

ABSTRACT

Ecuador supplies 70% of the “fine and flavor” cacao demand (*Theobroma cacao*) worldwide, used for the manufacture of high quality chocolate. This thesis defines a post-harvest decision model for the best technology adapted to small producers (59% of the Ecuadorian production), using two types of multi-criteria models including the following criteria: quality, cost of first processing and capacity for technology adoption.

A preliminary assessment of post-harvest technologies was needed considering only the quality criterion, which was evaluated by statistical methods. Methodologies based on Hierarchical Analysis Process (AHP for short) and fuzzy logic were then applied considering all mentioned criteria.

Applying three criteria, the post-harvest technology with best results by both multi-criteria methodologies was the “heap” for fermentation and “concrete floors” for drying. The multi-criteria methodology achieves solutions that approximate to reality in the way that small cocoa farmers make decisions.

Keywords: Cocoa, Post-harvest Hierarchy Process Analysis, Fuzzy Logic