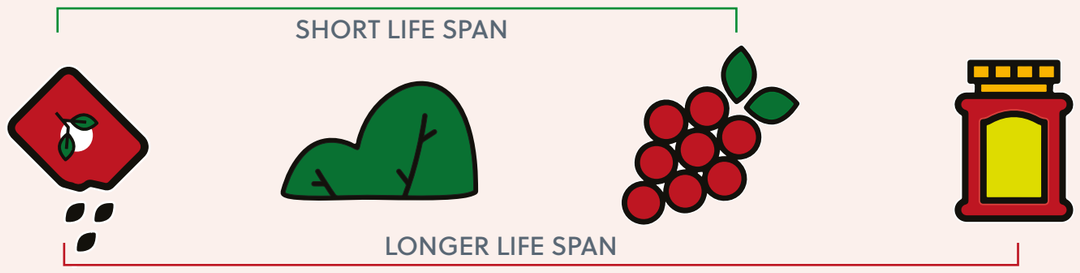
GREEN TECHNOLOGY

SMALL-SCALE FOOD PROCESSING

FRUITS, VEGETABLES, DAIRY PRODUCTS



Food processing refers to a variety of food saving practices that help preserve food by extending its shelf life and reducing waste at the consumer level. Modern infrastructural and technological improvements are facilitating this process.

PROCESSING PRESERVATION METHODS:

FERMENTATION · DEHYDRATION · CANNING · CONCENTRATION · REFRIGERATION

METHODS USED TO PREPARE FOOD PRODUCTS BEFORE PROCESSING:

WASHING · PEELING · SORTING · BLANCHING · PASTEURIZATION

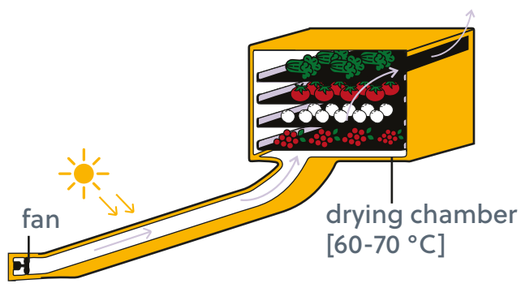
1. TECHNOLOGY DESCRIPTION

1. FRUIT & VEGETABLE PROCESSES

DRYING

One of the oldest & cheapest methods.

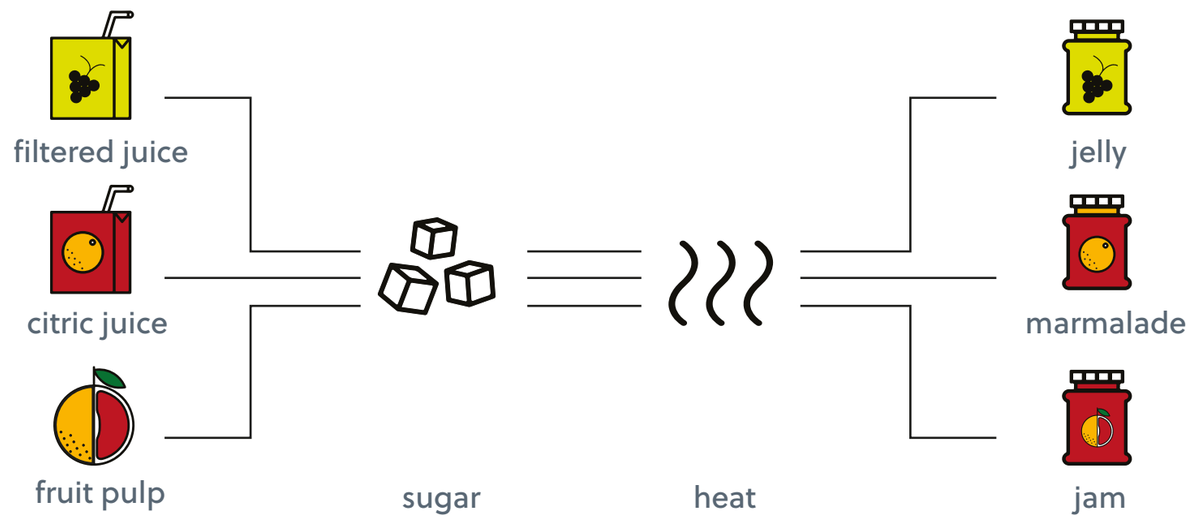
Modern drying methods are used to combat the disadvantages of direct sun drying and to protect the quality of exposed produce from contamination. One example is solar drying.



JAM & JELLY MAKING

can preserve fruits from months to years, if stored properly.

The high acidity [pH≈3] & sugar content (68 - 72%) prevent the contamination & growth of molds after opening jars.

