



**The BALL
BLUE BOOK**
of CANNING and
PRESERVING RECIPES

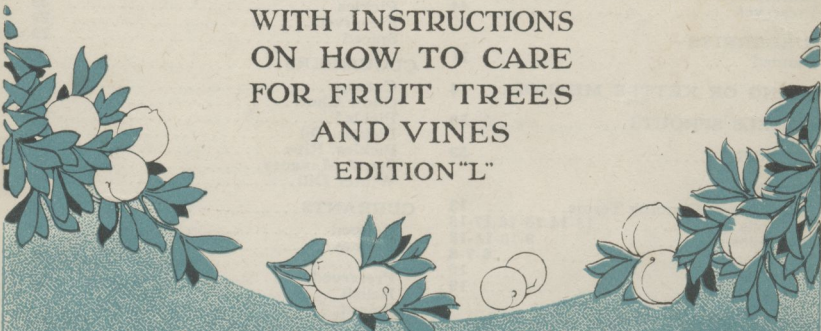




Ball

Blue Book of Canning *and* Preserving Recipes

WITH INSTRUCTIONS
ON HOW TO CARE
FOR FRUIT TREES
AND VINES
EDITION "L"



Issued by

BALL BROTHERS GLASS
MANUFACTURING COMPANY

MUNCIE, INDIANA



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FOREWORD

DURING the recent world war, we were constantly urged to produce more food on the farms and in the war gardens and to conserve in every way possible. Now that the armies of the allies have been victorious, we realize more than ever the extreme necessity for the conservation and preservation of foodstuffs.

Knowledge of how to preserve and can fruits and vegetables economically and to eliminate the danger of spoilage are at this period very essential.

With this in mind we have carefully studied the different methods of canning and from these experiences, we have prepared *The Ball Blue Book*, which should be a very valuable reference book to the modern housewife.

We explain the way to prepare fruits and vegetables for canning or preserving, and the methods given are conceded to be the most practical, and if adhered to should produce the most satisfactory results.

A well-chosen diet contains material for growth, reproduction, energy and regulation. So, when we are choosing our substitutes for meat, wheat and sugar, we must choose a combination that will supply the four needs.

In an emergency, when fruits and vegetables can be obtained, they may replace cereals in a measure. The proportion of vegetables in our national diet is very low, and it will contribute to the public health to increase very much the eating of vegetables. Since fresh fruits and vegetables are available in the greater part of the United States only four months of the year, it is necessary for us to preserve during those four months all that may be needed for the other eight months. Food is classified as follows:

- | | |
|--------------------|---------------------|
| (1) Proteid | (3) Fats and oils |
| (2) Carbohydrates | (4) Mineral matters |
| (sugar and starch) | (5) Water |

The chief use of the carbohydrates is to furnish energy and maintain heat. So we see that they are an important factor in the food of the adult or child who is constantly using up mental or physical force.

Fruits and vegetables are the chief foods that furnish carbohydrates and are valuable for their starch, sugar, acids and salts. Fruits especially are stimulating and refreshing and act as a tonic and assist in purifying the blood. The following formula has been considered as the proper average ration for the adult for a day:

4½ ounces Proteid	18 ounces Starch
2 ounces Fat	5 pints of Water

From this formula we see what large factors starch or fruit sugar are in the diet of man. Since vegetables and fruits supply these elements in a large degree we recognize the importance of supplying these needs the year round. Those who think sugar should be excluded from their diet need not exclude fruits entirely, for plums, peaches, apricots or raspberries contain very little sugar and can be eaten with safety.

In cases where uncooked fruit cannot be eaten, many kinds can be taken cooked, and form a valuable addition to an otherwise restricted diet.

People as well as stock need a balanced ration. To be strong and healthy, to grow good bone and muscle and red blood, one must eat more vegetables.

Suggestions for improving future editions of this book will be appreciated.

Your friends,

BALL BROTHERS GLASS MFG. COMPANY

IMPORTANT

Read very carefully the following fundamental rules for canning and preserving.

A thorough knowledge of these points will eliminate numerous difficulties that might otherwise be experienced.

Preserve fruit as soon as possible after picking. Canning within twelve hours is better than within twenty-four and within one hour better than either. Can vegetables while they are fresh; only thus is it possible to secure the best results. Avoid using any fruit that is overripe or decayed. Most fruits are better slightly underripe than too ripe. That which is a little underripe, having more acid, requires less cooking to insure sterilization and so the original color, shape and flavor is kept. It is also less likely to have suffered in transportation. Use the method of canning best adapted to the kind of fruit you wish to can. The **COLD PACK METHOD** is advocated by the United States Government and is considered the most economical. It can be used for any fruit or vegetable. The Steaming and Boiling Methods are good for hard fruits, such as the apple and pear.

Whichever method of canning is used, proceed as follows: Put Jars and Caps in a pan, cover with boiling water, and keep hot until ready for use. This is for the purpose of sterilizing them, prevents breakage, and so is important. Many find it desirable to sterilize by boiling Jars and Caps for twenty minutes. When using the Boiling or Steaming Method, when filling the Jars, place them on a clean china plate or granite pan to catch the liquid that overflows, put a new rubber in place and see that it lies flat on the sealing

shoulder or seat and does not set on the edge against the neck of the Jar; fill the Jar to overflowing to drive out all the air, return to the kettle the liquid and fruit that overflows.

As soon as the Jar is filled to overflowing, put covers in place without waiting to fill another. Bacteria are liable to fall upon the fruit in the Jar if it stands open, and they may later cause fermentation. Never try to wipe the overflowing juice off the rubber or the Jar before the Jar is sealed, as bacteria are almost sure to fall upon the fruit from the cloth.

A draft of cold air coming in contact with hot glass sometimes causes Jars to break. Therefore, after filling, they should be stood out of a draft while cooling. After a few days examine the Jars carefully and if the fruit has "worked" at all, open and repeat the process of heating, filling, etc., after re-testing Jar, Cap and Rubber. The "working" may be due to some little error which the second attempt will correct. Some find it a good plan to turn the filled Jars upside down over night before storing them away.

To open Jars, pour fairly hot water on the top of the Jar, and the Cap can be easily unscrewed. If there is no hot water handy, and the rubber can be grasped between the fingers, it may be pulled out sufficiently to allow air to enter and the Cap can then be unscrewed. If there is no hot water, and it is not possible to get hold of the rubber, run a knife under the rubber, between the rubber and the glass, and hold it until air enters the Jar. Do not run the knife between the metal Cap and Rubber and do not pry with the knife, for either way would dent the Cap, rendering it unsafe for re-use.

Use glass Jars in place of tin cans for all canning and preserving, for the glass is more sanitary than tin and is much more economical, for the glass will last many years, while the tin can cannot be used more than once.

Small fruits, such as cherries and berries, will usually rise to the top of the Jar, leaving the clear liquid syrup or juice at the bottom of the Jar. This is because the fruit shrinks and is lighter than the liquid. Fruit rising to the top does not mean that there is anything wrong with it.

If you have the Jar as hot as the fruit that is to be put into it, the Jar is less liable to break. Lastly, and of more importance than all the rest, you must be sure to sterilize thoroughly your Jars, Caps and Rubbers. If you fail to do this, the products are almost sure to spoil.

It is important that the Jars be stored in a cool, dry place. Bacteria flourish in warm and damp places and may secure entrance to the fruit in time if stored in such places.

Light fades fruit. **BALL** Jars are made of green glass which protects the contents from the effects of strong light. The paper box in which the Jars are delivered serves for convenient storage.

General Principles of Canning

THE housewife can be more sure of success in canning if she understands why fruit and vegetables, canned or uncanned, spoil. There are two principal reasons for spoilage—bacteria and molds. Bacteria and molds are very minute plants, generally so small that single individuals cannot be seen without the microscope. Both grow from seed-like bodies called spores. The spores are so small and light that they float about in the air when dry. They are always present on the outside of fruits and vegetables, but cannot enter until the skin is broken. When the spores once fall upon a spot favorable for growth, such as peeled apples or corn cut from the cob or bruised fruit, they immediately grow and multiply with exceedingly great rapidity. Under favorable conditions a single spore may produce millions of bacteria in a single day; and in a short time they become so numerous that they cause the decay of the fruit or vegetable.

To be successful the efforts of the person canning should be directed toward the killing of the bacteria and molds in and on the fruit, and then so sealing the fruit in jars that no more spores can enter to set up a growth. The molds are easier to deal with than the bacteria. Molds require a constant supply of fresh air, so they cause little trouble, even if the jar is not absolutely air-tight. The bacteria that thrive in fruits and vegetables, however, work even if no air is present; therefore all in the fruit must be killed and the jars must be sealed so tight that no more can enter. On the other hand, the acid usually present in fruit has no effect on molds, but is very unfavorable for bacteria.

Bacteria can be killed or made inactive by the use of preservatives, but this is highly undesirable because the same chemicals that preserve fruits and vegetables from bacteria in the jars prevent entirely the proper action of the digestive fluids on these same fruits in the stomach. In addition, the preservatives are likely to act as poisons in the body. There are three means used in dealing with bacteria in fruits and vegetables—the natural acid (if any is present), the use of sugar, and the application of heat. Such fruits as gooseberries and cherries contain so much acid that little else is necessary to protect them from bacteria. In a strong sugar solution, such as preserves or jelly, bacteria are entirely unable to “work.” Most bacteria are killed if heated to the boiling point of water for a few minutes, and no bacteria that cause canners trouble can withstand this temperature longer than a few hours.

Sugarless Canning



All fruits may be canned successfully without the use of sugar by simply adding hot water instead of hot syrup. If the fruit is perfectly sterilized and sealed, it will keep; so the addition of sugar is only a matter of taste. In canning fruit without sugar, can the product the day it is picked. Prepare the fruit, pack carefully in hot glass jars until jars are full. Tablespoon or wooden ladle may be used for packing purposes. Fill the jar to overflowing with boiling water, put on rubber and top, screwing down to just touch the rubber. Proceed with the Cold Pack Method of cooking. If fruits shrink, do not open jar to refill. The space left is a sterilized vacuum and will not injure the contents. Sugarless canned fruit may be used for pies, jellies, desserts and salads, or as table fruit by sweetening when serving.

Directions for Making Syrup

To make a syrup suitable for plain canning take a pound of sugar to two and one-half large cups of water. This can be varied to suit the taste. If a sweeter syrup is desired, more sugar may be added. The directions in this book sometimes call for a heavy syrup. Make this syrup by boiling together three pounds of granulated sugar and a quart of water. This makes one and a fourth pints syrup. This should be boiled until it shows indications of threading. At this point it should be put in the jar at once, for should it boil longer it will candy in the bottom of the jars. If more syrup is needed, use more sugar and water, in the same proportion as above. The syrup should always be boiling when poured into the jar.

There are certain essentials for the successful canning of fruits or vegetables. These include good clean fresh materials, perfect containers, including good rubbers, heating for sufficient time to insure preservation, and air tight sealing. The essentials must be secured in any method of canning. The details of procedure may differ yet all have as their object the prevention of spoilage.

Most housewives are familiar with some form of canning. Much of the canning practiced in the homes, however, has been restricted to the putting up of fruits. The canning of vegetables and of meats

General Principles of Canning—Continued



has been considered, until recently by all but a relatively few persons, to be too complicated to be done satisfactorily in the home. By the Cold Pack Method recommended by the United States Department of Agriculture it is comparatively easy to can practically any food product in the home with the ordinary kitchen equipment and with the expenditure of comparatively little labor. (This method of canning is described on pages 15 and 16.)

Advantages of Cold Pack Method

FEWER SPOILED JARS—Jar and contents are sterilized together and no germs are introduced afterwards.

BETTER FLAVOR—Jar is closed during sterilization, thus preventing the escape of flavoring substances.

MORE PLEASING APPEARANCE—Material is not handled so much and is not cooked to pieces. The natural color is more nearly retained because of blanching and cold dipping.

LESS TIME, LABOR AND FUEL EXPENDED—One handling takes the place of two, and the tedious part of the work is at the beginning and not at the end. Work and time are saved because so many jars are processed (boiled) at the same time and with the same fuel.

Sugar

The amount to be used is very largely a matter of individual taste. The increased cost per jar of fruit because of any increase in price of sugar is very slight, only a fraction of a cent. The price of sugar should therefore not determine whether to put up fruit or not.

General Principles of Canning—Continued

The three methods of using sugar, heat and the natural fruit acid to make bacteria inactive or to kill them, are called the Cold Pack Method, the Steaming Method, and the Boiling Method. These methods are described in detail under **METHODS OF CANNING**.



The rules for the canning of fruits and vegetables given on preceding pages are the best that have been devised to make sure of the killing of all bacteria on the fruit and in the jars, and to insure that none enter the jars after sealing.

The housewife should always remember that though the application of heat kills bacteria, it also destroys the natural color, shape, and flavor of most fruits. Therefore heat should be applied only as far as is absolutely necessary. If fruit contains acid, less heat is necessary. In fact, rhubarb contains so much acid that it need not be heated at all; its own acid will protect it from bacteria. Cherries, gooseberries, and strawberries contain considerable acid, so they need but little heating. If fruit contains proteid as well as acid it offers a good field for bacteria; the proteid in part offsets the effect of the acid by furnishing an abundant food supply. Apples contain acid, but also much of the proteid favorable for the growth of bacteria, so they require considerable heating. Corn contains little acid but much proteid, so it must be cooked thoroughly for several hours. The following table is simple and shows at a glance the classes which different fruits and vegetables fall into. It enables the housewife to judge roughly for herself how much heat is necessary for preservation:

Strongly acid fruits and vegetables (little heating required)—Rhubarb, cherries, strawberries, gooseberries, red raspberries, currants, pine-apples, tomatoes.

Fruits containing considerable acid but also considerable proteid (moderate amount of heating necessary)—Apples, pears, quinces, grapes, peaches, plums, blackberries, black raspberries.

Vegetables containing little acid and much proteid (long continued heating required)—Corn, beans, peas, beets, asparagus, carrots.

Spoilage of canned vegetables is very often due to allowing vegetables to become stale before canning. Gather them fresh and can immediately.

Methods of Canning



Definition of Terms Used in Canning

BLANCH. Blanching really means parboiling. Vegetables are put into boiling water for from one to fifteen minutes to cause softening and to clean and sterilize them.

COLD DIP. To plunge the product quickly into cold water immediately after blanching.

PROCESSING. This means cooking for a certain length of time.

HOT-WATER BATH. An ordinary wash boiler, home canner, in which Jars can be placed to be sterilized. It must contain a false bottom which may be made of wooden slats, or a tray with lifting handles to keep the Jars from setting directly on the bottom of the boiler, and should have a tight-fitting cover.

WATER-SEAL OUTFIT. This apparatus contains an inner seal or jacket and a cover that passes into the seal and between the outer and inner jackets. This outfit is good for canning meats, for a higher pressure can be kept up than in the hot-water bath.

STEAM PRESSURE COOKERS. These are kettles in which a fixed pressure of steam may be kept up. They are equipped with steam-gauge, pet-cock, safety-valve, etc.



Methods of Canning—Continued

Boiling or Kettle Method

This method is recommended for jams, preserves and fruits where a large amount of sugar is used.

Directions

PLACE THE FRUIT in a preserving kettle.

PREPARE SYRUP according to recipes on page 10 for the particular kind of fruit and pour it over the fruit, using judgment as to the proper amount.

BOIL for the length of time given in the following recipes.

STERILIZE THE JARS AND CAPS by placing them in cold or warm water and heat the water until it boils. Leave them in the hot water until ready to use.

PLACE A JAR on a clean plate or in a granite pan.

SCALD a new rubber and place it on the Jar. See that it rests flat on the shoulder of the jar all around.

FILL THE JAR to overflowing with the boiling fruit and syrup (always dip from the part of the kettle that is boiling hardest).

SEAL THE JAR as soon as possible after it is filled with the boiling fruit. Do not wipe the fruit juice or syrup from the rubber or top of the Jar before sealing. It will aid in sealing and bacteria may be introduced by wiping.

PROCEED LIKEWISE with other Jars until the kettle is empty. The fruit juices or syrup that overflow can be reheated and used.

PLACE THE JARS IN A TRAY UPSIDE DOWN to cool. When cool examine for leaks. If leaks are found, remove the cap, examine for defects, reheat the fruit and seal again.



Success in canning lies in complete sterilization.

Methods of Canning—Continued



DIRECTIONS

For Using Ball-Mason and Ideal Jars

By Cold Pack Process

Recommended by Government Agricultural
Department



- 1st STERILIZE AND TEMPER THE JARS AND CAPS** by placing them in cold or warm water and heat the water until it boils. Leave them in the hot water until ready to use.
- 2nd SELECT GOOD, SOUND, FRESH FRUIT OR VEGETABLES.** Carefully reject all decayed or withered which will spoil the flavor of the good or probably ruin the whole.
- 3rd BLANCH (SCALD)** the fruit or vegetables by placing them in a cheese-cloth bag or basket and dip into boiling water for time given in "Time Table;" then dip into cold water and pack in jars. In case of berries and all soft fruits, blanching can be dispensed with.
- 4th IN CASE OF FRUIT,** pack the prepared fruit in the Jars after blanching and fill with hot syrup, about two parts water and one part sugar. The sugar can be omitted, using hot water only, and sweeten the fruit when it is used. It is better, however, to sweeten when canning if sugar is available.
- 5th IN CASE OF VEGETABLES,** after blanching, pack the prepared vegetables in the Jars and fill the Jars with hot water, adding sufficient salt to season.
- 6th PLACE THE RUBBERS IN POSITION ON THE JARS.** See that they rest flat on the shoulders of the Jars all around. Sterilize them before using by dipping them in hot water.
- 7th IF MASON JARS ARE USED,** screw Caps on the Jars part-way down.
IF IDEAL JARS ARE USED, place Glass Lid and Rubber in position, with wire in loose position over lid.
- 8th PLACE JARS IN COOKER OR BOILER.** (See directions for making home-made cooker.)
- 9th FILL BOILER WITH WATER** until the Jars are entirely submerged. Place cover on boiler and boil for time given in "Time Table."
- 10th REMOVE JARS FROM BOILER** and seal immediately while hot.
- 11th PLACE JARS IN TRAY UPSIDE DOWN.** When cold, examine for leaks. If leaks are found, remove the Cap, examine for defects, repeat the processing and seal again.

BALL Jars are made of green glass to protect contents from light, preventing bleaching, or fading, of fruit or vegetables.

It is extravagant to use tin cans, which may be used but once, when you can get glass jars for very little more money, and they will last for years.

Methods of Canning—Continued

Time Table for Cold Pack Canning

Fruits	Blanch or Scald	Process (Boil)
Apples.....	2 min.	20 min.
Apricots.....	.....	16 min.
Blackberries.....	.....	16 min.
Cherries.....	1 min.	16 min.
Cherries (sour).....	.....	16 min.
Currants.....	1 min.	16 min.
Gooseberries.....	1 min.	16 min.
Grapes.....	.....	20 min.
Peaches.....	$1\frac{1}{2}$ min.	16 min.
Pears.....	$1\frac{1}{2}$ min.	20 min.
Pineapples.....	3 min.	20 min.
Plums.....	.....	16 min.
Quince.....	$1\frac{1}{2}$ min.	20 min.
Raspberries.....	.....	16 min.
Rhubarb.....	2 min.	20 min.
Strawberries.....	.....	15 min.
Vegetables	Blanch or Scald	Process (Boil)
Asparagus.....	7 min.	60 min.
Beans.....	7 min.	120 min.
Beets.....	6 min.	90 min.
Carrots.....	6 min.	90 min.
Corn.....	10 min.	180 min.
Greens.....	10 min.	90 min.
Peas.....	7 min.	120 min.
Peppers (sweet).....	10 min.	90 min.
Pumpkin.....	30 min.	60 min.
Squash.....	30 min.	60 min.
Sweet Potatoes.....	6 min.	90 min.
Tomatoes.....	2 min.	22 min.

Throw away all metal caps dented on the edge and all glass covers that are chipped, for they will not seal the Jars tight enough to keep out air. The covers of BALL Mason Jars are made from the purest zinc.

A Home-Made Cooker

A wash boiler with cover, or similar utensil.

A metal or wood rack to prevent the Jars from coming in contact with the bottom of the boiler and to allow water to circulate beneath the Jars.

If sides and handles are provided on the rack, it can be used to lift the Jars out; otherwise dip out some of the water and lift Jars out by hand, using a towel.

Seal each jar quickly as soon as filled, and do not wait to fill several before capping any one.

Methods of Canning—Continued



The Steaming Method

A steam cooker is necessary for the steaming method. These can be bought for a few dollars, but the home-made ones may be used. Any flat-bottomed vessel that has a cover fitting moderately tight, and that is deep enough to be covered after the jars are placed inside, makes a good steamer. The steam cooker must be provided with a false bottom of some sort so the jars will not be broken by the fierce heat applied on the bottom. This false bottom may be strips of wood, shingles, or excelsior.

