ARTIFICIAL NEURAL NETWORKS IN VOLUME ESTIMATION AT EUCALYPTUS PLANTATION USING HEMISPHERICAL PHOTOGRAPHS AND NUMBER OF TREES

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- *ABSTRACT: The objective of this work was to compare and evaluate the performance of artificial neural networks and regression method of the volume estimated in a plantation of Eucalyptus urophylla using as variables only the number of trees per plot and canopy openness. The areas located in the municipality of Rio Verde, Goias, where they were released 23 plots of 400 m^2 in total area of 116 hectares. In each plot was counted the number of trees and was taken 3 hemispheric photos diagonally. The volume of each tree was obtained by the method Hohenadl. Adjustments were using simple linear regression and artificial neural networks with data from 18 plots, the other 5 were for validating. Although tested methods have been satisfactory in relation to the volume estimates, all dada tendencies to overestimate the response variable, however the neural networks were always higher in performance even not differing significantly from the regression.*
- *KEYWORDS: Opening canopy; forest inventory; volumetric models.*

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