

Title Changes in rheological and food-chemical parameters in sweet melon varieties during the postharvest treatments

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Abstract

In Hungary the sweet melon consumption is relatively low comparing to another European countries. Hungarian traditional melon growing based on early, normal maturity, quick over-ripening varieties, in that case the harvest time and the time of the fresh consumption from local production are short. Chance to increase the Hungarian consumption of melon are the introduction and entering on the market the new, long-shelf life (LSL) varieties. The aim of our research to study the effect of the different storage system different post-harvest handling for the 4 type of sweet melon varieties in different maturity stage, as follows: Fiata and Proteo (LSL) from Cantalup type, Candy and Solarking (LSL) from Galia type. Melon fruits in each varieties were harvested at two maturity stage: 50 % and 75%. We stored the fruits in experimental storage chamber without any packing on 4 °C and 8 °C, at 90-95 % relative humidity, during 28 days. We sampled the stored fruits 4 times weekly. To simulate poor handling technique some fruits were dropped from height of 50 cm 2 or 4 times for studying the effect of bruising on fruit firmness and weight loss. The treated fruits were stored and measured same than other ones. Measurement methods were used for studying the changes in rheological parameters of fruits: weight of fruits - weight loss, skin and flesh firmness by penetrometer, stiffness by acoustic method. Several food-chemical parameters were detected from same samples of melon: refraction (TSS) % by refractometer, sugars - glucose, fructose, sucrose by enzymatic method, total acid by titrimetria, vitamin C by Spanyar method (dipiridil, FeCl₃, spectrophotometer) The results of the differences of normal maturity and long-shelf life varieties type are very clear, the long-shelf life varieties were far more keepable. Main results of our research work was the evaluation of the storage results of the melon fruits which were harvested in different maturity stage. Results of dropping-treatment, model of ill-treatment shown dramatically deterioration loss. After dropping immediately 27-48 % firmness loss were detected in fruits, the ratio increased during storage time. Our research results add some detailed information for the better storage results of the different melon variety types. We hope help to supply for longer season of our market with better quality melon product, which will increase Hungarian melon consumption.