than 4 one-quart jars. For a cooker holding 7 one-quart jars, or more, the petcock is left open for 10 minutes. If this is not done the gage will not register the correct steam pressure. When 14-quart cookers are used, fully loaded with pint jars, it is recommended that the water should be boiled 10 minutes before sealing the cooker, then allow steam to escape for 10 minutes from petcock before closing it.

73. HOW CAN CRACKING AND CHIPPING OF AN ENAMEL COOKER BE PREVENTED?

Treat an enamel cooker as though it were glass because porcelain enamel is a glass coating fused on to a steel base. Overheating, or allowing the cooker to boil dry may crack the porcelain. Sharp blows or dropping may chip the coating. Too great a pressure or sudden change of temperature may also crack the enamel.

74. DO THE WEIGHT GAGES ON THE VICTORY CANNER NEED TO SPIN CONSTANTLY DURING PROCESSING?

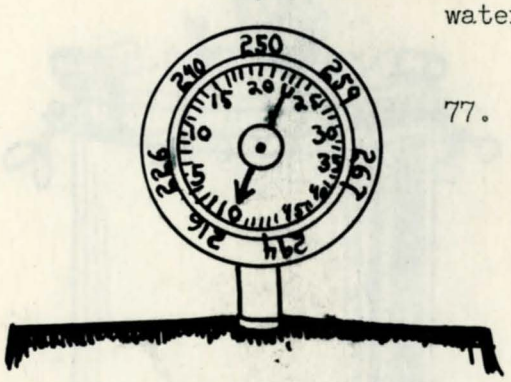
No. Steam should merely issue steadily from the openings. Place plenty of water in the bottom of this kind of canner.

75. HOW CAN THE LID OF A PRESSURE COOKER BE KEPT FROM STICKING?

If the pressure cooker lid sticks or the cooker leaks steam, try rubbing the edges of the lid and kettle with unsalted cooking oil before sealing.

76. DOES IT MATTER IF A PRESSURE COOKER LEAKS STEAM?

No, if the desired pressure can be reached. Be sure to have enough water in the cooker.



77. HOW OFTEN SHOULD THE PRESSURE COOKER GAGE BE TESTED?

The gage should be tested for accuracy at least once a year, or at any time the hand fails to return to zero. This service is available through your county extension agent.

SECTION II

CANNING ARITHMETIC

On the basis of helping win the war every jar of home canned food represents a step toward victory besides all the other advantages of storing up summer time food for winter

To help thrifty homemakers figure how many jars of canned foods to expect from fresh fruits or vegetables as bought or picked the following tables have been prepared:

(Approximate Amounts)

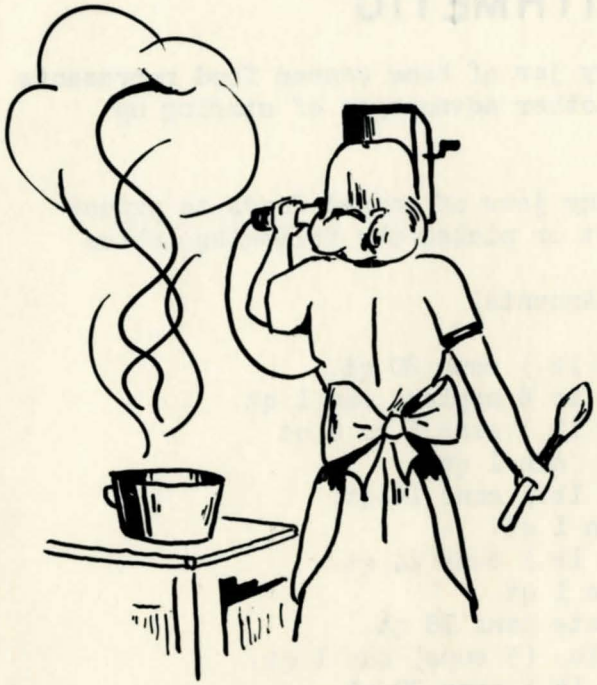
Apples	1 bu. (48 lb.) cans 20 qt.
	$2\frac{1}{2}$ lb. (7 to 8 apples) can 1 qt.
Beans, lima	1 bu. (32 lb.) cans 6 to 8 qt.
	4 to 5 lb. can 1 qt.
Beans, snap	1 bu. (32 lb.) cans 16 qt.
	$1\frac{1}{2}$ lb. can 1 qt.
Beets	1 bu. (52 lb.) cans 24 qt.
	$2\frac{1}{2}$ lb. can 1 qt.
Berries	24 qt. crate cans 18 qt.
	$1\frac{1}{4}$ to $1\frac{1}{2}$ lb. (5 cups) can 1 qt.
Carrots	1 bu. (50 lb.) cans 20 qt.
	$2\frac{1}{2}$ lb. can 1 qt.
Cherries	1 bu. (56 lb.) cans 25 qt.
	$1\frac{1}{2}$ to $2\frac{1}{2}$ lb. (6 to 8 cups) can 1 qt.
Corn (in husk)	1 bu. (50 lb.) cans 8 to 9 qt. whole kernel
	6 to 10 ears can 1 qt.
Grapes	1 bu. (48 lb.) cans 20 qt.
	$2\frac{1}{2}$ lb. can 1 qt.
Greens	1 bu. (13 lb.) cans 5 to 7 qt.
	$1\frac{1}{2}$ to $2\frac{1}{2}$ lb. can 1 qt.
Peaches	1 bu. (48 lb.) cans 20 qt.
	2 to $2\frac{1}{2}$ lb. (8 to 10 peaches) can 1 qt.
Pears	1 bu. (50 lb.) cans 24 qt.
	2 to $2\frac{1}{2}$ lb. (5 to 6 pears) can 1 qt.
Peas	1 bu. (32 lb.) cans 12 to 16 pt.
	2 to $2\frac{1}{2}$ lb. can 1 pt.
Plums	1 bu. (56 lb.) cans 30 qt.
	$1\frac{1}{2}$ to 2 lb. (24 to 32 plums) can 1 qt.
Squash	40 lb. cans 20 qt.
	2 lb. can 1 qt.
Strawberries	24 qt. crate cans 12 qt.
	2 qt. can 1 qt.
Sweet potatoes	1 bu. (50 lb.) cans 20 qt.
	$2\frac{1}{2}$ to 3 lb. can 1 qt.
Tomatoes	1 bu. (56 lb.) cans 20 qt.
	$2\frac{1}{2}$ to $3\frac{1}{2}$ lb. (8 to 10 tomatoes) can 1 qt.

