The thermal conductivity of food is important not only for the process design, but also for the control prediction of the various changes that occur in food during thermal processing, and accurate data of thermal conductivity are required both for existing foods, as for new products and processes. The objective of this study was to determine the thermal conductivity of milk products (yogurt, fermented milk and dairy drink) at high temperatures and compare the data obtained experimentally with values estimated by structural models in the literature. The method used was linear heating probe which was calibrated with 40% sucrose solution at temperatures of analysis. Models in series, parallel and Maxwell-Eucken were used to determine the theoretical conductivities. The experimental data did not fit the model completely, and they were subjected to regression analysis to adjust the functions that enable the direct calculation of this property using only the knowledge of the history of temperatures during heat processing. The thermal conductivity ranged from yogurt 0.435 W/mK to 0.467 W/mK, fermented milk 0.499 W/mK to 0.532 W/mK, and the dairy drink of 0.507 W/mK to 0.526 W/mK, at temperatures of 5-25°C, respectively.

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