ABSTRACTS

Oils and Fats

Edited by
M. M. PISKUR

STANDARD INTERNATIONAL METHODS FOR FAT ANALYSIS. H. P. Kaufmann. *Fette u. Seifen 46,* 499-517 (1939). International analytical methods in both French and German are given.

CONTINUOUS MANUFACTURE OF MARGARINE. Lars Erlandsen. *Fette u. Seifen 46,* 536-40 (1939). A history of margarine manufacture is given.

UNSAPONIFIABLE IN FATS AND OILS. W. Holwech, *Fette u. Seifen 46,* 551-4 (1939). The effect of the number of extn. and amt. of solvent used for detg. unsapon. by the Bömer and English S. P. A. methods were compared. A special combination of both methods gave the best results.

DETECTION OF MINUTE QUANTITIES OF PETROLEUM SPIRITS IN VEGETABLE OILS. B. Segal. *J. S. African Chem. Inst. 21,* 58 (1938). The following modification of Aida's version of the Nastukov formolite reaction gives satisfactory concordant results. The sample (50g) is saponified with aq. KOH under reflux and dild. with 50 ml. of H_2O; then concd. aq. $CaCl_2$ is added and the whole is steam-dist. The distillate is tested by adding portions of it to a soln. of 1 ml. of formalin in 20 ml. of concd. H_2SO_4; the immediate formation of a red-brown surface film, or of a ppt., indicates the presence of petroleum spirit. The suggested quant. application of the method has been found satisfactory. (*Chem. Abs.*)

DETECTION OF A NEW ADULTERANT OF OLIVE OIL. Gulbrand Lunde, Hans Krinstad, Erling Mathiesen and Olf Olsen. *Tids Hermetikind. 6,* 200-4 (1939). In the Norwegian canning industry the amt. of refined pressed olive oil to be used in packing sardines is limited to 30%. This is detd. by a fluorescence test. Adulteration was detected by the low acid no. of an oil that gave a correct fluorescence test. Spectroscopic examn. showed in the unsaponifiable portion of the oil and added coloring agent that gave to the oil the appearance of pure pressed olive oil. (*Chem. Abs.*)

THE TRANSFORMATION OF FAT, PARAFFIN AND PALMITIC ACID UNDER THE INFLUENCE OF MICROORGANISMS FROM LAKE ALA-KUL. L. D. Shturm aid S. I. Orlova. *Microbiology (U. S. S. R.) 6,* 754-72 (1937); Chem. Zentr. 1938, I. 488. The transformation of fatty matter under the influence of microorganisms from Lake Ala-Kul is of importance in connection with the fuel, balchaschite, that occurs on the shores of this lake. Beef tallow, paraffin or palmitic acid was used as a source of C and inoculation of the surface of the medium was done with sapropel deposits from the lake, with balchaschite or with algae from the surface of the lake. Decompn. of the fat under aerobic conditions resulted in the formation of sol. and insol. acids and hydroxy acids contg. few C atoms; the same was true for palmitic acids. (*Chem. Abs.*)

THE CHEMISTRY OF FAT SPOILAGE. VIII; THE INFLUENCE OF VARIOUS MATERIALS (BARLEY, MALT, ROASTED BARLEY PRODUCTS, PHOSPHATIDES, PROTEINS, CARBOHYDRATES) IN NON-HEATED AND HEATED STATE ON THE STORAGE CAPACITY OF FAT. K. Täufel and J. Köchling. *Fette u. Seifen 46,* 554-60 (1939). Barley and malt in meal form as well as oats have an antioxidant effect. Heating the meals with the oil does not reduce the effect. Roasted barley, barley coffee, and roasted malt coffee also give an antioxidant effect. Carbohydrates do not have an oxidation hemming effect, except when heated to above 185° C. Gelatin, casein, and alanin act similar to carbohydrates. Lecithin is a good antioxidant.

DETECTION OF EVEN NUMBERED AND UNEVEN NUMBERED FAT ACIDS IN THE ANALYSIS OF COCO OIL. E. Jantzen and H. Witgert. *Fette u. Seifen 46,* 563-9 (1939). Distn. of the methyl esters was the means of separation. 99.5% of the acids contained even numbers of carbon atoms.

FAT RECOVERY FROM RINSE WATER. W. Passavant. *Fette u. Seifen 6,* 583-5 (1939). Several designs for fat traps are illustrated.

