

Title New contact acoustic emission detector for texture evaluation of apples
Author Artur Zdunek, Justyna Cybulska, Dorota Konopacka and Krzysztof Rutkowski
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Abstract

A new contact acoustic emission detector (CAED) was developed for the instrumental texture evaluation of apples. The goal of this work was to determine the relations between instrumental parameters and sensory texture attributes, and to develop calibration models for prediction of the sensory texture of apples with CAED. Seven apple cultivars were used for the construction and validation of the models. CAED is particularly useful for evaluation of sensory crispness, crunchiness and hardness. There is also a significant correlation of acoustic emission counts with juiciness, mealiness and overall texture. Validation of the models indicates better prediction of these sensory attributes by total acoustic emission counts than prediction by puncture firmness in terms of variance explained, root-mean-square of a model prediction, and bias.