Place the prepared fruit in **BALL** Jars, put the covers in place loosely without the rubbers, and with the "Ideal" Jar **DO NOT** put the top wire or lever wire in final place, but leave them loose so as not to hold the glass cover tight; stand the jars in a wash boiler (or other steam cooker) on a false bottom and surround them with a few inches of warm water. Boil the water until the fruit is well heated throughout. The time required varies widely with different fruits; in general about half an hour is necessary if quart jars are used, and more than twice as long with two-quart jars. When the fruit is well heated throughout, remove one of the jars, stand it on a plate, fill the jar to overflowing with a boiling syrup, and seal it at once. (See directions on page 10 for making the syrup.) Proceed likewise with the other jars.

Steaming causes all fruits to shrink, but some much more than others. For these fruits more syrup is required to fill the jars to overflowing. Some housewives prefer to use the fruit in one jar to fill the others; but if this is done, great care should be taken to prevent the fruit from cooling, or it may become infected with bacteria.

The Steaming Method should be used for fruits only, never use it for vegetables. The Cold Pack Method is the only safe way of canning vegetables.

Methods of Canning—Continued

Time Table for Scalding, Blanching and Sterilizing Vegetables and Fruits

Products by Groups	Scald or Blanch	Hot- Water Bath Outfit at 212°	Water- Seal Outfits 214°	Steam Pressure 5 to 10 Pounds	Pressure Cooked 10 to 15 Pounds
Special Vegetables	Minutes				
Tomatoes.....	1½	22	18	15	10
Pumpkin.....	3	120	90	60	40
Squash.....	3	120	90	60	40
Corn — Sweet.....	5	180	120	90	60
Corn — Field.....	10	180	120	90	60
Pod Vegetables					
Beans — Wax.....	5-10	120	90	60	40
Beans — String.....	5-10	120	90	60	40
Okra.....	5-10	120	90	60	40
Peppers.....	5-10	120	90	60	40
Green Vegetables					
Cabbage.....	5-10	120	90	60	40
Brussels Sprouts.....	5-10	120	90	60	40
Cauliflower.....	3	60	40	30	20
Root and Tuber Vegetables					
Carrots.....	5	90	80	60	40
Parsnips.....	5	90	80	60	40
Salsify.....	5	90	80	60	40
Beets.....	5	90	80	60	40
Sweet Potatoes and all Roots.....	5	90	80	60	40
Lima Beans.....	5-10	180	120	60	40
Peas.....	5-10	180	120	60	40
Greens.....	15	120	90	60	40
Soft Fruits					
Apricots.....	1-2	16	12	10	5
Blackberries.....	No	16	12	10	5
Blueberries.....	No	16	12	10	5
Cherries.....	No	16	12	10	5
Currants.....	No	16	12	10	5
Dewberries.....	No	16	12	10	5
Figs.....	1-2	16	12	10	5
Gooseberries.....	1-2	16	12	10	5
Grapes.....	No	16	12	10	5
Huckleberries.....	No	16	12	10	5
Peaches.....	No	16	12	10	5
Plums.....	No	16	12	10	5
Raspberries.....	No	16	12	10	5
Strawberries.....	No	16	12	10	5
Citrus Fruits.....	No	16	12	10	5
Fruits without Sugar Syrup.....	No	30	20	12	10
Hard Fruits					
Apples.....	1-2	20	12	8	6
Pears.....	1-2	20	12	8	6
Quinces.....	1-2	20	12	8	6

Time should be reckoned after the water is boiling hard around the jars in water outfits.

SIZE OF JARS. When cooking products in pint or half-pint Jars deduct 3 or 4 minutes from time given above. When cooking in half-gallon Jars add 3 or 4 minutes to time. The estimate given is for quart jars.

BALL Jars are Green. The "Green" keeps your fruit from fading.

Methods of Canning—Continued

WHEN TO CAN

Seasons When Fruits and Vegetables Reach Their Prime

	IN THE NORTH	IN THE SOUTH
Apples	September	
Apricots	August	
Asparagus	May-June	April
Beans (wax)	August	May
Beans (string)	July	June
Beans (lima)	July	June
Beets	August	June
Beet Tops	August	June
Blackberries	August	
Brussels Sprouts	October	August
Carrots	August-September	July
Cabbage	October	October
Corn	August	July
Cauliflower	September	May
Cherries	July	
Currants	July	
Dandelion Greens	May	May
Eggplant	September	July-August
Gooseberries	July	
Grapes	September	August
Huckleberries	July	
Mustard Greens	July	May
Milkweed	July	
Okra	September	July-August
Peppers	September	September
Parsnips	October	
Peas	July	May
Pusley	August	
Peaches	August-September	July-August
Plums	August	July-August
Pears	September	
Pineapple	June	
Pumpkin	October	August
Quinces	September	
Raspberries	July	
Rhubarb	All summer	April-May
Squash	August	June
Salsify	October-November	
Sweet Potatoes	November	September
Spinach	August	April
Swiss Chard	August	
Strawberries	May-June	April-May
Tomatoes	August-September	June
Turnips	July	

Don't use the same rubber twice; your fruit may spoil if you do.

RUBBERS

"Ball Perfect Seal" Rubbers

**Are Packed with all Ball Jars and
Made Especially for Hot Pack and Cold Pack**

They are Approved by United States Agricultural Department

THE COLD PACK METHOD requires firm, elastic rubbers; if too soft they will blow out in the processing; if not sufficiently elastic, they will break.

They must be made of a compound that will stand boiling and not deteriorate.

They must be free from spongy and porous places that would admit air.

They must be of proper width, size and thickness.

GRAY IS THE NATURAL COLOR of Rubber. The use of coloring matter adds to the cost without improving the quality.

The **"Ball Perfect Seal"** Rubbers packed with **BALL Jars** embody all these features.

Always use new rubbers of good quality; throw away the old rubber. Much fruit spoils on account of "last year's" rubber. It is false economy to risk a Jar of fruit, together with the sugar and labor, in an effort to save one rubber. The rubbers that are packed in **BALL Jars** are of high quality.

It is economy to can fruit within an hour after picking it.



RECIPES

Peaches

Peaches to be preserved should be well ripened, as then the amount of sugar in the fruit is greatest. No special care is required in handling them, except they should not be bruised needlessly.

Peaches contain considerable acid, therefore they may be canned easily, by either the boiling or syrup method or the cold pack method. The clingstone varieties in general have the best flavor, but the flesh sticks to the seeds so closely that it is difficult to remove. For pickling purposes, however, clingstone peaches are the best. The "fuzz" on peaches is hard to wash off, but it may be easily removed by wiping with a damp cloth.

Cold Pack Method. Before using this recipe, read carefully full directions for Cold Pack Method on page 15. Remove the skin, cut in halves, removing stones, drop into cold water to keep from turning yellow. Blanch one and one-half minutes in boiling water, then plunge in cold water. Pack closely in hot jars. Fill to overflowing with hot syrup. Put rubbers and caps in position, not tight. Sterilize in hot water bath for twenty minutes. When done, remove immediately one jar at a time, tighten top and stand upside down to cool.

Syrup Method. Peel the Peaches, cut them into halves, and remove the seeds. Drop them into boiling water in a granite kettle, and let them boil slowly without stirring until a silver fork will pierce them. In another granite kettle make a thin syrup, using enough sugar to sweeten the peaches. Remove the peaches from the boiling water and drop them carefully into the boiling syrup. Allow them to simmer for five minutes. Place them in BALL Jars that have been sterilized in boiling water, fill the jars to overflowing with the boiling syrup, and seal them immediately, using new rubbers.

Steaming Method. Peel the peaches, cut them into halves, remove the stones, and drop them into BALL

Canned
Peaches

Canned
Peaches

Canned
Peaches

Jars. Put the covers in place loosely without the rubbers, stand the jars in a wash boiler on a false bottom, surround them with a few inches of warm water, and steam them until the peaches are thoroughly tender. This usually requires an hour for quart jars. Remove one jar, put a new rubber in place, fill the jar to overflowing with a heavy boiling syrup, and seal it at once. Proceed likewise with the other jars. The syrup may be added before the fruit is steamed.



Canned Peaches

Boiling Method. Make a thin syrup, using half as much sugar as water. Drop in prepared peaches and continue boiling slowly until they are tender. Dip the peaches carefully into BALL Jars, fill the jars to overflowing with the boiling syrup, and seal them at once. Peaches canned by the boiling method retain their natural flavor better than any other fruit. In fact peaches cooked in the syrup in this way will have a better flavor than if steamed in the jar.

Preserved Peaches

Drop the prepared peaches into a heavy boiling syrup, and continue the boiling until they are tender and the syrup very thick. Pour the preserves into carefully heated BALL Jars and seal them, using new rubbers. The flavor of preserved peaches is so rich that many people prefer the fruit in other forms.

Peach Butter

Wash the peaches and remove the "fuzz" by rubbing them with a damp cloth, but do not peel them. Place them in a granite kettle, add a little water, and stew them until they are very tender. Run them through a fruit press or colander to remove the pits and skins. Put the pulp into a clean preserving kettle and sweeten it to suit the taste. Boil it until it is very thick and of a rich color, stirring it constantly. Pour it into carefully heated BALL Jars while it is boiling hot, and seal them at once with new rubbers. Peach butter is ordinarily considered better if it does not contain spices. Use great care in making the butter; stir it constantly and vigorously, so it will not burn.

Peach Chutney

Peel the peaches and remove the stones. Add a pint of vinegar to each four quarts of peaches and cook them until they are soft. Add another half pint of vinegar,



half cupful of chopped onions, half a cupful of sugar, a quarter of a pound each of raisins and white mustard seed, two ounces of scraped ginger root, one ounce each of red peppers and garlic. Mix the ingredients well and add another pint of vinegar. Cook the mixture fifteen minutes. Seal in BALL Pint Jars. Peach chutney is used as a catsup.

Rub freestone peaches with a damp cloth to remove the "fuzz," cut them into halves, and remove the stones. Make a mixture of equal parts of white mustard, nutmeg, ginger and celery seed, and fill the cavities. Tie the halves together and place them in BALL Jars. Fill the jars three-fourths full of peaches. Then fill to overflowing with boiling vinegar and seal them at once. Whole cloves may be added if desired.

Make a syrup of two quarts of best cider vinegar and six pounds granulated sugar. Place this in a kettle with a spice bag containing one tablespoonful of whole cloves and one-quarter pound of stick cinnamon. Pare and halve the peaches, leaving in an occasional stone for flavor. Cook the peaches in the syrup until tender, then place in glass jars. Fill jars with the vinegar syrup and seal. The peaches may be left whole if preferred.

Pears

Pears should be well ripened before they are preserved. Those not ripened may be kept for several weeks if wrapped in tissue paper and stored in a cool, dry place; this makes it possible to extend the time of canning and spread the work over a longer time. Pears are one of the standard fruits everywhere, and because of their high food value, should appeal to the housewife. The small sugar pears are best for preserves and Bartlett pears for canning.

Cold Pack Method. Proceed just the same as with peaches—Cold Pack Method, page 21.

Steaming Method. Select perfect pears, wash them thoroughly, peel and halve them, remove the cores, and drop the fruit at once into cold water to prevent discoloration. When the peeling is finished, pack the halves as closely as possible in BALL Jars, and proceed as directed for peaches.

Peach
Mangoes

Pickled
Peaches

Canned
Pears

Canned
Pears.

Canned Pears

Boiling Method. Pare and halve the pears and remove the cores, but leave the stems, as they add to the appearance. Drop the fruit as soon as peeled into cold water to prevent discoloration. Make a syrup by using sugar and water in proportion of a pint of sugar to a quart of water. Skim the syrup as soon as it boils; then drop in the pears and cook them slowly until they are tender. Transfer them to BALL Jars with a silver fork, fill the jars to overflowing with the boiling syrup, and seal them at once.



Pear Preserves

Use the small sugar pears if they can be secured. Wash and peel the pears, cut them into halves, and steam them until a straw can readily be passed through them. Drop the pears into a heavy boiling syrup and boil them until they are a rich red color, skimming the syrup as often as is necessary. A few slices of lemon improve the flavor. Dip the pears out carefully, place them in BALL Special Wide-Mouth Jars, and boil the syrup until it begins to jell around the edges. While it is still boiling hot pour it into the jars until they overflow, and seal them at once.

Pear Butter

Wash the pears and without peeling boil them until they fall to pieces. Put them through a colander to remove the cores and seeds. Add half as much sugar as there is pulp, and spice the mixture to suit the taste. Cook the mixture slowly until it becomes smooth and thick, stirring it carefully to prevent burning. Seal the butter in BALL Jars.

Whole Pickled Pears

Peel three pounds of pears, and cut out the blossom ends, being careful to leave the stems. Boil the pears in a quart of water until they can be easily pierced by a straw. Remove the pears and add to the juice one and a half pints of sugar, one pint of vinegar, a stick of cinnamon, a little ginger, and some whole cloves. Boil this syrup five minutes; then place the pears in it and continue the boiling until the syrup is thick. Dip the pears out carefully and place them in BALL Jars. Boil the syrup five minutes longer, remove the spices, fill the jars to overflowing with the boiling syrup, and seal them immediately, using new rubbers.

Ginger Pears

Four pounds of pears, peeled, and cut small; four pounds granulated sugar, juice of four lemons, and the grated



yellow rind of two lemons. Two ounces of preserved ginger, cut very fine. Cook all together over a slow fire until it thickens. Seal in BALL Jars.

Quinces

Quinces should be fairly well ripened before they are preserved. The troublesome "fuzz" may be removed by wiping the quinces with a damp cloth.

Cold Pack Method. Rub the "fuzz" from the quinces with a damp cloth. Peel, quarter and core the quinces, and place them in BALL Jars. Proceed as directed under peaches. (Page 21.)

Boiling Method. Pare the quinces and slice them into quarters. When enough are prepared for two or three jars, put them into a kettle, cover them with water, and boil them until they are tender. Proceed as with peaches.

Make a syrup of three parts of sugar to one part of water. Let this come to a boil. Drop into it quinces which have been pared and halved. When the quinces are cooked tender, remove from the kettle and put in half as many peeled and quartered apples. When these are cooked tender, put the two fruits in a jar in alternate layers and fill up the jars with boiling syrup. The quinces will require considerably more cooking than the apples.

Remove the "fuzz" with a damp cloth. Cut the quinces into small pieces, put them into a preserving kettle, cover them with water, and boil them until they are soft. Proceed according to the directions given for Apple Jelly; see page 27.

Cut and quarter unpeeled quinces. Put in kettle and just cover with water. Let cook until tender. Press through a sieve. Measure and add an equal part of sugar. Cook this slowly until quite stiff, being careful to stir frequently to keep from burning.

Apples

Apples are probably used more than any other fruit. They may be preserved fresh for a long time but the loss from decay is so large after a few weeks that the

Canned
Quinces

Canned
Quinces

Preserved
Quinces
and Apples

Quince
Jelly

Quince
Marmalade

housewife is forced to preserve a considerable supply if she is to have economical dishes at all seasons with apples as a base. Apples have greater food value than most other fruits because of their large supply of proteids and carbohydrates. This makes them more difficult to preserve than the small fruits, though they also contain considerable acid. They may be canned successfully by either cold pack, the boiling or steaming method.



The possibilities of crab apples are not realized by most housewives. For some purposes crab apples are superior to other apples. The number of recipes for crab apples given on pages 29 and 30 show something of their varied uses.

Canned Apples

Cold Pack Method. Proceed as with Peaches. Cold Pack Method, page 21.

Canned Apples

Boiling Method. Make a thin syrup by boiling together water and sugar, using enough sugar to sweeten the quantity of apples to be canned. Wash, peel, quarter, and core the apples. Drop the quarters into the boiling syrup and boil them until they are tender. Add the grated yellow rind of one lemon for each two quarts of apples. Boil the apples a few minutes longer. Set a BALL Jar on a clean, china plate, put a new rubber in place, fill the jar to overflowing with boiling syrup and apples, and seal it at once. Proceed likewise with other jars until the kettle is empty.

Canned Apples

Steaming Method. Wash, peel, halve, and core the apples, and place them in BALL Jars. Proceed as with Peaches. (Page 21.)

Spiced Apples

Wash, peel, quarter and core the apples and then chop them fine. Make a syrup by boiling together for fifteen minutes two quarts of water and two and a half quarts of sugar. Add the rind and pulp of two oranges, two pounds of seeded raisins chopped fine, two teaspoonfuls of cinnamon, and one and a half teaspoonfuls of ground cloves. While this mixture is boiling, add three quarts of the chopped apples. Continue the boiling fifteen minutes longer and while still boiling fill into BALL Jars and seal.

Never use a tin pan for cooking fruit.



Put two quarts of vinegar and three quarts of light brown sugar into a kettle with a spice bag containing a tablespoonful of whole cloves and a quarter of an ounce of cinnamon. Wash, peel, and cut into halves or quarters a peck of ripe sweet apples, and cook them in the syrup until they are almost transparent. Transfer the apples to BALL Jars, cover them with the boiling syrup, and seal the jars at once. If there is

too much syrup, boil it a few minutes after the apples are removed before pouring it into the jars.

Make a heavy syrup of sugar and water (See page 10), and add the juice and rind of two or three lemons. Wash, peel and quarter the sweet apples. While the syrup is boiling, add the apples, and continue the boiling slowly until the apples are the consistency of preserves. Seal them in BALL Jars. When the preserves are done they are a rich golden color and the juice almost jells when cold.

Use any proportion of apples and quinces desired. Peel, quarter and core both the apples and quinces, and steam them separately until they are tender. Make a heavy syrup (See page 10), drop the steamed fruit into it while it is boiling, and continue the boiling until the fruit becomes a rich red color. Avoid stirring if possible. Transfer the fruit to BALL Jars. Boil the syrup down until it is very thick, pour it into the jars until they overflow, and seal them at once. A few slices of lemon boiled with the fruit improves the flavor.

Wash the apples and cut them into pieces without peeling them or removing the cores and seeds. Put them into a kettle, just cover them with cold water, and cook them until they are soft and tender. Transfer them to a jelly bag and let them drain. Carefully avoid applying pressure if clear jelly is desired. When the juice has all drained out, measure it and return it to the kettle. For every pint of juice add a pint of sugar and boil together for twenty or thirty minutes, testing all the time. When it will jell on a cool plate it is done. Pour the jelly into BALL Ideal Jelly Glasses and cover it with melted paraffine. If desired, part of the jelly may be flavored with vanilla or other extracts when it is poured into the glasses.

Sweet
Apple
Pickles

Sweet
Apple
Preserves

Sweet
Apple and
Quince
Preserves

Apple
Jelly

**Cider
Apple
Sauce**

Wash, peel, quarter and core eight quarts of sweet apples. Put them into a large preserving kettle and add five quarts of boiled-down cider. Boil the apples and cider slowly until the fruit is clear and tender; this takes from two to three hours. Avoid stirring as far as possible. Seal the sauce in sterilized BALL Jars.



**Cider
Apple
Butter**

Use sweet cider of good quality, and apples that cook easily. Boil the cider down one-half. Wash, peel, quarter and core the apples. Then boil together rapidly equal amounts of apples and boiled-down cider. If the boiling is slow the apples at once sink to the bottom and are liable to scorch. After the first two hours, constant and vigorous stirring is necessary to prevent burning. If the butter becomes too thick before it is perfectly smooth, add a little more cider and continue the boiling and stirring. Add sugar at any time after the stirring begins if the butter is not sweet enough. Spice the butter to suit the taste and seal it in BALL Jars. Apple butter is usually considered better if not highly spiced.

**Apple
Chutney**

Wash, peel, and core four quarts of apples. Cook them with a quart of brown sugar and two quarts of cider vinegar until they are smooth. When the mixture is thick, place it in a crock and add two pounds of seeded raisins chopped fine, a small, mild onion, an ounce each of white and black mustard seed, two ounces of ground ginger, one tablespoonful of salt, and two or three red peppers chopped fine. Mix the ingredients thoroughly, heat them, and let them stand over night. In the morning place the chutney in BALL Pint Jars and seal them. Apple Chutney may be used as a catsup.

**Apple
Ginger**

Wash, peel, quarter, core, and chop fine two quarts of sour apples, put them in a pan, and add three pints of brown sugar, the juice and rind of one and a half lemons, half an ounce of ginger root, a little salt, and enough water to keep the apples from burning. Cover the mixture and cook it slowly for four hours, adding water as it is needed. Seal the apple ginger in BALL Jars.

Do not allow small fruit to stand in water while washing it.



Equal parts of apple and quince may be used, or crab apple and quince. Proceed as for Quince Marmalade, page 25.

Wash and core, good, sound, tart baking apples. Fill cavities with sugar. Bake until tender in pan containing a little water. Pack the baked apples in hot sterilized jars. Fill the jars complete with syrup made by boiling together for two minutes one part water and one part sugar. Seal the jar. By this plan you may have baked apples for little money when fresh fruit is most expensive.

