

**Title** Modeling on heat and mass transfer in stored wheat during forced cooling ventilation  
**Author** Yuancheng Wang, Haifeng Duan, Hao Zhang and Zhaohong Fang  
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#### **Abstract**

A mathematical model based on the theory of heat and mass transfer in porous media was developed to simulate the evolution of grain temperature and moisture content in a wheat storage bin during ventilation with cooling air at the constant temperature and humidity. Unlike the previous works on this aspect, the present work was not focused on cooling the stored grain by ventilation with ambient air, but with the refrigerated air. Validation was performed by comparing between predicted and measured grain temperature and grain moisture content for two cases. Predicted data were in reasonable good agreement with measured ones. The model and the parameter values used in the model are applicable for predicting temperature and moisture of stored grains under ventilation conditions.

<http://www.springerlink.com/content/a411327408254138/fulltext.pdf>