Chemistry of Edible Oils and Fats 3(2-1)

Theory

Introduction, history of triglyceride analysis, triglycerides types, nomenclature and possible applications. Extraction, isolation and fatty acid analysis (Methyl ester preparation, column, identification of peaks, quantization etc.). Preparation of chemical derivation reactions at double bond (hydrogenation, permanganate oxidation, ozonization, bromination, mercuration etc) reac tions at ester link ages, hydroxy, epoxy and keto groups, silver ion adsorption chromatography, TLC, Column chromatography and application, GLC, Fraction al crystallization. Distribution theories of fatty acid in natural triglyceride mixtures.

Practical

Extraction of lipids, isolation of triglycerides by column chromatography, Florisil/ salicylic acids, TLC. Fatty acid analysis by GLC, Methyl ester preparation. Catalytic hydrogenation, permagnate oxidation, ozonization, epoxidation, bromination etc. Silver ion adsorption chromatography.

Books Recommended

1. Akoh, C.C. and Min, D.B. (Eds). 2008. Food Lipids; Chemistry, Nutrition and Biotechnology. CRC Press, New York.
2. AOCS. 1998. Official methods and recommended practices of AOCS, 5th ed. Am. Oil Chem. Soc. Illinions, USA.
3. NIIR BOARD. Modern Technology of Oil, Fats and its derivatives. Asia Pacific Business Press Inc., India.
4. Nilelsen, S.S. 1994. Introduction to the Chemical Analysis of Foods. Jones and Bartlett Pub. Inc., London.
5. Perkins, E.G. 1993. Analysis of Fats, Oils and Derivatives. AOCS Press, Champaign.