Select perfect, well-colored crab apples, wash them thoroughly, and remove the blossom ends, leaving the stems and skins. Place the apples in a heavy boiling syrup (See page 10) and stew them gently until they are well done. Lift them out of the syrup and put them into BALL Jars. Unless the syrup is very thick boil it longer until it becomes like jelly; then fill the jars to overflowing and seal them at once. Crab apple preserves are easily made, and they are superior to other apple preserves in color, shape and flavor.

Prepare the crab apples as for preserves. Make a heavy syrup (See page 10), and add to it a few slices of lemon and a bag containing cloves and cinnamon. Drop the apples into the boiling syrup and continue the process as with preserved crab apples.

May be made same as Sweet Apple Pickles. Highly colored crab apples make the best appearance.

Wash the apples carefully, cut them up without peeling or coring them, place them in a granite kettle, add enough water almost to cover them, and boil them slowly until they fall to pieces. Remove the apples to a granite colander and press them through. Add the pulp to the water in which the apples were cooked, and allow it to simmer until it is quite thick. Add enough sugar to sweeten the butter, and if desired a little spice. Continue the boiling with constant stirring until the butter is perfectly smooth; then seal it in BALL Jars while it is still hot. Crab apple butter is somewhat inferior to cider apple butter, but it serves well when apples are scarce, as crab apples are nearly always cheap and abundant.

Apple and
Quince
Marmalade

Canned
Baked
Apples

Preserved
Crab
Apples

Spiced
Crab
Apples

Crab
Apple
Pickles

Crab
Apple
Butter

Crab
Apple
Catsup

Wash carefully four quarts of crab apples and cook them in a granite kettle with a little water until they are soft. Press them through a coarse colander and add one and a half quarts of sugar, two quarts of vinegar; two teaspoonfuls of cinnamon, one tablespoonful of cloves, one tablespoonful of pepper, and two tablespoonfuls of salt. Cook the catsup until it is thick and smooth and seal it in BALL Jars. Stir the catsup constantly while it is boiling to prevent burning.



Sweet
Apple
Cider

Use fully ripened apples free from decay. Wash them thoroughly and remove all leaves. Crush the apples and extract the juice by either a horse or hand power press; but in either case, see that it is clean and in a sanitary condition. Fill BALL Jars with the fresh cider, put the covers in place loosely, without the rubbers, stand the jars in a wash boiler on a false bottom, surround them with a few inches of warm water, and steam them an hour. Remove a jar, put a new rubber in place, and seal the jar at once. Proceed likewise with the other jars. Cider made and preserved according to the directions remains sweet indefinitely. It is excellent to use in making mince meat.

Cider
Vinegar

Select ripe, sound apples, wash thoroughly, and grind or press them in a clean press to extract the juice. Place the extracted juice in a large receptacle and allow it to stand for a few days. Then drain off, leaving the sediment in the bottom undisturbed. Wash out the barrels or kegs in which it is to be placed as thoroughly as possible with boiling water. Fill them three-fourths full with the juice. Leave the bung out, but put in a loose plug of cotton to prevent dirt from falling in.

For each five gallons in the barrel add a cake of compressed yeast dissolved in lukewarm water. Keep the barrels at a temperature of from 75 to 85 degrees F. if possible. As soon as the alcoholic fermentations cease (which will take several months), drain out the clear liquid, rinse the barrels, and put the clear liquid back again, filling the barrels three-fourths full. Add from two to four quarts of vinegar containing more or less "mother" for each five gallons of liquid. Store the barrels in as warm a place as possible until the

Sell your surplus canned fruit; there is always a demand.



vinegar is made; this usually requires from six to twelve months. Then fill the barrels full and bung them tight.

Make the cider as directed under Sweet Apple Cider. While it is fresh and sweet put it into a large open preserving kettle and boil it until it is reduced one-half, skimming it frequently. Seal it in BALL Jars.

Boiled-Down Cider

Plums

Plums are best when allowed to ripen well before picking. They remain in good condition for a week or more after leaving the trees. The Damson plum is a small, blue plum, and it makes a very rich, fine-flavored sauce.

Cold Pack Method. Proceed as with Peaches. Cold Pack Method, page 21.

Canned Plums

Measure out a pint of sugar and a pint of water for each quart of plums, and make a syrup. Wash the plums and drop them whole into the boiling syrup. Cook until soft; then seal them with the boiling syrup in BALL Jars. The plums are less likely to burst if they are pricked with a fork before they are dropped into the syrup.

Canned Plums

Use slightly underripe plums. Follow the directions given for Currant Jelly; see page 40.

Plum Jelly

Follow the directions given under Apple Butter, see page 28; or Peach Butter, see page 22.

Plum Butter

Wash and stem the plums, measure them, and put them into a kettle with one-half pint of sugar to every one pound of fruit and let them stand over night. In the morning heat slowly and let simmer until the fruit is soft and tender. Seal in BALL Jars, using new rubbers. The plums are less likely to boil to pieces if a few are cooked at a time.

Canned Damson Plums

Measure out equal amounts of plums and sugar, and put them in layers in a stone crock or granite kettle. Set in a moderately hot oven and cook for three hours without stirring. Seal the preserves in BALL Jars.

Damson Plum Preserves

Remove the stems from a peck of Damson plums, and add five pints of sugar, the juice and rind of three

Plum Conserve

Green
Gage Jam

oranges and two lemons, and two pounds of seeded raisins chopped fine, or nuts may be substituted for raisins. Boil the mixture until it is the consistency of jelly, and seal the conserve in BALL Jars.



Wash the plums, remove the seeds but not the skins, and for each quart of fruit measure out a little less than a pint of sugar. Dissolve the sugar over the fire in a very little water, and boil and skim it. Add the fruit and cook it rapidly until it jellies. Seal the jam in BALL Pint Jars.

Cherries

Unlike strawberries, cherries should not be preserved until they are dead ripe. If allowed to hang on the tree for a week or two after they are apparently ripe, they almost double in size, turn a rich red color, and become much sweeter. Cherries do not have to be preserved immediately after picking to obtain good results. They remain in good condition twenty-four or even thirty-six hours after leaving the trees.

The application of too much heat changes the flavor of cherries; they become strong and bitter even when heated for only a short time. Fortunately, however, the large amount of acid in cherries makes continued heating unnecessary. The flavor is improved if sugar is added in the preserving process, though it is not necessary for preservation.

Cherries may be canned with or without the seeds. If the seeds are left in, the fruit has a peculiar spicy flavor that many people like. Cherry seeders are now so cheap and so efficient that it does not pay to seed cherries by hand.

Canned
Cherries

Cold Pack Method. Wash and seed the cherries. Place them in hot BALL Jars and shake them down carefully. Fill each jar to overflowing with hot syrup prepared under directions page 10. Put rubber and top in place and screw down top part way. Set the jars in a wash boiler on a false bottom, surround with boiling water and let boil until they are thoroughly heated through. This will take from sixteen to twenty minutes. Remove the Jars one at a time and seal tight. Invert to cool and test.

Do not pick fruit for jelly making the day after a rain; it contains too much water.



Steaming Method. Wash and seed the cherries. Place them in BALL Jars and shake them down carefully. Put the covers in place loosely without the rubbers, see the jars in a wash boiler on a false bottom, surround them with a few inches of warm water and boil them until the cherries are heated through. Remove one jar, put on it a new rubber, fill it to overflowing with a heavy boiling syrup, and seal it at once.

Proceed likewise with the other jars.

Boiling Method. Wash and seed the cherries, place them in a preserving kettle with enough sugar to sweeten them (but without water), and heat slowly until the boiling point is almost reached. Put a new rubber in place on a BALL Jar, fill the jar to overflowing with the hot juice and cherries, and seal it at once. Proceed likewise with other jars until all the fruit is sealed.

Put two quarts of seeded cherries into a wide-bottomed granite pan, pour over them three pints of sugar, and set the pan over a slow fire. Do not stir the cherries, but shake the pan frequently as if popping corn. As the sugar dissolves, a liquid covers the cherries. After about thirty minutes, or as soon as the liquid forms, increase the heat enough to cause simmering. Continue the simmering without stirring for twenty minutes. Seal the preserves in BALL Jars. Cherries preserved in this manner have a bright red color and a mild flavor. Regulate the fire carefully and shake the pan frequently to avoid scorching.

Wash, drain, and seed the cherries and run them through the meat grinder. During this process they lose a great deal of juice; but in making marmalade this is desirable, as long-continued cooking makes the flavor strong, and removing part of the juice helps to remedy this. Peel and slice the pineapple and run it through the meat grinder. Mix with the ground cherries a fourth to a third as much ground pineapple. Place the mixture on the fire and add two-thirds as much sugar as there is fruit and juice. Cook the mixture slowly until it becomes almost thick, stirring it constantly to prevent burning. Pour the marmalade

Canned
Cherries

Canned
Cherries

Preserved
Cherries

Cherry and
Pineapple
Marmalade

Don't just order "Jars"—Specify the BALL Jars, whether you wish "screw top," "glass top," or "wire top."



**Preserved
Cherries
with
Currants**

into BALL Ideal Jelly Glasses and cover it with melted paraffine. A considerably smaller proportion of pineapple may be used if desired.

To four quarts of seeded cherries add one quart of stemmed currants and five quarts of sugar. After the sugar dissolves, cook the mixture slowly for thirty minutes. Put the preserves into BALL Ideal Jelly Glasses and cover them with melted paraffine.

**Olived
Cherries**

Fill jars with cherries, only the perfect ones with stems. Boil together vinegar and salt in the proportion of one cupful of vinegar to two level tablespoonfuls of salt. Pour this liquid over the cherries after it has cooled, filling the jars to overflowing. Seal securely. Olived cherries serve as good appetizer.

**Maraschino
Cherries**

Seed the cherries, saving all the juice, measure them, and then measure out an equal amount of sugar. Drain the cherries in a colander and set them on ice. Put the juice and sugar into a preserving kettle and make a thick syrup; add the cherries and let the mixture simmer for fifteen minutes. Drain off half of the syrup and add an equal amount of Maraschino, keeping the kettle covered to prevent the evaporation of the volatile liquor; bring the mixture quickly to the boiling point. Remove it from the fire and at once seal in BALL Jars.

**Barrier
Cherries**

Stew and seed the amount of cherries you wish to preserve by this recipe. Drain thoroughly in a colander. Press the cherries down in an earthen jar and cover with vinegar. Let stand twelve hours. Then measure cherries and add equal amount of sugar. Let stand for ten days, stirring each morning. On the tenth day remove the product to hot sterilized glass jars and seal. These are delicious with meats or in salads.

Strawberries

Because of their delicacy, strawberries are one of the most difficult fruits to can so as to preserve their natural color, shape and flavor. A very slight pressure breaks the skin, and then bacteria quickly enter and cause softening and decay. It is highly important, therefore,

Don't waste time wrapping paper around your Jars of tomatoes. BALL Greer Jars are sufficient protection.



that strawberries for preservation be freshly picked and canned as soon as possible after picking. The amount of acid is largest when they are slightly underripe and the berries are also firmest then. They should not be stemmed until after they are washed, as they then lose less juice.

Strawberries contain so much acid that long-continued heat is not necessary to preserve them, therefore they may be canned by any of the three methods given. The steaming and syrup methods perhaps preserve the color and shape of the fruit best, but great care should be used in the syrup method that the syrup boils hard during the entire time that the jars are being filled. If the boiling method is used the berries should not be cooked more than fifteen minutes. This old-fashioned method is sure to preserve the fruit and retain the flavor, but the color and shape may not be as natural.

Cold Pack Method. Proceed as with Cherries, page 32.

Boiling Method. Wash and stem firm, fresh strawberries. Weigh them and to every pound of fruit add one-half pound of sugar. Put berries and sugar in preserving kettle and heat up slowly, shaking kettle occasionally to keep from burning. When the mixture starts to boil let it cook slowly for fifteen minutes. Fill sterilized jars to overflowing with mixture and seal immediately.

Caution. Most important that mixture of syrup should be kept boiling when jars are being filled.

Steaming Method. Wash and stem firm strawberries and pack in BALL Jars which have just been sterilized. Have ready boiling a syrup made in proportion of one pound sugar to two and one-half cups of water. Place new rubbers on the jars and fill to overflowing with syrup. Put tops on loosely. Place in steamer and steam thirty minutes. Remove jars one by one and seal.

Canned
Straw-
berries

Canned
Straw-
berries

Canned
Straw-
berries

Preserved Straw- berries

First Method. Prepare the berries as for canning. Place two quarts in a wide-bottomed preserving kettle and cover them with one and a half quarts of sugar. Place the kettle over a slow fire. Do not stir the berries, but shake the kettle frequently as if popping corn. Gradually the sugar dissolves and the liquid covers the berries. When this point is reached, increase the heat enough to cause boiling, and continue the boiling slowly for fifteen minutes. Place a new rubber on a BALL Jar, fill it to overflowing with berries and syrup, and seal it at once. Proceed likewise with other jars until all the fruit is sealed.



Caution. Strawberries heated thus scorch very easily, so the fire must be carefully watched. Strawberries cannot be preserved successfully by this method if a small-bottomed kettle is used. After the boiling point is reached, avoid hard boiling; allow the berries to simmer.

Preserved Straw- berries

Another Method. Prepare the berries and a heavy syrup as for canning. While the syrup is boiling rapidly, drop in large, firm berries until the syrup is thick with them but not crowded. Lower the heat somewhat and continue the boiling for fifteen minutes, or until the berries are a rich red color and the syrup is thick. Place a new rubber on a BALL Jar, fill it to overflowing with the berries and syrup, and seal it at once. Proceed likewise with other jars until the preserves are all sealed. Do not cook more than two quarts of berries in kettle at one time.

Straw- berry Marmalade

Marmalade affords the best means of utilizing small and overripe berries free from decay. Wash the berries carefully and quickly, stem them, place them in a preserving kettle, crush them, and add three-fourths as much sugar as there is crushed fruit. Boil the marmalade over a slow fire for twenty minutes, stirring it often enough to prevent scorching. Seal it in BALL Jars.

Sweet Pickled Straw- berries

Prepare two quarts of berries as for canning. Add two cupfuls of sugar, and slowly heat the sweetened berries to the boiling point. Add half a pint of vinegar and continue the boiling slowly for ten minutes. Then

Try the steaming method of canning strawberries and cherries.



keep the berries over a slow fire, but below the boiling point, for an hour. Remove the berries to BALL Jars and boil the syrup until it thickens. Put new rubbers in place, pour the boiling syrup into the jars until they overflow and seal them at once.

Use any proportion of strawberries and gooseberries. Crush the gooseberries and cook them until they are tender. Remove the skins by running the fruit through a colander. Measure the pulp and juice, add an equal amount of sugar, and bring the mixture to a boil. Crush the strawberries, add half as much sugar, and bring the mixture to a boil. Mix the gooseberries and strawberries, and boil the combination slowly for twenty minutes. Pour the marmalade into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Pare the pineapples and pick them into small pieces with a silver fork. Boil the pieces in a little water until the pineapple is tender. Make a heavy syrup and drop in the pineapple while it is boiling. Continue the boiling for ten minutes. Then drop in firm, slightly under-ripe strawberries that have been washed and stemmed. Continue the boiling very slowly ten or fifteen minutes longer. Seal the jam in BALL Jars.

Gooseberries

Gooseberries are so firm that no special care is needed in handling them. They usually remain in good condition even if allowed to stand for a week after picking. They are better, however, if preserved sooner. They contain so much acid that they may be canned by either the cold pack, boiling, or steaming method. Unless sugar is added the canned product is very sour.

Cold Pack Method. Proceed as with Cherries, page 32.

Steaming Method. Prepare the berries and place them in BALL Jars. Place the covers on the jars loosely without the rubbers, stand the jars in a wash boiler on a false bottom, surround them with a few inches of warm water, and steam them until the berries are

Straw-
berry and
Gooseberry
Marmalade

Strawberry
and Pine-
apple Jam

Canned
Goose-
berries

Canned
Goose-
berries

Canned
Goose-
berries

Gooseberry
Preserves

heated through. Remove one jar, place a new rubber on it, fill it to overflowing with a heavy boiling syrup, and seal it at once. Proceed likewise with the other jars.

Boiling Method. Proceed as with Cherries, boiling method, page 33.



Stem and wash the berries, put them into a preserving kettle, half cover them with water, and boil them until they are tender but not until the skins burst. Add as much sugar as there is fruit. Stew the mixture until it is a rich amber color. Seal the preserves in BALL Pint Jars, or pour them into BALL Ideal Jelly Glasses and cover them with melted paraffine. Use care to prevent scorching.

Gooseberry
Marmalade

Stem and wash the berries, put them into a preserving kettle containing enough water to cover the bottom, mash them thoroughly, and boil them over a slow fire until they begin to soften. Add as much sugar as there is pulp, and boil the mixture slowly twenty minutes longer. Pour the marmalade into BALL Ideal Jelly Glasses and cover it with melted paraffine. The marmalade must be stirred constantly while boiling to prevent scorching.

Gooseberry
and
Rhubarb
Marmalade

Stem, wash and mash the gooseberries and add any proportion of young rhubarb desired. Place the mixture in a preserving kettle, add enough water to cover the bottom well, and allow it to simmer slowly until the fruit is soft. Add as much sugar as there is fruit, and continue the boiling slowly for twenty minutes longer. Seal the marmalade in BALL Jars, or pour it into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Caution. Stir the marmalade constantly while it is boiling to prevent scorching.

Gooseberry
Conserve

Wash three quarts of gooseberries and boil them until they burst. Add two quarts of sugar, one quart (less if preferred) of ground pineapple, and one pound of raisins chopped fine. Boil the mixture slowly until it is thick and then add two cupfuls of the meats of English walnuts. Put the conserve into BALL Ideal Jelly Glasses and cover with melted paraffine.

There is something the matter with your method if your fruit spoils



(Old English Recipe.) Five pounds of gooseberries, large English preferred. Four pounds of sugar. One and one-half pounds seedless raisins. Juice and chopped rind of four oranges. Boil about forty-five minutes or until it is of the consistency of jam. Seal in BALL Jars to prevent mold.

Gooseberry
Conserve

Stem, wash and mash five quarts of gooseberries. Put them into a preserving kettle with six cupfuls of granulated sugar, one quart of vinegar, and one ounce each of ground nutmeg, allspice, cloves and cinnamon. Boil the mixture until it is quite thick, stirring it constantly. Seal the conserve in BALL Jars while it is still boiling hot.

Gooseberry
Catsup

Stem and wash one quart of gooseberries, add one cupful of sugar, and boil the mixture twenty minutes. Add two tablespoonfuls of vinegar, and season with allspice, cinnamon, and cloves to suit the taste. Seal the relish in BALL Jars while it is still hot.

Gooseberry
Relish

Currants

Currants should be handled carefully and preserved as soon as possible after picking. They contain so much acid that little heat is necessary to preserve them. They may be canned with or without sugar, but are generally considered better when sweetened. Currants contain a great deal of the substance called pectin, which causes boiled sweetened juice to become jelly, so they are used a great deal in jelly making, both alone and in combination. Many forehanded housewives always can a quart or two of currants to use in making mince meat.

Cold Pack Method. Proceed as with Cherries, page 32.

Follow the directions for Preserved Cherries; see page 33.

Canned
Currants

Preserved
Currants

Make a syrup of one and a half quarts of sugar and a pint of vinegar. Skim the syrup and add three quarts of currants and one pound of seeded raisins chopped fine. Boil the mixture thirty minutes; then add a teaspoonful of salt, and a half teaspoonful each of cloves,

Spiced
Currants

Currant Jelly

allspice, and nutmeg. Pour the spiced currants into BALL Ideal Jelly Glasses and cover them with melted paraffine.



Select currants that are not overripe, and avoid fruit gathered after a rain, as the juice is then too watery for making first-class jelly. Remove all leaves and imperfect fruit, wash and drain the currants without removing the stems, and mash them in a porcelain preserving kettle with a spoon or wooden potato masher. Heat the mashed fruit slowly, stirring it frequently to prevent burning and to break up the cells. When the fruit is thoroughly heated, put it into a jelly bag and drain off the juice. Be careful not to press the fruit if clear jelly is desired. The draining may be hastened, however, by occasionally shaking the bag gently.

Pour the juice into the preserving kettle and add to it an equal amount of granulated sugar. Place the kettle over a fire and stir the juice until the sugar dissolves. When boiling occurs remove the kettle, skim the contents, and replace the kettle on the fire. Do this three times. Test the contents frequently by putting a little of the liquid into a saucer and allowing it to cool. When it thickens well, pour the entire contents into BALL Ideal Jelly Glasses. The juice usually jells within two minutes after the sugar is added. A double flour sack serves well for a jelly bag. As the draining must continue for several hours, it is well to plan the work so this may continue over night. The temperature is then lower and there is less danger of fermentation.

