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Better Use of Home Grown Products

Susan Z. Wilder

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BEETTER USE OF HOME GROWN PRODUCTS

by

Susan Z. Wilder

Extension Specialist in Foods and Nutrition

OH! who is as healthy as I?

Spinach and peas, and young lima beans,
Potatoes and carrots, I try;
Celery, too and sweet, juicy beets,
Asparagus, tender and green,
Brown tempting squash
in a queer, crooked shell,
Are dishes quite fit for a queen.

--Junior Home Magazine

Why Can Fruits and Vegetables

I. Economy

1. Prevent waste of what is produced

There are many garden products both fruits and vegetables that will go to waste unless some method of preservation is used. Canning is one of the best.

2. Cheaper to make use of home grown products than to buy them.

It is impossible to have fresh fruits and vegetables the year round in the country communities because of the short growing season and the cost of shipping. The home maker must therefore use the fresh fruits and vegetables she raises, can any surplus and fill in with the stored and dried products. She may be able to purchase some fresh fruits, oranges and apples, but they are generally expensive. The family will be as well fed and the cost of food will be less if she makes the best possible use of a well planned garden.

II. Health

1. A well balanced diet

Scientists who have made a study of the food needs in definite tests with animals and people have found that the body must have protein food for repair and growth of tissue, carbohydrates and fat foods for heat and energy, vitamins for health and growth, mineral substances for repair and growth of bone tissue and body regulation, roughage for body


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regulation. Water is also needed since seventy percent of the body weight is water. This supply must be maintained. All the foods can be placed in one or more of these groups. In a well balanced diet, all of these groups should be represented every day. Investigation has shown that the American diet is one-sided; that too much meat, (protein food), and cereal products (carbohydrate food) are used and that a comparatively small amount of fruits and vegetables are used.

2. Fruits and Vegetables are necessary in the diet.

The fruits and vegetables are one of the best sources of minerals (calcium, phosphorous and iron) of vitamins and of roughage. They also furnish some carbohydrate food in the form of starch and sugar. Their water content is high.

Raise a Garden and Can it by a Plan

If the homemaker expects the best results she must first know why she needs the fruits and vegetables the year round (that has already been discussed) and second a plan by which to secure them. The woman who is going to make a dress knows the amount of material needed before she goes to the store to buy. She may make changes later but she does have a plan. The same holds true for home canning. Have a plan before you start. You say, "We can all we raise and can afford to buy and never have enough". But if you know in the first place how much you actually need to feed your family to keep them in health would you not be more likely to get enough than if you went at it in a haphazard way? The plan means that you figure out ahead of time the amount of fresh, canned, dried and stored fruits and vegetables needed for your family for a year and that you plant your garden so that you will have enough. If it has been impossible to raise a good garden in your part of the state you need to begin earlier with your plans and consult your County Agent or write the State Extension Specialist at Brookings, South Dakota for help so that you can raise an adequate garden.

Carrots make good food!

Oranges are excellent because of their vitamin content. Tomatoes will give you the same

Tomatoes four times a week!
The Plan - The Fruit and Vegetable Budget

What is the plan, the fruit and vegetable budget? Vegetables other than potatoes, should be served once a day, better twice. Greens should be served twice a week. The same holds true for oranges or tomatoes, because of the necessary vitamin content. Tomatoes are one of the canned vegetables in which the vitamins seem to be affected by the heat very little. Carrots and cabbage can be served in salads fresh the year round. Few fruits and vegetables should be used whenever possible - apples are excellent eaten raw. With these specific suggestions in mind it is possible to substitute one vegetable or fruit for another to suit the family tastes.

How to Work the Plan

Suppose you allow one-half cup canned vegetables or fruit to a serving. For canned tomatoes served four times a week for nine months, it will mean 36 x 2 cups or 72 cups equal to 15 quarts of tomatoes for one individual for 6 months. If there are six in the family you will need 6 x 13 qts., or 108 quarts of tomatoes to serve your family four times a week for 6 months. Follow this same plan of estimating for the whole budget, fresh, canned, dried and stored. The accompanying table will aid you.

Use String Beans!

Don't forget Spinach

The budget allows for the following:

1. Vegetables about eighteen servings a week.
   a. Leafy vegetables canned or stored nine servings.
   b. Other vegetables canned or stored five servings
   c. Tomatoes about four servings a week.

2. Fruits about ten servings a week.
   a. Fresh fruits about four servings.
   b. Canned fruits about four servings.
   c. Dried fruits about two servings.

