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home [page](#) [about us](#) [contact](#)



US

Table of Contents

IN PRESS

RAE 2014

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

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. Stasiak

Determination of elastic parameters of

grain with oedometric and acoustic methods

Res. Agr. Eng., 49 (2003): 56-60

Values of modulus of elasticity E and Poisson's ratio were determined with two methods adopted from geotechnique. First approach used was a method proposed by Sawicki (1994). This type of examination was applied to estimate values of E and ν for wheat and rapeseed beddings for five levels of moisture content ranging from 6% to 20%. Modulus of elasticity E of wheat was found to decrease with an increase in moisture content. With the second method values of E were determined based on measurement of shear wave velocity. Tests were performed for bedding of wheat and rapeseed under equilibrium moisture content. Values of modulus of elasticity were found to depend of hydrostatic pressure and were higher than those determined in uniaxial compression test.

Keywords:

grain; wheat; rapeseed; elastic parameters; uniaxial compression; shear wave velocity

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