Currant and Red Raspberry Jelly

Follow the directions for Currant Jelly. Use any proportion of currants and raspberries desired.

Currant Catsup

Boil together for two hours one and a half quarts of brown sugar, three quarts of currants, two tablespoonfuls of cinnamon, one tablespoonful of cloves, and one pint of good cider vinegar. Seal the catsup in BALL Jars while it is hot.

Try muskmelon and watermelon preserves.



Mix together three quarts of currants, three quarts of sugar, one pound of raisins chopped very fine, the rind and pulp of two oranges (remove all seeds), and two lemons cut fine. Cook this mixture until it is solid. Keep the relish in BALL Ideal Jelly Glasses.

Currant Relish

Red Raspberries

Red Raspberries, like the black, are liable to contain small worms, and must therefore be examined carefully. They also deteriorate very quickly after picking and should be canned at once. They lose their juice and shape so easily that great care must be used in washing them. This is best done by placing them in a colander and lifting them gently in and out of water several times, without allowing them to stand, and then draining them well.

Follow the directions given for Black Raspberries, for Boiling Method (page 42), and directions for Cherries, Cold Pack Method, page 32.

Wash and drain the berries, crush them thoroughly, place them in a wide-bottomed granite pan, and bring them quickly to a boil. Run the mass through a fruit press to remove all seeds. Measure the pulp and juice and place it in a clean granite pan with three-fourths as much sugar. Bring the mixture to a boil and then allow it to simmer for ten minutes. Pour the marmalade into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Follow the directions for Red Raspberry Marmalade, but remove only three-fourths of the seeds.

Wash and place in a preserving kettle four quarts of red raspberries and one quart of red currants. Mash the fruit thoroughly, add three-fourths as much sugar, and boil the mixture for ten minutes or until it jellies when cooled. Seal the marmalade in BALL Jars or pour it into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Caution. Stir the marmalade constantly to prevent burning.

Canned Red Raspberries

Red Raspberry Marmalade

Red Raspberry Jam

Red Raspberry and Currant Marmalade

Black Raspberries



Black Raspberries must be handled with care, especially while being washed. Dip them in and out of water several times, without allowing them to stand in the water. Occasionally very small worms or insects get into the cavities of the berries, so it is necessary to examine them carefully. This fruit deteriorates rapidly after picking, and should be canned as soon as possible. Either syrup or steaming method gives good results.

Canned
Black
Raspberries

Cold Pack Method. Proceed like Cherries, page 32.

Canned
Black
Raspberries

Boiling Method. Select large fruit, as the number of seeds is less in fruit well developed. Wash and drain. Weigh the fruit and to each pound of fruit add one-half pound of sugar. Put the sugar and fruit in a preserving kettle and let it heat up slowly, shaking occasionally to prevent burning. When the fruit has all boiled thoroughly for five minutes, seal in hot, sterilized jars.

Black
Raspberry
Preserves

Follow the directions given for Preserved Strawberries; see page 36. Use either method.

Black
Raspberry
Marmalade

Select fresh, ripe raspberries, wash them carefully, heat thoroughly, and run them through a colander to remove the seeds. Add as much sugar as there is pulp, and boil the mixture until it is thick enough to harden on a spoon held in the air. Put the marmalade into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Caution. Stir the marmalade constantly while it is boiling to prevent scorching.

Black
Raspberry
Jam

Follow the directions for Black Raspberry Marmalade, but remove only half the seeds.

Black
Raspberry
Jelly

Wash and drain the berries carefully, place them in a granite kettle, and heat them slowly but thoroughly. Pour a small quantity at a time into a jelly bag and drain them. Boil the juice rapidly for five minutes,

Preserve your corn in BALL Jars by sterilization.



measure it, put it into a clean preserving kettle, and add an equal amount of sugar. Continue the rapid boiling until the liquid forms a jelly when cool. Pour into BALL Ideal Jelly Glasses and cover it with melted paraffine.

Caution. The directions must be followed carefully to insure success.

Make the juice of each fruit into jelly separately. Fill BALL Ideal Jelly Glasses half an inch deep with raspberry jelly. While this is hardening allow the currant juice to cool also, but not so much that it cannot easily be poured out. When the raspberry jelly in the glasses has hardened and the currant jelly cooled, pour half an inch of currant juice into each glass. Allow this to cool and then add half an inch of raspberry juice to each glass. Continue this process until the glasses are full; then cover them with melted paraffine. This makes a pretty red and black striped jelly. The flavor is also pleasing because the currant jelly is very tart, while the raspberry jelly is mild. If the currants and raspberries do not ripen at the same time, the currant juice may be canned during the currant season and made into jelly when the raspberries ripen.

**Black
Raspberry
and Currant Jelly**

Blackberries

In canning, blackberries must be heated longer than raspberries. The underripe berries are not so good as the ripe ones. Blackberries may be handled with ease; they keep well for thirty-six hours after picking.

Cold Pack Method. Proceed as with Cherries, page 32.

Boiling Method. Make a thin syrup of water and sugar, using enough sugar to sweeten the berries as for table use. While the syrup is boiling drop the berries into it and boil them rapidly until they are heated through. Put a new rubber on a BALL Jar and fill it to overflowing with berries and juice, dipping from the part of the preserving kettle where the boiling is most rapid. Then dip a large spoonful of berries — not juice —

**Canned
Black-
berries**

**Canned
Black-
berries**

from the hottest part of the kettle, stack them on top of the already overflowing jar, place over them a perfect cover, press the berries down, and seal the jar. Proceed likewise with the other jars. Pressing down a spoonful of berries into the overflowing jar forces out all remaining air and insures the killing of all bacteria on the fruit, rubber, and cover. Avoid boiling the berries more than enough to heat them thoroughly, as otherwise they lose their color and become slightly strong.



Blackberry Marmalade

Follow the directions for Black Raspberry Marmalade; see page 42.

Blackberry Jam

Follow the directions for Black Raspberry Jam; see page 42.

Blackberry Jelly

Follow the directions for Currant Jelly; see page 40.

Blackberry Preserves

Follow the directions for Preserved Strawberries (either method); see page 36.

Blackberry Cordial

Boil together for fifteen minutes a quart of blackberry juice, a pint of white sugar, and a tablespoonful each of cloves, allspice, cinnamon, and nutmeg. While the liquid is boiling, pour it into BALL Pint Jars and seal them at once, using new rubbers.

Pineapples

There are several ways of preparing pineapple. In each the process is best begun by peeling the fruit and removing the eyes with a pineapple eyer. The pineapple may then be sliced; or it may be sliced first and then each slice peeled and the eyes removed. The former method is easier. The pineapple may be picked to pieces with a silver fork, beginning at the small end; it may be ground; or it may be cut into small dice with a silver knife or scissors. For most purposes pineapple is thus diced.

Pineapple may be bought fresh throughout the year in most markets, but as the price is high much of the time, it is true economy to can a good supply early in the Spring when the price is lowest. The pineapple flavor is pleasing to most people; and it is so strong that a large amount of cheaper and more weakly

BALL Jars are made in green glass; this color protects the fruit from fading.



flavored fruit can be combined with a little pineapple to make an economical combination.

Cold Pack Method. See Peaches, page 21.

Boiling Method. Cut the pineapple into dice, using a silver knife or scissors. Proceed as with Peaches, Boiling Method.

Peel the pineapple and remove the eyes. With a silver fork remove small pieces until the core is reached, beginning at the small end. When enough pineapple is thus prepared, place it in the preserving kettle, and add three-fourths as much sugar. Allow this to stand until it forms a syrup. Then cook the mixture slowly until the pineapple becomes transparent. Transfer to BALL Jars, fill them to overflowing with the boiling syrup, and seal them immediately.

Pineapple and Cherry Marmalade. See page 33.

Pineapple and Rhubarb Marmalade. See page 50.

Canned
Pineapple

Canned
Pineapple

Preserved
Pineapple

Grapes

Grapes are at their best when fully ripened, though for jelly they should be picked slightly underripe, and for green grape jelly, pick just as they have begun to turn color. Grapes are best washed by holding the separate bunches in running water. Grapes are rather widely grown, and stand transportation so well that they should form one of the staples in the housewife's store of canned goods. Their food value is high among fruits. Good use can also be made of wild grapes whenever they are available.

Steaming Method. Pick firm grapes from the bunches, wash them carefully, and pack them as closely as possible in BALL Jars without crushing them. Proceed as under Peaches, steaming until grapes are heated through. This method preserves the flavor of fresh grapes, and requires little work.

Wash the grapes carefully, removing all stems and imperfect fruit, and drain them in a colander. Separate the pulp from the skins. Heat the pulp to the boiling point in the preserving kettle, and cook it slowly until

Canned
Grapes

Grape
Marmalade



Grape
Conserve

the seeds separate from the pulp. Remove the seeds by passing the pulp through a colander. Put the pulp and skins in the preserving kettle, add an equal amount of sugar, and cook the mixture slowly for thirty minutes. Seal the marmalade in BALL Jars.

Wash carefully two and a half pounds of grapes, remove the stems and separate the pulp from the skins. Place half the skins in a granite saucepan on the back of the stove and allow them to simmer for five minutes. Throw away the rest of the skins, as the conserve is too strong if all are used. Cook the pulp until it falls to pieces; then run it through a colander to remove the seeds. Run through the meat grinder and add to the pulp, the pulp and rind of two oranges, one pound of seeded raisins, and the grape skins. Add also one and a fourth quarts of sugar. Boil the mixture for five minutes; then add one pound of chopped English walnuts and seal the conserve in BALL Jars at once.

Grape
Jelly

Wash the bunches thoroughly, remove the fruit from the stems, put the grapes into a preserving kettle, add a little water, and boil slowly until the grapes burst open and are soft enough to drain. Drain the juice through a cheesecloth bag, measure it, and add an equal amount of sugar. Cook the sweetened juice in a porcelain kettle rapidly for about twelve minutes or until a little of the juice hardens when cooled on a saucer, skimming it frequently. For green grape jelly the fruit should be gathered just as it begins to turn color. If a mint flavor is desired, see directions under general instructions, page 55.

Grape
Juice

With Sugar. Heat thoroughly ripe grapes slowly on the back of the stove. When soft, strain through a cheesecloth bag without squeezing. Measure the juice and replace on fire and bring to boiling point. Add one-half cup of sugar to each quart of juice and let the mixture boil five minutes. Seal while hot, in well sterilized BALL Jars.

Spiced
Grapes

Weigh out seven pounds of grapes and slip the pulps from the skins. Put the pulps over the fire in kettle and let simmer until softened. Pass

Sterilizing your Jars, caps and rubbers means boiling them, and it must be done just before using them.



through a sieve fine enough to keep back the seeds. Add the sieved pulp to the skins with four pounds of sugar, one pint of vinegar, one nutmeg grated, one-half tablespoonful of ground cinnamon and one teaspoonful of ground cloves. Let the whole simmer for two hours. Seal while hot. The nutmeg may be omitted.

Wash the grapes carefully, remove the stems, separate the pulp from the skins, and let them stand over night. In the morning heat the pulp to the boiling point in a porcelain kettle, and drain it through a colander. Put the skins and pulp together, and to each five pints of fruit add four pints of brown sugar and two tablespoonfuls each of cloves and cinnamon. Boil the mixture an hour, add a cupful of vinegar, and continue the boiling until the butter is thick. Seal it at once in BALL Jars.

Spiced
Grape
Butter

Take grapes as fresh as can be secured, just ripe, not dead ripe, nor soft. Remove from stems carefully so as not to break the fruit. Wash them, and shake in a cloth to remove moisture. Weigh the fruit and pack into BALL Jars. For every seven pounds of fruit take four pounds of granulated sugar and a quart of vinegar. Put these over the fire with a teaspoonful each of cloves and cinnamon tied in cheesecloth. Bring the vinegar, sugar and spice to the boiling point. Turn this boiling mixture upon the grapes in the jar, filling to overflowing, and seal them. Watch them for any signs of fermentation, and if this should appear, drain off the liquid, scald it again, pour back on the grapes while boiling hot and seal again.

Pickled
Grapes

Mash thoroughly two quarts of well-ripened wild grapes cover them with vinegar and thoroughly heat them. Strain them and add one cupful of sugar, one tablespoonful of cinnamon, one teaspoonful of cloves, and a quarter of a teaspoonful of cayenne pepper. Cook the mixture slowly until it is thick, and seal it in BALL Jars.

Wild Grape
Catsup

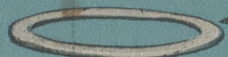
Rhubarb

Rhubarb contains a very large amount of acid, so it is easily preserved. It may be canned by either the steaming method, cold pack or boiling method. Rhubarb may be combined with almost any other fruit.

Cold Pack Method Preserves Fruits Meats and Vegetables Retains Natural Form Flavor and Color



Genuine Zinc Porcelain
Lined Mason Fruit Jar Cap



High Grade "Perfect Seal"
Rubbers Packed with all
Ball Jars. Made especially
for Hot and Cold Pack



Perfect Mason Fruit Jars

Have been on the market for many years and have acquired their good name and popularity by real superiority over other jars. Made from the best materials by the Owens Process, which process distributes the glass more evenly and forms the Jars more perfectly than any other method. We own the exclusive right to make Jars by the Owens Process; so they cannot be duplicated by others.



VITAL STEPS IN THE COLD PACK METHOD

1. Blanch in boiling water to shrink and sterilize.
2. Cold dip quickly.
3. Pack at once in clean jars.
4. Add boiling syrup or water.
5. Place rubbers and partially seal.
Put on rack in wash boiler or cooker.
6. Sterilize in boiler or cooker.
7. Tighten covers. Test for leaks.
Label and store.

Made Especially for Hot Pack
and Cold Pack

High Grade Ball Perfect Seal Rubbers

**Packed with
All Ball Jars**

Approved by United States
Agricultural Department

THE COLD PACK METHOD requires firm, elastic rubbers; if too soft they will blow out in the processing; if not sufficiently elastic, they will break. They must be made of a compound that will stand boiling and not deteriorate. They must be free from spongy and porous places that would admit air.

They must be of proper width, size and thickness.

GRAY IS THE NATURAL COLOR of Rubber. The use of coloring matter adds to the cost without improving the quality.

The "Ball Perfect Seal" Rubbers packed with all Ball Jars embody all these features.



Young rhubarb makes the best preserved product; in addition, it need not be peeled. No special care is required in handling rhubarb.

Canned Rhubarb

Cold Pack Method. Proceed as with peaches page 21.

Canned Rhubarb

Boiling Method. Proceed as with peaches page 22. This method requires the least time and labor.

Rhubarb Marmalade

Put into preserving kettle two quarts of young rhubarb cut into cubes. Add from one to two quarts of sugar (depending upon the desired richness), the pulp and juice of two oranges, and one cupful of blanched almonds chopped fine. Boil the mixture very slowly for three hours, or until it has rich red color. Seal the marmalade in BALL Pint Jars or pour it into BALL Ideal Jelly Glasses and cover it with melted paraffine. If desired, two sliced lemons may be added; and the nuts may be omitted. The marmalade must be stirred frequently while boiling to prevent scorching.

Rhubarb Conserve

Cook together for five minutes two quarts of rhubarb, two and a half cupfuls of sugar, and the pulp and juice of two oranges ground fine. Add one pound of seeded raisins chopped fine and cook the mixture five minutes longer. Remove the conserve from the fire, add two cupfuls of nut meats chopped fine, and seal the conserve in BALL Jars.

Rhubarb and Pine-apple Marmalade

Boil together until the mixture is thick, one quart of pineapple, four quarts of rhubarb, and the juice of two oranges. Then add a cupful of nut meats chopped fine, and seal the marmalade in BALL Jars or pour it into BALL Ideal Jelly Glasses and cover it with melted paraffine. A little spice may be added if desired. This marmalade is especially good for preparing the lunches of school children.

Caution. The marmalade must be stirred constantly while it is boiling to prevent scorching.

Rhubarb and Fig Preserves

Cut fine three and a half quarts of rhubarb, add two quarts of sugar, and let the mixture stand over night. In the morning boil it till it is thick, and add a pint of

Seal each jar quickly. Don't wait to fill more and then seal all.



chopped figs and the juice and rind of one lemon. Put the preserves into **BALL** Ideal Jelly Glasses and cover them with melted paraffine.

Southern Fruits

Gather the figs before they are perfectly ripe. Slit them on one side and soak in lime water or mild salt brine for three or four hours.

Wash them thoroughly in cold water. Make a syrup of one pound of sugar and a pint of water to each pound of fruit. Place the syrup in a kettle and when boiling smartly, drop in the figs and cook until done. Place in **BALL** Jars. Fill up with hot syrup and seal.

Make a strong soda solution with boiling water and pour this over just enough figs to cover the bottom of a preserving kettle. Let them remain in this solution five minutes and then drain them thoroughly. Take one quart of vinegar to three pounds of sugar and when dissolved add the figs and cook slowly for one hour. Seal in **BALL** Jars. If you have some syrup left, more figs may be cooked in it. A spice bag filled with whole cloves, cinnamon and allspice may be boiled with the vinegar syrup if desired. Some persons, instead of using a soda solution, prefer to soak in rather weak salt water for about six hours, rinse, and then boil as above.

This can be made from the bruised and soft figs by mashing the fruit well. After bringing the fruit to a boil in a little water, add equal parts of sugar and cook for an hour. Stir all the time to avoid burning.

Fig and Rhubarb Preserves. See page 50.

For five melons take two and a half pounds of sugar and half a teaspoonful of powdered alum. Peel the melon. Cut into slices and boil until tender in a little water to which the alum has been added. Drain and rinse in cool water. Make a syrup by boiling together the sugar and juice of two lemons with grated rind of half the lemons. A little ginger root may be added if desired when this syrup is hot. Put the sliced melon in it and cook for a few minutes. Fill **BALL** Jars to overflowing and seal.

Preserved
Figs

Pickled
Figs

Fig
Marmalade

Preserved
Citron
Melon

Grape Fruit Marmalade

Wash thoroughly. Remove seeds and run through a chopper. Barely cover with water and let stand over night. In the morning boil thirty minutes and let stand another night. On the third morning boil thirty to forty minutes or until the white part of the fruit is very tender. Measure the fruit. Add equal quantity of sugar and boil until the mixture "jams" from the spoon. This will take from thirty to sixty minutes. Pour into hot sterilized glasses or BALL Pint Jars and cover with paraffine.



Guavas

There are many varieties. For canning or preserves use the large, sweet kind if possible. Remove the seeds. Proceed same as with peaches.

Guava Marmalade

Take quite overripe guavas. Slice. Place with a little cold water in a kettle. When cooked soft, press through a coarse sieve. Add equal quantity of sugar and the juice of one lemon to each pint of pulp. Cook all together until thick.

Guava Sweet Pickle

Make a syrup of three pounds of sugar to one quart of good cider vinegar. This will be enough for six pounds of fruit. The following spices may be added if desired: one teaspoonful of allspice, one teaspoonful of mace, one teaspoonful of cloves, and one teaspoonful of cinnamon. Cook the syrup and spices together for an hour. Drop into it the whole fruit which has been peeled. Cook thoroughly until tender. The fruit for the sweet pickle should be ripe. Skim out the fruit. Place it in BALL Jars. Cook the syrup until quite thick and pour boiling over the fruit and seal.

Sour or Wild Orange Marmalade

Wash and peel the oranges. Let the yellow rind soak in salt water over night. In the morning pour off the salt water and bring the rind to a boil in enough fresh water to cover it well. When this has boiled up well pour off the water and reserve this rind until ready to add to the pulp. After removing the juice and pulp from the orange, chop the shells and cook until tender. Then add juice, pulp and yellow rind, measure and add equal parts of sugar and cook all together until the proper consistency. This can be stored in BALL Ideal Jelly Glasses or small jars.

Keep the flies out of the kitchen while canning fruit.



Remove the seeds and slice thin six oranges and three lemons. Add three pints of water for each pint of fruit. Let the mixture stand twenty-four hours; then boil it an hour. When it cools add an equal amount of sugar and boil it an hour longer. Seal the marmalade in BALL Jars, or pour it into BALL Ideal Jelly Glasses and cover it with melted Paraffine. This makes about twenty glasses of marmalade. A little more sugar may be added if desired.

Orange Marmalade

Grate the yellow rind off the lemons and cut them across each end. Pack them in dry salt, covering them thoroughly and let remain eight days. Take them out. Put them in shallow dishes. Set in a hot oven until the salt dries and candies on them. Put in a jar and to each twenty-five lemons add one pound of white mustard seed, half a pound of black pepper, half a pound of ginger, tablespoonful of mace, two tablespoonfuls of celery seed, a little horseradish and two pounds of brown sugar. The spices may be bruised and the ginger sliced. Cover with boiling hot vinegar and seal.

