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home **page** about **us** contact 

us

Table of Contents

IN PRESS

RAE 2013

RAE 2012

RAE 2011

RAE 2010

RAE 2009

RAE 2008

RAE 2007

RAE 2006

RAE 2005

RAE 2004

RAE 2003

RAE Home

Editorial

Board

For Authors

- **Authors Declaration**
- **Instruction to Authors**
- **Guide for Authors**
- **Copyright Statement**
- **Submission**

For Reviewers

- **Guide for Reviewers**
- **Reviewers Login**

Subscription

Res. Agr. Eng.

M. Božiková

Thermophysical parameters of corn

Res. Agr. Eng., 49 (2003): 157-160

This article deals with thermophysical properties of nutritive raw materials particularly of corn and wheat granary mass. It is necessary to know thermophysical performance of granary mass for protection of quality of technological process by processing to final products. Granary mass consist of grains complex of specific kind. It is non uniform material in microscopic and macroscopic structure. There are enacted biophysical and physiological processes. Heat transfer can not be isolated by solid transfer and heat – moisture transfer. It means that specification of granary mass and granary fragments is difficult to determine. We researched thermal properties of fragments of corn and wheat grain, concretely corn and wheat flour. In the first series of measurements we measured relations of thermal conductivity to the moisture content in range (2 ÷ 18) % for two different samples

– corn flour and wheat flour. Function $f(\rho)$ (to bulk density ρ , samples had identical moisture content 6.5%. For size of corn and wheat grains in range (0.063 ÷ 0.5) mm this is polynomial function. Measured results are corresponding with results at present literature (Ginzburg et al. 1985).

Keywords:

thermal conductivity; thermal diffusivity;
moisture content; bulk density

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