Development of Fiber-enriched Chicken Sausage by Incorporating Rice Bran and Underutilized Millets in Sri Lanka

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Chicken sausage is considered to be a delicacy and protein-rich addition to the diet, in particular for breakfast. The low content of dietary fiber in chicken sausages limits their demand and requires other foods additions to the diet. Fiber plus protein keep the body energized until the next meal. In particular, fiber-rich diet combined with other nutrients offer balanced nutrition and good gut health. Therefore, the objective of this research is to develop and characterize fiber-enriched chicken sausages by incorporating rice bran and underutilized millets in Sri Lanka. The three formulations of fiber-enriched chicken sausages were prepared by replacing 7% of chickpea flour and chicken with finger millet (*Eleusine coracana*), foxtail millet (*Setaria italica*), and proso millet (*Panicum miliaceum*) separately. Three more formulations were prepared by replacing 10% of chickpea flour and chicken with 7% of these millets each, along with 3% of rice bran. As the experimental control, a sausage was prepared without the addition of millets or bran. The prepared sausages were analyzed for their proximate composition, water holding capacity, sensory and microbial count. Water holding capacity of the sausages with only millets showed significantly higher values than control ($P < 0.05$). Crude fiber content of all sausage samples incorporated millets and rice bran showed significantly higher values ($P < 0.05$) than control, showing the highest fiber amount in sausage with finger millet with rice bran (2.89%). Total plate counts of all sausage formulations were below the limit 1×10^5 cfu. Sausages containing proso millet and foxtail millet exhibited the higher overall acceptability for organoleptic properties than the control. Therefore, millets and rice bran are potential candidates for enhancing the fiber content of chicken sausages, which can be incorporated into meals like breakfast.

Keywords: Finger millet, Proso millet, Foxtail millet, Underutilized, By-products

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