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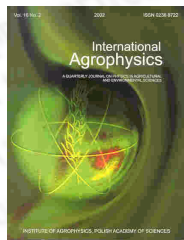
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Prediction of apple bruising based on the instantaneous impact shear stress and energy absorbed

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abstract Instantaneous impact shear stress together with the instantaneous energy absorbed were used to predict bruise volume in Golden Delicious apple. The prediction produced a linear relation between the predicted bruise volumes and the measured bruise volumes with a factor of proportionality (K) 1.08 and a coefficient of correlation (R) 0.949. Both the instantaneous impact shear stress and energy absorbed decreased during storage of the fruit, but the value of K was relatively constant. The value of K was also relatively constant for the impact with small drop heights, but it slightly increased with the variation of fruit mass.

keywords apple, instantaneous impact shear stress, instantaneous energy absorbed, predicted bruise volume, measured bruise volume