Study of brain electrical activity pattern of during gustatory stimuli of sweet and salty at different concentrations

Ana Carolina de Sousa Silva¹, Ellen Cristina Moronte Teche¹, Ana Livia Huet¹, Marcela Marinho Muraro¹, Aldo Ivan Céspedes Arce¹, Adriano Rogério Bruno Teche¹, Ernane José Xavier Costa¹

¹Faculdade de Zootecnia e Engenharia de Alimentos/Universidade de São Paulo, Pirassununga - São Paulo - Brasil

The feeding behavior of humans is influenced by sensory aspects, psychological, social and economic, involving cognitive and physiological mechanisms of brain processing. In the midst of an excess of stimuli from the environment, some are not perceived consciously, because this depends not only on the stimulus intensity, but also the psychological state of the individual (ASP, 1999). The study and monitoring of brain electrical activity, using electroencephalogram (EEG), have proved to be a feasible and cost-effective methodology for data collection to allow comparisons of brain electrical activity during flavors tasting. This study aimed to analyze EEG data acquired during gustatory stimuli with sweet tastes in three different concentrations (5%, 0.15% e 0%) in order to verify the hypothesis of the existence of an EEG response perception threshold different of the one declared by the volunteer before data acquisition. Each concentration was 10 times replicated. Tests took part with 10 male and female volunteers aged between 20 and 25 years. Signal was acquired using superficial electrodes placed in positions C3-C4 (10-20 system), data analysis compared the mean value of Lempel-Ziv Complexity (Lempel&Ziv, 1976) to each concentration, preliminary results show similarity between 0.15 and 5 % and a small difference between these concentrations and water.

Keywords: electroencephalogram, perception, threshold, salty, sweet

References
