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PANTRY *Suggestions*

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NOTE

This bulletin is a revision of the publication written in 1944 by Mrs. Winifred C. Leverenze, former Extension specialist in food preservation. The plans were drawn by M. R. Bentley, former Extension agricultural engineer.

PANTRY SUGGESTIONS

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GOOD STORAGE SPACES ARE IMPORTANT

FOOD retains more food value, a better flavor, a more desirable color and texture if it is stored in a **cool, dry, dark** place. Even though the food is canned, dried, or brined, some vitamins are destroyed by heat, light, and moisture. It has been found that "A" quality canned food becomes "C" quality canned food in a year's time if it is not stored properly; however, if canned foods are stored in a **cool, dry, dark** place, it may require several years to lose much of the food nutrients or change its appearance and flavor.

Heat is the most destructive factor

Experiments on fruit canned in tin revealed that when it was stored at 32° F. it takes eight times as long to dissolve the metal coating of the tin containers as it did when stored at 86° F. and four times as long when stored at 68° F. The ideal temperature would be about 40° to 50° F., but this temperature is almost impossible to attain other than in cold storage in most parts of Texas during the summer months. Even though the ideal may be impossible, something can be done toward improving storage.

Spoilage may be caused by poor storage conditions

As described above, there is a simple chemical reaction of foods canned in tin. It is not harmful but if food is stored long enough in warm places, enough metal will dissolve to cause "hydrogen springers," perforations, corrosion, and/or deterioration in color and flavor. If perforations and corrosion cause air leakage, the contents will spoil. Damp atmosphere aids heat in causing corrosion and rusting from the outside; thus bringing about a more rapid destruction of the tin container and eventually spoilage.

As far as the jar is concerned, the excessive heat and moisture deteriorates the rubber or rubber compound in the metal lids and the final outcome would be the same as in the tin can. In addition, light fades the color of canned foods in glass which indicates loss of some nutrients. In both tin and glass, temperatures between 100° F. and 130° F. aid the development of certain bacteria which cause flat sour spoilage. In case these harmful

bacteria were not all destroyed by processing, the heat would then help them to develop and cause spoilage; whereas, if the food were kept cool, the bacteria would lie dormant and never cause the spoilage or be harmful in any way. Records show that there is 50 to 75 percent more spoilage during summer months than in winter. It has been shown also that foods canned during the hottest part of the day spoil more easily than when canned in the cooler part of the day.

Freezing may cause spoilage of canned foods

If food is stored in a place so cold that freezing causes the jar or can to burst or the seal on the container to break, the food will spoil. If the seal or container is not broken, when freezing occurs, there is no danger of spoilage; however, the food may become soft as a result of the freezing.

All foods need good storage

In dried foods, brined foods, preserves, and grains, the four factors of heat, air, light, and moisture are destructive in temporary or long time storage. In cured meats and lard, heat and light not only destroy vitamins but aid rancidity. Moisture aids mold. Moisture and heat are the best helpers for insects which attack meat, grains, dried food, etc., causing much waste in pantry.

CHOOSE STORAGE PLACES WISELY

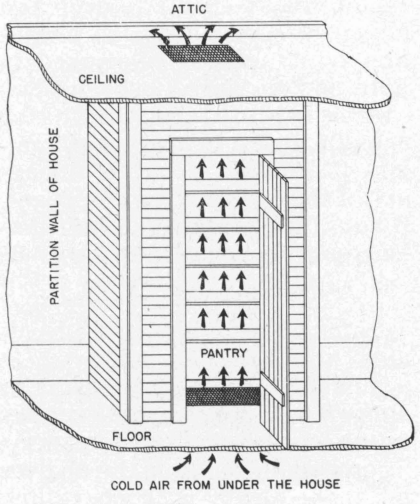
With these factors in mind, the selection and construction of adequate storage space depend primarily on the factor of heat first, moisture second, and light third. **Cleanliness** may be named along with these three but it is assumed that wherever the location, the storage space can be kept clean if the owner so desires. Naturally, some places are easier to keep clean than others, but taking everything into consideration, an easily cleaned place would be the fourth factor involved. A fifth factor which might be ranked even more important from the standpoint of labor-saving would be **convenience** of the storage place.