Give peas a place in the diet.
**SUGGESTED FRUIT AND VEGETABLE BUDGET FOR ONE PERSON**

*September 1 to June 1*

*by*

Mary A. Dolve

Extension Specialist in Foods and Nutrition

(Multiply these quantities by the number in the family and you have your own family budget.)

<table>
<thead>
<tr>
<th>Name of Food</th>
<th>Quantity per week</th>
<th>Divisions in serving per week</th>
<th>Quantity for Sept. 1-June 1</th>
<th>Fill in your family budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomatoes</td>
<td>1 lb.</td>
<td>4</td>
<td>29 lbs or 20 qts</td>
<td></td>
</tr>
<tr>
<td>Spinach</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chard</td>
<td>½ lb.</td>
<td>2</td>
<td>20 lbs or 10 qts</td>
<td></td>
</tr>
<tr>
<td>Beet Greens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Greens</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td></td>
<td>4</td>
<td>45 lbs.</td>
<td></td>
</tr>
<tr>
<td>Celery</td>
<td>1½ lb.</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lettuce</td>
<td></td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cauliflower</td>
<td>1 lb.</td>
<td>3</td>
<td>19 lbs or 10 qts</td>
<td></td>
</tr>
<tr>
<td>Asparagus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>String Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peas</td>
<td>½ lb.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Squash</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td>3 lb.</td>
<td>5</td>
<td>45 lbs.</td>
<td></td>
</tr>
<tr>
<td>Kale Robi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutabagas</td>
<td>3 lb.</td>
<td>5</td>
<td>45 lbs.</td>
<td></td>
</tr>
<tr>
<td>Parsnips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turnips</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oranges</td>
<td>1 lb.</td>
<td>3</td>
<td>39 lbs.</td>
<td></td>
</tr>
<tr>
<td>Grape Fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td>1 lb.</td>
<td>3</td>
<td>39 lbs.</td>
<td></td>
</tr>
<tr>
<td>Bananas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peaches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cherries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plums</td>
<td>1 lb.</td>
<td>4</td>
<td>39 lbs or 20 qts</td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raspberries</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other canned fruit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peanuts</td>
<td>1/8 lb.</td>
<td>2</td>
<td>5 lb.</td>
<td></td>
</tr>
<tr>
<td>Raisins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dates, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One pint of canned fruit or vegetable weighs about one pound.
Steps in Fruit and Vegetable Canning

1. Select fresh firm well ripened products with no blemishes.
2. Prepare the product for canning - wash, scrape, ped, string.
3. Blanch all products but berries in hot water or steam.
4. Omit cold dip.
5. Prepare the products for packing by pooling, cutting into convenient sizes, etc.
6. Pack product carefully so as to make an attractive looking can.
   a. Vegetables
      To every pint can add ½ teaspoon salt; to every quart can add 1 teaspoon salt. Fill can with water to one-fourth inch of top.
   b. Fruits
      Fill can with syrup of required density to one-fourth inch of top.
7. Partially seal cans.
8. Process cans the required length of time depending upon the size of jar and the method of processing.
9. Remove from sterilizer and seal.
10. Cool and store.
(Taken from Farmers' Bulletin No. 1211)

TIME REQUIRED FOR BLANCHING AND PROCESSING FRUITS AND VEGETABLES.

<table>
<thead>
<tr>
<th>Product</th>
<th>Glass jar</th>
<th>Tin can</th>
<th>Blanch or cook</th>
<th>Water bath at 212°F</th>
<th>Steam Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 lbs.</td>
<td>10 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pounds</td>
<td>pounds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>288°F</td>
<td>240°F</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>Glass jar</th>
<th>Tin can</th>
<th>Blanch or cook</th>
<th>Water bath at 212°F</th>
<th>Steam Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 lbs.</td>
<td>10 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>pounds</td>
<td>pounds</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>288°F</td>
<td>240°F</td>
</tr>
</tbody>
</table>

- Apples - whole: Pint or 10 min.
- Packed hot: quart or 3
- Apple sauce: 1-2 min.
- Apricots: 30 min.
- Asparagus: Pint 4 min.
- Beans, string: quart in water or 5-10 min. in steam
- Beans, Lima: Pint 90 min.
- Beets: Pint or quart 40 min.
- Barries, etc.: 10 to 20 min.
- Blackberries: 10
- Blueberries: 10
- Carrots: #2 90 min.
- Cherries: 1/2 min.
- Corn, sweet #1 1 to 5 min.
- Currents: Pint or #2, 2 1/2 quart or 3
- Gooseberries: 10 to 20 min.
- Gooseberries - sauce (packed hot): 10 min.
- Grapes: #2 4 min. (15 if in steam)
- Greens: #2 10 min.
- Legumes: #2 #2, 2 1/2 or 3
- Peaches: 1 min.
- Peas: Pint #2 40-50
- Peppers, pimientos: #1 or 4-8 min. in water or steam
- Pineapple: Quart #2 10
- Plums: Pint or #2, 2 1/2 20-30 min.
- Pumpkin: #2 10-15 min. in 120-300 min.

