Abstracts

Oils and Fats

Edited by
M. M. PISKUR

THE DETERMINATION OF THE IODINE NUMBER WITHOUT IODINE. E. Ullrich. *Wollen- & Leinen-Ind.* 60, 67 (1940). Fat is dissolved in CCl_4 and treated with solns. of $KBrO_3$, KBr and HCl. Br is thus liberated and adds onto the double bonds in the fat. The excess Br is titrated back with KI, starch and 0.1 *N* $Na_2S_2O_3$, or entirely without I by means of 0.20 *N* $NaAsO_2$. Multiplication with the factor 1.2692 gives the usual I no. *(Chem. Abs.)*

THE DEVELOPMENT OF GREATER EMULSIFYING POWERS IN HIGH-ABSORPTION SHORTENINGS. Mary Gaffney. *Bakers Dig.* 15, 101-2 (1940).

PRESSING OF SUNFLOWER SEEDS WITHOUT PRESSING CLOTHS. M. Pitkewitsch. *Msl. Zhir. Delo.* 15, No. 5, 11-14 (1939). The meats are heated and formed into a ball before placing between plates. The oil content of the cake was 0.3 to 0.5% less than when cloth was used.

BEHAVIOR OF PHOSPHORUS COMPOUNDS AND UNSAPONIFIABLE MATTER IN COTTON SEEDS DURING EXTRACTION AND PRESSING. A. M. Goldowski and M. I. Lischkewitsch. *Work of Russ. Central Sci. Fat Research Inst.* 1939 118-25. Pressed oil contains 1.48-1.82% phosphatides and 0.77-1.04% unsapon. matter. The resp. figures for solvent oil are 1.48-1.70 and 1.38-1.44. In both processes the major portion of the phosphatides remains in the gel phase. *(Chem. Zentr.)*

THE COMPONENT ACIDS OF AN OX BONE MARROW FAT. T. P. Hilditch and K. S. Murti. *Biochem. J.* 34, 1299-1300 (1940). The acids were: lauric 0.1, myristic 2.6, palmitic 32.2, stearic 15.5, tetradecenoic 0.7, hexadecenoic 3.0, oleic 43.2, octadecadienoic 2.5, unsapon. 0.2. THE COMPONENT ACIDS AND GLYCERIDES OF SOME INDIAN OX DEPOT FATS. *Ibid.* 1301-11. EFFECT OF A HIGH-FAT DIET ON THE EXECRETION OF BISULPHITE-BINDING SUBSTANCES IN THE URINE OF RATS DEFICIENT IN VITAMIN B_1. G. G. Banerji. *Ibid.* 1329-33. The ingestion of a high-fat diet by rats deprived of vitamin B_1 diminished the excretion of bisulphite-binding substances in their urine and alleviated the severity of the brady-cardia. The aneurinsparing action of fat, therefore, is not limited to its effect in protecting such animals against loss of wt. or the development of the better known symptoms of deficiency, but shows itself likewise in the absence of these 2 characteristic signs of the avitaminosis. The significance of these results for vitamin assays, and for the assessment of deficiency, is discussed.

METHYL ESTERS OF THE HIGHER FATTY ACIDS. F. W. Wyman and C. Barkenbus. *Ind. & Eng. Chem. Anal. Ed.* 12, 658-61 (1940). The methyl esters of caprylic, capric, lauric, myristic, palmitic, and stearic acids have been purified and their *n* detd. Small quantities of known mixts. of these esters have been fractionally distd. through a spinning-band column and their compn. has been detd. With the exception of the more volatile esters the analyses are fairly accurate, considering the difficulty connected with sepg. such mixts. In oil analyses where only small quantities of these acids are available this method offers for the first time a convenient and fairly accurate method of analysis.

HARDENING OIL WITH FIVE CATALYSTS. S. S. Ueno and T. Suzukawa. *J. Soc. Chem. Ind. Japan* 42, 350-1B (1939). A catalyst of Ni, Cu, Co, Mn and small amts. of Cr, Mg, Zn and Pb are very active, but addn. of Fe reduces the activity. Catalyst of Ni, Cu, Co with some Pb, Ca or Fe are highly active but activity is reduced by Mn. Catalysts of Ni, Cu, Co, Mn and small amts. of other metals were as active as those of Ni, Cu, Co, Zn and other metals. *(Chem. Zentr.)*

PRESENT STATE OF MANUFACTURE OF FAT WITH MICROORGANISMS. G. Haesler and H. Fink. *Z. Spiritus ind.* 63, 89-90, 94, 96 (1940). Literature on the subject is reviewed. *Oidium lactis (Copera lactia)* yielded a good fat mold. Out of 50 strains one called strain A, gave optimum results at 24 to 29° in 5-6 days. A 4.5% sugar concn. in whey is used in the media. With wood sugar a sugar :whey ratio of 6 :4 has been recommended.

