Cairo University
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Effect of fat types and fat replacers on the quality and technological properties of oriental sausage

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Hygiene and Control of Meat and its Products

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Abstract

(**Key words:** oriental fresh sausage, animal fat, fat replacer, chicken skin, fatty acid profile, sensory quality, TBARS, TVBN pH)

Fat has an important role in the processing and sensory attributes of meat products. Therefore, the current study was designed to evaluate the effect of incorporating fats from different slaughtered food animals [beef (mesenteric and perinephric), buffalo (mesenteric and perinephric), Camel (mesenteric and hump) and mutton (mesenteric and perinephric) on the physicochemical and sensory as well as fatty acid profile of oriental beef sausages. Higher saturated fatty acids were recorded when fresh sausages processed using either buffalo or camel fats compared with those processed using beef or mutton fats. The highest level of Omega ω3 was obtained when camel mesenteric fat was incorporated. Sensory attributes revealed superiority of sausages formulated using beef or sheep fat, meanwhile lower scores were obtained when camel or buffalo fat was used. Higher cooking loss% values were recorded when fresh sausages processed using either buffalo perinephric or camel hump fats compared with those processed using beef or mutton fats. The highest level of diameter reduction% was obtained when camel hump fat was incorporated followed by buffalo perinephric fat incorporation. Based on this study, sheep fats may be recommended for production of high quality acceptable fresh sausages. Buffalo perinephric and camel hump fats are not recommended for production of high quality acceptable fresh sausages in contrary to beef and sheep tallow. In the second part of the study chicken skin based fat replacers (chicken skin, chicken skin emulsion, gelatinized chicken skin and gelatinized chicken skin emulsion) were incorporated instead of fat and effect of their addition on the physicochemical and sensory as well as fatty acid profile were studied. Moreover, incorporating chicken skin based fat replacers (skin, skin emulsion, gelatinized skin or gelatinized skin emulsion) improved the fatty acid profile of the oriental sausage as they increased the PUFA, omega 3 and omega 6 fatty acids and lowered the SFA content. Moreover, they improved the sensory quality, physicochemical, cooking characteristics and nutritive criteria of the oriental beef sausage specially when gelatinized skin or gelatinized skin emulsion were used.

Dedication

To

My Mother and Father

&

My Brothers and Sisters

&

My Wife

ACKNOLEDGEMENT

*First of all, prayerful thanks to **ALLAH**, for everything I have.*

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