STAINLESS STEEL FOR PREPARATION AND USE OF FATTY ACIDS. H. Hongardy. *Seifensieder Ztg. 66,* 669-71; 700-1 (1939). Stainless steel, especially 18% Cr, 8% Ni, 2.5% Mo, is much more resistant to corrosion by fatty acids at fat-splitting temperatures than steel, aluminum, or copper. Its tensile strength and stiffness are greater also. Solid sheets or clad sheets may be used. (*Chem. Abs.*)

PATENTS

MACHINE FOR TREATING FATS. A. V. Hammer. *U. S. 2,169,642.* A kneading machine for mixing and blending fats for shortening and margarine manufacture is described.

SALAD DRESSING. A. Musher (to Musher Corp.). *U. S. 2,170,518.* A salad dressing base contains the fats, spices, salt, sugar, citric acid and some emulsifiers is prepd. as a product that can be further mixed with eggs or other ingredients for converting it to different types of dressing.

COMPOSITION OF MATTER. R. T. K. Cornwell. *U. S. 2,170,632.* A reaction product of a fat acid with a mono-carboxylic acid of the benzophenone series is used as a plasticizer for a lacquer vase.

PURIFICATION OF LAUNDRY WASTE. O. H. Urbain & W. R. Stemen (to C. H. Lewis). *U. S. 2,171,197-203.* Methods and apps. for removing suspended solids, hydrolyzing the soaps, recovering the fat acids and purifying the same from laundry waste liquors are described.

PROCESS OF TREATING GLYCERIDES. F. E. Dearborn. *U. S. 2,169,793.* Sulfurized insecticidal and fungicidal oils are prepd. by heating the glycerides with sulfur in the presence of a few crystals of I.

Liquid coating composition. T. F. Bradley. *U. S. 2,169,577.* Fatty acid soaps of Al and Fe contg. oxidation promoters in hydro-carbon solvents are used to give varnish-like films.

GLYCEROL FERMENTATION PROCESS. F. M. Hildebrandt & N. M. Erb (to U. S. Indus. Alc.), *U. S. 2,169,245.* Glycerol and ethanol are produced by yeast fermentation of black strap sugar in a process comprising seeding a dilute mash to grow the yeast, increasing the sugar content, and adding a glycerol-ethanol fermentation promoter.

METHOD OF DETERMINING THE PURITY OF TRIMETHYLAMINE. L. U. Spence (to Rohm & Hass Co.). *U. S. 2,171,809.* Detn. is by saturating water with the gas-

eous trimethylamine and measuring the conductivity of the resulting soln.

METHOD OF FINISHING SHORTENING. T. M. Godfrey (to Lever Bros. Co.). *U. S. 2,174,364.* App. for simultaneous agitation and chilling of shortening is described.

BLENDING EDIBLE FATS. A. Gudheim (to Lever Bros. Co.). *U. S. 2,174,365.* —.5 to 5% of hard fat having a titer not less than 65° C. is added to other shortening fats to impart plastic characteristics over a wide range.

HYDROGENATION PROCESS. R. J. Byrkit (to Hercules Powder Co.). *U. S. 2,174,651.* An app. for continuous hydrogenation of rosin under pressure is decribed.

PROCESS OF CONCENTRATING ORES BY FROTH FLOTATION. A. W. Ralston and W. O. Pool (to Armour & Co.). *U. S. 2,175,093.* Fat nitriles are used in the process.

ABSTRACTS

Soaps

Edited by M. L. SHEELY

PRESENCE OF TWO MICCELLE SPECIES IN AQUEOUS SOAP SOLUTIONS. J. Stauff, *Naturwissenschaften 27,* 213-14 (1939). X-ray diagrams of Na palmitate soln. at 70° showed even at concns. of 0.25 N interference rings of smaller diam. than that of the solid Na palmitate ring. Below this concn. no rings were found; above it the intensity increased with concn. On cryst. soap-water mixts. at 20° interferences were found at concs. of 0.025 N. The rings are caused by colloidal particles, and 2 kinds of these are present, one of which gives no x-ray reflections. When detg. the period required in solns. of difference in concentration for formation of the first visible crystals (curve) at 3 or 6° undercooling a distinct change in direction of the time-concn. curve appears between 0.1 and 0.25 N which is attributed to a change in particle size. Small as well as large micelles are present; they are different, however, from the 2 forms of McBains. (*Chem. Abs.*)

