

Stabilisation techniques to prevent food waste



Crop

Tomato
Solanum lycopersicum L.
 Chicory (Belgium Endive)
Cichorium intybus L.
 Cauliflower
Brassica oleracea convar. botrytis var. botrytis
 Brussels Sprouts
Brassica oleracea convar. oleracea var. gemmifera
 Green bean
Phaseolus vulgaris L.
 Sweet Pepper
Capsicum annuum L.
 Barley
Hordeum vulgare L.

Croppart

Fruit
 Seed
 Leaf

Application area

Food & feed

Status

Research stage

Public availability

Semi-public

Relevant plant compounds

carbohydrates

proteins

Vitamins and minerals

Description

Fresh fruits and vegetables are vitally important in the human diet as they are a primary source of proteins, carbohydrates, vitamins, dietary fibers, minerals, and minor but important bioactive nutrients such as e.g. polyphenols.

One of the most limiting factors in marketing of fresh fruits and vegetables is their short shelf life. They are highly perishable due to the biochemical reactions involved in metabolism, risk of infection with pathogenic microorganisms and environmental conditions of storage.

If the harvested fruits and vegetables are not instantly processed and preserved using proper methods, the economic loss resulting from their spoilage can be substantial.

In order to meet the increasing consumer demand for fresh-like, natural, and additive free and minimally-processed fruits and vegetables and to reduce economic loss, various processing and preservation technologies have been extensively investigated to extend the shelf life and to preserve the quality of fresh fruits and vegetables.

Many physical preservation methods such as freezing, canning, and drying that rely on heating and cooling operations have been explored by [VIVES](#) and [ILVO](#) within the BioBoost project. Although these technologies ensure a high level of food safety, the heating and cooling of fruits and vegetables can result insignificant quality losses. For instance, the colour, flavour, and texture of fruits and vegetables subjected to heating and/or cooling processes can be irreversibly altered.

Pros and cons

-  Upgrading of residual flows
-  Reduction of food waste

Used conversion methods

Mechanical-Physical processes

Milling

Biochemical processes

Aerobic/ Anaerobic fermentation

Resources

<https://www.bioboosteurope.com/en/publications> Initiative website

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