KETOGENIC ACTION OF ODD NUMBERED CARBON FATTY ACIDS. E. M. MacKay et al. *J. Biol. Chem.* 136, 503-7 (1940). In fed rabbits with adequate amts. of liver glycogen and without a ketosis the feeding of odd numbered C fatty acids higher than propionic in the form of their ethyl or glycerol esters leads to an increase in the level of acetone bodies in the blood. Valeric, heptylic, pelargonic, and undecylic adds were all ketogenic.

THE EFFECT OF FAT ON TUMOR FORMATION. H. P. Jacobi and C. A. Baumann. *Am. J. Cancer* 39, 338-42 (1940). The rate of tumor production by local application of benzopyrene, methylcholanthrene or dibensthracene to mice was accelerated by addn. of 15% fat to the diet. Fat applied locally to the painted areas had less effect than fat in the diet. *(Chem. Abs.)*

SOME FACTORS AFFECTING THE SPECIFIC DYNAMIC ACTION OF FAT IN NORMAL AND PARTIALLY DEPANCREATIZED RATS. G. C. Ring. *Am. J. Physiol.* 131, 357-62 (1940). In rats, the specific dynamic action of fat is not affected by pancreatectomy unless the animals are on a fat diet for at least 3 days. Then the calorigenic action of fat in the operated animals is approx. doubled. The fat diet does not greatly affect the S.D.A. in normal animals. Since the partially depancreatized rats studied were not undernourished, nutritional condition cannot be resposible for the results obtained. Giving large doses of cortical extract depresses both the S.D.A. of normal and depancreatized rats.

PATENTS

IMPROVEMENTS IN THE RECOVERY OF OIL FROM THE BONES OF WHALES EXTRACTED BY STEAM IN ROTARY DIGESTERS. Aktiebolaget Separator, Lever Bros. & Unilever Ltd. and B. R. Bostock. *Brit. 511,264.* A scheme for extn, of whale oil is presented; rotary steam digesters are used. The glue water is given a preliminary skimming to remove the oil layer, the remainder of the oil is removed by centrifuges.

PURIFYING FATS. D. Freres. *Fr. 854,568.* Soap is removed from alkali refined oil by centrifuging.

METHOD FOR REFINING FATTY OILS. H. M. Stadt (Refining, Inc.). *U.S. 2,223,077.* In a continuous process the oil is cooled to below 60° F., refining proportioned into it, heated quickly to sepn. temp. and continuously sepg. out the foots with centrifuges.

IMPROVEMENTS IN PROCESS AND APPARATUS FOR DEODORIZATION OF ANIMAL AND VEGETABLE OILS. Foster

Wheeler Corp. *Brit. 510,852.* The oil is passed successively through 2 vacuum zones.

PROCESS FOR BLEACHING OILS, FATS AND WAXES. E. Scheller (Deutsche Gold und Silber Scheideanstalt). *U.S. 2,221,559.* The fat, oil or wax is emulsified, bleached with an oxidizing agent in acid emulsion, neutralized to pH of 8.5 and then bleached with H_2O_2.

MANUFACTURE OF STABILIZED ANIMAL AND VEGETABLE FATS AND OILS. E. Böhm and T. Sabalitschka. *U.S. 2,223,244.* In the stabilization of animal and vegetable fats and oils subject to deterioration by oxidation, the process comprises adding small amts. of HO—C_6H_4—CO—O—$(CH_2)_3$—N$(C_2H_5)_2$ or similar compds.

STABILIZING OF FATS. T. Sabalitschka and E. Bohm. *Belg. 435,981.* Alc. esters of tannic acid are used as antioxidants.

PROCESS OF TREATING LIQUIDS. I. M. Colbeth (Baker Castor Oil Co.). *U.S. 2,183,486.* The process of purifying an oil contg. fatty acids, comprises passing an aq. alk. soln. downwardly through a confined space at a rate slower than drops of the oil will rise through it, introducing the oil into the lower portion of said space and dividing it into droplets without agitating it or causing it to form a stable emulsion while dissolving the resulting soap in the liquid phase of said soln. and removing it.

PROCESS OF BREAKING EMULSIONS. I. M. Colbeth (Baker Castor Oil Co.). *U.S. 2,183,487.* Castor oil that has been bleached by oxidation at a temp. of about 320°F and oxidized at 285° F and then treated with Na bisulfite is used as a de-emulsifier.