# In pint jars only, when processing glass jars in water bath.
<table>
<thead>
<tr>
<th>Product</th>
<th>Glass jar</th>
<th>Tin can</th>
<th>Blanched or cooked</th>
<th>Water bath at 212°F</th>
<th>Steam Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raspberries</td>
<td>Pint or</td>
<td>quart</td>
<td>No. 2</td>
<td>10-20 min.</td>
<td>10 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120-300 min.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>in steam</td>
<td>250°F</td>
</tr>
<tr>
<td>Tangerines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spinach</td>
<td></td>
<td></td>
<td></td>
<td>:4 min. in water;</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Squash, winter</td>
<td></td>
<td></td>
<td></td>
<td>:10-15 min.</td>
<td>40-60</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Pint or</td>
<td>quart</td>
<td>No. 2</td>
<td>:10-30 min.</td>
<td>10 lbs.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120-300 min.</td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
<td></td>
<td></td>
<td>:1-1½ min.</td>
<td>15 lbs.</td>
</tr>
<tr>
<td>Vegetable mixture</td>
<td></td>
<td></td>
<td></td>
<td>:25-30 min.</td>
<td>30</td>
</tr>
<tr>
<td>(tomato and corn)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>as specified for canning in each case.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vegetable soup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40</td>
</tr>
<tr>
<td>mixture, as specified for canning in each case.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Asparagus, lima beans, string beans, corn, greens, pears and spinach are processed three hours in the hot water bath. The steam pressure cooker gives the best results in processing these products.
1. What are the main points to keep in mind in canning fruits and vegetables for exhibit purposes? It will be easy to make a selection from the home canned products if these results are always worked out.

   a. Uniform pack - same size, color, shape.
   b. Clear liquid - not cloudy.
   c. No blemishes.
   d. Full can
   e. Good color
   f. Excellent flavor.

2. What kind of water is best for canning?


3. Is it necessary to sterilize the jars for canning?

   No. The jars should be washed clean with soap and water and rinsed in hot water. The jars are sterilized at the same time as the product.

4. How do you test rubber rings?

   a. Stretch the ring 4 to 6 inches. If it returns to position it is probably a good ring.
   b. Fold a rubber ring and pinch. If it does not crack the ring is all right to use.

5. What can be done when the rubber ring has bulged at the side of the jar during processing?

   Loosen the lid slightly and allow ring to go back to place. If this is impossible sterilize new rings. Remove jar cover. Put on the new ring. Return cover and sterilize jar 10 minutes.

6. How do you test jars for seal?

   Place rubber in position. Pour 1 cup water in the jar. Place cover in position and tighten. Invert jar. If no moisture appears seal is perfect.

7. How do you test glass jars for imperfections?

   Examine all edges for cracks or nicks. Discard imperfect.

   a. Screw top.

   Do not use those with loose inner plate for products difficult to can - peas, beans, greens, asparagus, meats. The edge must fit tight into the rubber ring when in position. A rolled or fluted edge must be smoothed down. Screw cover into position. If the finger nail can be inserted under the top it is too loose.

   b. Glass top.

   Discard a top which rocks when the cover is placed in position without the rubber ring. If the wire clamps do not go down with a snap the bail needs tightening. To do this bend the bail in slightly at the center. If the bail is too tight loosen by bending it out slightly at the center.
c. Composition metal tops

The rubber ring should be soft and unbroken. Otherwise discard.

8. How can breakage of the glass jars be prevented at time of processing?

Set the jars in a pan of hot water while packing or hold the jars over the hot water until they are partially heated before lowering them into the water bath.

9. Can all vegetables be packed tight in jars?

No. Corn and spinach should not be packed too tightly because the center of the jar may not be sufficiently sterilized by the end of the processing period. Too tight a pack may be the cause of spoilage. Corn contains a high percent of starch which expands when heated. If the jar is packed too full a good part of the liquid may be forced out of the jar during the sterilization.

