

New process for creating storage-stable, 12-month non-perishable „ESL-H-Milk“

Field of application

New process for creating storage-stable, non-perishable milk. It should be possible to store this so-called ESL-H milk at room temperature and at even higher temperatures for at least five and up to 12 months, and nevertheless have good product characteristics with respect to taste, vitamin content and coloration.

For many dairies, and especially for the retail trade, a long shelf life without noticeable loss of quality means generally more flexibility and especially cost savings if, for example, deliveries and stocks can be combined. Long shelf life is especially advantageous for export into countries that are far away, such as Asian or North African countries. Furthermore, on the transport routes to such countries, there are demanding climatic conditions.

State of the art

In addition to the common so-called non-perishable or H-milk, which can generally be stored closed at room temperature for 6 months at the longest, there is so-called ESL-milk. However, this common ESL-milk can generally be stored only for up to 30 days, and this is only when refrigerated and unopened.

Furthermore, there is also milk with a shelf life of 2 years. However, this milk undergoes undesirable color and especially sensory changes during processing, as well as significant vitamin losses. Additionally, it cannot be produced continuously but only through more time-consuming batch processes.

Innovation

At Hohenheim University, it has been possible to overcome the above-mentioned disadvantages of the current state of technology thanks to an innovative process for creating a storage-stable, non-perishable and yet good-tasting milk through two heat treatment steps. The heating conditions can be selected depending on the bacterial load of the raw milk and, as compared to the familiar processes, this milk demonstrates comparably long shelf life at comparatively lower temperatures. The activities of the enzyme systems in the milk can thus be avoided safely so that no bitterness or other negative properties arise during storage for up to 1 year.

Your advantages at a glance

- ✓ Shelf stability of milk processed this way of up to 12 months at room temperature and at even higher temperatures
- ✓ Nevertheless, good taste and visual properties
- ✓ Minimal thiamine loss (“Vitamin B1”)
- ✓ Reliable inactivation of the milk’s own enzyme plasmin
- ✓ Reliable inactivation of other existing bacterial enzymes
- ✓ Procedure can be performed continuously
- ✓ Milk made this way is especially suitable for export to countries far away

Technology transfer

Technologie-Lizenz-Büro GmbH is responsible for the management of this technology and assists companies in obtaining licenses.

Patent portfolio

German patent application is pending.

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