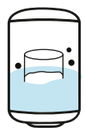


2. DAIRY PRODUCTS PROCESSING

PASTEURIZATION

An essential step in milk processing.

It's the process of heating milk to destroy harmful bacterias & preserve dairy products.

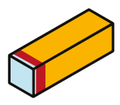


Batch or vat pasteurization is done through indirect heating of milk in double jacket boilers filled, with water.

- Fat
- Moisture
- Milk

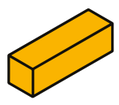
BUTTER & GHEE PREPARATION

First, skim the milk (separating the cream from milk) by centrifugal or gravitational separation.



BUTTER

A butter chum is used to churn the cream until the formation of butter granules



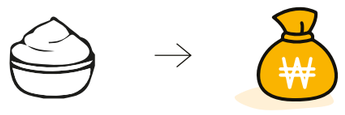
GHEE

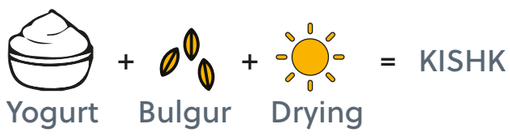
Butter is heated over slow fire until all moisture is removed

YOGURT

Result of milk fermentation by bacteria to form lactic acid.

Sub-products of yogurt

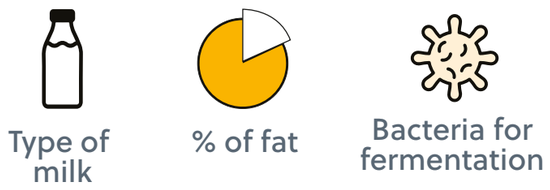




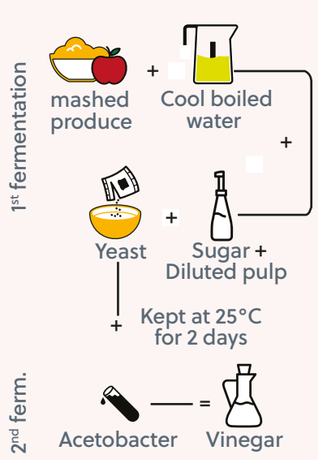
CHEESE

Based on protein coagulation in milk to form curds & then separate from the liquid whey.

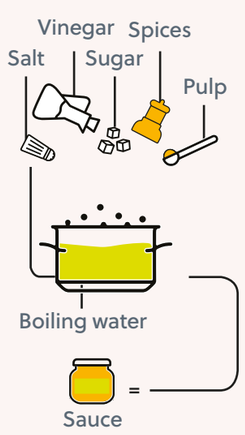
The diversification in flavor & texture is due to variations in:



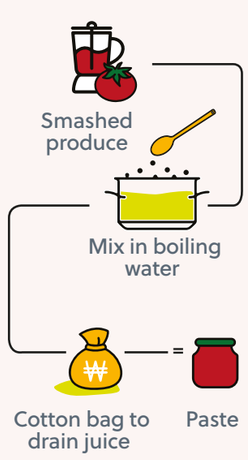
VINEGAR MAKING



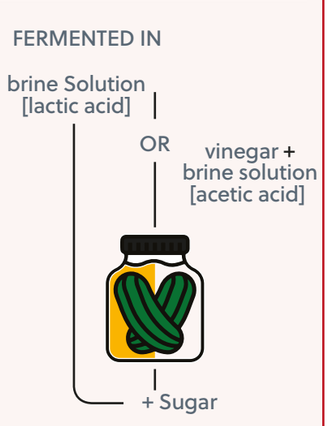
SAUCE MAKING



PASTE & PUREE MAKING



PICKLE MAKING



Advantages	Points To Consider
• Ensures food security • Provides new employment opportunities & creates chances for exporting traditional products to international markets. • Reduces post-harvest losses & uses imperfect or excess produce • Ensures variety of new products & adds nutritional benefits. • Guarantees more profitability than fresh products.	• Ensure proper training and qualified experience of users. • Raw materials, water, and packaging material. • Consider some potential nutrient loss or increase in unhealthy components • Ensure proper handling and sanitation to avoid contaminations leading to health risks

ASSOCIATED GREEN PROCESSES

Food processing requires considerable amounts of energy and water in the different stages of product preparation. Green alternatives are key to reducing this dependence on non-renewable energy sources while preserving natural resources, protecting the environment and creating economic benefits.

EXAMPLES OF GREEN TECHNOLOGIES

Renewable Energy
ex. solar dryers, biomass fueled dryers, solar photovoltaic panels, wind turbines

Rainwater Harvesting

Water Treatment & Usage

Environmentally Friendly Packaging

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