10. What is the best method to follow in canning corn?


11. Why does corn turn dark in sterilizing?

It may have been cooked at too high a temperature in the steam pressure cooker. The corn may have been too old.

12. When is salt added to vegetables?

When the jar is packed with vegetables place the salt on top, ½ tsp. to a pint, 1 teaspoon to a quart, add the hot water.

13. What gives the cloudy appearance to the liquid in which vegetables are canned?

The vegetables may be over cooked. Old vegetables develop more starch which may come out into the liquid if the vegetable tissue is cut or broken. Impurities in the water may give a cloudy appearance.

14. How may beets be made to retain their bright color?

Blanch the beets without breaking the skin. Then peel.

15. Do all fruits require blanching?

No. Only the hard fruits - apples, peaches, tomatoes. The time is shorter than for vegetables.

16. What is the proportion of sugar to water for fruit syrups?

<table>
<thead>
<tr>
<th>Consistency</th>
<th>Sugar</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>thin</td>
<td>1 cup</td>
<td>2 cups</td>
</tr>
<tr>
<td>medium</td>
<td>1 &quot;</td>
<td>1 &quot;</td>
</tr>
<tr>
<td>thick</td>
<td>1 &quot;</td>
<td>½ &quot;</td>
</tr>
</tbody>
</table>
17. With what fruits are the different syrups used?

a. Thin syrup for soft fruits - strawberries, raspberries, peaches, apricots.

b. Use a thin syrup for hard fruits - apples, pears.

c. Use a medium or thick syrup for sour fruits - currants, gooseberries, cranberries.

18. How many fruit juices be extracted and canned?

Crush the fruit to extract the juice. As an old the fruit may be heated in a double boiler. Strain the juice thru a jelly bag. Bring the juice to the boiling point. Pour the juice in hot sterilized jars and seal. Place a stopper of cotton in top of bottles. Filled with the hot juice (not boiling) they are placed in water up to the neck and held for 40 minutes at a temperature of 185°F. A fitted cork is pressed into the bottle over the cotton.

19. What can the fruit juices be used for?

Unsweetened may be used for jelly. The juices are good for sherbets, ices, fruit sauces, gelatin desserts.

20. What fruits can be canned by the cold water method?


21. How may berries be kept from shrinking?

a. Wash berries. Sprinkle with sugar and allow them to stand 24 hours in a cool place. Pack in jars and pour over them a hot syrup made from the juice.


22. "Why do my tomatoes spoil?"

Tomatoes are one of the easiest products to can because they contain a high percent of acid. Carelessness in grading, blanching and properly sterilizing are probably the causes of spoilage. There are times when the bacteria which cause the spoilage are particularly virulent. To prevent their action the greatest care must be exercised with either the open kettle or the cold pack method.

23. How full should a jar be packed for processing?

This depends upon the product. If it is rich in starch like corn, one-half inch from the tip. Otherwise one-fourth inch.

24. What is the result if the cans are filled too full?

The liquid will be forced out during processing so that the cans will not be full. Rubber rings may be pushed out of position or covers sprung.
25. How tight a seal is made before jars are sterilized?
   a. Screw top
      Tighten top only with thumb and little finger.
   b. Glass top
      Place one bale over the top and the second bale up.
   c. Composition metal top
      Place top in position with clamp.

26. Should the water come above the tops of the jars during the processing?

   Yes. One and a half to two inches. To keep the product the whole jar from top to bottom inside must be sterilized. If the water covers the entire jar you are sure of results. If the boiler has a tight fitting cover a blanket of hot steam would probably surround the jar tops even if the water came only to the neck of jar and sterilize the product as well as the hot water. One or the other condition must exist.

27. What should be the temperature of the water when the jars are placed in the water bath?

   Hot. The sterilization starts immediately. The time of waiting for the finished product is lessened because the water can be heating during the preparation of the products. There is no harm done in placing the jars in cold water and waiting for the water to boil before counting time.

28. Is it necessary to always use a fresh boiler for a hot water bath for sterilizing?

   No. Any kettle that is deep enough to allow the water to come two inches over the tops of the jars and has a tight fitting cover.

29. Why have a tight fitting cover to the boiler?

   The water will boil quicker. Results are more sure.

30. When do you begin to count time in processing fruits and vegetables?

   a. When the water begins to boil - water bath
   b. When the desired pressure has been obtained - steam pressure cooker.

