

Public Abstract

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Title:EFFECTS OF TOMATO POWDER OR SOY FIBER ADDITION AND FAT CONTENT ON PHYSICOCHEMICAL PROPERTIES OF HOT DOGS

Tomato powder and soy fiber may provide health benefits by supplying dietary fiber and antioxidant compounds. The main objective of this study was to investigate the effects of dietary fiber additions (tomato powder 3%, tomato powder 5%, soy fiber 3% and soy fiber 5%) and fat content (10, 15 and 20%) on physical and chemical properties of beef hot dog.

Tomato powder and soy fiber additions increased protein content and dietary fiber content in all cases, and all dietary fiber additions provided a small degree of showed antioxidant activity in the order of 3% tomato powder >3% soy fiber > 5% tomato powder = 5% soy fiber.

Tomato powder content had no effect on cooking loss but decreased water holding capacity, whereas soy fiber decreased cooking loss and increased water holding capacity. Increasing fat content generally resulted in increased cooking loss and water holding capacity. However, interaction effects on cooking loss due to fiber addition were found in 10 and 20% fat levels.

For the color analysis, Tomato fiber decreased L* and a* values and increased b* value, while soy fiber increased L* and b* value and decreased a* value in beef hot dogs. Increasing fat content increased L* value and decreased a* value but did not affect b* value.

In regard to the texture profile, increasing fat content decreased hardness, gumminess and chewiness ($P < 0.05$) but did not affect springiness and cohesiveness. All dietary fiber additions increased hardness in hot dogs with 10% and 15% fat content but decreased hardness in hot dogs with 20% fat content. Springiness and cohesiveness decreased due to dietary fiber additions for all fat levels. Chewiness and gumminess also decreased when dietary fiber was added, and higher percentages of dietary fiber addition decreased springiness, cohesiveness, gumminess and chewiness to a greater extent but did not show additional effects on hardness.