Lemon Pickle

Are a smooth-skinned variety of peaches and may be canned without peeling. The same amount of sugar and the same methods may be used as are given under the heading of peaches.

Nectarines

Slice the kumquats. Cook until tender in just enough water to keep from burning. Measure. Add equal parts of sugar with a little lemon juice. Cook all together until the consistency of jelly. This should be sealed in BALL Jars.

Kumquat Jam

Make a heavy boiling syrup. When boiling briskly drop into it the kumquats, halved or whole. Boil briskly until tender enough to be pierced with a straw. Seal at once on removing from the fire. These are delicious served with whipped cream.

Kumquat Preserves

May be preserved or canned the same as peaches, but it is desirable to use a little less sugar, as this fruit is more delicately flavored.

Apricots

For four quarts of fresh, ripe apricots, use one quart of Hawaiian pineapple. Make a syrup as you would for peaches and cook the apricots, which have

Apricots and Pineapple

Do not let vegetables stand after gathering and before canning. Can them immediately.

been sliced, until tender enough to pierce with a fork. Add the pineapple and cook until it is thoroughly heated. Then seal in BALL Jars. A handful of almonds added to each jar gives this sauce a fine flavor. They should be blanched and cooked with the apricots.



The Principles Underlying Jelly Making

Few things connected with the preservation of fruit cause more trouble and irritation than the failure of fruit juice to "jell" at all times. At one time the jelly is perfect, and the housewife congratulates herself that at last she has found the best method. But again, under conditions apparently the same, the juice simply will not "jell," or it turns to a mass of sugar and candy. There are some simple rules, however, that ordinarily insure success. The explanation of many failures lies in the composition of fruits. All fruits at the time they are ripe contain more or less of a substance called pectin. If the fruit juice is extracted, the pectin goes with it in solution. If the right proportion of sugar is now added to the juice, and the mixture heated to the boiling point for some time, the pectin causes the juice to harden into jelly.

The pectin, however, does not exist in the fruit at all stages of ripeness. In fact, it forms just at the time of ripening or a little before, and it disappears soon afterward. Therefore, fruit for jelly making should be just ripe or slightly under ripe. It is for this reason that overripe fruit almost invariably fails to make good jelly; the pectin has disappeared, in whole or in part. If the extracted juice is allowed to stand in a warm place for any length of time it ferments; and fermentation takes from the pectin its power to cause hardening. Too long heating has exactly the same effect upon the pectin as fermentation.

Adding the improper amount of sugar to the juice also causes failure. If too much sugar is added, the juice candies or crystallizes. If too little is added, the juice must be boiled a long time to evaporate the surplus water, and this causes the pectin to lose its power to bring about hardening.

It is economy to can fruit within an hour after picking it.



Not all fruits contain pectin in the same abundance. In general the acid (or sour) fruits contain most pectin; but the strawberry, though acid, contains very little. Often extremely good jelly can be made from the juice of some fruit not containing much pectin, such as the cherry, by mixing it with the juice of a fruit rich in pectin, such as the currant. The most desirable fruits for jelly making, in the order of their desirability, are: Currant, crabapple, apple,

quince, grape, blackberry, raspberry, plum.

Clear jelly can be obtained only when the juice is extracted without subjecting the fruit to pressure. When all the juice possible has been drained off without pressure, more may be obtained by applying pressure. Jelly made from this juice after pressure is just as well flavored and as nutritious as any, but is not as clear.

One must use judgment and test jellies in the making by putting a spoonful on a plate. If the juice jellies quickly, it is done. If a jelly is not as hard as it should be the day after it is made, setting it in the sun for several hours helps it greatly.

If water has been added to the fruit in boiling it before the juice is extracted, or if the fruit has been picked shortly after a rain, boiling the juice down somewhat before adding the sugar helps to produce good results. Boiling the juice in a large-bottomed vessel makes possible more rapid evaporation and reduces the length of time required; it prevents both the candying and the gumminess of the jelly to a considerable extent.

It is almost impossible to succeed with jelly if the juice is boiled slowly. There is greater likelihood of success, therefore, if only a small amount of juice is boiled at a time.

If a syrup gauge is used, it reads 25 degrees when the right amount of sugar has been added to the juice. If the reading is more than 25 degrees, add more unsweetened fruit juice; if less than 25 degrees, add more sugar.

If a "mint jelly" or mint flavor is desired, remove the leaves from the mint stems, using leaves from about six to twelve stems for each twelve glasses of jelly. Crush the leaves and tie them in a cheesecloth bag. Put the

bag in the kettle with fruit to boil. When enough flavor has been boiled out to suit your taste, remove the bag. The mint flavor is used chiefly in crab apple and grape jelly.

Jellies may be colored by using vegetable coloring. Different colors of jelly in the same glass or "layer jelly" may be had by mixing the coloring in only a part of the jelly, pouring first a half-inch of uncolored into the glasses and letting it harden a trifle, and then a half-inch of colored and so on.

Jelly contains so much sugar that bacteria cannot work in it. Molds, however, find jelly a good feeding-ground. As molds require a constant supply of oxygen, the jelly can be protected by covering it with melted paraffine as soon as it has cooled. The paraffine soon hardens and shuts out the air and also dust. Store jelly in a cool, dry place.



Vegetables

Vegetables differ from fruits in that they contain very little acid and considerable proteid. Therefore they are more difficult to can; both the absence of acid and the presence of proteid are favorable to bacteria. Moreover, the bacteria are often of the particular kind that are very resistant to heat.

Two methods of preserving vegetables are commonly used. One way is to use them in making relishes, catsups, pickles and the like. In these, spices and vinegar are always used. Both spices and vinegar protect from bacteria, the vinegar because of the acid it contains, and the spices for other reasons. The other method for preserving vegetables in common use is the Cold Pack Method. Vegetables cannot be canned in any other way with as great certainty of success (with the exception of tomatoes, which contain considerable acid). Some bacteria are almost sure to be introduced into the jars, even if all the bacteria in the vegetables to be preserved are killed.

Many women think that tomatoes can be preserved more easily in tin cans than in glass jars. This is a

Green vegetables in summer, and canned, in the winter from your own garden.



mistake. The chances are better in the glass jars, as the bacteria that cause tomatoes to spoil cannot live in a moderately strong light. There is a still more important reason, however, for using glass jars. The acid in the tomatoes is liable to attack the metal of the cans and form products that are poisonous when taken into the stomach. The use of BALL Jars eliminates this danger.

As was said under General Directions for Cold Pack Method on page 15, this method is the only sure way of preserving all kinds of vegetables. In canning vegetables where not otherwise specified the recipe for Canned Corn may be used but in every case the canner should read carefully the general directions for the Cold Pack Method, page 15, before undertaking to can any vegetable. The study of these directions is essential to success.

Cold Pack Method. Select sweet corn ears of nearly uniform size and proper ripeness. If too ripe, the corn will color while processing. If not ripe enough, much food value is lost. Remove husk, silk, shanks, tips and any injured or defective places. Blanch the corn in boiling water or steam chest for from five to ten minutes (time depends on degree of ripeness). Remove ears from boiling water and plunge into cold water for one minute, cut only enough corn from the ears at a time to fill one Jar. Pack in hot BALL Jars ($\frac{1}{4}$ -inch from top). Fill to overflowing with boiling water, adding one teaspoon salt for each quart jar. Put rubber and cap in position, not tight, and set the Jar in cooker immediately. Proceed with each Jar in same manner. Process the corn three hours in home-made water bath outfit, see page 16. See time table page 18, for other types of cookers. When the product has finished cooking remove one Jar at a time, fasten cover down tight and set away to cool.

Corn on the Cob. Blanch in boiling water five to ten minutes, according to ripeness, size, and freshness; plunge quickly in cold water. Pack, alternating butts and tips; add just a little boiling water and one level teaspoonful of salt to each quart. Place rubber and top and partially tighten. Process three to four hours in hot-water bath; one and one-half hours, water-seal

Canned
Corn

Canned
Corn

outfit; one hour under five or more pounds of steam; forty minutes in aluminum pressure cooker. Remove jars, tighten covers, invert, and cool. (Heat up for table use in steamer, not in water. If corn seems flat or water-logged, it has been overcooked or allowed to stand in too much water.) Quart jars will hold two ears, two-quart jars will hold from three to five ears, according to size of ear. Do not can large ears. If the corn is removed from can and steamed for a few minutes, it cannot be distinguished from the sweet corn removed from the husk in mid-summer. One advantage of sweet corn canned on the cob over other canned corn is that all the best food values are kept with the cob. In cutting corn off, the germ quality of the kernel, which keeps up its standard, is usually lost. This germ quality is the part of the corn that is sought by rats and mice when they look for food in the corn bin, and is the most vital part. Much of the corn is also rendered mushy when it is cut from the cob. Whenever possible, can the corn within an hour of the time it is pulled from the stock, as the amount of sugar diminishes rapidly thereafter.



Special Requirements of Corn, Peas, Beans and Asparagus

Canned corn, peas, beans and asparagus may show no signs of spoilage and still when opened have a sour taste and a disagreeable odor. This trouble is known to the canner as "flat-sour" and can be avoided if the canner will use strictly fresh product, one that has not been gathered more than five to six hours and will blanch, cold dip and pack one jar at a time and place each jar in the cooker just as soon as it is packed.

Canned String Beans

Select young and tender beans, remove strings, break them in short lengths and proceed with the five steps exactly as with corn, see page 57.

Canned Lima Beans

Proceed exactly as with corn, page 57.

Pickled String Beans

Wash and string the beans, but do not break them. Cover them with cold water and boil them ten minutes. Drain off the water, and then immediately pour boiling water over them. Salt them as for table use and boil them until they are tender. Skim out the beans and place them in BALL Jars. While the beans are boiling hot, cover them with boiling vinegar, sweetened

Do not be wasteful by using tin cans which are good for one year only when Glass Jars will last many years and the first cost is but little more.



and spiced to suit the taste, and seal the jars at once.

Shell the peas which should be young and fresh. Proceed as with corn, page 57. A cloudy appearance of the liquid when peas are keeping well shows they were roughly handled in the blanching or cold dipping.

Prepare vegetables as for table cooking. Blanch in boiling water or live steam for from five to ten minutes. Remove and dip quickly in cold water. Pack in hot BALL Jars, fill Jars to overflowing with boiling water. Add level teaspoonful salt to each quart. Put rubber and cap in position, not tight, process for two hours in home-made water-bath. See time-table, page 18, for time in other outfits. When done remove one Jar at a time and fasten top tight.

Prepare and cut into convenient sections. Blanch in boiling water three minutes. Cold-dip. Pack closely in hot Jars. Fill to overflowing with boiling water. Level teaspoon salt to each quart. Put rubbers and caps in position, not tight. Process for two hours in home-made water-bath. When done, remove one Jar at a time and fasten top tight. Set away to cool.

Grade for size, color and degree of ripeness, wash thoroughly, use vegetable brush. Scald or blanch in boiling water long enough to loosen skin. Dip quickly in cold water. Scrape or pare to remove skin. Pack whole vegetable or cross sections in hot Jars. Fill to overflowing with boiling water. Level teaspoon salt to quart. Place rubbers and tops in position, not tight. Process one and a half hours in home-made hot-water bath. Remove Jars one at a time, tighten tops and cool.

A large number of cultivated and wild greens are edible and if canned by this method will make a succulent and valuable food for the winter and spring. Among the wild greens are pepper cress, sour dock, pusley, dandelion and others. Can the greens the day they are picked. Wash, clean, and sort carefully, letting no foreign weed or vegetable matter remain. Place the greens in a crate or cheesecloth and blanch in live steam for fifteen minutes. A regular home steamer may be used for this purpose. Keep the steam up all

Canned Peas

Okra,
Green
Peppers,
Cabbage
and
Brussels
Sprouts

Pumpkin,
Squash,
Eggplant

Root
Vegetables,
Carrots,
Parsnips,
Beets

Greens

Vegetables may be safely canned by the sterilization method. Eating plenty of fruit helps to prevent stomach trouble.

the time. Remove the greens and plunge into cold water. Pack tight in hot jars. Fill Jars to overflowing with boiling water and add seasoning to taste. A few strips of boiled bacon or chipped beef may be added (hot). Put rubbers and caps in position, partially seal, and process two hours in home-made hot-water bath. Remove from cooker, tighten covers on Jars, invert and cool.



Canned Cauliflower

Use the flowered portion. Plunge head down into a cold brine (one pound salt to 12 quarts water). Let cauliflower remain in brine one hour. Blanch three minutes in boiling water and dip quickly in cold water. Pack carefully in hot glass Jars. Fill to overflowing with boiling water, add level teaspoon salt to each quart. Proceed as with root vegetables, page 59.

Canned Tomatoes

Whole. Scald one and a half minutes, or until skins loosen. Cold dip carefully so as to preserve whole. Remove stems and cores. Pack directly in hot Jars. Press down gently with a tablespoon (add no water). Add level teaspoon salt per quart. Put rubbers and tops in position, not tight. Process for twenty-two minutes. Remove from cooker, tighten lids, invert and cool.

Canned Tomatoes

Select tomatoes slightly underripe and free from decay. Peel them, cut out all green and hard parts, place them in a preserving kettle, salt them as for table use, and boil them until they are thoroughly heated. Fill sterilized BALL Jars to overflowing with the boiling tomatoes, add a teaspoonful of salt and a teaspoonful of sugar to the top of each jar, and seal the jars at once.

Spiced Tomatoes

Mix together two quarts of tomatoes, skinned and sliced, one quart of sugar, and spices to suit the taste. Boil the mixture until it is the consistency of jam, and seal the spiced tomatoes in BALL Jars. This is excellent served with cold meats.

Tomato Marmalade

To a quart of ripe tomatoes, skinned and sliced, add half a cupful of cider vinegar, a third of a cupful of sugar, a teaspoonful of salt, and a teaspoonful of mixed spices. Cook the mixture slowly, stirring it with a wooden spoon, until it is reduced a half in bulk. Seal it in BALL Pint Jars.

Eat fruit; it is good for your digestion.



Boil together for an hour, a half bushel of ripe tomatoes, sliced, and six small red peppers. Strain the tomatoes through a colander and boil them an hour longer with two tablespoonfuls of black pepper, two ounces of cloves, one-eighth of an ounce of mace, and a quarter of a pound of salt. When the tomatoes are cold, add two ounces of mustard, two ounces of curry powder, and one pint of vinegar. Seal the tomato mustard in BALL Jars.

Tomato
Mustard

Blanch fresh corn on cob five minutes. Cold dip quickly. Cut corn from cob. Scald tomatoes one and a half minutes and cold dip. Remove skins and core. Chop tomatoes into medium-sized pieces. Mix thoroughly two parts tomatoes to one part corn. Pack the mixture in hot glass Jars. Add level teaspoon salt per quart. Put rubbers and caps in place, not tight. Process two hours in hot-water bath. Remove Jars and seal tight.

Corn and
Tomato
Combina-
tion

Uncooked. Chop together two quarts of peeled tomatoes, one cupful of celery or cabbage, four red or six green peppers, and six tablespoonfuls of chopped onion. Add a teaspoonful of ginger, a tablespoonful of celery seed, five tablespoonfuls of salt, half a cup of sugar, half a cupful of mustard seed, two and a half cupfuls of vinegar, three-fourths of a teaspoonful each of cloves, cinnamon and grated nutmeg. Mix the ingredients thoroughly, and put the mixture into a covered jar. Let the pickle stand for a week before using it.

Ripe
Tomato
Pickle

Mix together one peck of green sliced tomatoes, six large sliced onions, and one teacupful of salt. Let the mixture stand over night, and in the morning drain off the liquid. Boil the mixture for five minutes in two quarts of water and one quart of vinegar. Drain it again. Boil for fifteen minutes four quarts of vinegar a quart of brown sugar, half a pound of ground mustard, a tablespoonful of cloves, two tablespoonfuls of cinnamon, two tablespoonfuls of ginger. Put the drained tomatoes and onions in BALL Jars, pour over them the boiling liquid, and seal the jars at once.

Sweet
Green
Tomato
Pickles

For each pound of peeled and quartered tomatoes add three-fourths of a pint of sugar, a tablespoonful of lemon juice, ten cloves, an eighth of a teaspoonful of

Green
Tomato
Preserves

mace, and a quarter of a teaspoonful each of ginger and cinnamon. Let the tomatoes stand covered with the sugar for an hour. Then add the spices, bring the whole gradually to a boil, and cook the mixture slowly until the tomatoes are clear and tender, keeping the sides of the vessel carefully wiped down. Seal the preserves in BALL Jars.



**Boiled
Tomato
Catsup**

Peel and slice a peck of ripe tomatoes and boil them thoroughly. Drain off the juice and boil the tomatoes slowly for four hours longer. Add two tablespoonfuls of salt, a tablespoonful of black pepper, one and a half teaspoonfuls of cayenne pepper, and a tablespoonful of mustard. Continue the boiling an hour longer. Allow the catsup to cool, add a pint of vinegar, and seal it in BALL Jars.

**Sweet
Pickled
Carrots**

Select young and even-sized carrots, boil them until they are tender, cool them and pack them into BALL Jars. Fill the jars to overflowing with a hot liquid made by boiling together for five minutes a pint of vinegar, a cupful of sugar, and two tablespoonfuls of mixed spices; seal the jars at once.

**Carrot
Marmalade**

Grate a dozen raw carrots, add a cupful of sugar for each cupful of grated carrot, and allow the mixture to stand over night. In the morning add the strained juice of three lemons, a teaspoonful of powdered cinnamon, a teaspoonful of powdered cloves, and a teaspoonful of allspice. Cook the mixture slowly for an hour. Seal the marmalade in BALL Jars.

**Vegetable
Marrow
Preserves**

To every pound of vegetable marrow allow one pound of sugar, one lemon, one ounce of dried ginger, and half a glass of whiskey. Peel and slice the marrows; pour over them a syrup made of brown sugar and boiling water, and let them stand for two or three days. Then make a syrup of one pound of sugar to each pound of marrow, the juice and peel of one lemon, an ounce of dried ginger, and as little water as is necessary to make it into a syrup. When boiling, put in the marrows, having previously drained them. Let them simmer for twenty minutes; then pour in half a glass of whiskey for every pound of vegetable and

Try the steaming method for canning strawberries and cherries.



sugar, and boil until quite clear, which ought to be soon after the spirit is thrown in. When done, put into jars and seal.

Peel and remove the seeds of one large marrow; cut into small dice; sprinkle with salt, and let stand for twelve hours. Put two quarts (8 cups) of vinegar into a sauce pan, add one pint white sugar, one ounce each ground ginger and tumeric powder, four chillies, two shallots cut into small pieces, and a pinch of red pepper. Boil for ten minutes, then take out the shallots, put in the diced marrow and boil for twenty minutes. Seal in Glass Jars.

**Vegetable
Marrow
Conserve**

Take six pounds of vegetable marrow, three chillies, two ounces of ginger root, two lemons and three-fourths of a pound of sugar to each pound of marrow. After peeling and removing the seeds of the marrow, cut it into small pieces. Put the marrow and sugar into a preserving pan, and allow it to stand for twelve hours before boiling, then add the ginger (well bruised), the chillies tied in a muslin bag, the lemon rinds and the strained juice of the lemons. Boil the jam from three to four hours, and when well done, remove the muslin bag and the lemon rinds. Seal in jars.

**Vegetable
Marrow
Jam**

Peel and slice a peck of ripe tomatoes, and add six green peppers chopped fine, six onions chopped fine, two tablespoonfuls of cinnamon, two teaspoonfuls of cloves, one tablespoonful of salt, two cupfuls of brown sugar and five cupfuls of vinegar. Boil the mixture two hours and seal the chili sauce in BALL Jars.

**Chili
Sauce**

Chop fine a peck of ripe tomatoes, drain them, and add three cupfuls of chopped celery, two cupfuls of chopped onions, and half a cupful of salt. Let the mixture stand two hours; then add two pints of vinegar, three cupfuls of brown sugar, half a cupful of white mustard seed, two red peppers chopped fine, one tablespoonful of ground cinnamon, one tablespoonful of allspice, and half a tablespoonful of cloves. Mix the ingredients well and seal the relish in BALL Jars without cooking it.

**India
Relish**

**Chow
Chow**

Chop together two quarts of green tomatoes, twelve small cucumbers, four green peppers, a small head of cabbage, six onions, and a quart of string beans. Let the mixture stand in a covered enamel pan over night. In the morning put the mixture into a pan with alternate layers of salt, using a cupful of salt, and reserving enough for the last layer. After this has stood twelve hours, drain it. To a gallon of vinegar add a tablespoonful each of celery seed, mustard, allspice, pepper, and cloves; heat the mixture to the boiling point, add the vegetables, and cook them until they are tender. Seal the chow chow in BALL Jars.



