

a taste sensation...

Strawberry Jam

New technology from C-Tech Innovation

The Jam displayed improved **colour**, **taste** and increased levels of **vitamin C**.

How do you increase quality and improve the taste of Strawberry Jam?

Traditional jam production on a large scale means extended cooking times which result in the destruction of flavour, colour, vitamins and texture. This is exacerbated by the sensitivity of strawberries as a raw material. Furthermore, unwanted changes often only become clear after prolonged storage.

Popular but Sensitive...

The strawberry has a complex composition in comparison to many other fruits. This means that preserving its original and popular flavour and colour can be a real challenge.

Short thermal treatments and low temperatures are critical for retention of flavour compounds and for retention of vitamin C.

Strawberries also contain structural and colour degrading enzymes, which must be inactivated during processing to ensure and preserve the ongoing quality of the jam during storage. The brown staining often seen in strawberry jam can be related to the presence of some of these enzymes.

Sufficient time at temperature is therefore required for enzyme inactivation.

The Solution Emerging Technologies

The quality problem can be solved with an emerging heat treatment, ohmic heating. Using this method the jam is heated very quickly and completely evenly and tight control on the time temperature history can be obtained.

The Science

Ohmic heating works by passing an electric current directly through the jam heating the jam volumetrically by I^2R losses and without heat transfer from hot heat-exchange surfaces.

The Way Forward

The Benefits

A recent study compared the conventional production of strawberry jam with the ohmic heating method. Results from the comparison revealed that jams made by ohmic heating and then stored for four weeks at room temperature displayed better colour, taste and increased levels of vitamin C. The jam also retained more of the individual strawberry pieces and scored best for taste, with the natural strawberry flavour not being masked by the sugary flavour.

The equipment used in ohmic heating can be easily controlled, and the technology can be adapted to other foods, for example soups, juices, fresh berries, sauces.

The Future looks Rosy

The potential for ohmic heating is very significant and its convenience, versatility and controllability are real benefits. The technology is already successfully used in the UK, Europe, Japan and Northern America.

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