

Effect of Refining Operations on the Quality of Tallow Olein

P. Ghasemiafshar, M. Ghavami, M. Gharachorloo, P. Aberomand

Islamic Azad University - Science & Research Branch

College Of Food Science & Technology

Tehran, Iran

Iranian mutton tallow was fractionated into tallow olein (71%) and stearin (29%) fractions. The olein or liquid fraction was subjected to series of refining operations consisting of alkali neutralization, bleaching and deodorization to produce a liquid oil free of impurities. The oil was treated with 10% β -cyclodextrin to reduce cholesterol content. The crude, neutralized, bleached, deodorized and β -cyclodextrin treated oils were subjected to series of chemical tests consisting of free fatty acid content, peroxide value, iodine value, fatty acid composition, saponification value, unsaponifiable matter and induction period measurements. The results indicated that the fatty acid composition was unchanged during the course of refining operations where oleic acid was the predominant fatty acid present. Impurities such as peroxides, free fatty acids, unpleasant odors and flavors were removed. β -cyclodextrin proved to reduce cholesterol content up to 89 % during refining process. Due to the high content of oleic acid, low amount of cholesterol and being liquid at 5 ° C, the oil might be suggested for frying operations.

Keywords: Tallow, Tallow Olein, Refining