**Abstract**

**Potential Application of Gizzard Fat In Manufacturing of Emulsion Type Chicken Sausage**

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The qualities of the fat used in sausage manufacturing could affect the properties of the final product, even affecting in cost of production. The use of slaughterhouse chicken fat byproducts with major properties required to be a fat ingredient may have the potential to use as fat sources in sausage making. The aim of the study was to investigate the ability to use commonly discarded gizzard fat in chicken sausage, using traditionally used fat source, the chicken skin as the reference. Sausage samples were prepared by incorporating gizzard fat with 50%, 75%, and 100% replacing the traditional chicken skin. The control sample was prepared with chicken skin in 100%. All the sausage samples were kept at -18°C after processing prior to analysis. Water holding capacity, proximate composition, emulsion stability, cooking loss, pH, color, and texture of sausages were tested. The texture of the sausages was measured with a texture analyzer, and a Chroma meter was used for color parameters. Colour, texture, juiciness, overall acceptability, and flavor were also tested by conducting a sensory evaluation after frying the samples. Sausages with gizzard fat (50%,75%a and 100%) significantly (p<0.05) reduced the moisture and protein but increased the fat content more than the control. The addition of gizzard fat significantly (p<0.05) improved the water holding capacity and emulsion stability and significantly reduced the cooking losses (p<0.05) than those in control. The incorporation of gizzard fat significantly (p<0.05) changed pH to be more acidic with increasing levels of gizzard fat. Gizzard fat at the level of 75% and 100%, had a significant (p<0.05) effect on the colour of the sausage (redness a\*). The hardness was significantly (p<0.05) increased as the level of gizzard fat was increased. Sensory analysis revealed that the incorporation of gizzard fat had a significant effect on sausage color (p<0.05) while not influencing flavor, overall acceptability, texture, and juiciness compared to the control.  The study concluded that the sausages incorporated with gizzard fat improved the water holding capacity, fat composition, emulsion stability, cooking loss (lower), hardness, and sensory properties (colour acceptance) indicating its potential application as a source of fat for chicken sausage manufacturing.

**Keywords :** *chicken sausage, chicken skin, fat byproducts, gizzard fat, physicochemical properties*

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