

ABSTRACT

Okara is a by-product of soybean curd residue resulting from the processing of soy milk and tofu. Okara noodles were made from wheat flour (WF) and okara flour (OF) with a few modifications that consist of high dietary fiber (DF). Therefore, okara can be considered as an effective functional component with health-promoting benefits, especially for diabetes mellitus (DM). Albeit, the anti-diabetic effect has not been conscientiously investigated. The goal of the current research was to analyze the nutritional quality, DF content of OF & newly developed okara noodles as well as their sensory attributes and to evaluate the anti-diabetic effect of okara noodles on STZ-NA (Streptozotocin-Nicotinamide) induced DM rats. In the experiment, the different ratios of OF for five treatments (B0, B1, B2, B3, and B4) were prepared where nutritional and DF analysis was performed only for B0, B2, & B4, and sensory evaluation was carried out for all treatments. 24 male Wistar rats were randomly divided into 4 groups (6 rats/groups), normal group of rats fed with standard feed and 3 DM groups, respectively fed with standard feed and formulated noodles variety (B0, B2, & B4). In sensory analysis, it proved that noodles developed from 25% OF and 75% WF were the most accepted by consumers. Additionally, *In vivo* experiments also indicated that DM rats fed okara noodles had lowered BGLs (Blood glucose levels) & HOMA-IR, made higher SILs (serum insulin levels) & HOMA- β index than those fed with control noodles. These outcomes demonstrated okara noodles possess significant anti-diabetic activity, prompting the applicability of okara noodles as potential food for DM food products.

Keywords: Okara noodle, Nutritional quality, Dietary fiber, Sensory evaluation, Anti-diabetic effect, Streptozotocin-Nicotinamide