A ventilated pantry is good

One of the most nearly ideal places to store food is a **ventilated** pantry near the center of the house. Experiments have shown that it is possible to keep the temperature about 10 or more degrees cooler in a properly built ventilated pantry than in an ordinary room. If the room temperature averaged 85° F. in summer and the temperature in the ventilated pantry could be kept 75° F. or lower, it would be

reasonable to believe that the stored foods would have a better quality or longer life than when stored at room temperature. Again convenience is a factor. Perhaps the center of the house is in a hall, under a stairway or even in a bedroom. The most convenient place would be near the kitchen, and yet that is probably the hottest place in the house. If a ventilated pantry could be used for long time storage of foods and a smaller pantry or cabinet in the kitchen could be arranged for several days' supply, it would save many steps and much time for the homemaker.

The principle of the ventilated pantry is as follows: have an opening in the ceiling and floor; shelves arranged with slats or holes; and tight walls. The cool air from under the house passes through the floor opening, through the shelves, and as it gets warmer goes out into the attic.



Other pantries can be used

Where a ventilated pantry is not practical, an ordinary pantry can be made into a good storage place. Some houses are so constructed that it would be difficult to arrange a ventilated pantry. Often a family not owning its own home cannot afford or are not allowed to build a ventilated pantry in the house. In this case, the Texas 4-H pantry (Blueprint 165) may be most advisable. If the plan is used, build the pantry near the center of the house or on a north wall. It is so constructed that it can be moved from one house to another.

SPECIAL POINTERS FOR PANTRIES

Insulation is helpful in any type pantry

Insulation helps in any kind of pantry. In the summer, it helps to keep the hot air from coming in or the cool from going out. In the winter, the reverse is true. In the summer, the door of an insulated pantry should be opened at night and closed in the morning to keep a lower and more even temperature. In order to have better insulation, the following may be done:

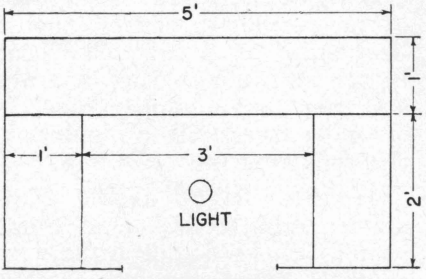
1. Make tight double walls and a tight fitting door. Some people fill the double walls with sawdust, wood shavings, straw, cotton, wool, moss or fluffy gypsum.
2. If double walls are impossible, the tight single walls which are less expensive will help.
3. Use beaver board, fiber board, rock board, corrugated

pasteboard or even several layers of paper to line the closet if it is impossible to have tight walls otherwise. This is often used in an old pantry that is being improved at minimum cost.

4. Outside walls of the pantry may be painted with aluminum paint to improve insulation. The aluminum paint may be covered with canvas and paper without losing the insulating value.

Plan the size of the pantry

The size of the pantry varies according to the size and need of the family. A family of five usually needs about 500 quarts of canned foods, some dried vegetables and fruits, some cured meat, some stored root vegetables, and some brined vegetables. In order to plan the amount of food needed by the family, use "Our Family's Food —How We Plan to Get It," C-230; "Can Vegetables in a Pressure Canner," C-223, and "Can Fruits in a Water Bath," C-224. If a pantry is 3x5 feet



and has shelves on three sides, there is about 8 feet of shelf space on each row of shelves. If the ceiling is 8 or 9 feet high, about 6 shelves could be arranged. This would mean 48 square feet of shelf space. Usually 1 square foot of shelf space will accommodate 12 pints or 9 quarts or 4 half gallon jars or 24 No. 2 cans (stacked two deep) or 18 No. 3 cans (stacked two deep). Therefore, 48 feet of shelf space should accommodate at least 500 containers of food and have some space left for some small quantities of dried foods, crocks of brined food, cured meats, lard and probably a few root vegetables. Large quantities of potatoes and other root vegetables should be stored in mounds or outside storage houses or cellars.

What about the shelves

Shelves 12 inches wide are more convenient than wider ones. Two or three rows of jars or cans are satisfactory. The distance between each shelf will be determined by the size of containers to be stored. If No. 3 cans and quart jars are the most common size to be used, the shelves may be about 12 inches apart. This would allow No. 3 cans to be stacked two deep and quart jars one deep. If pickles and fruits are to be canned in half gallon jars, one or two shelves should be made far enough apart to place half gallon jars with about 2 inches above the jar. Don't waste space, though. If you have no half gallons, put shelves closer together.

