Canned Cape Gooseberries

Agricultural Processing Brochure

Brochure content:

South African farmers facing current economic realities are searching for new options to maintain and expand their businesses. One of the many opportunities to grow markets, turnover and profits is to add value to farm produce. Options need to be selected carefully based on sound information and knowledge of the opportunities presenting themselves.

Introduction:

Product group: Cape gooseberries

The Cape gooseberry is the fruit of the genus Physalis peruviana of the family: Solanaceae. Synonyms for the Cape gooseberry are: Goldenberry, Husk Cherry, Peruvian ground Cherry and Poha, Poha berry.

Cape Gooseberries are best adapted to areas with no frost and temperatures below 30°C. The Cape gooseberry is an annual in temperate regions and a perennial in the tropics. Fruit grows on shrubs 1 - 1.5 m high, with many branches, and small, heart-shaped leaves. The flowers are bell-shaped. The berries are enclosed in a straw-colored husk and take 70 - 80 days to mature.

The berry is smooth, waxy, with an orange-yellow skin and juice pulp with small yellowish seeds.

The fruits are ideally suited for canning and can be used in desserts and baking products. The Cape gooseberry may also be dried.

Product description: Canned Gooseberries

Fresh Cape gooseberries can be canned in either water or a sugar syrup. The canned gooseberries in water are used as Danish, fruit pie fillings and toppings, while the canned berries in sugar syrup can be used as dessert fruit.

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Please note the **Disclaimer** on page 4

Process description:

Harvesting of Cape gooseberries

The berries are picked by hand when ripe, which is when the husk covering the fruit turns from green to a straw or dry grass colour and some fruits start to fall from the plant.

Separation of Cape gooseberries

The harvested berries are separated from their husks. Any foreign materials such as sticks, stones and leaves are also removed.

Washing of Cape gooseberries

The berries are washed in an agitated or non-agitated water bath. The gooseberries are gently dumped into a tank containing cold, potable water (0 - 5 °C). The water acts as cushioning against any possible mechanical damage, while cooling and cleaning the gooseberries. The clean gooseberries are delivered to the sorting tables/belts via perforated racks/conveyors that also allow draining of cleaning water. The potable water may be recirculated after filtration and treatment.

Sorting and inspection of Cape gooseberries

This is done to select the best suitable raw materials for manufacturing the value-added end product.

The clean gooseberries are spread out on sorting tables and inspected for defects. Any damaged, spoilt, immature or misshaped berries are removed manually.

Filling and exhausting of cans with Cape gooseberries

Suitable cans are filled with raw but prepared gooseberries and hot potable water or syrup at a temperature between 88 and 96°C is added. The filled containers are exhausted with steam at 100 °C for 5 - 6 minutes. The steam reduces the oxygen in the headspace of the tins, which may cause some undesirable changes in the product such as discoloration.

The containers are sealed under steam injection. Upon cooling, a partial vacuum is formed in the headspace. If the exhaust is insufficient, the berries will collapse during sterilisation, releasing the air within the berries, with the result that the vacuum is not maintained, and the product may spoil.

