# Agricultural Journals

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# AGRICULTURAL ENGENEERING

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**Editorial**

# Res. Agr. Eng.

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## Approximation of bruise spot volume in

# pears in plots against deformation parameters

Pears of different varieties were compressed between two flat rigid plates in loading/unloading tests. The bruise spots appearing after room temperature incubation were analysed manually, and bruise spot volumes were determined. The main parts of the paper discuss mathematical approximation of total bruise volume versus two deformation parameters defined in previous papers: hysteresis losses and degree of elasticity. The polynomial of the second order was used for this purpose, but success of this method depends on including some part of not-bruising results in the analysis. Characteristic values of hysteresis losses and degree of elasticity were used to determine the bruise index, the integral parameter, that is suitable for classifying the tested varieties as to tissue susceptibility to low-level bruising. The variety susceptibility to bruising decreased in the following order: Elektra, Erika, Vonka, Lucasova, Dicolor, Dita, Omega, Jana, Lada, Astra, Bohemica, and Delta.

## Keywords:

pears; bruising; compression; bruise volume; hysteresis losses; degree of elasticity; approximation of curve; quality

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