BioBoost
Accelerating biobased horticulture

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

Report Stabilisation Methods And Techniques Final Article