

Abstract

Pork jerky provides a product with high protein content. To mitigate environmental concerns related to animal-derived proteins, analogue jerky made from the combination of soy protein isolate and vital wheat gluten might become one of the alternatives. The objective of this study was to determine which oil extraction gives the highest protein content in the defatted soy flour and the potential of plant proteins to develop plant-based jerky. The development of plant-based jerky was started by developing defatted soy flour made from three oil extraction methods which are cold press oil extraction, hexane solvent extraction, and ethanol solvent extraction. The defatted soy flour from all extraction methods was used in protein extraction to produce soy protein isolate. The plant-based jerky is made by combining soy protein isolate and vital wheat gluten in different ratios (1:2, 1:1.5, and 1:1) and analyzed based on its physicochemical and sensory characteristics which were then compared with pork jerky. Plant-based jerky ($66.46\pm0.97\%$; $66.58\pm0.96\%$; $68.77\pm1.27\%$) contained similar and non-significant different in protein content towards pork jerky ($64.75\pm2.95\%$) showed a promising result for substitution. In terms of sensory attributes, although plant-based jerky still faces challenges in mimicking pork jerky, Formula 2 (1 soy protein isolate : 1.5 vital wheat gluten) achieved the most balanced and comparable sensory profile for all attributes towards pork jerky with the overall liking 6.00 ± 1.23 and 6.36 ± 1.41 respectively. These not-significantly different in both physicochemical and sensory properties suggest promising outcomes in physicochemical characteristics and consumer acceptability even though the formulation and processing need to be optimized.

Keywords: defatted soybean flour; plant-based jerky; soy protein isolate; vital wheat gluten