

Abstract

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Experimental and Numerical investigation of Air Temperature and Velocity Distribution within a Refrigerated container

Quality and safety of perishable products such as fruits and vegetables during transportation is dependent on the air temperature, temperature fluctuation and air velocity distribution. In this study a full scale model of a refrigerated container was constructed in order to investigate experimentally the airflow patterns and temperature distribution within the refrigerated container. A numerical investigation is carried out using computational fluid dynamics (CFD) code, Fluent, in order to validate and study the air velocity and temperature distribution using different configurations (duct system) inside the refrigerated containers. The results showed that adding a duct system improves the air velocity and temperature distribution within the chilling room