

**TEST STUDENT-NEWMAN-KEULS BOOTSTRAP:
PROPOSAL, EVALUATION AND APPLICATION
PRODUCTIVITY DATA OF SOURSOP**

Bruna de Oliveira GONÇALVES¹
Patrícia de Siqueira RAMOS²
Fabricio Goecking AVELAR¹

- **ABSTRACT:** The aim of this work was to propose a modification of the SNK test for multiple comparisons using bootstrap resampling (SNK_B) 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 H_0 and normality. Under H_0 and non-normality, the tests controlled experimentwise error rates and, therefore, they are considered exact in most simulated cases. Under H_0 partial, the SNK test_B 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 H_0 and H_1 . 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.

¹ Universidade Federal de Alfenas - UNIFAL, Instituto de Ciências Exatas, CEP: 37130-000, Alfenas, MG, Brasil. E-mail: *brunag_25@hotmail.com; fabricio@unifal-mg.edu.br*

² Universidade Federal de Alfenas - UNIFAL, Instituto de Ciências Sociais Aplicadas, CEP: 37048-395, Varginha, MG, Brasil. E-mail: *patricia.ramos@unifal-mg.edu.br*