ABSTRACT: The aim of this work was to propose a modification of the SNK test for multiple comparisons using bootstrap resampling (SNKB) and evaluate the performance of the two versions of the test. The performance was evaluated by experimentwise error rates and power using a Monte Carlo simulation study considering normal and non-normal residuals. Both tests were exact under H0 and normality. Under H0 and non-normality, the tests controlled experimentwise error rates and, therefore, they are considered exact in most simulated cases. Under H0 partial, the SNK test was liberal in all simulated scenarios, while the SNK test was conservative, in most situations, and liberal in some cases. In general, as the differences between the means increased the power also increased under partial H0 and H1. Furthermore, the tests were applied to a real experiment designed to evaluate the chemical and mechanical controls of soursop pests in order to compare the results of both tests.

KEYWORDS: Multiple comparisons; resampling; Monte Carlo simulation; experimentwise error rates; power.