

Deep-Freezing of French Fries

Cooling and Deep-freezing of Industrially Pre-Fried French Fries and Similar Products in a Simple Way

Most of the industrially pre-fried French fries in Germany are sold as fresh products (refrigerated between +4 and +10 degrees centigrade) to restaurants, big canteens and snack bars. If they are kept refrigerated until consumption, they will not, as a rule, go bad for seven days. Also in the neighbouring West European countries fresh goods are more popular than deep-frozen products. In the United Kingdom and the USA, however, it's deep-frozen goods that occupy the first place.

There are cooling tunnels with cooling aggregates and deepfreeze tunnels. The purchase of such tunnels requires, however, high investment sums.

In the following we describe, as far as cooling/deep-freezing is concerned, a more simple but more personnel-intensive solution.

The products to be deep-frozen are put e. g. on special perforated aluminium sheet vessels with continuous borders. The thickness of the French fries' layers on the sheets can be varied (abt. 30 mm). The temperature of the French fries to be deep-frozen, after the frying process and cooling on a cooling conveyor belt or cooling table, will amount to approx. 10 degrees centigrade above the ambient temperature.

After that, the sheet vessels are placed on trolleys with shelf units to be pushed into a specially-provided deep-freezing or shock-freezing room at a temperature of approximately -30 to -38 degrees centigrade.

Perhaps there is a cooling room for fresh goods that should have a temperature of abt. +4 degrees C. This can serve as temporary storage place for the trolleys, in order to effect the cooling of the products, before deep-freezing.

After cooling the French fries, the product will be packed in cartons, manually or by machine, in the above mentioned cooling room. After that it will be stored in a cooling room with a temperature of approx. - 18 degrees centigrade.

If fresh products are produced, their temperature must not exceed +10° centigrade on delivery. They will be placed on special trolleys with shelf units, in open 5-kg or 10-kg cartons, to be put in a cooling room with a temperature of abt. + 4° C. The cartons will not be closed until the French fries have cooled down.

As far as the above described procedures and products are concerned, we refer to French fries with a moisture content of abt. 65% to 68% in fresh goods and 68% to 73% in deep-frozen goods.

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