

# Abstracts

## Oils and Fats

Edited by  
M. M. PISKUR

NEW EXTRACTION METHODS FOR OIL FRUITS. H. Gehle. *Fette u. Seifen* 47, 360-4 (1940). Some new app. are illustrated and described.

THE PEROXIDE EFFECT IN THE ADDITION OF REAGENTS TO UNSATURATED COMPOUNDS IN REARRANGEMENT REACTIONS. F. R. Mayo and C. Walling. *Chem. Revs.* 27, 351-412 (1940). A review.

APPLICATION OF NON-RUSTING AND ACID RESISTING STEEL IN THE DAIRY INDUSTRY AND IN THE MARGARINE INDUSTRY. W. Tofaute. *Fette u. Seifen* 47, 419-23 (1940). German equipment is illustrated.

PALM OIL ORPHANED BY WAR. *Soap* 16, No. 11, 31-4 (1940).

DEHYDRATED CASTOR OIL. D. H. Killeffer. *Ind. & Eng. Chem.* 32, 1466-8 (1940). An economic study.

THE STABILITY OF EMULSIONS. II. EMULSIONS STABILIZED BY HYDROPHILIC COLLOIDS. A. King and L. N. Mukherjee. *J. Soc. Chem. Ind.* 59, 185-191 (1940).

LANOLIN, STERINE AND "EMULGATORE II." H. Janistyn. *Fette u. Seifen* 47, 405-9 (1940). The capacity of cholesterol, sterols, steroids, fats, hydrocarbons to take up water depends on the activity of the hydroxyl group. Unsatd. sterols emulsify better than satd. sterols. The utility of the various sterols are discussed.

CONSISTENCY OF FAT AND MARGARINE. Thor Lexow. *Fette u. Seifen* 47, 334-7 (1940). Methods are reviewed. A new method proposed by L. makes use of app. by which a ball falls on the sample under set conditions. The diam. of the impressions are used as the criteria. Effect of the height of drop of an isoelectric mixt. and data on butter and margarin are presented.

STORAGE OF STOCK OF MARGARINE. F. Kiermeier. *Fette u. Seifen* 47, 400-1 (1940). In Germany, the production of margarine is organized so that the highest storage period is 6 wks. Influence of temp. is recorded both in regard to acidity and quality. At 18.5° a 2.20 acid no. was recorded at 60 days, at 8.50°, a 1.10 acid no. in 125 days, at 0°, a 1.20 in 200 days, at -6.5 and -16.5° the acid no. did not exceed 1.20 in 350 days. Quality, however, was reduced 60% at 18.5° in 50 days, 60% at +8.5° in 75 days, 40% at 0° in 200 days, 35% at -6.5° in 350 days and 20% at -16.5° in 350 days. The beginning of the tallowy flavor, and the courses of the acid, ketone and peroxide values are tabulated and discussed. On the basis of the tests, the storage life in fresh state at the various temps. were 18.5°, 32-38 days; 8.5°, 38-54; 0°, 96-129; -6.5° about 340 and -16.5° over 340. It is concluded that storage for 6 mos. is possible only at freezing temps.

PROGRESS IN MICROCHEMISTRY. I. QUANTITATIVE ORGANIC MICRO-ANALYSIS. R. Roth. *Angew. Chemie* 53, 441-9 (1940). The reviewed micro-methods include methods for hydrocarbons, O, N, S, P, halogens, metallic org. compds., active H, -CO group, methoxyl- and ethoxyl group, alkylamide, acetylene, sapon. no., isoprenylidene group, I no., D no. and mol. wt.

EXTRACTION OF CASTOR SEED OR CAKES WITH INDUSTRIAL ALCOHOL. N. G. Chatterjee. *J. Indian Chem. Soc., Ind. Ed.* 2, 171-7 (1939). Extn. of the seed with industrial EtOH followed by sepn. of the oil by addn. of H<sub>2</sub>O, is suggested (*Chem. Abs.*).

EXTRACTION OF CASTOR SEED AND CAKE WITH INDUSTRIAL ALCOHOL. N. G. Chatterjee and R. S. Sanena.

*J. Indian Chem. Soc., Ind. Ed.* 3, 23-8 (1940). Extn. of oil from decorticated castor seed and from half-decorticated castor cake with industrial EtOH under various conditions is described. Some extraneous matter is deposited during the conc. of the extract (*Chem. Abs.*).

CHEMISTRY OF TALL-OIL. H. Niesen. *Fette u. Seifen* 47, 296-301 (1940). Literature is reviewed. It is pointed out that the fat acid compn. should not be considered as made up of only 3 components. The results of several fractionations are graphically illustrated.