**Cucumber
Sweet
Mangoes**

Make a brine that floats an egg and soak in it for twelve days, twelve large cucumbers of uniform size. Remove the cucumbers and soak them in fresh water for twenty-four hours. Split the cucumbers lengthwise, remove the seeds, and place them in a kettle with alternate layers of grape leaves. Over each layer sprinkle a very little pulverized alum. Cover the whole with equal parts of good vinegar and water, and heat it to the boiling point. Remove the pickles and stuff them with seeded raisins and cubes of lemon; use a lemon without the rind removed, to a pound of raisins. Tie the parts of each cucumber together and place them in a large jar. Sprinkle whole cloves and cinnamon over each layer. Make a syrup of one quart of sugar to one pint of vinegar, and pour this over the pickles. Each morning for nine days pour off the syrup and reheat it.

**Winter
Dill
Pickles**

Make a brine by adding half a cupful of salt to each four quarts of water; in this soak a hundred medium-sized cucumbers over night. Boil together ten quarts of water, one quart of vinegar, two cupfuls of salt; let this brine stand over night. In the morning drain the cucumbers and pack them tight in layers in BALL Two-Quart Jars between cherry leaves and dill. Add a small piece of red pepper to each jar. Cover the cucumbers with the boiled brine and seal them. A cupful of mustard seed and a cupful of horseradish shaved fine may be added.



Wash a peck of red peppers and cut a slice from the stem end of each. Remove the seeds. With a pair of scissors cut the peppers into rings. Cover the rings with boiling water and let them stand two minutes. Drain them and put them at once into cold water (preferably ice water). After ten minutes drain them again and then pack them into BALL Pint Jars. Have ready a syrup made by boiling together for fifteen minutes a quart of vinegar and two cupfuls of sugar. Pour the boiling syrup over the peppers until the jars overflow and seal them.

Canned Peppers

Select medium-sized red and green peppers, wash them, cut off the stem end, and remove all seeds and veins. Fasten the top of each pepper to the pepper with a straw or toothpick. Place the peppers in a jar, cover them with a fairly strong brine, and allow them to stand for three days. Chop very fine a head of red cabbage, and sprinkle it with a small quantity of cloves, a teaspoonful of celery seed, two tablespoonfuls of white mustard seed, and one tablespoonful of salt. Add some gherkins and some very small onions chopped fine. At the end of three days, drain the peppers thoroughly and fill them with this mixture. Moisten the filling with vinegar that has been boiled and cooled. Put the tops in place on the peppers and pin them with straws. Pack the stuffed peppers into BALL Jars, fill the jars to overflowing with boiling vinegar, and seal them. The mangoes should stand at least six weeks before they are used.

Pepper Mangoes

Remove the seeds and chop very fine twelve sweet red peppers, twelve green peppers, and twelve very small onions. Add three tablespoonfuls of salt and allow the mixture to simmer for ten minutes; then drain it and add a quart of vinegar and a cupful of brown sugar. Let the hash come to a boiling heat; then pour it into BALL Pint Jars and seal them. Pepper hash is excellent for sandwiches.

Pepper Hash

Remove the seeds from a bushel of peppers, peel and seed a dozen ripe cucumbers and peel half a peck of apples. Add six stemmed and seeded small peppers,

Ripe Sweet Pepper Catsup

run all through a meat grinder, and add a quart of salt. Let the mixture stand twenty-four hours; then squeeze it through a cotton sack, a quart at a time. Mix together and bring to a boiling heat three quarts of cider vinegar, four pints of brown sugar, two ounces of ground mace, and three ounces of ground cinnamon. Boil half a pint of white mustard seed and a fourth of a pint of celery seed in half a pint of vinegar for an hour. Pour both mixtures over the catsup, stirring it all the time. Boil the catsup until it is tender and then seal it in BALL Jars.



**Cauliflower
Mustard
Pickle**

Divide a large head of cauliflower into pieces and boil it with a dozen white button onions in salted water until it is about half done. Drain the cauliflower and onions, and add a dozen dill pickles chopped fine. To two quarts of vinegar add two cupfuls of sugar, two teaspoonfuls of celery seed, and one teaspoonful of mustard seed, and bring the whole to a boil. Mix together three-fourths of a cupful of flour, a quarter of a pound of ground mustard, a tablespoonful of turmeric powder, and a little cold water; add this mixture to the boiling vinegar and continue the boiling five minutes longer. Pour the boiling mixture over the pickle and seal it in BALL Jars. This pickle is easily prepared. The above amounts make about a gallon of pickle.

**Corn
Sauce**

Cut fine one large head of cabbage, let it stand over night, and in the morning drain off the water. Boil a dozen large ears of corn and cut off the corn. Chop fine three green and three red peppers. Dissolve two tablespoonfuls of mustard in vinegar. Mix all the ingredients together, and cover the mixture with vinegar. Add two tablespoonfuls of salt and a pint of vinegar, and boil the whole for half an hour. Seal the sauce in BALL Jars while it is still hot.

**Pickled
Cucumbers**

Scrub two hundred cucumbers with a small brush, put them into a stone jar, and cover them with scalding hot brine strong enough to float an egg. Let the pickles stand over night in the brine. In the morning rinse and drain them. Wash thoroughly several BALL

If you fail to sterilize your Jar, and the cap and rubber, your fruit is pretty sure to spoil.



Jars and place in the bottom of each a slice of red pepper, a slice of green pepper, and a little horseradish washed, scraped, and cut into pieces. Pack the jars full of the cucumbers, and on top of each scatter a few cloves, black mustard seed and white mustard seed. Add a small lump of alum and half a pint of brown sugar to a gallon of the best cider vinegar and bring it to a boiling heat. Fill the jars to overflowing with the boiling

vinegar and seal them at once. It is well to go over the jars a second time before they are sealed and refill them to overflowing. Pickles preserved in this way keep for years. The commercial vinegar at the present time is apt to be treated with acid and if used clear will "eat up" the cucumbers. It is therefore wise to dilute all vinegar, not home-made, with one-quarter to one-third boiling water.

Pare very thin, six large, fresh cucumbers, chop fine, add a scant tablespoonful of salt, and let them drain in a colander about an hour. Add two small onions or one large one chopped fine, one teaspoonful of white pepper, and a pint of vinegar. Stir the ingredients together well, and seal the catsup in BALL Jars. Let it stand at least a month before using it. This catsup keeps for years. It is made without cooking, and it retains so perfectly the taste of fresh cucumbers that any one fond of cucumbers likes it.

Slice fifteen medium-sized cucumbers thin without paring them, place them in a large jar with alternate layers of salt, and let them stand all night. In the morning rinse them and pour over them a mixture of a fourth of a teaspoonful of pulverized alum dissolved in a little vinegar, a cupful of olive oil, a quarter of a pound of whole black mustard seed, an eighth of a pound of white mustard seed, and one and a half teaspoonfuls of celery seed. Place the mixture in BALL Jars and fill them to overflowing with cold vinegar. Slice a few onions, place them in ice water for three hours, add a few slices to the top of each jar, and seal the jars.

Pare ripe cucumbers, cut them into strips, remove the seeds and soak them in a weak brine for twelve hours. Pour off the brine and scald the pickles in water containing a little alum until they are clear. Wash them in water and drain them well. Make a syrup of one

Cucumber Catsup

Cucumber Oil Pickle

Ripe Cucumber Pickles

It is extravagant to use tin cans, which may be used but once, when you can get glass jars for very little more money, and they will last for years.

gallon of vinegar and two quarts of sugar; add some stick cinnamon, nutmeg and mace. Boil the cucumbers in this syrup until a straw will pierce them; then seal them in BALL Pint Jars.



**Cucumber
Chow
Chow**

Make a brine strong enough to float an egg and soak in it for twenty-four hours a hundred small cucumbers, two heads of cauliflower, one quart of small white onions, one quart of string beans, one quart of green tomatoes, one pint of radish pods, one pint of nasturtium seeds, and twenty-five martinis. At the end of twenty-four hours drain off the brine. Scald three quarts of vinegar, a little red pepper, a quarter of an ounce of turmeric powder, three tablespoonfuls of black pepper, and a little brown sugar. When this mixture has cooled, add three green peppers, some horseradish root, a quarter of a pint of mixed mustard, and a quarter of a pound of white mustard seed. Stir the two mixtures together thoroughly and seal the chow chow in BALL Jars.

**Celery
Pickles**

Put together in a porcelain lined kettle two quarts chopped white cabbage, two quarts chopped celery, three quarts vinegar, half ounce each of crushed white ginger root and turmeric, fourth pound white mustard seed, two tablespoons salt, five of sugar; cook slowly several hours until cabbage and celery are tender.

**Ripe
Tomato
Pickle**

Pare and weigh ripe tomatoes and put in jars and just cover with vinegar. After standing three days, pour off the vinegar and add five pounds of sugar to every seven of tomatoes; spice to taste and pour over tomatoes. Cook the mixture slowly for five hours, pack in glass jars while hot and seal.

Mangoes

Select green or half grown muskmelons; remove a piece the length of the melon an inch and a half wide in the middle and tapering to a point at each end. Take out seeds with a spoon. Make a brine of salt and cold water strong enough to float an egg. Pour this over the melons and let stand twenty-four hours. For filling, use chopped tomatoes, chopped cabbage, small cucumbers, small white onions and nasturtium

When using the boiling method be sure the fruit is boiling hot when filling the jar.



pods, each prepared by remaining in salt water in separate jars for twenty-four hours. You may also add green beans if desired. These should be partly cooked before putting in salt water. For spice use cinnamon bark, whole cloves, chopped horse radish, cayenne pepper (sparingly) and white mustard seed. Prepare three times as much tomatoes and four times as much cabbage as of other articles for filling. The amount

of filling prepared must necessarily depend on the number of melons to be stuffed. After all ingredients for filling have been put through the brine, chop them separately, then mix together. Fill the melons full of the mixture, sprinkling on the cayenne pepper last. Then take the section of the melon that was removed and fasten it with a needle and thread at each end to the melon itself. Place the melons in stone or glass receptacles and cover with a weak cider vinegar. The next day, drain off the vinegar and boil it, adding one pint of sugar to each gallon; pour boiling hot over the mangoes and seal the cover on the receptacle with wax or paraffine.

Chop together a peck of green tomatoes, a head of cabbage, eight large onions, and three red or green peppers. Add a cupful of salt and let the mixture stand over night. In the morning drain off the liquid, add two quarts of vinegar, one pound of brown sugar, a quarter of a pound of mustard seed, two tablespoonfuls of cinnamon, two tablespoonfuls of ground black pepper, a quarter of a teaspoonful of cayenne pepper, and a bag containing a tablespoonful of cloves, a tablespoonful of allspice, and two tablespoonfuls of ginger. Boil the mixture for thirty minutes, stirring it frequently to prevent scorching and seal the piccalilli in BALL Jars.

Piccalilli

Remove with a knife the outer skins of small silver-skinned onions so that each is white and clean, put the onions into a brine strong enough to bear up an egg, and let them stand twenty-four hours. Drain them and place them in BALL Jars, putting in thin layers made up of horseradish, cinnamon bark, cloves, and a little cayenne pepper. Heat to the boiling point a gallon of vinegar and a quart of brown sugar, pour the

Pickled Onions

The green glass helps exclude the light and so helps to keep contents of jar from fading.



boiling syrup into the jars until they overflow, and seal the jars at once. In making the seasoning, use these proportions: Half a teaspoonful of cayenne pepper, two teaspoonfuls of chopped horseradish, two teaspoonfuls of cloves, four teaspoonfuls of cinnamon bark.

Spiced Celery

Chop together five bunches of celery, fifteen ripe tomatoes, and a large red pepper. Add two cupfuls of sugar, one and a half cupfuls of vinegar, a tablespoonful of salt, a teaspoonful of mustard, a teaspoonful of celery seed and a teaspoonful each of ground cloves, allspice, and cinnamon. Mix the ingredients thoroughly, boil the mixture for one and a half hours, and seal the spiced celery in BALL Jars. Spiced celery is delicious with any kind of meat.

Beets for Winter Use

Boil the beets in water until they are tender, and then put them into BALL Jars. Measure out equal parts of good cider vinegar and water, and add a little sugar and salt. Heat this mixture, pour it over the beets while it is boiling hot, and seal the jars at once.

Miscellaneous

Pickled Barberries

Soak nice, large bunches of barberries in salt and water for a few hours. Remove from the water and pour scalding vinegar over them. Spice them if preferred. Place in BALL Jars and cover with hot vinegar. These will keep their color and are handsome for garnish.

Preserved Barberries

Place any quantity of berries in a double boiler and cook until thoroughly heated through. Remove and weigh. Add equal parts of sugar and cook together until the juice begins to "jell." Seal in hot BALL Jars, or Jelly Glasses.

Mulberries

Mulberries may be used in as many ways as raspberries or blackberries, but are considered superior to them for making jelly. This berry is seldom appreciated. It is most wholesome, containing much potash; is one of the largest and purest sugar manufactories among fruits, the quantity of grape sugar outranked only by the grape and cherry.

The syrup must be boiling hot when Jar is being filled.



To each five quarts of berries add two quarts of cold water. Let cook together slowly for half an hour. Then add two more quarts of cold water. Cook again for half an hour. Mash any berries that don't break easily. Drain through a bag. Measure the juice. Put back over the fire and add sugar, a pint for each pint of juice. When the mixture has boiled three minutes, begin testing it. When ready to jell pour into Glasses. Let stand in the sun until firm.

Mulberry Jelly

Use elderberries alone or with an equal amount of lemon juice or green grapes or gooseberries or currants. Follow the directions given under Apple Jelly; see page 27.

Elderberry Jelly

Follow the directions given under Canned Rhubarb, any method; see page 50.

Canned Cranberries

Follow directions given under Black Raspberry Marmalade; see page 42.

Cranberry Marmalade

Pare off the rind, remove the seeds, and cut the citron into thin slices. Measure the fruit, put into a preserving kettle with enough water to cover it, and boil it for an hour. Remove the citron and to the water add as much sugar as there was fruit. Boil the syrup until it is thick, replace the citron, add one sliced lemon for each quart of fruit, boil the preserves twenty minutes longer, and seal them in BALL Jars. Some prefer after slicing to let soak over night in a weak brine.

Citron Preserves

Follow directions given under Canned Blackberries; see page 43.

Canned Blueberries

Select a good, ripe watermelon, cut off the green rind, and cut the fleshy rind remaining into slices. Soak the slices in weak salt water or lime water, over night, and in the morning drain off the water. Make a liquid by boiling together sugar, weak vinegar and spices, using one and a quarter pounds of sugar and two sliced lemons for each pound of rind. Boil the sliced watermelon in this water until it is tender; this usually takes about an hour. Seal the pickles in BALL Jars.

Watermelon Pickles



Water-melon Preserves

Peel and cut into slices the rind of one watermelon, soak the slices in weak salt water over night, and drain off the water in the morning. Parboil the slices for a few minutes in water containing a pinch of dissolved alum. Drain the slices again. Make a heavy syrup of sugar and water, slice into it two lemons, and add whatever spices are desired. Drop in the parboiled watermelon and boil it until it is tender. Seal the preserves in BALL Jars.

Muskmelon Preserves

Follow the directions given for watermelon preserves. Partially green melons make delicious preserves, but they should be soaked in stronger salt water than that used for watermelons.

Muskmelon Butter

Select ripe muskmelons. Slice them and remove the rinds, seeds and soft parts. Place the melon in a preserving kettle with a little water and boil it until it is tender. Press it through a colander and measure the pulp. Add one-half cupful of sugar, the juice of one-half lemon, and a very little cinnamon to each quart of pulp. Continue to boil until it is the consistency of apple butter. Pour into BALL Jars and seal while hot.

Canned Persimmons

Select well-frosted persimmons, peel them, and put them into BALL Jars. Put the covers in place loosely without the rubbers, stand the jars in a wash boiler on a false bottom, surround them with a few inches of warm water, and steam them until the fruit is thoroughly heated. Remove the jars one at a time, fill them to overflowing with a heavy boiling syrup, and seal them at once.

Persimmon Marmalade and Jelly

Cook in a double boiler thoroughly ripe persimmons. To every two quarts of pulp add half a pint of orange juice. When cooked down thick, measure and add three-quarters as much sugar as pulp. Cook as stiff as desired. Put into BALL Pint Jars and seal. Jelly may be made in the usual way, combining the persimmon pulp with orange pulp, and add equal weight of sugar after the juice has been drained.

Preserved Ginger

Scald the young roots until they become tender. Then soak them in cold water, changing the water

You must use a good quality rubber. Those packed with BALL Jars are of the right kind. Ask for them.



very frequently. Make a thin syrup. Pour over the ginger roots and let stand for five days. Place the ginger in BALL Jars and boil down the syrup until very thick. Spices may be added if desired. Pour the thick syrup over the ginger and seal.

Mix together in a jar one quart of strained honey and eight quarts of warm water. Allow the mixture to stand in a warm place until fermentation ceases. The resulting vinegar is white and of excellent quality. Seal it in BALL Jars.

Pick the clover blossoms without stems or leaves attached. Place a peck of the blossoms in a stone jar; add two quarts of brown sugar, one quart of molasses, and four and a half gallons of boiling water. When this cools add one and a half pints of hop yeast. Mix the ingredients well. Place a white cloth over the top of the jar and let it stand in a cool place fourteen days. Strain the vinegar off and seal it in BALL Jars.

Place the lemons in BALL Jars; fill to overflowing with cold water. When they are needed, place them in boiling water a few minutes before squeezing them, and double the usual amount of juice will be obtained.

Mix together a quart of elderberry juice, a quart of warm water, and one and a half pints of brown sugar. Fill BALL Jars with the liquid and stand them in a pan. Each morning and evening refill the jars level full with some of the liquid reserved for the purpose. After about a week fermentation ceases and foaming begins. After a few days more, seal the wine in jars.

Use only fresh blossoms and carefully remove all stems, as otherwise the wine will be extremely bitter. To every quart of blossoms, well packed but not crushed, add two sliced lemons, two sliced oranges, and a quart of boiling water. Allow this mixture to stand for twenty-four hours; then drain off all the juice. For every quart of juice obtained add a cupful of granulated sugar. Pour the sweetened juice into BALL Jars and stand them in granite pans or similar receptacles. Allow the jars to stand until all fermentation ceases. Each morning it will be found that fermentation has

Honey
Vinegar

Clover
Blossom
Vinegar

Juicy
Lemons

Elderberry
Wine

Dandelion
Wine

caused the jars to run over, but that the liquid does not stand at the top. With the contents of one jar fill the others level full each morning. After all fermentation ceases empty the wine out, wash the jars in hot water, put the rubbers in place, refill the jars to overflowing, and seal them. This makes a very mild wine.



Red Haw Butter

Select well-ripened haws. Remove the blossom ends and wash them. Place them in a preserving kettle with enough water to cover them. Cook them very slowly until they are tender. Press them through a colander and remove the skins, seeds and stems. Place the strained pulp in a clean preserving kettle. Add enough boiled down vinegar to make the pulp very thin. Continue the boiling until the pulp is the consistency of cider apple butter. When about half done, add about one-half teaspoonful of cinnamon and one-half cupful of sugar to each quart of pulp. Pour into jars and seal them at once.

Pickled Walnuts

Pick young walnuts while they are soft enough to be pierced with a needle. Soak them in a strong brine for three days, drain them, soak them in cold water for six hours, drain them, and place them in a stone crock. To a gallon of vinegar add a cupful of sugar, two tablespoonfuls each of whole peppers and cloves, a tablespoonful of allspice, and eight blades of mace; boil the mixture for ten minutes, pour it over the walnuts while it is scalding hot, and let them stand for three days. Then drain off the vinegar, put the nuts into BALL Jars, bring the vinegar to a boil, pour it over the nuts, seal the jars, and store them in a cool place. The nuts must stand at least six weeks before they are ready for use.

Spiced Walnuts

Select walnuts soft enough to pierce with a needle and soak them in strong brine for a week, changing the brine each day. Drain and wash the walnuts, cover them with vinegar, and boil them ten minutes. Add a bag of spices containing four tablespoonfuls of whole cloves, peppercorns, mace, celery seed, and mustard seed. Cover the walnuts closely and let them stand for three weeks; then seal them in BALL Jars.

You can have a safe and sure jar by always getting the BALL brand.



Soups

Many scraps of meat, bones, odds and ends of vegetables and cereals which could be transformed into nourishing and palatable food are wasted. These can be made into soups and put up in glass Jars and be ready for use at any time.

All housewives will appreciate the advantage of having Jars of delicious soups ready to add to any meal or to serve up hot and quickly when unexpected guests drop in; also the advantage of making enough soup at one time to last a month or more, instead of making a little each day. The labor and heat required for making a large amount is not much more than for a small amount, so it is an economical proceeding for every one to put up soups in glass Jars. For those who butcher or pack their own meats the time when this is done is the economical time to put up a large amount of soup stock for future use. Bones and scraps of beef and veal and chicken, make the most desirable stock, but any kind of meat may be utilized.

