Technology of Oils and Fats 3(2-1)

Theory

Oils and fats: importance, sources, production, uses. Characteristics of oils and fats: physical, chemical. Oil bearing materials: pre-treatment, storage. Extraction methods: rendering, expression, solvent extraction. Processing: degumming, refining, bleaching, deodorization, fractionation, winterization, hydrogenation, interesterification, esterification, emulsification, stabilization. Spoilage: oxidative and hydrolytic rancidity – chemistry, prevention - use of antioxidants. Manufacture of frying oils, margarine, mayonnaise. Byproducts of fats and oils industry and their uses.

Practical

Extraction of oils and fats. Determination of physical and chemical constants: color, cold test, melting point, smoke point, specific gravity, solid fat index, refractive index, acid value, peroxide value, iodine value, saponification value. Visit to oil and fat industries.

Books Recommended

1. AOCS. 2009. Official methods and recommended practices of AOCS. Am. Oil Chem. Soc., Illinois, USA.
2. Raie, M.Y. 2008. Oils, fats and w axes, National Book Foundation, Islamabad, Pakistan.
3. Akoh, C.C. and Min, D.B. 2008. Food lipids: chemistry, nutrition and biotechnology, 3rd ed. CRC Press, Taylor & Francis Group, Boca Raton, Florida, USA.
4. Fereidoon S. 2005. Edible oil and fat products: application technology. John Wiley & Sons, Inc., New York, USA.
5. O'Brien, R.D. 2000. Fats and oils: formulating and processing for application. CRC Press, Taylor & Francis Group, B oca Raton, Florida, USA.