

Chemical profiling of different types of soy sauce and the relationship with its sensory attributes

ABSTRACT

Four types of soy sauce which are widely consumed and commercially available in Southeast Asia, namely sweet, salty, light and dark soy sauce were discriminated. A comprehensive chemical profiling such as sodium chloride, sugars, organic acids, total nitrogen and free amino acids were determined. The sensory attributes were determined using the Quantitative Descriptive Analysis (QDA) and their relationship with chemical profiles were analyzed by multivariate approach using orthogonal partial least square discriminant analysis (OPLS-DA). Results showed that sugar was the dominant compound in sweet, salty and dark soy sauce. The sensory attributes such as color, caramel odor, viscosity and sweetness taste increased the overall acceptance in these types of soy sauce. In light soy sauce, sodium chloride, total nitrogen and free amino acids appeared to be dominant compound. It was found that saltiness and umami taste were the important sensory attributes that well-characterized the taste of light soy sauce.

Keyword: Soy sauce; Chemical profiling; Sensory attributes