The following recipes are only the foundation recipes. Any soup recipe used in the home may be doubled or increased in any amount and put up in the same way as the following:

Take 25 lbs. of beef hock, joints, shins and other bones. Strip off all fat and discard. Crack the bones containing marrow. Put the bones in a kettle and cover with 5 gallons of cold water. Simmer (do not boil) for 6 or 7 hours. Remove from the fire and strain through a colander. Cool and skim off all grease. Reheat, and when boiling pour into BALL Jars. Partially seal Jars according to directions for continued sterilization of corn on page 57. Process forty minutes in hot-water bath. Seal while hot. An excellent stock is made by using half beef and half veal bones and scraps.

Six pounds of shin of veal, one fowl and eight quarts of water. Proceed in same manner as soup stock recipe above. This makes a rich soup which is very nice to serve at parties.

Take any amount of tomatoes desired; place them in a wire basket and plunge into boiling water from one to three minutes. Remove skin and cores. Put in a kettle and boil thirty minutes. Then pass the pulp through a

Soup
Stock

White
Stock

Tomato Pulp
for Cream
of Tomato
Soup

Vegetables (Mixed) Without Stock

sieve. Put the strained pulp into BALL Jars, adding a teaspoonful of salt for each quart Jar. Partially seal the Jars and stand them in the hot-water bath and process for thirty minutes. Seal while hot.



Many people would like vegetable soup during the winter months but are not always able to secure a variety at that season. By canning vegetables in Summer when they are plentiful and often going to waste, a supply can be made available to add to the meat stock canned during the winter months. The following mixture is good, but one or a number may be omitted if desired.

Soak 6 pounds of lima beans and 4 pounds of dried peas over night. (Fresh ones may be used and cooked until tender.) Boil each one-half hour. Blanch 6 pounds carrots, one pound onions, 3 pounds celery, 4 pounds okra, 6 pounds cabbage and 1 pound parsley in boiling water for three minutes and dip in cold water. Prepare vegetables and chop into cubes. Mix all together and add a level teaspoonful of salt for each quart Jar. Pack as full as possible in BALL Jars. Add boiling water until Jars overflow. Partially seal and process in hot-water bath for 90 minutes. Seal Jars while hot.

Meats

Poultry and Game Birds

Kill fowl and clean at once. Wash carefully and when cool cut into sections. Boil until meat can be removed from bones; remove from boiling liquid and pack the meat closely in BALL Jars. Fill jars with pot liquid after it has been concentrated one-half; add level teaspoonful of salt per quart of meat for seasoning. Put rubbers and cap into position and after sterilizing, seal tight and invert jars to cool.

Fresh Beef

Use strictly fresh beef and cut into convenient pieces for handling (about $\frac{3}{4}$ pound in weight) roast or boil slowly for one-half hour. Cut into small pieces, remove bone gristle and excessive fat and pack directly into BALL Glass Jars. Fill with gravy from roasting pan or pot liquid concentrated to one-half its volume. Put rubbers and cap into position and after sterilizing seal tight and invert jars to cool.

Corned Beef

Remove the beef from the brine, after it has been properly corned for the required time, and soak for two hours in clear water, changing the water once. Place in a wire basket and boil slowly one-half hour. Remove and plunge into cold water, taking off excessive fat, bone and gristle. Cut into small pieces and pack closely into BALL Glass Jars. Put rubbers and cap into position and after sterilizing, seal tight and invert jars to cool.

Spring Chicken, Fried

After cleaning, season and fry as though preparing for the table. Cook until meat is about three-fourths done. Roll up tight and tie string around chicken. Drop this hot partially-fried chicken into hot glass jar. Pour liquid from the griddle or frying pan into the jar. Place rubbers and caps into position not tight. After sterilizing, seal tight and invert jars to cool.

In a similar way any fowl or wild game may be prepared by frying, oven baking, roasting or stewing. Meat Products, which may be canned this way include beef, pork, hamburger steak, sausage, rabbit, venison, squirrel and all types of sea food. All may be packed after cooking three-fourths done in any desired way. Products should be packed while hot and the hot liquids, gravies, dressings, etc., should be poured over them.



*Instructions on how to
care for Fruit Trees
and Vines*

Notes on Care of Fruit Trees, Bushes and Vines

During the past few years there has been a rapid increase in destructive insects. This condition has been brought about partly by the importation of insect pests from other parts of the world, pests which have thrived in their new home unhampered by the inroads of the parasites that kept them in control in their original haunts. Then we have our native insects, which since the tremendous decrease in forest area have turned their attention to orchard and garden. These infested orchards and gardens have passed the infection along into new territory so that at the present time destructive insects in injurious numbers are found in nearly every home and commercial orchard and garden.



These insects multiply so rapidly that unless they are checked and brought under control they will in time either entirely destroy or seriously handicap the development of all fruit and shade trees. There is only one possible remedy, and that is to *spray*. It is therefore now no longer a question of the advisability of spraying, but it is an absolute necessity to spray all fruit trees and bushes.

By the use of the proper insecticide or fungicide at the right time, practically all of the insects and fungus diseases which affect fruits and vegetables, as well as shade trees and flowers, can be controlled.

It is now simply a question of how to do this spraying most efficiently, thoroughly and economically.

To help our friends in looking after the fruits on their home place we give here in concise form information regarding these various plant troubles and the various kinds of spraying material and the time in which the work should be done.

Spraying, if done carefully and thoroughly, will assure one perfect fruit and in much larger quantities, instead of inferior and insect-infected fruit and with only occasional crops, so that all the work and expense created will be amply repaid.

Insecticides and fungicides are primarily to prevent injury. This is especially true of fungicides.

Thoroughness is more than half the battle, and in applying poisons aim to cover all parts of the plant liable to attack, and when using contact insecticides hit as many insects as possible. It is necessary to know whether a pest chews its food; for if it does not, contact insecticides or other means must be employed.

Biting or chewing insects devour or eat away portions of a plant, and the poison, in order to be effective, should be applied where it *must* be eaten, or the insect go hungry. This, if thoroughly done on the appearance of a pest, should give most excellent results, since young caterpillars usually succumb to poisons much more quickly than older ones.

Sucking insects, as a rule, produce a wilting or discoloration of small areas and sometimes considerable curling of the leaves; for example, certain plant lice. Such attacks should be checked at their inception by the use of contact insecticides. Some plant lice are so well protected by a woolly secretion that it is exceedingly difficult to hit them with a spray.

Certain scale insects are very resistant to treatment and, as a rule, sprays for the destruction of these latter must either be used very strong (in winter) while plants are leafless and therefore not subject to harm; or the application may be more dilute and applied at the time the young scale insects are crawling actively and before the woolly secretion appears, mats down, and forms a protective covering or scale.

Leaf miners and *borers* in fruit, stems and roots, feed within the plant tissues and ordinarily can not be controlled by poisonous or other applications.

Save the trees on your home place by giving them the necessary care.

Notes on Care of Fruit Trees, Bushes and Vines



There is usually some time in the life history of these pests when they are more easily attacked, and knowledge of this often renders it possible to keep them within bounds. *Underground feeding* kinds, though hidden from view, may sometimes be reached with a contact insecticide.

I. Insecticides

Arsenate of lead is one of the best poisons which can be used for the destruction of insects. There are a number of excellent brands on the market. A standard paste arsenate of lead should contain 15% of arsenic oxide, not over $\frac{3}{4}\%$ being water soluble. There are

on the market excellent brands of dry or powdered arsenate of lead containing approximately twice as much poison as the paste. These preparations are valuable in proportion to their poison content.

Sweetened poison, consisting of 3 oz. arsenate of lead, 1 pint of cheap molasses and 4 gals. water (or 5 lbs. poison, 3 gals. molasses, 100 gal. water) sprinkled lightly on the foliage when the flies appear (usually early June) is very effective against cherry fruit flies and will probably prove of value with other fruit flies.

This and other poisons are to be put where they must be eaten if the plant is attacked by insects, and on nothing soon to be eaten for human food.

Paris green and *London purple* are two of the oldest and most widely used insecticides. Paris green may be employed at the rate of one pound, with an equal amount of recently slaked lime, to 100 gallons of water. London purple may be used in the same way. Repeated applications of either of these poisons will injure most foliage unless lime is employed. Both Paris green and London purple can be added to Bordeaux mixture and used with safety. This preparation is a combined insecticide and fungicide.

Poisoned bait can frequently be employed to good advantage in destroying such pests as cutworms, army worms, and grasshoppers. It is prepared by dipping fresh clover or other attractive leaves in poisoned water and distributing in infested localities. A mash composed of 20 pounds of bran, one pound of Paris green, two quarts of cheap syrup or molasses and three oranges or lemons and three and one-half gallons of water is a most satisfactory bait. Mix the bran and poison while dry and squeeze the fruit into a vessel containing the syrup or molasses and water, adding also the finely chopped or grated remains of the fruit. Mix the sweetened, flavored liquid and the poisoned bran and sow thinly in infested fields. The above quantities are sufficient for five acres. This mash is very effective in destroying army worms. For the latter, spread the bait rather thickly where the pests are abundant. These poisoned baits should not be placed where domestic animals, such as rabbits and chickens, can gain access to them.

Contact Insecticides

Contact insecticides are employed almost exclusively against sucking insects; that is, those forms which draw their nourishment from the underlying plant tissues and are, therefore, not injured by inert poisons lying on the leaf surface.

Kerosene emulsion is one of the most widely employed of these. It may be prepared by dissolving one-half pound of hard soap in a gallon of boiling water and adding thereto 2 gallons of kerosene. Mix vigorously by passing it through a spray pump for five to ten minutes. This preparation may be diluted four to twenty-five times before applying. Better results can probably be obtained in sections where lime or hard water occurs, by using 1 gallon of sour milk in place of soap.

You can have a safe and sure jar by always getting the BALL brand.

Notes on Care of Fruit Trees, Bushes and Vines

A very satisfactory emulsion is made by taking 1 part of this stock mixture to 9 of water. The strong emulsion is employed mostly for scale insects, while the weaker dilutions may be used against such insects as plant lice, cabbage worms, currant worms, and other forms having soft bodies. Some very good oil emulsions, in a form ready for use, have been placed on the market under various trade names. Do not use oil emulsions on dormant sugar maples.

Whale oil soap solution can be employed in much the same manner as kerosene emulsion. The maximum strength for summer use on foliage is 1 pound to 4 gallons of water. An extremely satisfactory dilution for many of the more common pests is 1 pound to 6 or 7 gallons of water.

Ivory soap used at the rate of a five-cent cake to 8 gallons of water is a very convenient solution and has been employed with great success in controlling insects, plant lice, etc., on house plants.

White hellebore (fresh) used at the rate of 1 ounce to 3 gallons of water, is a valuable internal poison as well as an efficient contact insecticide. It may, therefore, be employed against both classes of insects, and is frequently used where the application of an arsenical poison is inadvisable.

Pyrethrum or insect powder (fresh) may be used at the rate of 1 ounce to 3 gallons of water. It may be applied dry, diluted with flour, and should then be mixed several hours before it is used. It is a contact insecticide only.

Tobacco dust and tobacco water are other valuable insecticides. The dry dust has been used most successfully in destroying the woolly aphid infesting the roots of apple trees. Tobacco water may be prepared by steeping tobacco stems in hot water for several hours and diluting the liquid from three to five times. One pound of the stems should produce 2 gallons of excellent tobacco water.

A concentrated, standardized tobacco solution such as nicotine sulphate, 40% nicotine, is a very efficient insecticide. It is particularly valuable against plant lice, pear thrips and pear psylla. It can be used in combinations with arsenate of lead and a lime-sulphur wash or the Bordeaux mixture.

Lime-sulphur washes are among the cheapest and most effective insecticides as well as exceedingly valuable fungicides.

There are a number of good commercial lime-sulphur washes on the market. They usually test 33° Beaume and are valuable in proportion to their density, that is, the amount of material in solution. The usual strength for the winter wash is 4.5° Beaume, while for the summer spraying of apple foliage it should read about 1° Beaume.



Table of Dilutions*

Gallons of water to one gallon of lime-sulphur wash.

Beaume Reading†	For San Jose Scale	For Summer Spray on Apples
35°	9 Gallons	45 Gallons
34°	8¾ Gallons	43¼ Gallons
33°	8¼ Gallons	41½ Gallons
32°	8 Gallons	40 Gallons
31°	7½ Gallons	37¾ Gallons
30°	7¼ Gallons	36¼ Gallons
29°	6¾ Gallons	34½ Gallons
28°	6½ Gallons	32¼ Gallons
27°	6 Gallons	31 Gallons
26°	5¾ Gallons	29½ Gallons
25°	5¼ Gallons	27¾ Gallons
24°	5 Gallons	26 Gallons

†The Beaume hydrometer is a special hydrometer rather generally used for ascertaining the density of lime-sulphur washes. It may be purchased from dealers in chemical supplies.

*Modified from Bulletin 330, New York Agricultural Experimental Station.



Formulas

1. 40 lbs. of lime.
80 lbs. of sulphur.**
50 gals. of water boiled actively at least 30 minutes.
2. 60 lbs. of lime.
125 lbs. of sulphur.
45 gals. of water.
3. 32 lbs. of lime.
32 lbs. of sulphur.
200 gals. of water.

1. Slake the lime in about 10 gallons of warm water in a cooking vessel, and as slaking begins add the sulphur, the latter preferably first well mixed or moistened with warm water, and then keep the lime and sulphur well stirred. Add the remainder of the water when the lime has slaked and boil with fire or steam for about one hour, stirring as long as there is any sediment; the latter should practically disappear before the end of the operation. Allow extra capacity for the vigorous boiling, e. g., a 50-gallon barrel or kettle is only large enough for a half batch. This wash should test about 26° Beaume and, ordinarily, may be diluted at the rate of 1 gallon to $5\frac{3}{4}$ gallons of water.

2. Slake the lime in a cooking vessel in a small quantity of water and stir in the sulphur previously made into a paste; add water to make 45 gallons and boil rapidly with either fire or steam one or two hours. After standing, draw off the clear liquid and dilute to 50 gallons. This will keep indefinitely if protected from the air and freezing and should test about 33° Beaume. The ordinary dilution is 1 gallon of spray to 9 of water. The uncombined sulphur, if any remains, may be used in preparing the next lot. Formula 1 is considered more economical.

3. This self-boiled lime-sulphur wash is prepared as follows: Place the lime in a barrel with about 6 gallons of water (enough to almost cover it) and as soon as the lime begins to slake, the sulphur, previously finely sifted, should be added and the mixture constantly stirred, more water (3 to 4 gallons) being added as needed to form at first a thick paste and then gradually a thin paste. As soon as the lime has well slaked, water should be added to cool the mixture and prevent further cooking. It may then be strained and diluted to form 200 gallons or more. A combination particularly adapted to use on the foliage of trees because of the small amount of caustic sulphides present.

Potassium sulphide (liver of sulphur) 3 pounds to 100 gallons of water has been very successfully used as a spray against certain leaf mites.

This material is particularly serviceable in controlling certain scale insects, pear psylla, and some fungus diseases. It is a specific for peachleaf curl.

Hydrocyanic acid gas fumigation is extensively employed in the South and West for the control of scale insects and white fly on citrus trees. This work can be safely done only by experienced men possessing a somewhat expensive outfit. The amateur is advised to be extremely careful in undertaking any such operations.

Soft soap wash is an excellent protective against borers. It is made by thinning 1 gallon of soft soap with an equal amount of hot water, then stirring in 1 pint of crude carbolic acid or one-half pint of the refined article, allow it to set over night, then add 8 gallons of water. This is applied to portions of trees liable to attack by borers, for the purpose of preventing the parent insects from depositing eggs.

**A finely ground sulphur should be used. This is cheaper and just as effective as the more costly flowers of sulphur.

II. Fungicides

These are employed in all cases for the purpose of keeping out disease spores. Do not spray fruit trees and berry plants while in bloom. The concentrated lime-sulphur wash (page 80) is a valuable fungicide, and there are indications that we may soon have a dilute lime-sulphur wash which can be employed with safety on more hardy foliage at least.



The standard fungicide at the present time is the *Bordeaux mixture* which may be prepared by putting 6 pounds of copper sulphate in a bag of coarse cloth and hanging this in an earthen or wooden vessel containing 4 to 6 gallons of water. Then slake 4 pounds of quicklime and add thereto 25 gallons of water. After the copper sulphate is dissolved, dilute with 25 gallons of water and mix the two by pouring the solutions together in a third vessel; stir and keep stirred while spraying. For peaches and Japanese plums the amount of copper sulphate should be reduced to 4 pounds, and some growers have used but 2 pounds each of blue vitriol and lime to 50 gallons of water with excellent results. The weaker solutions should be employed wherever the normal proves too strong. A plain solution of copper sulphate, 1 pound in 15 to 25 gallons of water, may be employed before the buds break, the weaker solution being used on peach and nectarine. Ready-to-use Bordeaux can be had in cans.

Lime-Sulphur washes both the commercial and the self-boiled, are important fungicides as well as insecticides. The usual dilution of a 33° Beaume wash for apple foliage is 1—40. The self-boiled wash is particularly adapted for use on peach, plum and cherry foliage. Both may be used in combination with arsenate of lead or nicotine sulphate, and are generally so employed.

Ammoniacal copper carbonate may be prepared by making a paste of 5 ounces of copper carbonate with a little water and dilute 3 pints of ammonia (26° Beaume) with 7 or 8 volumes of water. Add the paste to the diluted ammonia and stir until dissolved. Then add enough water to make 45 gallons. Allow the mixture to settle and use only the clear blue liquid. This preparation loses strength on standing. It may be used instead of Bordeaux mixture in late spraying and thus avoid the risk of injuring the appearance of the fruit.

Potassium sulphide (liver of sulphur) is used at the rate of $\frac{1}{2}$ to 1 ounce to a gallon of water. This preparation loses its strength on standing and should, therefore be used immediately. It is particularly valuable for surface mildews.

Iron sulphate, a saturated solution, with one part of commercial sulphuric acid to every 100 parts of water, is valuable for grape anthracnose, the dormant vines being treated by means of sponges or brushes. This solution should be prepared just before using.

Formalin. One pound (1 pint) to 30 gallons of water is frequently used for the prevention of potato scab. Soak the seed in this solution for about two hours before planting.

Do not lose the work of years of nature by neglecting your trees at the time they need a little attention.

Remedies and Preventives for Plant Enemies and Diseases

By E. PORTER FELT, State Entomologist, New York

The amateur should have little difficulty in recognizing the trouble and deciding upon the most efficient means of checking it. The directions must necessarily be very brief. Be sure and heed the remarks and cautions.

Serious Pests of Orchard Trees

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
*Apple (1).	Wormy fruit.	Late summer and fall.	Whitish caterpillar	Codling moth.	Poison, preferably arsenate of lead..	Put in blossom end of apples within a week after bloom falls.
Apple.	Irregular, hard or rotting trails in fruit. .	Summer and early fall.	Small maggot.	Railroad worm. .	Spray as for codling moth, possibly effective. .	Destroy early infested fruit every three days.
Apple.	Young fruit deformed	Spring.	Red bugs, plant lice.	Red bugs, aphids	Spray before and after blossoming with nicotine sulphate.	Red bug is locally abundant. The tobacco extract can be added to the San Jose Scale and Codling Moth sprays.
Apple.	Young leaves and blossoms destroyed. .	Early spring.	Caterpillars in cases.	Casebearers.	Poison, young leaves.	Spray tips of young leaves in badly infested orchards.
Apple.	Young leaves and blossoms destroyed. .	Early spring.	Brown caterpillar. .	Bud moth.	Poison.	Treatment as above.
Apple.	Stripped branches with large tents. .	Early spring.	Bluish caterpillar. .	Tent caterpillar. .	Poison.	Remove and crush caterpillars when in nest.
Apple.	Young leaves eaten or browned.	Early spring.	Looping caterpillars. .	Canker worms.	Poison.	Poison is preferable to the use of sticky bands.
Apple.	Terminal leaves eaten, twigs with small, firm webs.	Spring and fall. .	Hairy caterpillars. .	Brown-tail moth. .	Poison in spring and late summer	Collect and burn winter nests.

(1) Apple: This tree is very badly injured by gipsy moth (see shade tree insects).

*General treatment for orchard fruits: Apply lime-sulphur wash just before buds swell (for fungus, scale insects and blister mite); poisoned lime-sulphur wash or Bordeaux when young leaves appear (for bad infestations of casebearers, bud moth and early leaf feeders; add nicotine sulphate 40% nicotine, $\frac{3}{4}$ pint to 100 gallons, if red bug is present); repeat the latter within a week or ten days after the bloom falls (for codling moth, leaf feeders, red bug, and fungus); give another application a week or ten days later to insure thorough work if necessary. The same general directions apply to peach, pear, plum, and quince, the curculio affecting the latter being controlled in the same way as the plum curculio. Peach and plum are very sensitive to arsenic.

