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Corps Gras 18, 429–37 (1971). Principles and practices of interesterification are discussed. An example involving hydrogenated tallow and sunflower or rapeseed oil is given.

CHEMICAL CHANGES OCCURRING DURING THE HEATING OF FATS. R. Guillaumin (ITERG, Paris). *Rev. Franc. Corps Gras* 18, 445–56 (1971). The changes which take place in fats as a result of the action of heat and oxygen are reviewed. Both volatile and nonvolatile products such as free acids and various types of polymers are included. Reaction mechanisms for the formation of polymers are given in detail.

CHARACTERIZATION AND DETERMINATION OF PROOXIDANTS. A.M. Siouffi (Provence Univ., Marseille). *Rev. Franc. Corps Gras* 18, 457–64 (1971). Prooxidant substances in fats for the most part contain trace metals occurring either naturally (*e.g.*, from chlorophyll, hemoglobin) or accidentally as from contamination from equipment. The mechanism of their action is explained by Waters' and Kochi's hypotheses. Methods of analysis for these substances are reviewed. Those methods most frequently used are thin-layer microchromatography, atomic absorption spectroscopy, including use of a graphite oven, atomic fluorescence spectroscopy, photocolorimetry and activation analysis. The limits of sensitivity of atomic absorption and activation for different metals are tabulated.

PRESERVATION, STORAGE AND CONDITIONING OF EDIBLE OILS. G. Dagron (Ste. Lesieur-Cotelle, Boulogne-sur-Seine). *Rev. Franc. Corps Gras* 18, 501–8 (1971). Deterioration processes, such as autoxidation, reversion, and migration of components from the storage container, which fluid edible oils can undergo are reviewed. Ways of minimizing these changes in consumer containers of oil are discussed. Glass bottles are compared with containers of rigid PVC and low and high density polyethylene in terms of physical (*e.g.*, oxygen permeability), mechanical and thermal properties. Advantages and disadvantages of each of these last three materials are summarized.

ADDITIVES FOR EDIBLE FATS: PRESENT AND FUTURE REGULATION OF THE E.E.C.; GOOD AND BAD POINTS. M. Fondu (Union S.A., Merksam, Belgium). *Rev. Franc. Corps Gras* 18, 509–15 (1971). Regulations are tabulated on colors, antioxidants and emulsifiers in effect in the individual countries of the E.E.C. The proposals of the Codex Alimentarius Commission and the Federation of Oil Processors of the E.E.C. on these same additives are tabulated for comparison. Adoption of the acceptable daily dosage (A.D.D.) concept may alter some of these proposals.

VOLATILE COMPOUNDS FORMED VIA AUTOXIDATION. A. Prevot (Inst. des Corps Gras, Paris). *Rev. Franc. Corps Gras* 18, 517–36 (1971). Present knowledge on the identity of oxidative breakdown products of edible oils is reviewed. Particular attention is paid to the thresholds of perception of some of the compounds present at very low levels. Methods for isolating and analyzing these volatile breakdown products are described in detail.

OXIDIZED ACIDS IN CRUDE FATS. II. SEPARATION OF OXIDIZED METHYL ESTERS FROM UNSAPONIFIABLE CONSITUENTS WITHOUT STRUCTURAL ALTERATION. J. Graille, F. Bedie and M. Naudet (ITERG, Provence Univ., Marseille). *Rev. Franc. Corps Gras* 18, 537–45 (1971). The steps in the separation scheme are the following: hydrolysis by a nonspecific lipase, extraction of the unsaponifiables from a neutral buffered solution of the soaps with 25% ethanol, concentration (if necessary) of the oxidized acids by liquid-liquid extraction, methylation at room temperature with methyl sulfate, and isolation of the oxidized esters by reversed-phase liquid partition chromatography. The esters can then be fractionated by thin-layer chromatography.

MACHINE FOR MOLDING AND WRAPPING BUTTER, MARGARINE, AND OTHER SUBSTANCES OF LIKE CONSISTENCY. P. Graf (Schweizerische Industrie-Gesellschaft). *U.S. 3,616,594.* The shafts of the molding and wrapping wheels are at right angles and are turned step-wise by a common gear unit consisting of a Maltese cross transmission and planetary gearing.

APPARATUS FOR THE REMOVAL OF SURFACE OIL FROM FRIED FOODS. A.R. Davidson and J.E. Haubner (Lamb Weston). *U.S. 3,627,535.* The fried food is subjected to a blast of air saturated with water vapor immediately after frying and before the food has cooled substantially.

CONTINUOUS PROCESS FOR PRODUCING FAT AND SOLIDS FROM WET BIOLOGIC SUBSTANCE. E. Levin (Viobin Corp.). *U.S. 3,627,796.* Particles of substance and a solvent capable of forming an azeotrope with water and removing fat from the substance are continuously introduced into a wet intake zone and heated together to distill off the azeotrope. The solvent plus particles are further dried in a second zone before being separated by filtration in a third zone. The fat can then be separated from the miscella and the particles desolventized.

DETERMINING THE FAT CONTENT OF MILK. H. Werner (N. Foss Electric A/S). *U.S. 3,628,916.* A batch of an oil-in-water emulsion, such as milk, is stabilized by addition of a viscosity-increasing agent. A portion of the batch is then analyzed for fat content. The remainder of the batch is then utilized as a reference standard for checking and calibrating the apparatus used to determine the fat content of such emulsions by light transmission.

REFINING PROCESS FOR CRUDE GLYCERIDE OIL. M.A. Marino, F.J. Birkhaug and G.E. Sadek (CPC International). *U.S. 3,629,307.* The improved process comprises mixing the crude oil with an aqueous solution of sodium hydroxide, reacting the mixture until the free fatty acids are converted into soaps, dehydrating the mixture, and then rehydrating it in a pressurized centrifuge. The foots are then separated from the refined oil by centrifugation. The process permits a single refining step without the need for a separate degumming step.

• Fatty Acid Derivatives

STUDIES ON THE SYNTHESES OF MERCAPTANS. IV. ON THE SIDE REACTIONS LAURYL CHLORIDE REACTION WITH SODIUM HYDROGENSULFIDE IN N-BUTANOL AND DIMETHYLFORMAMIDE. T. Arai, M. Koyama and M. Koide (Res. Lab., Nippon Oil & Fat Co., Ohama-cho, Amagasaki, Japan). *Yukagaku* 20, 155–60 (1971). Products of the lauryl chloride Na_2S reaction in n-BuOH or DMF were quantitatively analyzed. The following reactions occurred almost quantitatively in n-BuOH and to a lesser degree in DMF: $RCl + Na_2S \rightarrow RSNa + NaCl$; $RSH + NaOH \leftrightarrows RSNa + H_2O$; $RSNa + RCl \rightarrow RSR + NaCl$.