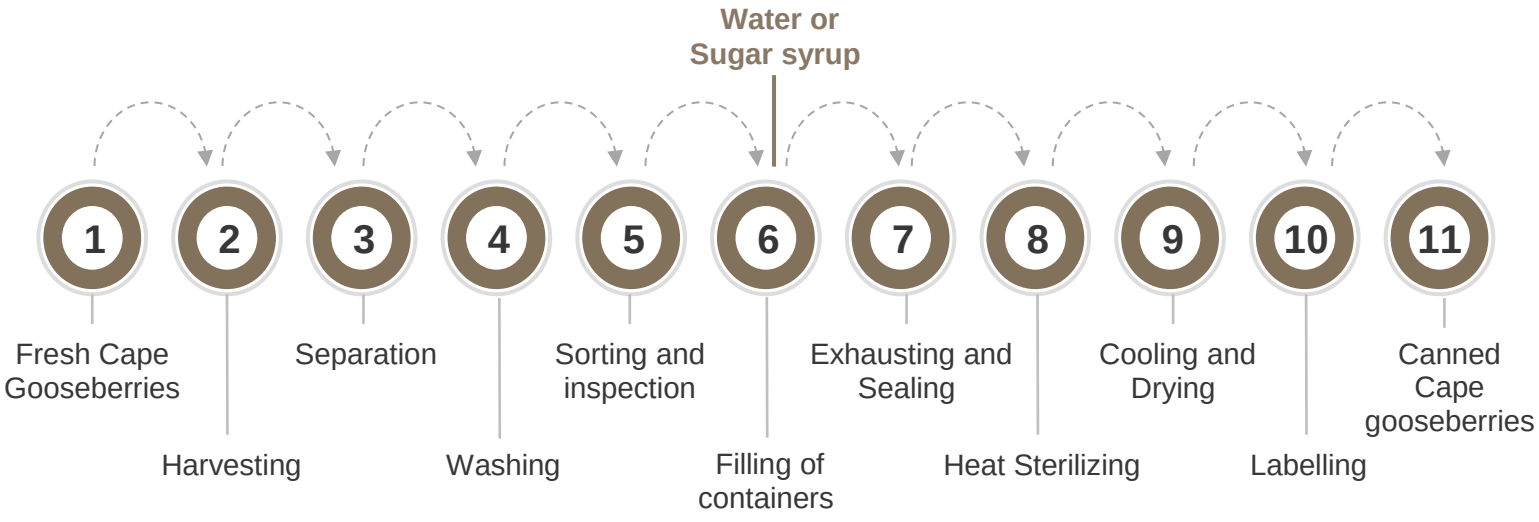
Heat sterilisation of Cape gooseberries

Sterilisation refers to the complete destruction of all micro-organisms in food. Most food products are, however, only commercially sterile. This means that the degree of sterilisation only destroys pathogenic and toxin-forming organisms as well as all other types of organisms which, if present, could grow on the product and produce spoilage under normal handling and storage conditions.

The canned gooseberries require a heat sterilisation treatment to stabilise the product. Sterilisation is done in vertical or horizontal retorts.

TAKE NOTE: It is strongly recommended that each processor adapts the processing time and temperature to his own unique circumstances as prescribed by a heat processing specialist.

Process overview



Fast facts

Cooling of cans to:

37°C

Cold potable water mist spray is used to cool the cans to **37 °C**. Casing and stacking of cans at temperatures **substantially above 37 °C** may result in quality deterioration known as **"stack-burning".**

Cooling and drying of cans

The cans must be water-cooled as soon as commercial sterility of the product has been reached to prevent over-cooking of the product, which could spoil the appearance, flavour and texture of the product.

Cold potable water mist spray is used to cool the cans to 37 °C. Casing and stacking of cans at temperatures substantially above 37 °C may result in quality deterioration known as "stack-burning". This involves too slow cooling and spoilage by thermophilic bacteria.

The cooled cans are air-dried by fans before being labelled and placed in storage.

Labelling of canned fruit products

Care must be taken to ensure compliance with the regulations with regard to composition and correct description of the contents, as well as labelling of products in the Republic of South Africa.

Legislation for fruit products

Labelling in South Africa is controlled by legislation. Anyone who wants to use the information provided in this document must familiarise him/herself with all the applicable laws that apply to the producing, processing, manufacturing and storage of the products referred to in this document

Other processing options

Dried Cape gooseberries have an intense fruit flavour and can be incorporated into dry baking mixes or other confectionery products.

Energy Advisory Services:

Eskom's role is to aid the client with basic information in the decision making process. Thereafter the Eskom Advisor will fulfil the role of energy advisor as part of the team that the farmer selects.

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- Optimising energy use patterns in order to grow businesses and industries

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