

Evaluation of Oxidative Stability of Mutton Tallow Fractions

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To obtain different oils/fats with different physical and or chemical characteristics, the fats are physically separated into the liquid, semisolid and solid fractions in a process termed fractionation.

In this research project in order to produce oils and fats with specific characteristics for different applications, mutton tallow was subjected to series of solvent fractionation procedures employing different temperatures. The results of fractionation indicated two solid fractions isolated at 25 and 15°C, one semisolid and one liquid fractions isolated at 5°C.

The influence of fractionation on the oxidative stability of tallow fractions was investigated. It is demonstrated that the induction periods at 110 °C are directly proportional to the unsaturations. Therefore, reduced temperatures of fractionation decreased induction period due to the rising concentrations of unsaturated fatty acids. Tallow is deficient in natural antioxidants namely tocopherols which are present in various concentrations in vegetable oils. Therefore a small fractional blending of vegetable oil might improve the stability of the tallow fractions.