

## 3D CFD Modelling of the Airflow and Heat Transfer in Cold Room Filled with Dates

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**Abstract :** A transient three-dimensional computational fluid dynamics (CFD) model is developed to determine the velocity and temperature distribution in different positions cold room during pre-cooling of dates. The turbulence model used is the k- $\omega$ ; Shear Stress Transport (SST) with the standard wall function, the air. The numerical results obtained show that cooling rate is not uniform inside the room; the product at the medium of room has a slower cooling rate. This cooling heterogeneity has a large effect on the energy consumption during cold storage.

**Keywords :** CFD, cold room, cooling rate, dDates, numerical simulation, k- $\omega$  (SST)

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