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UTILIZATION OF WASTE FROM CANNING PRODUCTION OF COMPOTE, MODES OF REFRIGERATION PROCESSING AND STORAGE OF THE READY COMPOTE “ASSORTED №2”

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Fruit seeds have great value for fruit nurseries, where rootstocks are grown. The juice is peeled on the pact press at slightly lower than normal pressure and juice output to prevent seed deformation. Seeds from pomace washed with water.

The resulting seeds are scattered with a thin layer (3-5 cm) on sieves made of metal mesh or on burlap and dried in good weather in the air, in another - in special rooms with warm air or in dryers at temperatures not higher than 35°C. Dried seeds are cleaned on the cleaning machines "Super-Petkus." The seeds are calibrated, packed into bags and sent for storage. Seed humidity should not be greater than 10 - 11%.

Pomace apples immediately after separation of the juice is crushed on a hammer to the size of pieces no more than 5 mm and dried in dryers at a temperature of heating of raw materials not higher than 90-100 °C (at a higher temperature, pectin is destroyed). Often pomace is dried on drum dryers first at the temperature of the drying agent 300 - 350°C, and at the end of drying 85 - 95°C. After drying, the pomace is cooled, sieved through a sieve with holes with a diameter of 10 mm, inspected and packed in kraft bags (paper) with a capacity of up to 30 kg [1].

The extract from the pomace is separated first by gravity, then by pressing on a pact press. Then they filtered using kiselgur. The filtered extract is concentrated in two-hull continuous vacuum evaporators.

From the concentrate, pectin is precipitated with ethyl alcohol, which has a volumetric fraction of ethanol 90 - 95%, on the pact presses, raw pectin (coagulation) is separated from the liquid, which is dried in a drum vacuum dryer. Used alcohol is disrupted and reused. From - 2 tons of dried apple pomace receive 100 kg of dry pectin, the allocation of which requires 75 dm³ of alcohol (irreversible losses).

Most canned fruits after production require aging for 10-15 days. During this time, the concentration of syrup or pouring is aligned between the fruit and the liquid part of the canned food. In addition, during this period, there is mainly a lack of canned food [2].

Canned goods are stored in the company's warehouse in boxes or without placing them in boxes, with packaging in boxes after quality assessment immediately before sending them to consumers. Boxes are placed on sturdy mobile trays (pallets), the height of which is not less than 0,15 m with the formation of stacks. The height of the stack for boxes with metal cans should not exceed 5 m. the width of the stack in heated warehouses 6 - 10 boxes, in unheated - 3-4. Each stack is formed by the assortment and batches of canned goods. Each stack hangs a tag with the name of canned goods, the number of boxes and cans in the party (stack), the date of manufacture and delivery of canned goods to the warehouse. Between the stacks along the length of the warehouses and

opposite the doors provide the main passages at least 2.0 - 2.5 m wide. Products are stored in well-ventilated warehouses on wooden racks or pallets at a relative humidity of not more than 75%.

Storage temperature of fruit and berry canned products in all types of containers - from 0 to 25°C; fruit, berry and vegetable canned semi-finished products, as well as canned chemical preservatives in all types of containers - from 0 to 25°C.

Shelf life of compotes from the date of manufacture in months no more

1. with vitamin C - 12;
2. of dark-colored fruits and berries - 18;
3. other compotes - 24;
4. in tin containers - 12;
5. in aluminum containers - 24.

The products are transported in a contactless way by specialized tank cars and in a container way - by car-vans, cars with on-board platform (if necessary - with tarpaulin shelter), as well as in containers [3].

Canned goods in tin and glass containers are served for transportation packaged in boards and cardboard boxes and wooden cages. Banks are placed so that the possibility of moving them is excluded. Horizontal rows of cans in the box are shifted cardboard or solid paper gaskets.

- To avoid combat, the glass bottom and side walls of the cage must be laid out with a packaging material.

- Wooden boxes and cages should be firmly clogged and tightly wrapped on the ends with a knitting wire or metal packaging tape, which ensures the integrity of the packaging when transporting boxes that are stacked.

- Glass jars, glasses, bottles, vials with products when packaged in boxes are separated from each other by partitions forming cages to prevent glass fighting. Cardboard partitions should be made of thick cardboard.

