EVALUATING QUALITY CHARACTERISTICS OF GROUND ROUND FORMULATED WITH THREE FAT SOURCES

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ABSTRACT

This research was performed to determine if changing the source of fat for inclusion in ground beef from the round will cause a change in the number of days that the ground beef has a viable shelf-life as influenced by oxidation. The objectives were to evaluate the color stability and degree of fat oxidation during retail storage of ground beef patties and to determine the influence of fatty acid profile on the extent of ground beef lipid oxidation and shelf-life of ground beef patties over 7 d of refrigerated retail storage. Beef carcasses (n = 30) were chilled for two days and then fabricated. Semimembranosus muscles (IMPS # 168) were removed and closely trimmed. Within each carcass, three sources of fat (kidney and pelvic = KP, subcutaneous = S, or seam = I) were sourced to blend with the top round to achieve either 75 or 95% lean ground beef. Data analysis indicated different (P = 0.0004) saturated fat (SFA) percentages (KP > I > S with means of 57.9, 53.5, and 52.1%, respectively). Calculated IV differed (P = 0.003) where KP < I = S with means of 33.9, 37.1, and 38.3, respectively. Changes in fat profile likely explain differences (P = 0.007) in TBA values where KP = S < I with means of 0.110, 0.118, and 0.120 mg/kg, respectively. Minolta a* value differed (P = 0.004) where S > KP with I not differing from S or KP (S = 14.78, I = 14.52, and KP = 14.46). Fat source is a significant contributor to quality indicators in ground beef patties and should be considered when formulating products intended for fresh, refrigerated retail sale.