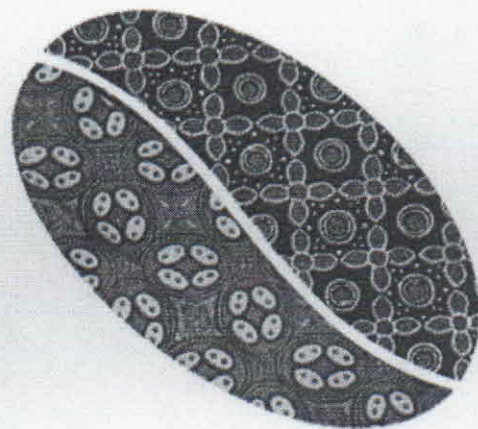**ASIC 2010**

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ABSTRACTS

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EVALUATION OF ARABICA (Coffea arabica L.) AND CONILON (Coffea canephora P.) COFFEE BEVERAGES USING AN ELETRONIC TONGUE (ET)

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Sensory analysis carried out by trained panels has been used for the assessment of the coffee beverage quality through a description of the product, which is called sensory profile. This methodology eliminates disadvantages associated to the traditional classification system named the "cup proof". Despite its recognized usefulness, it is desirable to develop instrumental measures that correlate with sensory ones, in such a way that they can be used as an instrument in the routine analysis of a quality control laboratory. The electronic tongue (ET) is an innovative tool for coffee analysis since is able to assess quality with accuracy and high sensitivity at low cost. The ET classifies coffee samples by scores and by comparison with standards and, therefore, can be a useful alternative to the coffee industry. The aim of the present study was to evaluate coffee beverages prepared with arabica and conilon beans using the ET. Coffee samples from roasted and ground arabica and conilon beans were prepared at the Embrapa Food Technology Sensory and Instrumental Evaluation Lab. (Rio de Janeiro - Brazil), at different proportions of conilon/arabica beans: 0 (100% arabica), 10, 20, 40, 60, 80 and 100%. Samples were packed in aluminium foil bags and sent to the Molecular Electronics Group, Polythecnic School of the University of São Paulo, SP – Brazil were ET analyses were carried out. Beverages were prepared using 1g of ground coffee in 100 ml of boiling mineral water and were analyzed in triplicate. Water was added to each individual weighted sample in a beaker, kept for 5 minutes and then filtered through coffee filter paper. Subsequently, each sample was analyzed by the ET composed by 10 polymeric sensors (films of conductive polymers deposited onto interdigitated microelectrodes). Samples' temperature was kept at 25°C with the aid of a thermostatized bath. Electrical data collected with the ET generated a matrix which was further processed by Principal Component Analysis (PCA). Results indicated that the ET allowed in a short time the discrimination between the two different varieties of coffee (arabica and conilon). The first PC distinguished samples 100% and 80% of conilon beans from those with larger contents of arabica. However, poor discrimination was attained among blends with 10, 40 and 60% of conilon beans, which appeared grouped in the PCA plot. The sensory attribute references established by the trained panel should be a useful data set for the ET calibration and could probably improve coffee analysis. Further studies are recommended to improve this instrumental method for evaluation of coffee blends of arabica and conilon beans.