31. Will the product spoil if the jar is not full when it is removed from the sterilizer?

   No. The whole area inside the jar has been sterilized if the work was done properly. If the product spoils in a partially filled jar it is due to some leakage. The work was not done right.

32. Should a jar that is only partially filled after sterilization be opened and refilled?

   No. The contents are sterile. If a jar is opened the contents will spoil unless the processing is repeated.
33. How long a wait should there be after the sterilizing is complete before the jars are finally sealed?

None. Seal immediately. A wait may mean a spoiled product.

34. What advantage has the steam pressure cooker over the hot water bath?

The products are cooked at a higher temperature over a shorter period of time and therefore the chances of spoilage are reduced. Saves both fuel and time.

35. Is even canning successful?

Yes. The glass jars are placed in pans of water in the oven. The time of processing is the same as for the water bath. There is danger of too high a temperature which will ruin the rubber seals. Flavor of product excellent.

36. Is it safe to use canning powders?

No. The results are likely to be injurious to the health. Moreover it is not necessary to use powders since the vegetables will keep perfectly if the work is well done.

37. Is a slight freezing of canned products injurious?

Yes. Freezing is very likely to spring the covers and break the seal. As a result the product will spoil.

38. What is "flat sour"?

Flat sour is a fermentation due to bacteria that were not destroyed at the time of processing. These bacteria are always present on fresh products. If the product is allowed to stand for any length of time after gathering the bacteria are likely to multiply in numbers. To prevent flat sour every step in the canning process should be done well. There should be no delay.

39. Why does a mould sometimes appear on canned products which may otherwise seem all right?

Incomplete sterilization. Leakage somewhere.

40. How may peeled products be kept from turning dark?

One tablespoon of salt to a gallon of water will prevent the dark color while standing.

41. Can meat be canned with bones?

Yes. The time of processing is longer to insure the product keeping. It is a waste of jar space.

42. Is it all right to can frozen meat?

It may be canned after it is thawed out. It is not a good practice to follow. Meat that has been frozen is not considered in prime condition for canning.
43. What is wrong with canned meat above the liquid line when it tastes off flavor?

Decay has started. Undoubtedly there was an imperfect seal. If the meat were left long enough the whole would have the same flavor.

44. What conditions might cause spoilage?

a. Poor rubber. Perhaps the rubber rings were not properly tested.
b. Leakage due to nicks in the top or edge of jars.
c. Imperfect seal.

45. How may jars be opened?

A screw top jar may be placed top side down in a pan of hot water. The metal expands quickly and the jar can be opened. A piece of fine sand paper in the hand will help. In any case a small opening with a knife under the lid will admit the air and then the process is easy. Rubber rings with extra at the side are a help in opening jars quickly.

46. Why store canned products in a dark place?

They keep their color better.

47. Why store canned products in a cool dry place?

If any bacteria are present they will remain inactive probably if the conditions are not right for growth — warm and damp.

The following soup stock recipes and vegetable mixtures for soups have been taken from the following sources:

U. S. Farmer's Bulletin No. 839
" " " No. 1211
Michigan Club " No. 11
Oklahoma A. & M. College circular No. 63

Chicken Soup Stock

Place 30 pounds chicken in 10 gallons cold water and simmer over fire for 5 hours. Remove meat from bones, then strain. Add sufficient water to make 10 gallons of stock. Fill glass jars with the hot soup stock.

Sterilize in hot water bath........ 90 minutes
" " steam pressure cooker... 45 " at 15 pounds pressure

Soup Stock from Meat Scraps

Gristle, bones and scraps of meat may be cooked in a large quantity of water and the liquid canned for soup.

Sterilize in hot water bath........ 90 minutes
" " steam pressure cooker... 30 " at 15 pounds pressure
Soup Stock in Quantity

Strip off the fat and meat from 25 pounds of beef hocks, joints and bones containing marrow. Crack bones with a hatchet or cleaver. Reserve meat and fat for other use. Put the broken bones into a thin cloth sack and place in a large kettle containing 5 gallons of cold water. Simmer (do not boil) for 6 or 7 hours. Do not salt while simmering. Skim off all fat. This should make about 5 gallons of stock.

Pack hot into glass jars, bottles. Partially seal glass jars. Sterilize for the length of time given below for the particular type of outfit used:

Sterilize in hot water bath .................. 90 minutes
" " steam pressure cooker........ 45 " at 15 pounds pressure

Corn and Tomato

(Vegetable Mixtures)

Corn and tomatoes are often canned together. The tomato aids in the preservation of the product. The more concentrated the mixture the less jar space required. Small and broken tomatoes can be used in these recipes.