TYPES OF SYRUPS

Light	1/3 cup sugar to 1 cup water
Moderately light	1/2 cup sugar to 1 cup water
Medium	3/4 cup sugar to 1 cup water
Moderately heavy	$1\frac{1}{4}$ cup sugar to 1 cup water
Heavy	1 3/4 cup sugar to 1 cup water

SECTION III

TIME SAVERS WHEN CANNING



Do you ever get tired when you are canning? If so, is there anything you can do to make this job less tiring? The following may be suggestions for making home canning an easier job for you:

TRY TO AVOID THESE

1. Working until 3 o'clock in the afternoon without taking time out to sit down to eat your dinner.

2. Making little or no provision for extra work space in your kitchen or basement for the canning season.

3. Hunting jars and washing them after foods are prepared for canning.

4. Failing to have the boiling water bath boiling when containers are put into the water bath.

5. Long telephone conversations in the midst of canning.

6. Failing to test jars and lids for leaks before using them.

7. Having dull knives which are inefficient.

8. Failing to have dinner or supper planned or partially cooked before canning is started for the day.

9. Having to run or send to a store or the neighbors to get jar rubbers or lids in the midst of your canning.

10. Using too small containers for cooking or blanching food.

11. Failure to supply ahead of time plenty of hot water for canning work.

12. Using tea towels for pot holders or for lifting jars from the hot water.

13. Starting your day's canning work before the breakfast dishes are washed and your kitchen is in order.

14. Starting to can a bushel of fruit or a quantity of vegetables after a full day's work has been done.

15. Standing on cement floor while working.

TRY TO DO THESE

1. Planning your housework ahead of time.

2. Getting your jars and cleaning them the day before.

3. Taking a large basket with you when you go to the cellar for jars, to save trips.

4. Using a dish mop to make washing jars easier.

5. Examining and testing jars and lids before canning.

6. Selecting wide mouth jars for foods which are to be canned whole.

7. Seeing that knives are sharp and of the correct size for the job to be done.

8. Making stirring easier by using a long handled spoon.

9. Using a food mill or colander to save time and effort when making juices and purees.

10. Using tongs and a jar lifter to aid in packing and moving jars.

11. Using jar filler to save time in filling jars and to prevent food from being spilled.

12. Having a clock in the kitchen or canning center to save steps.

13. Using a wooden rack on which to cool jars and also to protect the table top.

14. Planning to sit down whenever you can to peel fruit, prepare vegetables, etc.

15. Checking and adjusting the height of the work table to prevent backaches.

16. Maintaining good posture to prevent fatigue.

17. Wearing comfortable shoes and clothing will make canning easier.

18. Resting a short period after the vegetables have been gathered before canning is started will do much toward helping your work go smoothly.

19. Providing extra work space for canning if possible.

20. Maintaining an orderly workroom with good circulation of air and pleasant surroundings makes any job more pleasant.

21. Using accurate measuring spoons and cups to save time and eliminate guess work.

22. Keeping as much of the dirty work out of the kitchen as possible. Vegetables may be washed at the pump or in the yard on a bench or table.

23. Lifting food out of the water instead of pouring the water off the food to make fewer washings.

24. Preparing at one time the amount of food needed for a full load in your pressure cooker in order to save fuel, time, and energy.

25. Heating plenty of water for use in canning.

26. Using a vegetable brush to remove silk from the ears of corn to lessen the time required to pick it off.

27. Lifting baskets of fruit or vegetables the easy way, bending knees and not your back.

28. Letting gravity help as you prepare fruit and vegetables for canning.

29. Having both hands work instead of one holding whenever possible.

30. Arranging your work so that good light will fall on the work area.

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