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Properties of home processed Italian sausage prepared with oatmeal

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Due to concerns with obesity and related diseases, many consumers desire no-fat or low fat meat products. Commercially, several methods for reducing fat are available. Oat and oat bran have shown promise for increasing yield and juice retention in meats. In addition, oat and its constituents have been used in diets to control hypertension, diabetes, and heart disease.

The objective of this research was to evaluate the use of oatmeal in home-prepared low fat sausage, and how different levels of oatmeal and precooking times affect the properties and acceptability.

A 3X3 full factorial design was used to formulate Italian sausages with 0-30% oatmeal, with precook times of 0, 2, and 4 minutes. Cooking loss and expressible mositure was measured gravimetrically. Texture parameters were assessed by Warner Bratzler and texture profile analysis. A consumer panel of 43 persons evaluated flavor, texture, color, and overall acceptability. Results were analyzed by Analysis of Variance and Response Surface Methodology.

Response surface analysis showed least cook loss (<3%) when precook times were less than 1 min. Least cutting force (<1100 kg) and hardness (<1500 kg) occurred at >20% oatmeal and >2 min precook time. Most acceptable product was formed at 5-15% oatmeal, and precook times between 1-3 mins. Overall acceptability was most correlated with perceived texture.

These results will allow home preparation of reduced fat Italian sausage with an optimized formula and processing steps. It was found that formulating and processing to provide optimum flavor and texture did not coincide with conditions for maximum cook yield.