

#### Abstract:

With increasing demand for apple fruits of standardised and guaranteed quality the control of bruising becomes more and more important. Authors have developed an instrumental and processing method to determine the drop damage index (DDI) that by logistic model allowed to calculate the maximum drop height for which the probability of damage of the cultivar is equal to a fixed threshold (usually 10%). The aim of the work was to compare the bruising susceptibility of 'Golden delicious' apples by the means of the DDI in relation to CA storage time and to post-conditioning. Significant contribution to the bruising probability estimation was primarily found for the impact variable (the drop height) and secondarily for both the morphological (fruit weight and diameter) than the textural (absolute deformation at the value of maximum force, elasticity). Results showed a very high bruising susceptibility of the apples 'Golden delicious' at the harvest time that decreased of 4-6 times after five months of CA storage. A refrigeration treatment of ten days after CA storage and before impacts, increased significantly the resistance to impact bruise of the 23%, compared to the fruit bruising susceptibility measured directly after CA outgoing.