Try adjustable shelves

Some homemakers like adjustable shelves. To make these adjustable shelves, nail cleats or supports three or four inches apart on each end of the pantry. Then rest the ends of the shelves on these cleats without nailing

the shelf to the cleat. If there are more small jars than large ones, put shelves closer together, similar to the way you adjust racks in the oven of the stove. This practice would be more difficult in a ventilated pantry, but it could be done by proper bracing or supporting.

Make shelves strong

Be sure that shelves are braced or strengthened to hold the extra weight of the season's home-processed food supply. Shelves that are more than three or four feet long should be well supported especially in the center.

See page 10 for directions for building shelves for canned goods.

Group foods two ways

Foods should be grouped in two ways (1) all of one kind should be placed together and (2) foods harder to keep should be stored on lower shelves where it is cooler. Shelves should be labeled so that it will be easy for any member of the family to find the kind of food wanted.

Suggested arrangement

1. If small quantities of potatoes, onions, pumpkin, and fruit, such as apples, are to be stored in the pantry, they should be placed in ventilated bins or crates in the bottom of the cellar or pantry. These ventilated bins should have legs or props to allow circulation of air under and around them. Casters on the legs aid in moving the bins from place to place.

2. Carrots, turnips, parsnips, and beets may be stored in damp sand in boxes or crocks which can be arranged on the floor.

3. Crocks of pickles, lard or such may be stored on the floor or lower shelves.

4. Canned meat, cured meat stored in oil should be on a lower shelf, as well as dried foods and cereals.

5. Canned vegetables should be on shelves just above meats. They may be grouped in two sections:

   a. Green and yellow vegetables.
   b. Other vegetables.

6. Canned fruits come next. They should have two divisions:

   a. Tomatoes, kraut, strawberries, and citrus.
   b. All other fruits including fruit juices.

7. On the next shelf above fruits, the pickles and relishes may be arranged.

8. Jellies, jams and preserves may be placed on the top shelves.

9. If there's more space in the top of the pantry, empty jars or small pieces of equipment may be stored.

10. If the pantry or cellar is large enough, it is well to have places for equipment, jar lids, rings and other canning items; canning instruction; canning budget or plan; a record of food canned, etc. But, if the pantry is small, these things may be stored in other cupboards near the pantry.

11. If there is a baby in the family, a part of one shelf may be labeled "Baby Food." Or if there is a member of the family

who requires a special diet, one shelf may be arranged for this purpose.

12. Some families like to have a part of one shelf used to store school lunch supplies.

HERE ARE SUGGESTIONS ON LABELING

Shelves:

If shelves are labeled according to the type of food placed on them, it will be easy for any member of the family to find the product desired. For example, on the meat shelf, there may be three divisions—"beef," pork," and "chicken." On the vegetable shelf there may be several divisions—such as beans, peas, carrots, etc. Each shelf could be separated into as many divisions as required for ease in selection of food.

The labels for these shelves may be made of light weight cardboard. The size would depend on the thickness of the shelf. If the shelf is one inch thick, the label should be one inch wide. If the label is made wider than the shelf is thick, it will get torn or knocked down easily. The wording may be printed in ink or crayon. The label might be tacked on the shelf with thumb tacks. The label may be painted on the shelf instead of the paste board label.

Containers:

Each container may be labeled. This label may include **name of the product, when canned,** and any other comment the canner wants to make concerning the method used in canning.

For jars small labels 2½x1 inch may be placed about ¼ to ½ inch from the base of the jar. For tin cans the label should be cut as wide as the can is long and long enough to wrap around the can and over-lap. The label should not be pasted to the can because glue promotes rusting.

Other Products:

Dried foods may be packaged in small air-tight sacks or cartons which are labeled and then stored in large tin containers such as a lard can, large syrup bucket, or tight crock. If the dried foods are stored in jars or small tin cans, each container should be labeled. Every time a container of dried food is opened, there is greater possibility of oxidation and insect infestation. Proper labels prevent unnecessary opening.

Bins or boxes that hold root vegetables or other stored vegetables should be labeled for convenience.

