عنوان مقاله:

Characterization of Thermophysical Properties of Iranian Ultrafiltrated White Cheese : Measurement and Modeling

محل انتشار:

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خلاصه مقاله:

Information on the thermophysical properties of the Iranian ultrafiltrated (UF) white cheese is very limited. In this research, those thermal properties determined experimentally were thermal conductivity, specific heat, density and water activity. The thermal conductivity and specific heat of Iranian ultrafiltrated white cheese (IUFWC) ranged from ۰.۴۴۷ to ۰.۴۸۰ W m-۱ ℃-۱ and from ۳.۸۷۱ to ۴.۰۰۵ kJ kg-۱ ℃-۱ for temperatures varying from ۱℃ to ۲۳℃ and from ۱℃ to ۴۰ ℃, respectively. Both thermal conductivity and specific heat increased with moisture content and temperature. A three-step model predicting thermal conductivity as a function of cheese composition and temperature was developed based on the parallel and Maxwell models. The effective thermal conductivity predicted by the model developed was in good agreement with the experimental data. The modeling of density and water activity using non-linear regression concepts showed that density was highly affected by salt concentration and temperature; water activity was also strongly dependent on salt concentration and moisture content.

کلمات کلیدی:

Modeling, Salting, thermophysical properties, UF cheese