

Title Physical, physiochemical and electrochemical responses of 'Galaxy' apples to mild bruising

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Abstract

The study was set to evaluate physical, physiochemical and electrochemical quality parameters of 'Galaxy' apples bruised with a 50- or 70-N compressive force then stored at 15°C for 20 days. Weight and firmness loss were evident during the period of the storage regardless of the bruising. Deformation degree at bruised tissue was subjectively and instrumentally recorded. The 70-N force caused more bruising than the 50-N force as expected. Color changes in bruised fruit skin and flesh were significantly noted in the form of chromatic L *, a* and b* values. Darkening and reddening were found to be the most significant coloring symptom of bruised tissues. Bruising did not affect soluble solids, titratable acidity or vitamin C contents, all of which slightly decreased in the course of the storage. Electrochemical parameters redox potential, pH, P-value and resistivity quantified by Bioelectric Vincent method were not affected by bruising but they showed same changes during the storage period. The changes in redox potential and pH were however very subtle. P-value and resistivity, on the other hand, decreased considerably over time.