Nonlinear models description fruit cajá-manga growth

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Abstract: *The cajá-manga is much appreciated in Brazil, consuming in natura or in the form of products, mainly, frozen pulp, beverages, sweets, ice creams and popsicles, in addition it is known that this fruit is highly perishable and with short commercialization period. In this way, studying the plant growth curve is useful to help the elaboration of management methods to detect the harvesting season. Regarding the growth curve, the use of non-linear models is highlighted. The objective of this study was to compare and adjust non-linear models of cajá-manga fruit mass data over the course of days. For this, two collection periods (40, 60, 80, 100,120,140,160,180,200,220,240 and 260) were used. The nonlinear models Logistic, Gompertz and von Bertalanffy were used to describe the cajá-mango fruit. The parameters of the models were estimated using the least squares method using Gauss-Newton algorithm. Corrected Akaike information criteria and adjusted coefficient of determination were used as criteria for choosing the models that best fit the data. In addition, the analyzes were performed in software R. The results obtained show that the asymptotic weight was 97.843 to 109.801 g. Among the adjusted models, it is concluded that the Gompertz model is suitable for the description of the cajá-mango fruit.*

Keywords: Anacardiaceae; *Spondia*; Plant Growth Curve.

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