Miscellaneous

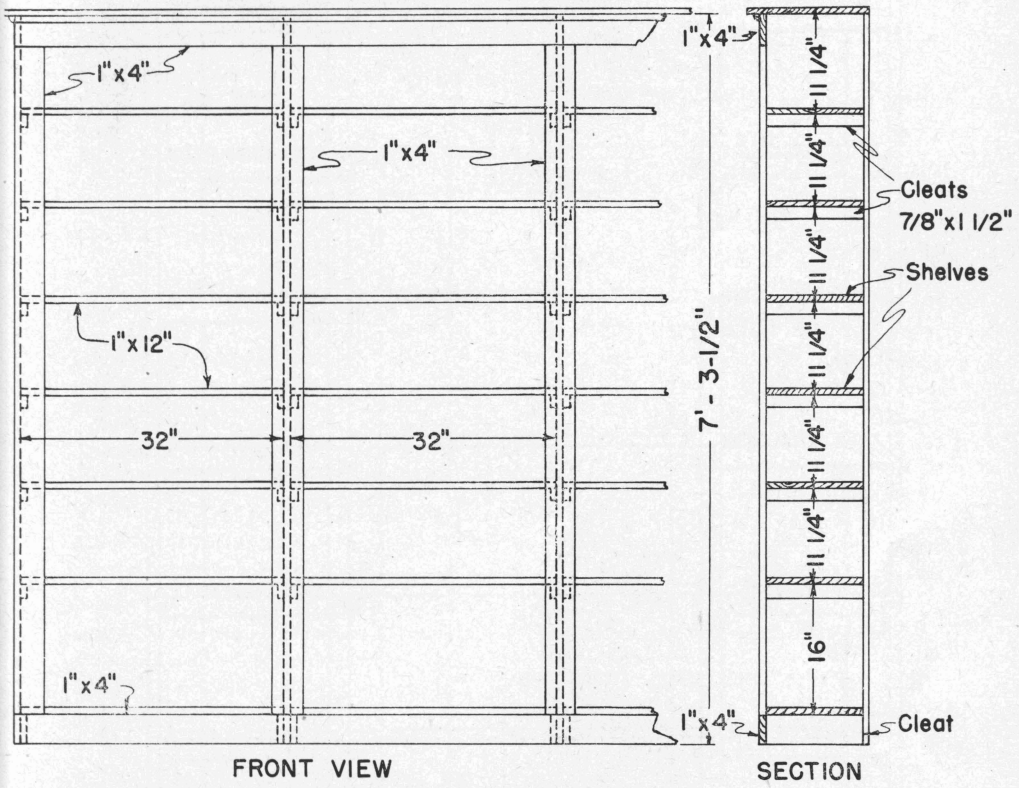
Canned Foods:

Have all containers clean when stored.

Tin cans may be wiped with a cloth which has been dipped in oil or white vaseline to help prevent rusting.

Check all canned foods occasionally for swelled or leaky cans. If there is any indication of spoilage, the food should be discarded.

