

International Agrophysics

Polish Journal of Soil Science

Acta Agrophysica

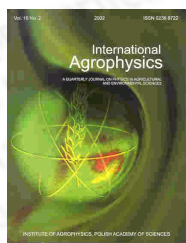
Instytut Agrofizyki

International Agrophysics

General information

Issues

Search



International Agrophysics

publisher: Institute of Agrophysics
Polish Academy of Sciences
Lublin, Poland

ISSN: 0236-8722

vol. 22, nr. 3 (2008)

[previous paper](#) [back to paper's list](#) [next paper](#)

Influence of moisture content on the stress relaxation response of amaranth seeds

[\(get PDF\)](#) Szot B.¹, Gołacki K.²¹ Institute of Agrophysics, Polish Academy of Sciences, Doświadczalna 4, P.O. Box 201, 20-290 Lublin 27, Poland² Faculty of Agricultural Engineering, University of Agriculture, Doświadczalna 50a, 20-236 Lublin, Poland

vol. 13 (1999), nr. 3, pp. 387-390

abstract In the present study relaxation test was used to evaluate the influence of moisture content of amaranth seeds on their mechanical parameters. The first approximation was to assumed linear viscoelasticity of the studied material. A generalised Maxwell model was suggested for the description of seeds reaction to loading. The model took into consideration relaxation that appeared during preliminary deformation. Relation between seed moisture content and the parameters of the model, energy and maximum deformation was considered. Significant differences were found in the course of stress relaxation of the samples in the studied moisture range (9.5-34.8%). A strong influence of moisture content on both energy and maximum deformation was observed in the first phase of the test.

keywords amaranth, stress relaxation, visco-elasticity

Instytut Agrofizyki PAN
ul. Doświadczalna 4
20-290 Lubline-mail: sekretariat@ipan.lublin.pl
tel.: +48817445061
fax.: +48817445067