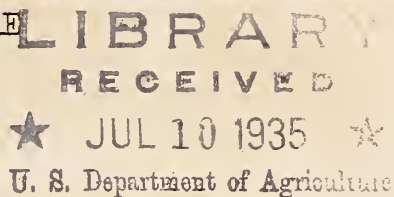


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15 Oct

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF HOME ECONOMICS
WASHINGTON, D. C.



CANNING TOMATO JUICE IN THE HOME

The following information on the canning of tomato juice has been assembled because of the many requests received for special directions for preparing this product. The Department of Agriculture has not carried out investigational work on tomato juice.

Equipment. Knives should be of hard stainless steel, and strainers or sieves of tinned wire or stainless steel. Strainers or sieves must give a fine division of the pulp, else the larger pieces may tend to separate from the juice on standing. Cooking utensils may be of stainless steel, aluminum, or a good grade of enameled ware. Utensils of copper, brass, and iron should not be used for preparing tomato juice as they cause deterioration of its color and flavor.

Tomato juice may be put up in either glass or tin, but containers must be of a kind that can be hermetically sealed. Plain tin cans are preferred, though sanitary enameled cans are used. In using glass jars wash the jars and caps thoroughly and sterilize in boiling water. Dip rubber jar rings in boiling water and place on the jars just before filling. Wash bottles and sterilize as jars. Dip the bottle crown caps in boiling water just before placing on the filled bottles. Clamp caps on with a bottle capper, a simple, inexpensive device. Wash tin cans before using, but keep the lids dry. Seal tin cans with a hand sealing machine.

Selecting the tomatoes. The varieties of tomatoes used for canning and juice vary with their adaptability to climatic conditions in different sections of the country. Any variety may be used for juice, although those of bright red color are preferred.

Use only fully ripe, firm tomatoes, as freshly picked from the vines as possible. Wash well, remove cores, and cut into small pieces. Some workers suggest that peeling as well as coring gives a better flavored juice. Green parts cause bitterness, and moldy or decayed portions influence both keeping quality and flavor.

Extraction of juice. Handle the tomatoes in rather small quantities (1 to 2 gallons) and avoid delay at any stage of the procedure. Allowing the juice to stand, either cold or hot, causes loss of flavor and vitamin content.

Precook the tomatoes at about 170° - 180°F., or if a thermometer is not available simmer until softened. Avoid boiling. Precooking drives out air, renders enzymes inactive, and permits a better separation of pulp from skin. It also liberates color from under the skin as well as vegetable gums and pectin which tend to keep juice and pulp from separating better than does juice from "cold-pulped" tomatoes.

Put the softened, hot tomatoes through a fine sieve at once. A bowl or cone-shaped sieve used with a wooden pestle gives about the least incorporation of air with the pulp. A minimum incorporation of air is desirable to protect vitamin C.

Salt. Tomato juice is frequently canned without the addition of any condiments, and should be so canned for infant or invalid use. It is desirable to keep the quantity of salt low, as $\frac{1}{2}$ of 1 per cent (by weight), or about $\frac{1}{2}$ to 1 teaspoon to the quart.

Canning methods. Reheat the juice at once after putting through the sieve. If using glass containers, heat the juice to 190°F. (if no thermometer is available heat just to boiling), pour into the sterilized containers, and seal. No processing is necessary. If tin cans are used, heat the juice to 180°-190°F. (or to simmering if no thermometer is available), pour into cans, seal, and process for 5 minutes in boiling water. Begin to count time when the water actually boils. Do not leave headspace in either glass or tin containers. Cool glass containers in the air but out of draughts. Cool tin cans in running water.

Labeling and storing. Labels may be fastened securely to tin cans with rubber cement. Or if the label is long enough to wrap around the can, place glue along one end, roll the label smoothly over the can, and lap the glued end over the other. A wax pencil may be used to write on tin or glass. Glued labels will adhere to glass.

Store canned tomato juice in a cool, dark place. It is especially important to keep tomato juice in glass protected from light to preserve both color and flavor.

Vitamins from tomato juice. Tomatoes are a valuable source of three vitamins, A, B, and C. Whole tomatoes canned out of contact with the air show no appreciable losses of these vitamins. Tomato juice can be prepared easily by putting cold canned tomatoes through a sieve.

Vitamin C is easily destroyed by heat if oxygen is present, although the rate of destruction is less rapid in foods like tomatoes which contain considerable acid than in those not definitely acid. Also, it is believed that vitamin C may be partially destroyed by the action of enzymes when cut or crushed tomatoes or unheated tomato juice are allowed to stand. Most of the oxygen can be removed from tomato juice by the use of a vacuum, but the process requires special equipment not practical except for large scale production. Heat, also, may be used to remove most of the oxygen, and to make the enzymes inactive as well. Little loss of vitamin C occurs if the whole process is carried out rapidly.

Grades. Information on tentative United States standards for grades of tomato juice may be obtained upon request from the Bureau of Agricultural Economics, U.S. Department of Agriculture, Washington, D.C.

Tomato cocktail. Most consumers of tomato cocktails prefer to add the seasonings at the time of serving. Canning tomato juice with spices may darken the color of the product, also change flavor undesirably. If tomato cocktail is canned use a tested recipe. Place spices in a bag during precooking and remove before canning.

Some seasonings from which to select in making tomato cocktail are the following:

Anise	chervil	onion pulp	soy sauce
bay leaf	horseradish	paprika	tabasco
capers	marjoram	parsley	thyme
celery seed	mint	pepper	vinegar
			Worcestershire sauce

References on tomato juice manufacture:

Essential factors in the preparation of tomato juice.

J. Gaubert. Canner 67 (17): 15-18. October 13, 1928.

The tomato juice pack keeps growing.

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C.Z. Gurin. Industrial and Engineering Chemistry 25 (6): June 1933.

If these publications are not available in libraries single copies may be obtained from the publishers.

The Canner, Canner Publishing Company, 140 N. Dearborn St., Chicago, Ill. 25 cents single copy.

The Canning Age, National Trade Journals, 101 W. 31st Street, New York City. 35 cents single copy.

Glass Packer, Ogden Watney Publishers, Inc., 117 Liberty St., New York City. 25 cents single copy.

Industrial and Engineering Chemistry, Easton Pa. 75 cents single copy.

