Universitatea de Ştiinţe Agricole şi Medicină Veterinară
"Ion Ionescu de la Brad" din Iaşi

Revista Lucrări ştiinţifice
SERIA AGRONOMIE

A finite difference approach of freezing phenomena

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The paper tackles the issue of heat conduction with phase-change (the moving boundary problem). This class of phenomena is characteristic to food freezing and ice formation. An original numerical technique using finite differences is presented, which allows knowing at any moment the temperature field in the phase-change material. Consequently, the total freezing time is implicitly determined.