

Title Evaluation of damage produced by tomato harvesters using the IS-100
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Abstract

The use of tomato harvesters has led to problems with fruit quality and a consequent drop in price for growers. We therefore evaluated fruit damage caused by different harvester models that work in Navarra (Spain). These models were: Guaresi G 8993, Gallignani Polaris, Sandei-FMC SL 150 T, P. Barigelli & B/RP and Pomac COSMO/SR. The objectives of this study were to evaluate the five harvesters in order to compare the different models and to determinate which elements caused the most damage. The impact levels produced in the harvester elements were measured using the instrumented sphere IS-100 manufactured by Techmark, Inc. Finally, tomato samples were taken during harvesting and were analysed using a TA-XT2 Texture Analyser and single Impact Equipment, in order to compare the IS-100 data and the mechanical properties of tomatoes. Although we didn't find differences in physical damage to fruit among the models of tomato harvesters studied, we did observe differences in their effects on some mechanical properties.