

Abstract

Method and System for Directly Heating a Protein-Enriched Milk Product by Introducing Steam into Said Milk Product

The invention relates to a method and a system 1000 for directly heating DE a protein-enriched milk product P by introducing steam D into said milk product P, the direct heating DE taking the form of an infusion IFV or injection method IJV. The object of the present invention is to provide a method of the generic type and a system for carrying out the method which have the effect of significantly extending service time in the method process or in the system, and in doing so ensuring a content of non-denatured whey proteins in the treated protein-enriched milk product greater than that obtained in the prior art. With regard to the method, the object is solved in that

- the milk product (P) which is preheated and kept at temperature is indirectly cooled (K) prior to direct heating (DE) by means of a recuperative cooling step from the preheating temperature (TVE) to a cool-down temperature (TK) with a temperature difference (ΔTK) in a range from 5 K(elvin) to 15 K ($\Delta TK \leq (5 \text{ to } 15) \text{ K}$),
- the direct heating (DE) from the cool-down temperature (TK) to the high pasteurization temperature (THE) is controlled by means of direct heating setting parameters which are known per se, and
- in accordance with feature (d), the milk product (P) is cooled by flash cooling (K) from the high pasteurization temperature (THE) to a necessarily required exit temperature (TA).

(Fig. 2).