In stores, canned goods should be stored in dry, well-ventilated rooms or chambers with a temperature of 0-20° C and relative air dampness not higher than 75% no more than 30 days. With prolonged storage of canned goods in the warehouse or in the store periodically check stocks and discard bombing, heavily deformed jars.

The consumer should not store canned food in the light, since the color of the product worsens, and the prolonged exposure to light can be reflected [4]. Canned goods cannot be stored next to heating or heating devices. Canned goods in a sealed container should be stored in a cool dry room at temperature of +15+20° C. In a raw room, tin lids that appeared at the same time the smallest holes can rust the cause of canned food spoilage due to penetration into the banks of microorganisms with air. Higher temperatures (+25...+40°C) contribute to the reduction of the taste of canned goods, since at such a temperature accelerates a number of chemical processes occurring in products. Storage of canned food at low temperatures (up to 0°C) is quite favorable. However, storage is lower than 0°C, when the contents of the cans can freeze and the liquid part will turn into ice, it is absolutely undesirable. First, it can burst banks.

In sealed cans, most sterilized canned food can be stored for a long time at normal room temperature. You cannot store canned food for a long time at a very high temperature (for example, near heating devices). Freezing is not allowed for fruit compotes, because after defrosting the vegetables and fruits become faded. The room where the canned goods are stored should be dry, because in a room with high dampness the jars and lids are easily subjected to rust.

From apple extracts, fruit powder is obtained, which is used in the confectionery, bakery and food concentrate industry for the manufacture of sweets, waffles, cakes, bread. Fruit powders can be obtained by sublimation drying. Apple extracts from apples is crushed, frozen in liquid nitrogen, freeze-dried in a nitrogen atmosphere, crushed in a frozen form using liquid nitrogen and packed in airtight packaging in nitrogen gas. Loss of vitamin C and carotene is minimal (2 - 6%). The humidity of the powder is 1,7 - 1,9%; the content of total sugar - 26.3 - 52.7%, pectin - 3.6 - 10.7, fiber - 7.1 - 13.8% [5].

Recycling of fruit seeds is carried out as follows: the shell, the content of which 69-88% of the mass of the seeds is used to produce the powder as a product used in the production of activated carbon or as a filler of special adhesives. Halva, marzipan masses and almond substitute, feed flour, oil are obtained from the kernels.

The stones isolated after crushing the fruit and separating the juice are washed on a drum or other washing machine, then immediately dried in dryers to a humidity of 13%, because storage longer than 7 - 8 hours leads to their mold, to darkening of the kernels. In washing machines, pulp remains are separated from the bones. Moisture residues are separated on the vibrating screen.

In mine, belt, vortex or drum dryers, the seeds are dried 8 hours after washing. Drying temperature is 80 - 120°C for 30 - 70 minutes.

The bones are cooled by a stream of cold air to a temperature of 30 - 40°C and packed in paper or linen bags.

Dried seeds are packed in bags up to 30 kg and sent to special plants, where they extract the kernel from them and used for food purposes. Activated charcoal is produced from the shell. Large batches of pits are allowed to be transported in carriages in bulk [6].

Storing compotes at home usually does not cause problems. The range of optimum temperature for compote is quite wide - from 2 to 14°C. The maximum shelf life of freshly cooked compote is no more than 2 days at a temperature of 2°C. And with an increase in temperature, accordingly, this period decreases significantly, up to 5 hours, if it is left at room temperature.

After the compote has cooled, it is left in a glass container or in plastic bottles. Of course, the reuse of plastic bottles is not welcome in the household, but when the compote needs to be frozen, it is impossible to do this in a glass container (in the freezer the glass will burst). By the way, as for storing compote in the freezer it is a great way to extend the life of the drink for several months.

If a home compote is planned to take in the near future, then the container with it is better to leave in the refrigerator or in the coolest place in the house. Of course, it should not be open.

It is enough to simply determine when the home drink has deteriorated - this will tell the foam on its surface, clouding, bubbles and the characteristic smell of fermentation. Do not rush to get rid of acid compote; it can be used to make wine.

The issue of waste disposal is important in the development of canning production in Ukraine. To date, many efforts have been made to ensure that any production has a small amount of waste, but these waste, as can be judged from the above, serve as raw materials for food powder, dyes, ethyl alcohol, lime wine, tannin and feed preparations. Modes of refrigeration storage of finished fruit canned food require improvement.

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