SEPARATING GLYCERIDES AND FAT ACIDS AND THE ADSORPTION DEACIDIFYING OF FATS. H. P. Kaufmann and O. Schmidt. *Fette u. Seifen* 47, 294-6 (1940). Data on removing free fat acids from fats with Al<sub>2</sub>O<sub>3</sub>, silica gel and other adsorbents are tabulated. As much as 20% added stearic or oleic acid was removed from some of the fats by some of the adsorbents.

ADSORPTION ANALYSIS. II. THE ADSORPTION OF HIGHER FATTY ACIDS. H. G. Cassidy. *J. Am. Chem. Soc.* 62, 3073-6 (1940). As a first step in the systematic study of adsorption analysis as a means of separating higher fatty acids it has been shown by compns. of the adsorption isotherms that lauric, myristic, palmitic and stearic acids differ markedly in their adsorption behaviors toward carbons, aluminas, magnesium oxide, active clay and silica gel. III. RELATION BETWEEN ADSORPTION ISOTHERMS AND POSITION ON THE ADSORPTION COLUMN. H. G. Cassidy. *ibid.* 3076-9 (1940). It has been shown that the adsorption isotherms obtained for fatty acids from their pure solns. are of uncertain value as criteria of separability of the acids by the method of chromatographic adsorption analysis.

HYDROLYSIS OF FATS AND FAT ACID ESTERS. VII. THE RELATION BETWEEN THE CONSTITUTION OF GLYCERIDES AND THE RATE OF HYDROLYSIS. 1. Toyoki Ono. *J. Agr. Chem. Soc. Japan* 16, 197-205, *Bull. Agr. Chem. Soc. Japan* 16, 41-2 (in Eng.) (1940). The hydrolysis of glycerides of stearic, palmitic and oleic acids increased in the order of tri-, di- and mono-glyceride. The difference between the reaction velocity coeffs. for mono-stearin and tristearin was greater than for monoölein and triolein. The mixed triglycerides were hydrolyzed more rapidly than the simple triglycerides in both homogeneous and heterogeneous systems. This may be due to the difference of the emulsification value or to the affinity for alkali (*Chem. Abs.*).

THE TOLERANCE OF GROWING CHICKS FOR SOYBEAN OIL IN THEIR RATION. E. W. Henderson and W. E. Irwin. *Poultry Sci.* 29, 389-395 (1940). Soybean oil was fed to 12 lots of 40-50 chicks in the following quantities: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, and 22% of a basal mash diet. The mean wt. of chicks at 8 wks. did not vary significantly until the ration contained 10% of oil after which a significant negative regression of wt. was obtained. No significant difference in wt. of livers, volume of gallbladders, or histological sections of livers was obtained. The iodine nos. of composite samples of fat from chicks were 74.0 ± 0.64 for the control lot, 110.0 ± 0.64 for the 12% lot and 120.0 ± 0.64 for the 22% lot. No odors or flavors of soybeans were detected in the broiled carcasses or fat residues of any of the chickens. Excessive moisture in the feces and a higher ether extract content of feces was noted

from the oil fed groups. Abnormal excessive molting beginning at the 6th wk. was noted in the lots fed more than 14% of oil.

QUINONYL DERIVATIVES OF FATTY ACIDS. L. F. Fieser et al. *J. Am. Chem. Soc.* 62, 2966-70 (1940). Bactericides, spermicides.

### PATENTS

PROCESS FOR COUNTERCURRENT EXTRACTION. G. Botaro. *U.S.* 2,218,080. App. is described.

TREATMENT OF DISTILLERY SLOP. C. R. Brown et al (Sharples Corp.) *U.S.* 2,216,904-5. The distillery slop contg. oil is heated to 250°F., filtered and oil is recovered from the filter cake by pressing.

RECOVERY OF FATTY ACIDS. M. Harder (Jasco, Inc.). *U.S.* 2,216,238. Oxidized nonaromatic hydrocarbons are submitted to sapon., the volatile constituents are removed by vacuum distn. and the fat acids are obtained from the resultant soap by treatment with inorg. acid.

PROCESS OF REFINING FATTY ACIDS. A. W. Hixson and R. Miller (Chemical Foundation, Inc.). *U.S.* 2,219,652. Fatty acids are sepd. from tar-like residues by extn. with normally gaseous hydrocarbons.

METHOD FOR PURIFYING REFINED OILS. B. Clayton (Refining, Inc.). *U.S.* 2,216,104. Refined oil contg. a trace of soapstock and moisture is pasted through a heating zone into a low pressure zone, the operation is so adjusted that moisture is removed and the soapstock is dried. The soapstock is then removed.

PROCESS FOR TREATING REFINED OIL. B. H. Thurman (Refining, Inc.). *U.S.* 2,216,680. Freshly pressed oil is mixed with water to form an emulsion and the emulsion is centrifugally sepd. The process removes impurities from the oil.

