

ABSTRACT

Excessive sodium intake is currently one of the major global health concerns as it is a risk factor for high blood pressure and kidney failure. The global and Thai sodium consumption are currently still higher (9-12 g/day) than the target set by the WHO (<5 g/day). *Pla-ra* is a popular and widely consumed food in Thailand, especially in the north and northeastern region; it is also known to be one of the food with the highest amount of sodium content. The objectives of this thesis are to characterize the physical, chemical, and sensory properties of commercial *Pla-ra* sauces and to develop a low-sodium *Pla-ra* sauce. Physical and chemical analysis were conducted as well as CATA, attribute intensity rating, and ranking test for the commercial sauces. Low-sodium *Pla-ra* sauce was formulated using Mixture design technique with KCl+glycine as partial NaCl replacement. Physical and chemical analysis as well as saltiness intensity test and consumer acceptance were performed for the low-sodium sauces. Commercial product screening showed that the physical and chemical properties varies widely between samples; some sensory attributes were also characterized by CATA and attribute intensity rating. The low-sodium sauces formulated in this thesis are shown to have similar physical and chemical properties, similar saltiness intensity (12.68 – 13.73 cm in a 15-cm scale), and similar consumer liking scores in terms of color (6.78 – 6.98), odor (7.02 – 7.24), salty taste (5.37 – 6.41), and overall liking (5.95 – 6.59) although it cannot be classified as low/reduced sodium and does not fulfill the general criteria of 30% reduction in sodium.

Keywords: Product formulation and development, *Pla-ra*, Low-sodium *Pla-ra* sauce, KCl+glycine