

Abstract:

Accurate design of thermal processes (e.g. cooling, heating and drying) requires knowledge of the thermal properties of the material. A transient line heat source method for measuring thermal conductivity of food products and packaging materials is described. The thermal conductivity of kiwifruit was experimentally investigated as a function of dry matter (moisture content). Results show that over the dry matter range investigated, the thermal conductivity decreased with increasing dry matter consistent with the decreasing moisture content. The thermal conductivity values measured experimentally using the developed system were in good agreement with the literature values.