Recipe No. 1

Prepare each vegetable as for canning. Chop the tomatoes into medium-sized pieces or heat to the simmering point and put them through a sieve. Mix thoroughly 2 parts of tomatoes to 2 parts of corn. Pack into hot glass jars. Add 1 level teaspoonful of salt, to a quart.

Sterilize in hot water bath two hours.
" " steam pressure cooker one hour at 10 pounds pressure.

Recipe No. 2

1 qt. thick tomato pulp 2 cups corn
1 small onion, chopped 2 teaspoonfuls salt
2 teaspoonfuls sugar

Cook altogether for ten minutes. Pack in hot jars.

Sterilize in hot water bath two hours.
" " steam pressure cooker one hour at 5 pounds pressure.

Tomato Soups

Recipe No. 1

14 qts. tomatoes (cut in pieces) 7 medium sized onions, chopped
14 stalks celery (cut) 21 cloves

Boil these together till thoroughly cooked. Strain. Melt one cup butter. Mix with butter, 1 cup flour, 8 tablespoonful salt, 16 teaspoonful sugar, 2 teaspoonfuls pepper. Cook vegetable stock and this paste together until as thick as desired. Pack in hot jars. When ready to use, add ½ teaspoonful soda and 1 cup hot milk to each pint of tomato soup.
Sterilize in hot water bath............. 10 minutes
    " steam pressure cooker........ 8 minutes at 5 pounds pressure

Recipe No. 2

Cook tomatoes until tender. Run through colander. Concentrate $\frac{1}{2}$ to $\frac{2}{3}$ of former volume. Pack in hot jars.

Sterilize in hot water bath............. 30 minutes
    " steam pressure cooker........ 15 " at 5 pounds pressure

Recipe No. 3

Cut the tomatoes into medium-sized pieces; add 1 large onion chopped and 1 cup of chopped fresh pepper to each gallon of tomatoes. Cook until tender, put through sieve, and add $\frac{1}{2}$ teaspoonfuls of salt and 3 teaspoonfuls of sugar to each gallon of pulp. Cook until the consistency of ketchup, stirring constantly. Pack while boiling hot into jars.

Sterilize in hot water bath............. 25 minutes
    " steam pressure cooker........ 15 " at 5 pounds pressure

Spanish Sauce

(To be used with spaghetti or macaroni)

2 lbs. tomatoes 3 onions
2 green peppers 2 stalks celery

Scald tomatoes, cold-dip, skin, core and chop. Blanch peppers, onions and celery together for 5 minutes, cold-dip and chop. Mix all vegetables together, pack in jars. Add 1 teaspoonful salt to quart. Use tomato juice in place of boiling water, to within $\frac{3}{4}$ inch of the top. Partially seal.

Sterilize in hot water bath ............. 2 hours
    " steam pressure cooker........ 1 " under 5 pounds pressure

Vegetable Mixtures for Soups

If it is impracticable to obtain materials for making soup stock in the summer when vegetables are abundantly available, the vegetable portion of the soup may be canned alone. The preparation of soup from cans of such vegetable combinations will be a relatively simple matter whenever stock is available, as it should be in most households if meat refuse is properly utilized.

Cream of Potato Soup

5 gallons soup stock 1/2 tablespoon pepper
1 1/2 pounds thin sliced potatoes 1/2 pound butter
3 ounces salt 2 tablespoons flour

Boil the first two together 10 minutes. Add the next three ingredients and boil 5 minutes. Make a paste of the flour and add it. Cook 3 minutes, and pack in hot jars.

Sterilize in hot water bath............. 90 minutes
    " steam pressure cooker........ 45 " at 15 pounds pressure
Vegetable Soup 1.

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Seek the lima beans and rice for twelve hours. Cook the pearl barley for two hours. Blanch the carrots, onions, potato, red peppers for five minutes. Pure the vegetables and cut into small cubes. Mix these ingredients thoroughly. Put into hot jars, add one teaspoonful salt to the quart. Fill with boiling water to within 3/8 of an inch of the top.

Sterilize in hot water bath............ 90 minutes 
" steam pressure cooker.... 45 " at 15 pounds pressure

Vegetable Soup 2.

Prepare vegetables. Cut potatoes and carrot into thin slices. Brown the onion in butter. Combine all the ingredients but flour. Cook vegetables tender. Press through a sieve, add the flour, let mixture boil up, pour into heated jars, leaving 3/8 of an inch space at the top, and 1 level teaspoonful salt to the quart. Seal.