THE COMPOSITION OF FAT ACIDS OBTAINED FROM OXIDATION PRODUCTS OF SYNTHETIC PARAFFIN. Friedrich Rannkamp Z. *physiol. Chem. 259,* 236-44 (1939). The synthetic fat contained all the fat acids from C_8 to C_{22} with about equal quantities of odd and even nos. of C atoms. It m. 27-9°, has I no. 4.2, acid no. O. sapon. no. 231. and unsaponifiable 0.3%. The Me esters were fractionated and some of the acids isolated pure from the fractions. (*Chem. Abs.*)

ZINC WHITE FOR FAT SPLITTING. A. Foulon. *Seifensieder-Ztg. 66,* 568-9 (1939). Zinc white mixed with 20-40% of zinc dust makes an excellent fat-splitting agent and catalyst in the oil and fat industry. One reason for this is that zinc white can be obtained in a high degree of chemical purity, giving correspondingly pure and light-colored fatty acids. Zn white has a very fine particle size which increases its surface activity. The Zn soaps formed are easily decomposed. Although Zn white is higher in price than oxides which might be used, smaller amounts are necessary. (*Chem. Abs.*)

MELTING POINTS OF THE TRIGLYCERIDES OF THE HIGHER ACIDS. W. Gruntzig. *Z. anorg. allgem. Chem. 240,* 313-21 (1939). Photomicrographs are shown of polymorphic forms of tristearin, trilaurin, tripalmitin, tripentadecalin, tritridecalin, and triheptadecalin. The m.p's of the triglycerides of the series C_{12} to C_{18} are tabulated and graphed. Each of the glycerides C_{13}, C_{15}, C_{17} has 4 polymorphic forms. The relations between the m.p's of the various forms are discussed. (*Chem. Abs.*).

THE PRODUCTS OF ESTERIFICATION OF FAT ACIDS CONTAINING ONE DOUBLE BOND AND THEIR DRYING. A. A. Blagonravova & A. Ya. Drinberg. *J. Applied Chem. (U.S.S.R.) 11,* 1642-7 (1938). Pentaerythritol and d-mannitol esters of oleic acid prepd. by heating the acid with an excess of alc. at 200-20° for 6-10 hrs. had the drying properties of the vegetable oil. Esters of erucic, stearic and ricinoleic acids were also prepd. by the same method. An increase in the chain of the fat acid lowered the drying ability and the physicochem. properties of the films of the esters obtained. (*Chem. Abs.*)

PHYSICAL AND TECHNICAL PROPERTIES OF SOAP FROM COTTONSEED OIL. I. E. Feigin and G. S. Pomerants. *Khlopchatobumazhnaya Prom. 7,* [5], 28-9 (1937). Cold sapon. of 2 parts cottonseed oil with one part 28% NaOH (d. 1.320) gave a neutral, solid soap of ivory-like appearance. The product, however, was difficultly sol. in cold and hot water. A readily sol. soap contg. 65.3% fat acids was obtained by incomplete sapon. This was done by treating 475 g. cottonseed oil and 12 g. cottonseed oil fat acids with 220 g. NaOH of d. 270 (80% of the theoretical amt.). No oil sepd. from the dil. soln. of the soap in 10 days. The unsapond. portion could not be sepd. by the usual known methods. The soap could also be used as an emulsion in turpentine. (*Chem. Abs.*)

PATENTS

DETERGENT COMPOSITION IN CAKE FORM. William Beckers. *U. S. 2,169,829.* A detergent composition in cake form adapted for toilet purposes which is mildly acid in reaction and possesses good lathering and cleansing properties comprising boric acid and a water soluble synthetic detergent consisting of a combination of sodium sulfate and the sodium salt of the acid sulfuric acid ester of technical lauryl alcohol, the sodium sulfate constituting up to about 60% by weight of said combination, the boric acid acting as a binding agent in the composition, said composition being composed of about 50 to about 80% of boric acid based on the dry weight of the composition and about 50 to about 20% of said water-soluble synthetic detergent.

STABLE EMULSION. Howards and Sons Ltd. and Leonard C. West. *Brit. 501,521.* Stable emulsions of higher fatty acids and glycerides of the oleic and ricinoleic series, higher paraffin hydrocarbons such as paraffin wax and mineral oils, hydrogenated phenol and cresols, and animal and vegetable waxes are made with the aid of cyclohexylamine soap, e.g. with fatty acids of the stearic, oleic, ricinoleic or linoleic series or with cycloaliphatic fatty acids or naphthenic acids.