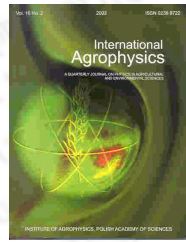


International Agrophysics
Polish Journal of Soil Science
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International Agrophysics

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

ISSN: 0236-8722

vol. 22, nr. 3 (2008)

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Strength characteristics and dilatation of food powders

(get PDF )

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vol. 16 (2002), nr. 3, pp. 183-189

abstract The strength characteristics of fine milk, agglomerated milk and potato starch were examined. Experiments were performed using the Jenike shear tester according to Euro-code 1 recommendations. The tester was 60 mm in diameter and the displacement velocity was 0.03 mm s⁻¹. A reference normal stress ranging from 30 to 240 kPa was applied. Experiments revealed a significant effect caused by shear stress vibration resulting from dilatation and hardening of the material during the slow shearing phase of these tests. The frequency of these vibrations were found to decrease with an increase in normal stress. Two components of the total strength were suggested: the physical friction strength and the extra component of strength caused by dilatation.

keywords food powders, Jenike tester, flowability, dilatation

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