Notes on Care of Fruit Trees, Bushes and Vines

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Apple	Leaves brown and loosely webbed	Summer and early fall	Hairy, yellowish caterpillars	Fall web-worm	Poison in summer	Remove nests and crush caterpillars.
Apple	Leaves stripped from branches	Summer and fall	Yellow or red marked caterpillars	Yellow-necked and red-humped worms	Poison in summer	Crush clustered caterpillars.
Apple	Curled, sticky leaves	Early spring and summer	Plant-lice	Apple plant lice	Nicotine sulphate or kerosene emulsion	Spray when green leaf tips appear or before leaves curl.
Apple	Dead limbs, red-spotted fruit	Spring to fall	Gray and black bark louse	San Jose scale	Lime-sulphur wash	Spray before or as buds open in spring.
Apple	Poor growth, limbs scaly	Spring and fall	Brown scale insect	Apple bark louse	Kerosene emulsion, lime-sulphur wash	Apply in early June when young are crawling.
Apple	Poor growth, limbs scurfy	Spring to fall	Whitish scale insect	Scurfy bark louse	Kerosene emulsion, lime-sulphur wash	Apply as above.
Apple	Poor growth, sickly foliage	Spring to fall	A white, woolly plant louse	Woolly aphids	Kerosene emulsion or whale oil soap	Force insecticide through woolly covering.
Apple	Boring at base of tree	Spring and fall	White legless grub	Round-headed apple borer	Tar paper bands	Band from May to July, cut out borers.
Apple	Leaves with thickened brown spots	Summer	Minute mite	Blister mite	Lime-sulphur wash	Spray before buds open.
Apple	Brown spots on leaf	Summer	Fungus	Leaf spot and scab	Lime-sulphur wash or Bordeaux	Spray swelling buds; 2 weeks before blossoms open; after they drop, and a week later.
Apple	Dead spots on bark	Growing season	Plant disease	Canker or blight	Burn infested parts	Cut well below infection to avoid carrying disease.
Apple	Dying twigs	Spring and summer	Pear blight	Fire blight	Keep pear blight cut out	Not very injurious to apple; self-limiting.
Apricot	Fruit rotten, covered with brown, powdery mold	Summer	Fungus	Brown rot	Self-boiled lime-sulphur wash	First application when shucks are falling, 2 others at 10-day intervals.

Notes on Care of Fruit Trees, Bushes and Vines

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Cherry....	Black knots on limbs	Summer.....	Fungus.....	Black knot.....	Cut out and burn in winter.....	Keep black knots cut out of near-by plum and cherry trees.
Cherry....	Maggoty fruit.....	Summer.....	White maggot....	Cherry fly.....	‡Sweetened poison spray.....	Apply in early June.
Cherry....	Fruit rotting with brown powdery mold	Summer.....	Fungus.....	Brown rot.....	Same as for apricot.....	Peach, apricot, also affected.
Cherry....	Reddish-brown spots on falling leaves	Summer.....	Fungus.....	Leaf spot.....	Self - boiled lime-sulphur wash....	Four applications, first as shucks fall.
Cherry....	Leaves, reddish, wrinkled, curled; witches' broom on leaves.	Summer.....	.....	Witches' broom...	Cut and burn witches' brooms; lime-sulphur wash.....	Make 2 applications, first just as buds swell.
Cherry....	Leaves curl, a white mealy mold.....	Summer.....	Fungus.....	Powdery mildew..	P o t a s s i u m sulphide, 1 oz. to 3 gal. water....	Often serious on nursery stock.
Cherry....	Curled, sticky leaves	Early summer....	Black plant louse.	Cherry aphids....	Nicotine sulphate or kerosene emulsion.....	Destroy lice on bursting buds, spray at 2 or 3 day intervals if necessary.
Citrus Fruits... (orange, lemon, etc.)	Scaly fruit and limbs.	Growing season...	Circular scale....	Red scale.....	Hydrocyanic acid gas.....	Fumigate at night, more effective than resin wash.
Citrus Fruits...	Scaly fruit and limbs.	Growing season...	Long scale insect..	Purple or long scale.....	Fumigation.....	Treat as above.
Citrus Fruits...	Scale on leaves and twigs.....	Growing season...	Black scale insect.	Black scale.....	Fumigation.....	Treat as above.
Citrus Fruits...	Blackened, sticky foliage.....	Growing season...	Small sucking insect	White fly.....	Fumigation.....	Treat as above.
Citrus Fruits...	Yellow streaks on leaves.....	Growing season...	Minute mite.....	Red spider.....	L i m e - s u l p h u r wash 1-50.....	More injurious in dry seasons.
*Peach....	Bored trunks.....	Fall and spring...	White caterpillars	Peach borer.....	Dig out borers....	Mound or band base of trees from June to September.

*Peach is very subject to San Jose scale; see under apple. ‡Arsenate of lead 3 oz., cheap molasses 1 pint, water 4 gal.

Notes on Care of Fruit Trees, Bushes and Vines

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Peach.....	Buds destroyed.....	Early Spring.....	Small caterpillar..	Peach twig borer .	Lime-sulphur wash or kerosene emulsion.....	Spray before the buds open.
Peach.....	Shot holes in bark...	Spring and summer.....	Small, black beetles.....	Fruit tree bark beetle.....	Burn the infested branches.....	Do this in winter or early spring.
Peach.....	Curled leaves.....	Summer.....	Plant disease.....	Peach leaf curl....	Lime-sulphur wash or Bordeaux.....	Apply before buds burst.
Peach.....	Sickly, yellowish trees	Summer.....	Plant disease.....	Peach yellows....	Cut and burn....	Keep infected trees from contact with healthy trees.
Peach.....	Rotting fruit.....	Summer.....	Plant disease.....	Brown rot.....	Lime-sulph. wash or cop. sulph. solution.....	Apply before buds open.
*Pear.....	Young fruit gnarly, maggoty.....	Spring.....	Yellowish maggot	Pear midge.....	Destroy infested fruit.....	Use Lawrence pears as trap.
Pear.....	Skeletonized leaves..	Summer.....	Slimy caterpillar..	Pear slug.....	Poison or dust....	Apply when slugs are abundant.
Pear.....	Leaves sticky, black..	Spring and summer	Jumping louse....	Pear psylla.....	Lime-sulphur wash as buds swell....	Scrape rough bark, use nicotine sulphate in late fall for the flies.
Pear.....	Buds sticky, blossoms blasted.....	Spring.....	Small, slender, black fly.....	Pear thrips.....	Lime-sulphur as buds are bursting; nicotine sulphate as blossoms separate....	Watch for sticky buds; give several sprayings with tobacco if necessary.
Pear.....	Brown foliage on dying branches.....	Spring and summer	Bacterial disease..	Pear blight.....	Cut 6-10 in. below affected part and burn.....	Cut out old cankers, disinfect and remove blighted blossoms promptly.
*Plum.....	Crescent-shaped cuts in fruit.....	Spring.....	Small weevil.....	Plum curculio....	Poison or collect..	Jar daily or every few days for 2 to 3 weeks after fruit sets.
Plum.....	Brown scales on limbs	Fall and spring...	Brown, oval scale..	Plum scale.....	Kerosene emulsion	Spray after leaves fall and repeat before buds open.

*See general treatment of orchard fruits under apple.

Notes on Care of Fruit Trees, Bushes and Vines

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Plum	Rotting fruit	Summer	Plant disease	Brown rot	Cop. sulph. solution and Bordeaux	Cop. sol. before buds swell; weak Bord. to swelling buds and after fruit has set; am. cop. carb. every 6-8 days when fruit is grown.
Plum	Fruit badly deformed, stunted	Spring . . . . .	. . . . .	Plum pockets	Spray with Bordeaux before buds swell	Other applications of little value.
Plum	Leaves curl, a white mealy mold	Summer	Fungus	Powdery mildew	Potassium sulphide 1 oz. to 3 gal. water	Not often as serious as on cherry.
Plum	Gnarly growths on limb	Summer and winter	Fungus	Black knot	Cut and burn	Apply Bordeaux in early spring.
Quince	Blighted, wilting tips	Spring and summer	Pear blight	Fire blight	Cut and burn affected tips	More serious on quince than apple.
Quince	Reddish brown spots on leaves and fruit	Summer and fall	Fungus	Leaf and fruit spot	Lime-sulphur wash or Bordeaux	Spray as for apple scab.
Quince	Rotting fruit with minute pimples, cankers on limb	Summer and fall	Fungus	Black rot	Lime-sulphur wash before buds open	Prune, cut out and disinfect cankers.
Quince	Yellow spots on leaves and a mealy rust on fruit	Summer and fall	Fungus	Rust	Destroy nearby cedar trees	

Small Fruit Troubles

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Currant (1)	Fruit reddens and drops.....	Summer.....	Small maggot....	Currant fly.....	Pick up and destroy infested fruit	Allow fowls to run among the bushes. Try sweetened poison, see under cherry.
Currant...	Leaves discolored....	Spring and fall...	Plant louse.....	Currant aphid....	Tobacco solution or kerosene emulsion.....	Apply early before leaves curl.
Currant...	Leaves irregularly brown spotted.....	Spring.....	Reddish or yellow and black bug....	4-lined plant bug.	Tobacco solution or kerosene emulsion for young....	Burn egg-bearing currant tips.
Currant...	Leaves stripped.....	Spring and summer	Spotted caterpillars.....	Currant worm....	Poison or hellebore	Use hellebore after fruit is half grown.
Currant...	Wilting tips.....	June.....	White borers.....	Currant stem borers.....	Burn infested tips.	Cut well below affected part of cane.
Currant...	Leaves brown spotted	Spring and summer	Fungus.....	Leaf blight.....	Ammoniacal copper carbonate...	Bordeaux after fruit is picked.
Grape.....	Tips of shoots webbed	Summer.....	Whitish caterpillar	Grape plume moth	Crush caterpillars	Apply poison if pest is abundant.
Grape.....	Buds destroyed.....	Early spring.....	Green beetle.....	Steely flea beetle.	Paint buds with poison.....	Spray with poison 10 to 14 days later.
Grape.....	Clusters wormy.....	Summer and fall..	Small caterpillars.	Grape berry moth.	Spray with poison in June.....	Keep surroundings clear of brush and weeds.
Grape.....	Vines sickly, roots badly scored.....	Summer.....	Brown beetle and white grubs.....	Grape root worm.	Spray foliage with sweetened poison in June.....	Serious enemy of European vines.
Grape.....	Light specked leaves.	Summer.....	Whitish hoppers..	Leaf hopper.....	Spray young with tobacco solution.	Destroy pupæ by cultivation.
Grape.....	Galled leaves.....	Summer.....	Small plant louse.	Grape phylloxera.	Plant resistant vines, flood for 10 days.....	Destroy winter shelters.

(1) Currant is badly injured by San Jose scale (see fruit trees).

(2) Nicotine sulphate.

40% nicotine is very good.

Notes on Care of Fruit Trees, Bushes and Vines

PLANT	INJURY	TIME	CAUSE	NAME	REMEDY OR PREVENTIVE	REMARKS AND CAUTIONS
Grape.....	Dark spotted shoots..	Summer.....	Fungus.....	Anthracnose.....	Copper sulph. solution and Bordeaux.....	1st before buds open, 2nd 3 to 4 days later; burn diseased wood.
Grape.....	Whitish growth on leaves.....	Summer.....	Fungus.....	Downy mildew...	Bordeaux.....	Spray when leaves are fully expanded.
Grape.....	Dark spotted fruit..	Summer.....	Fungus.....	Black rot.....	Bordeaux ammoniacal cop. carbide.....	1st to fully expanded leaves; after fruit sets in 2 to 3 weeks intervals till three-fourths grown. Then 2nd every 7 to 14 days.
Raspberry and Black-berry.....	Wilting tips.....	Spring.....	White maggot.....	Raspberry cane maggot.....	Poison ineffective.	Cut and burn infested shoots.
Raspberry and Black-berry.....	Leaves riddled.....	Spring.....	Greenish larvæ.....	Blackberry sawfly.	Poison or hellebore	Apply to expanded leaves and again 2 to 3 weeks later.
Raspberry and Black-berry.....	Stems gray, cracked..	Summer.....	Plant disease.....	Anthracnose.....	Fungicides ineffective.....	Cut and burn badly infested canes.
Raspberry and Black-berry.....	Orange - colored spots on leaves.....	Summer.....	Fungus.....	Red rust.....	Burn infested plants.....	Affection not amenable to treatment.
*Strawberry.....	Newly set plants dying.....	Spring.....	Grub at roots.....	White grub.....	Dig out and destroy.....	Set plants on new ground.
Strawberry	Folded, brown leaves.	Spring and summer	Greenish or brownish caterpillar...	Strawberry leaf roller.....	Spray with poison in early May....	Burning over beds just after picking also very effective.
Strawberry	Dead patches in bed.	Spring and summer	Grub in crown....	Crown borer.....	Destroy infested plants.....	It is unsafe to reset an old strawberry bed.
Strawberry	Bare spots in bed....	Spring and summer	Plant lice.....	Strawberry root louse.....	Set only uninfested plants.....	Burn over old beds in early spring.
Strawberry	Leaves blighted.....	Spring and summer	Fungus.....	Leaf blight.....	Bordeaux.....	Apply when growth begins, when fruit sets and after fruiting.

*Strawberry troubles are largely avoidable by adopting the one-crop system and never replanting old beds. There should at least a year of other cropping intervene, preferably more, before the land is again set to strawberries.

A Word for the BALL Jars

THE selection of the right jar for canning and preserving is of prime importance. Too often the quality of the jar has been taken for granted—just as too little attention has been given to the rubbers and caps.

Success in canning is a question of small details, and a perfect jar is as essential to good results as the selection of ingredients and the method of procedure.

BALL Jars are the scientific development of many years devoted to experimenting and practice. The vast resources of the BALL institution have been constantly devoted to the perfecting of the jars that bear its name.

“BALL” Jars are products of uniform quality. That name—blown in the glass—carries assurance to thousands of thrifty housewives that their labor shall not be wasted because of faulty jars. Always select BALL jars for successful canning and preserving.

BALL Jars are all made by recently invented machinery under an entirely different process from anything used in the making of other jars.

This new process consists of drawing the molten glass by suction into forming molds in exactly the amount required to make a perfect jar, no more and no less quantity, and then by compressed air, blowing into finished shape, forming one homogeneous piece. In the old process the neck and the sealing shoulder are pressed into shape and the lower part or body of the jar is blown. This pressing of one part and blowing of another makes two natures of glass, and as it is almost impossible to successfully anneal two natures of glass, and as the proper annealing is one of the most essential things in the making of a good glass article, this older process of making jars does not produce as strong a jar as newer automatic process first mentioned and used in making BALL Jars. Imperfect annealing is largely due to the older process of forming, often resulting in the jars twisting off at the neck when screwing on the caps.

Drawing the glass into a mold by suction measures the glass so that the same quantity is used in each jar, thus insuring that the jars will be of equal capacity. This special way of blowing

Order from your dealer the BALL Jar.

A Word for the BALL Jars



Help the H. C. L. by canning more instead of letting it be wasted.

into the final shape causes an even distribution in place of making them thick on one side and thin on the other, as is the result from other processes. This even distribution makes it possible to temper the jars more perfectly than can otherwise be done. Correct tempering reduces the breakage to the minimum.

In order to get a perfectly air-tight seal it is necessary that the sealing shoulder or rubber seat should be absolutely true. With the BALL method it is practically impossible to make a jar in which the shoulder is uneven. This insures an absolutely sure fruit keeper.

This shoulder is a very vital part of the jar.

Examine carefully a BALL Jar such as you are now buying, and you will readily observe the even distribution of the glass, the smoothness of the finish around the neck, and the smoothness of the inside from top to bottom, and the strong, double shoulder which was originated by the new BALL process and has been imitated by others in appearance, but being made in a different manner does not have the same strength.

BALL Jars are made from Green glass because the contents are better protected from the light which bleaches and fades the natural color of the fruit.

In the BALL factories every part of the jar is made complete, the metal cap, the porcelain lining of the cap, the wire trimmings for "IDEAL" Jars, the paper boxes in which the goods are packed. Even the zinc metal for the porcelain lined caps and BALL Improved screwbands is rolled in the BALL rolling mills from superior raw material, producing more pliable metal, expressly adapted for the requirements of a Fruit Jar.

The machinery for making all these various things is also designed and built in the BALL works.

All of this insures that the Jars and trimmings being made under one management will be more perfect fitting than could be expected where the glass is produced by one maker, and the metal, or some other parts, by other makers, neither being able to know just what is necessary to make his product fit the product of the other.

A Word for the BALL Jars



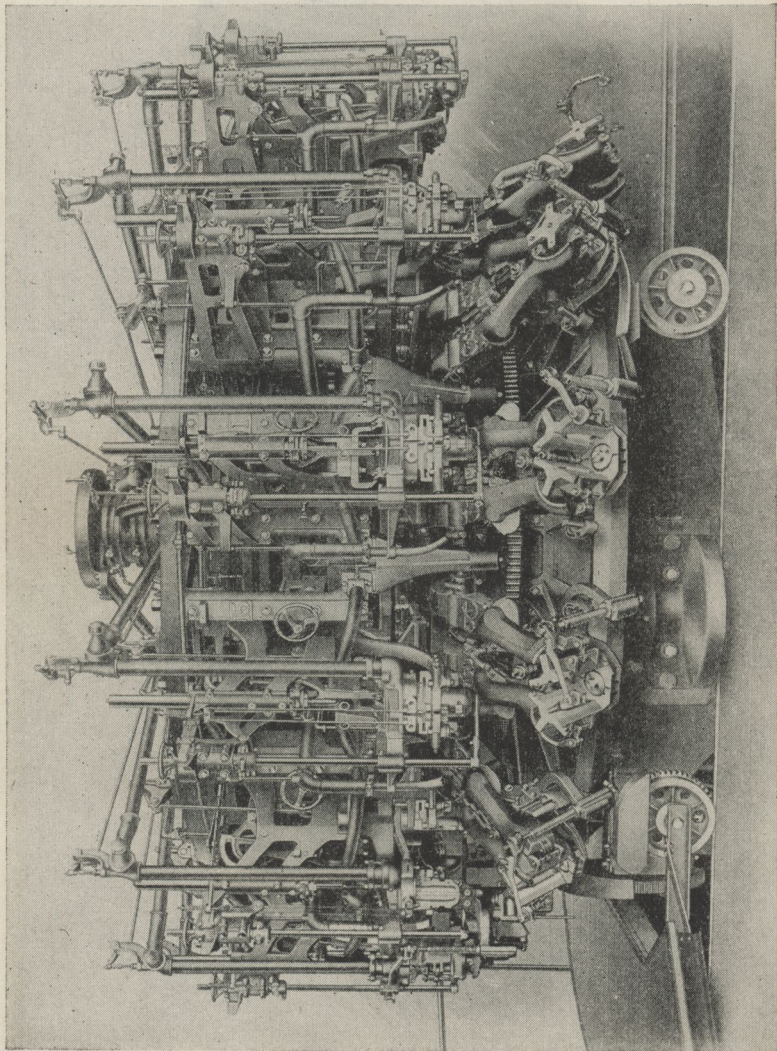
Use only a good rubber. The BALL Jar is packed with that kind. Use a rubber only once.

Facilities and Equipment

THE machine shown on this page takes the molten glass automatically from a tank containing a mass of 200 tons, forms and delivers it onto a traveling belt, which conveys the jars into the annealing ovens, from which other carrying devices take them to the sorting and packing rooms. We have the exclusive right to use this wonderful machine for the making of Fruit Jars.

BALL BROTHERS GLASS MFG. COMPANY

Muncie, Ind. and Wichita Falls, Texas



There is a real reason why the BALL Jars are the best made.



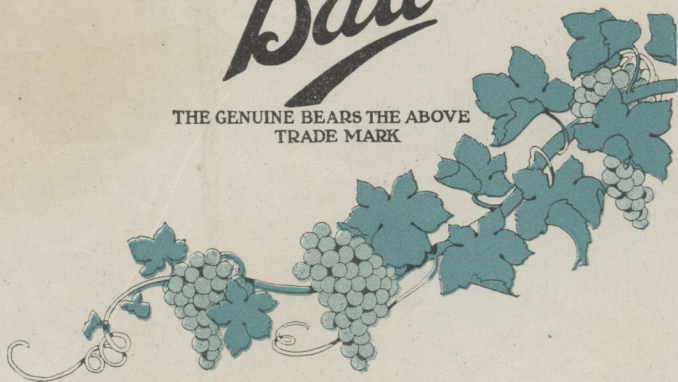
Main Plant of Ball Bros. Glass Mfg. Company, Muncie, Indiana.



The World's Favorites

Ball

THE GENUINE BEARS THE ABOVE
TRADE MARK





Ball

