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The Diversity of Inga Edulis Mart. (Mimosoideae) in Peruvian Amazon

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Abstract

Inga edulis Mart. (Mimosoideae) is a tree leguminous species widely planted in the Peruvian Amazon. It has large use in agroforestry systems due to its delicious fruit, rapid growth, shade potential for productive plantations and soil-improving ability. *I. edulis* is said to show growth variability on different environmental sites. The objective of the study was to indicate whether the diversity is really significant and also if there exists the variability between natural and deliberately planted trees. The field work was conducted from June 2008 to October 2008 in Ucayali department, Peru. Twenty-four trees (both deliberately planted and wild ones) in three different villages, twelve trees on experimental site and three trees nearby primary forest were randomly selected and morphological evaluation was performed. The leafy material of each accession was collected and preserved in silica gel. The statistical analysis (basis statistics and principal component analysis) of gathered data was done and completed by neural network analysis (Self Organizing Map, Histograms and Feature ranking analysis). The subsequent primary screening of DNA was done using PCR method. The results have shown low morphological variability among tree samples in different locations. There was not revealed neither qualitative nor quantitative feature with which the clear identification of trees from different locations should be done. On the other side, the more vigorous growth of wild trees and bigger pods of planted ones were observed. The polymorphism of tree samples was detected using ITS primers. The results from PCR analysis confirmed the variability among particular sites and even among particular trees on one locality, which was proposed in the statistical and neural network analysis.

Keywords: *Inga edulis*, morphological features, neural network analysis, PCR

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