

Abstract

Growing populations, urbanization and economic growth in developing are contributing to growing demand for livestock and livestock products. However, post-slaughter losses (50%) in the meat value chain remain a challenge for pastoral communities in Kenya. The study aimed to use simple low-cost and innovative meat processing technologies to produce meat products based on indigenous knowledge of the pastoral communities. A multi-method research approach was used to collect data using structured questionnaires in exploratory surveys, and Focus Group Discussions among pastoralist. Laboratory simulations for the new products and process development were done in the University of Nairobi laboratories. The effect of size of meat chunks, oil types, oven-drying time and deep-frying time on the physical, chemical and sensory attributes of deep-fried products was determined. The products were processed using a previously documented process flow analysis for Nyirinyiri, Enyas, Ng'amorumoru and Olpurda. The developed meat products had high proteins (52.10% to 66.48%), energy (329.69 Kcal/100 g to 404.20 Kcal/100 g); fats (10.78% to 15.40%) and moisture (14.05% to 19.35%) content were considerably low. No pathogenic microorganisms were present. Deep-frying and cooling products in the frying media were seen to increase the fat content (40-48%), carbohydrates (80-91%) and caloric value (54-61%) of the products. The sensory evaluation showed that Nyirinyiri was most preferred (5.34 ± 0.337) followed by Ng'amorumoru (5.23 ± 0.00) ($p < 0.05$). The products had high shelf stability (6 months) and were low-cost (KES 200-250/kg). This showed that simple meat processing technologies like deep frying can be used in preservation of meat products hence loss reduction.