CABINET TYPE PANTRY

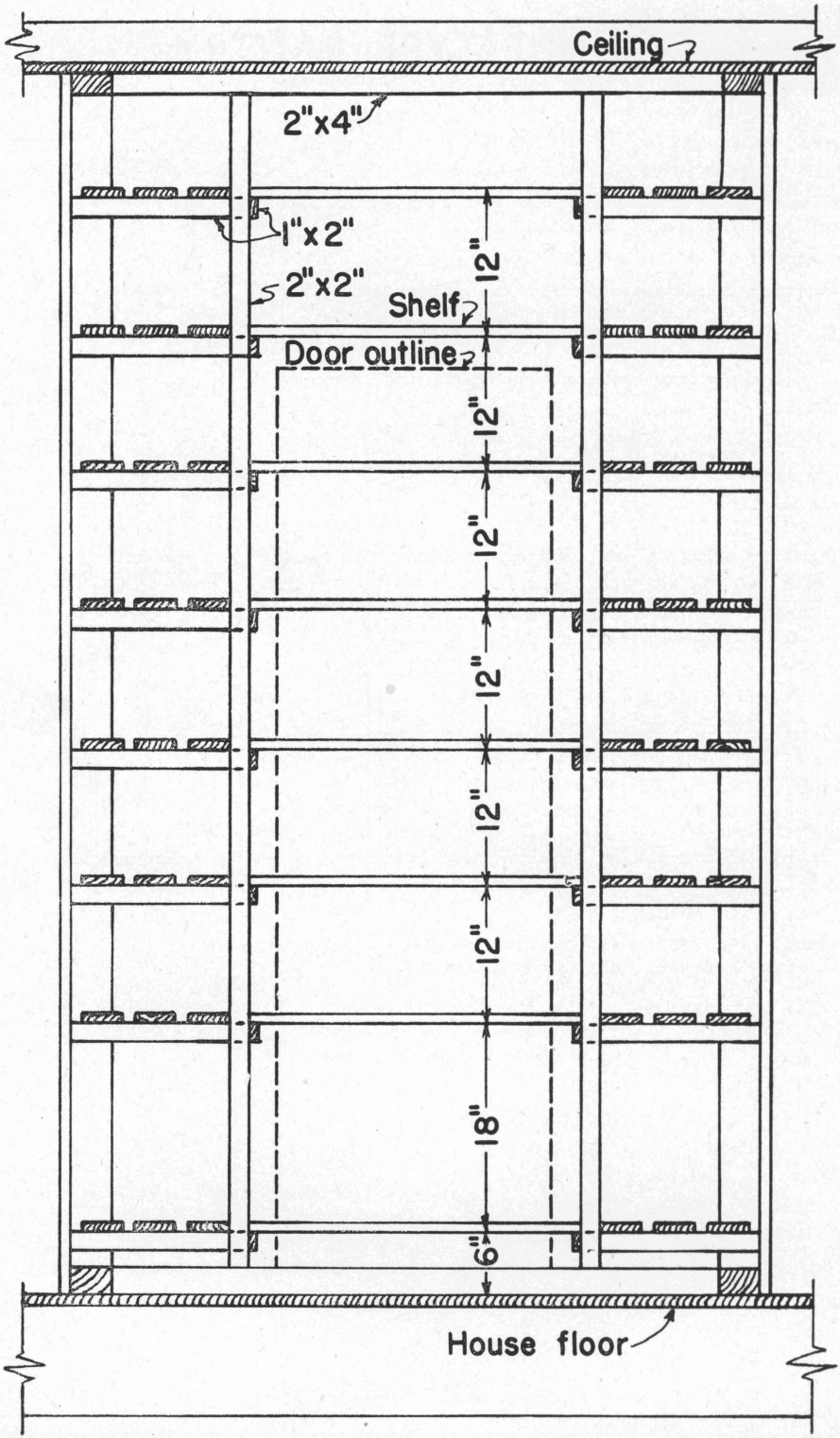


Dimensions between shelves may vary according to height of containers, but at least 1" of clearance between container and next shelf should be allowed.

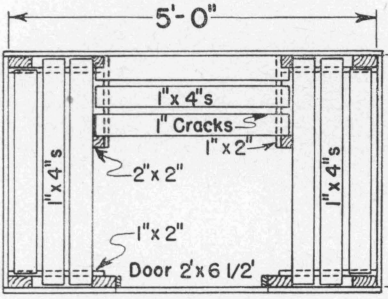
Doors on the front are desirable.

(From Extension Print 165)

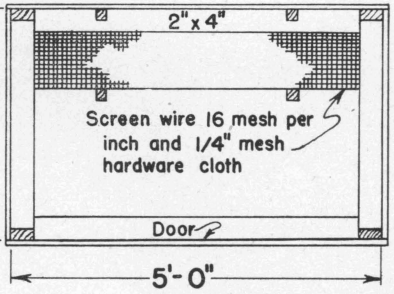
PLANS FOR A


Ceiling
2"x4"
1"x2"
2"x2"
Shelf
Door outline
12"
12"
12"
12"
12"
12"
18"
6"
House floor

VENTILATED PANTRY



PLAN



SCREENED OPENING IN THE FLOOR

(Size and shape as above as nearly as practical)

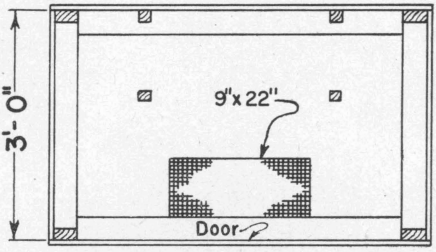
MATERIAL REQUIRED

(9' ceiling)

170 bd. ft. tongue and groove lumber	8—1"x2"x10'
	1—1"x6"x 8'
4—2"x4"x 9'	1 Pr.—4" strap hinges
4—2"x2"x 9'	8 sq. ft.—¼" mesh hardware cloth
4—2"x4"x 8'	8 sq. ft.—16 mesh screen wire galvanized
18—1"x4"x12'	

NOTE

Double wall preferable except for higher cost. All walls, tongue and groove lumber of 1" nominal thickness. Desirable that walls be practically airtight. Attic should be vented to the outside air.



SCREENED OPENING IN CEILING

(View looking upward)

SECTION

Dimensions between shelves may vary according to height of containers, but at least 1" of clearance between container and next shelf should be allowed.

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