MARGARINE PRODUCT AND METHOD OF MAKING SAME. A. K. Epstein et al. *U.S.* 2,217,309. The emulsifier is incorporated into the margarine mixt. in aq. or milk soln.

FOOD PRODUCT AND METHOD FOR PRODUCING IT. A. Musher (Musher Corp.). *U.S.* 2,218,475. Water and fat emulsions are prepd. for use in canned fish and other foods. The emulsion may contain fat, salt, sugar, spices, gum tragacanth and vinegar.

CANNED FOOD PRODUCT AND CANNING METHOD. A. Musher (Musher Corp.). *U.S.* 2,217,698. A special dressing is used in canned fish.

SALAD DRESSING AND METHOD OF PREPARING THE SAME. A. Musher (Musher Corp.). *U.S.* 2,217,699. Gumminess is reduced by using thickener in paste form and aerating to 20° air by vol.

ANTIOXIDANTS. S. Shappirio. *U.S.* 2,217,711. Betaines, their esters or salts are used as antioxidants.

PROCESS OF RETARDING FAT BLOOM AT THE SURFACE OF CHOCOLATE AND CHOCOLATE-COATED PRODUCTS, AND THE RESULTING PRODUCT. L. R. Cook and J. H. Light (Wilbur-Suchard Chocolate Co., Inc.). *U.S.* 2,216,660. A portion of the cocoa butter of the product is elaidinized, i.e., treated with oxides of N or S to convert some of the oleic acid to elaidic acid. The treatment raises the m.p. of the cocoa-butter thus reducing the tendency to crystallize.

METHOD FOR CRYSTALLIZING FATS. C. Dedlow (Swift & Company). *U.S.* 2,200,982. The process comprises two quick chilling steps, in the first the seed crystals are formed and in the second quick chill the seed crystals are increased by accretion.

CONVERSION OF BONES INTO EDIBLE FAT AND GLUE CONTAINING CRUSHED BONES. W. Steinmann. *Ger.* 686,158 Cl. 23a. The rendering of glue stock contg. crushed bones is accomplished by first drying at 58° under reduced press. and removing the fat from glue stock with centrifuges.

CONVERSION OF RICINOLEATES INTO OTHER ORGANIC COMPOUNDS. A. G. Houpt (American Cyanamid Co.). *U.S.* 2,217,515-6. In the prepn. of monohydroxydecanoic acid, castor oil soap is heated with water at 180-230°. For sebacic acid heat to 235-275°.

PROCESS FOR PRODUCING FATTY ACIDS AND RESINOUS MATERIALS FROM FATTY GLYCERIDES. A. Greth and F. Lemmer (Resinous Products & Chemical Co.). *U.S.* 2,217,363. Glycerides of drying oils are heated with an acidic resin under vacuum during which the liberated fat acids are distd. off.

MODIFICATION OF THE PHYSICAL PROPERTIES OF ISO-COLLOIDS. L. Auer (J. Randolph Newman). *U.S.* 2,213,943. The viscosity of mineral oils are increased by adding fatty oil and a sulfonated emulsifier and heating to 100-300°.

APPARATUS FOR RECOVERING GLYCERIN. B. Clayton (Refining, Inc.). *U.S.* 2,218,279. This still principle is based on the spraying of heated soap glycerin mixt. into a vacuum chamber, in which the glycerin vaporizes and distills off.

## Abstracts

### Soaps

Edited by M. L. SHEELY

CATALYTIC SOAP DARKENING. Mykola Zajcev. *Seifensieder-Ztg.* 67, 132 (1940). Soap containing 0.001% of cupric oxide or ferric oxide showed a noticeable darkening after exposure for four weeks to diffused daylight at 20-25° C.; that containing 0.005% of either oxide showed deterioration after one week. It is suggested that rancidity proceeds in the following manner: The unsaponified fat, which is in a finely divided state in the soap, oxidizes in the presence of moisture, light and catalysts to form lower molecular weight fatty acids, aldehydes, ketones and other products, with a decrease in the alkalinity of the soap, until finally all free alkali is removed and rancid acid soap remains.

VAPOR PRESSURE OF GLYCERINE SOLUTIONS AT 20°.

D. W. Grover and J. M. Nicol. *J. Soc. Chem. Ind.* 59, 175 (1940). The vapor pressures of glycerine solutions from 25-92% by weight are measured by determining the dew point of air maintained in equilibrium with the solutions. By means of Dühring's rule it is proved that the relative vapor pressure of glycerine solutions is substantially independent of temperature over the range of 0° to 70° C., a fact which enables the figures of various workers to be compared. The relative vapor pressures obtained at 20° are in good agreement with the majority of the published data, but not with one table in the International Critical Tables, which must therefore be considered to be in error.

USE OF SOAP IN MAKING VULCANIZED LATEX MOLDS