Sterilize in hot water bath............ 60 minutes 
" steam pressure cooker.... 30 " at 5 pounds pressure.

Vegetable Soup 3.

Seek the peas and beans over night. Boil 30 minutes. Blanch the vegetables 3 minutes. Prepare and chop them into small pieces. Mix all ingredients and season. Pack in glass jars. Fill with boiling water.

Sterilize in hot water bath............ 90 minutes 
" steam pressure cooker.... 45 minutes at 15 pounds pressure

Succotash

Use equal parts of corn and lima beans. Blanch corn on cob 5 minutes, blanch lima beans 5 minutes. Mix corn and beans, pack loosely in jar. Add 1 teaspoonful salt to quart. Add boiling water to within 3/8 inch of top of jar. Partially seal.

Sterilize in hot water bath............ 3 hours 
" steam pressure cooker.... 1½ " at 5 pounds pressure
Hungarian Goulash

2 pounds of meat (beef, veal or heart of pork may be used)
2 ounces of butter or any good fat
2 onions (medium-size) chopped fine
1 carrot (medium-size) finely sliced
1 stalk celery cut in small pieces, or
2 teaspoons crushed celery seed
1 pint tomatoes (canned or fresh)

Cut the meat into one-inch squares and sprinkle with flour mixed with salt and pepper. Melt the fat in a frying pan, add the chopped onions, carrot and celery when fat is hot, and brown lightly! Add the meat and brown, while stirring frequently with a spoon to keep from scorching. When nicely browned, add dry leaves, cloves, pepper corns, mace and thyme, tied up in a little bag of cheesecloth. Add tomatoes. Cover with water or soup stock and simmer for 45 minutes. (for two hours if to be served at once and not canned). Remove the bag of spices and season by adding salt and pepper to taste. Soy or Worcester sauce may be added in small quantities if desired. Add the parsley. Fill hot in cans, and process.

Sterilize in hot water bath............. 55 minutes
" " steam pressure cooker..... 60 " at 15 pounds pressure

In making goulash the cheaper cuts of meat may be used. If the different ingredients in this recipe are not at hand, a good goulash can be made by using meat, fat, onions, tomatoes, flour, salt and pepper and leaving out the balance of the ingredients.

Chicken Gumbo

1 chicken weighing 4 or 5 pounds (an old fowl may be used)
1 ½ tablespoons of lard
1 ½ tablespoons of butter
6 medium-sized onions, cut in small pieces
1 crown garlic, cut in small pieces
(may be omitted)
2 red pepper pods
2 bay leaves
3 pounds of best spaghetti

Clean the fowl, cut in pieces, add four quarts of water. Stew until the meat can be removed from the bones. Remove the bones and mince the meat. Return the meat to the liquid.

Put the lard and butter in a frying pan, heat and fry in it the onions and garlic until nicely browned. Add this to the fowl and add the pepper pods, bay leaves, cloves, thyme, lemon and tomatoes. Let simmer.

Take the spaghetti or macaroni, break in small pieces, put in colander, rinse well and put immediately into boiling salted water and let boil for twenty minutes. Drain and cover with cold water to prevent sticking together. Drain again and add to above mixture. Add salt.
Sterilize in hot water bath................ 3 hours
" " steam pressure cooker........ 1 " at 15 pounds pressure

Chicken gumbo may be served hot or cold. It may be covered with grated cheese and baked.

**Italian Stew**

5 pounds lima beans (dry)
1 pound fat (good butter, olive oil, plain fat, or good melted kidney fat)
2 No. 3 cans tomato purre or canned or fresh tomatoes
5 finely chopped onions

Put the meat, peppers, and garlic through a food chopper. Mix with tomatoes, water, and salt. Cook on slow fire, simmering for 45 minutes. Soak rice in salted water for 20 minutes. Rinse with cold water at once. Mix this product with the sauce without straining. Grind or grate cheese and mix thoroughly with all the other products.

To can this ration, the mixture should be packed in hot glass jars while hot. Place rubber in position, not tight. Sterilize for the length of time given below for the particular type of outfit used:

Sterilize in hot water bath............. 90 minutes
" " steam pressure cooker....... 40 " at 10 pounds pressure

Remove jars; tighten glass jar covers; invert to cool. Wrap jars to prevent bleaching, and store.

The following recipes on Camp Rations are taken from Farmer's Bulletin No. 639

**Camp Rations**

**Ration No. 1—Products required for mixture:**

4 pounds rice
1 pound fresh green peppers
4 Chili peppers
4 cloves or 2 garlic
2 quarts tomatoes

1 pound cheese (or ½ lb. butter)
1 pound fresh pork
4 Spanish peppers
6 level teaspoonfuls salt
4 quarts water

Put the meat, peppers, and garlic through a food chopper. Mix with tomatoes, water, and salt. Cook on slow fire, simmering for 45 minutes. Soak rice in salted water for 20 minutes. Rinse with cold water at once. Mix this product with the sauce without straining. Grind or grate cheese and mix thoroughly with all the other products.

To can this ration, the mixture should be packed in hot glass jars while hot. Place rubber in position, not tight. Sterilize for the length of time given below for the particular type of outfit used:

Sterilize in hot water bath............. 90 minutes
" " steam pressure cooker....... 40 " at 10 pounds pressure

Remove jars; tighten glass jar covers; invert to cool. Wrap jars to prevent bleaching, and store.
Ration No. 2—Products required for mixture:

1 pound rice or hominy, cracked
1 teaspoonful salt
2 pound bacon or chipped beef cut into small pieces
1 pound mixed equal parts carrots, onions, beans, Irish potatoes
2 quarts water or milk (or 2
1 quart water and 1 quart milk)
\frac{1}{2} pound sweet green peppers cut
fine
1 pint strained tomatoes
season with celery salt or celery seed

Cook rice or hominy, water or milk, and salt in a double boiler until the rice or hominy is soft. Bacon or chipped beef, green peppers, and the strained tomatoes should be cooked or boiled separately. Then add to this mixture the 1-pound mixture of vegetables and season with mixed spices. Cook this vegetable combination until done. Mix at once rice, bacon, green peppers, etc. Stir this well into the mixture.

The product to be canned should be hot and thoroughly mixed. Pack mixture into hot glass jars at once to one-eighth inch of top. Place rubbers in position, not tight. Sterilize for the length of time given below for the particular type of outfit used:

Sterilize in hot water bath.............. 90 minutes
" " steam pressure cooker........ 30 " at 10 pounds pressure

Remove jars; tighten covers; invert to cool. Wrap and store.

Ration No. 3—One-pound pack. Products used:

8 ounces beef
2 ounces potatoes
2 ounces onions
1 ounce carrots
1 ounce beans
2 ounces beef gravy

Parboil the beef in kettle with thin gravy for 30 minutes. Cut up potatoes, onions, and carrots into small sections; add the beans. Place entire mixture into kettle; add the gravy, season to taste. Stir mixture and cock for 10 minutes.

To can the mixture, pack it hot into glass jars to one-eighth inch of top. Place rubbers and tops of jars in position, not tight. Sterilize for length of time given below for the particular type of outfit used.

Sterilize in hot water bath.............. 90 minutes
" " steam pressure cooker........ 40 " at 10 pounds pressure

Remove jars; tighten jar covers; invert to cool. Wrap and store.

Bean Soup No. 1

Soak 3 pounds of beans 12 hours in cold water. Cut 2 pounds of ham meat into one-fourth-inch cubes and place in a small sack. Place the beans, ham, and 6 gallons of water in a kettle and boil slowly until the beans are very soft. Remove the ham and beans from the liquor and mash the beans fine. Return the ham and mashed beans to the liquor and add 5 gallons of soup stock and seasonings and bring to boil. Pack into hot glass jars. Partially seal glass jars. Sterilize for the length of time given below for the particular type of outfit used:

Sterilize in hot water bath.............. 90 minutes
" " steam pressure cooker........ 45 " at 15 pounds pressure
Bean Soup No. 2

1 qt. white navy beans
1 large onion (cut in small pieces)
12 large tomatoes
2 lbs. beef (cut in small pieces)
salt to taste

Soak beans over night. In morning add beef, tomatoes, onions, salt and
two quarts of water. Boil slowly till thoroughly cooked. Pour into jars,
partially seal.

Sterilize in hot water bath..................3 hours
" " steam pressure cooker........1 " at 15 pounds pressure

Cream of Pea Soup

Soak 8 pounds of dry peas overnight. Cook until soft. Mash fine. Add
the mashed peas to 1 1/2 gallons of soup stock and bring to boil. Pass the
boiling liquid through a fine sieve. Make a smooth paste of one-half pound
flour and add paste, 10 ounces of sugar, and 3 ounces of salt to the soup

Sterilize in hot water bath.............. 90 minutes
" " steam pressure cooker....... 45 " at 15 pounds pressure