SALAD DRESSING. W. F. Straub (W. F. Straub & Co.). *U.S. 2,221,957.* In a salad dressing, the combination includes honey and vegetable oil, the honey being in sufficient quantity relative to the oil to eliminate the corny and mealy taste of the oil but insufficient to mask the presence of the oil.

SHORTENING. H. Schou. *U.S. 2,220,976.* The shortening comprises fat, not more than 80%, some sugar and small amts. of dispersing and stabilizing agent for manuf. of thermo-stable water-in-oil dispersions.

DRYING OIL. O. Jordan and E. Rossmann (General Aniline & Film Corp.). *U.S. 2,220,906.* Drying oils comprising a semicarbazone of oiticica oil is admixed with other drying oils.

GLYCOL ESTERS. C. Ellis (Ellis-Foster Co.). *U.S. 2,221,674.* Diethylene glycol ethyl esters of coconut oil fat acids are claimed as new compds. They are used as softening agents for nitrocellulose coatings.

LUBRICATING OIL. S. Musher (Musher Foundation, Inc.). *U.S. 2,216,711.* Lecithin and a polyhydroxy benzene is added to lubricating oils and the mixt. is heated to 350° F. so that final oil will have less corrosive action and less tendency to form sludge.

CONDENSATION PRODUCT AND METHOD OF PREPARING SAME. E. A. Mauersberger (Alframine Corp.). *U.S. 2,186,464.* The reaction product of aliphatic aldehydes and compds. of formula R.CO.(NH.CxH2x)n.NH. CyH2y.OH in which R represents any alkyl or hydroxy-substituted alkyl chain of a fatty acid, contg. at least 7 C atoms, x and y each represent a number from 2 to 5 inc. and n represents a number from 0 to 3 inc. are reacted. The products are waxy or resin-like.

Abstracts

Soaps

Edited by M. L. SHEELY

GENUINE CASTILE SOAP VERSUS IMITATIONS. THE BLANDNESS OF GENUINE BRANDS AS DETERMINED BY PATCH TESTS AND RABBIT-EYE TESTS. Frederic Damrau. *Med. Record 152,* 187 (1940). The majority of so-called "castile" soaps are made wholly or in part from cheaper oils or fats other than olive oil. To show their inferior, harsh and irritation qualities, 6 brands of "castile" soaps were compared with 2 U.S.P. soaps, namely, laco castile soap (Sapo duris, I) and green soap (II). In 4 successive series of human skin patch tests I and II were the only brands that caused no erythema. All 6 of the other brands produced definite erythema in at least 1 expt. With the more delicate rabbit-eye test, none of the brands caused erythema in dilns. of 1:375 I and 2 other "castile" brands caused no irritation; 4 brands produced definite erythema (degrees 1½, 1½ 1, ½); II caused no reaction. With dilns. 1:250 or 1:175 all brands caused reaction. I was highly satisfactory as a non-irritating cleanser in a small series of cases where the skin was affected by chapping, chafing, roughness, dryness, excessive oiliness, pruritus or poison ivy. In cases of sunburn, windburn and eczema its use was free from irritating effects. *(Chem. Abs.).*

USE OF GLYCEROL IN SHIPPING TOMATO PLANTS. John Hartman and Edward Stair. *Proc. Am. Soc. Hort. Sci. 37,* 916 (1940). The addn. of glycerol (0.1%) to the water used to wet the packing material had no effect on yield or stem lesions caused by Macrosporium solani but delayed maturity somewhat. *(Chem. Abs.)*

DETERMINATION OF SOME PHYSICAL AND CHEMICAL CONSTANTS OF CERTAIN DETERGENTS. B. Holiday, E. Kelly and L. Rising. *J. Am. Pharm. Assoc. 29,* 367 (1940). With a view to aiding in building up a more comprehensive knowledge of the chem. and phys. factors in the act of removing soil and to develop a clear-cut and practical comparison between the detergents now available commercially, the following properties were detd. on 10 soaps; volatile, water, nonvolatile, alc.-sol., water-sol., water-insol., pH, surface tension, ability to form suds, ability to remove soil, and total alky. There appears to be correlation between total volatile and water; none was apparent between alc.-sol. and water sol., between ability to form copious and lasting suds and ability to remove soil, nor between total alky. and pH value. *(Chem. Abs.)*

SOLUBILIZING AND DETERGENT ACTION IN NONIONIZING SOLVENTS. J. McBain, R. Merrill, Jr., J. Vinograd. *J. Am. Chem. Soc. 62,* 2880 (1940). This note adduces a series of upwards of 200 qual. observations which serve the purpose of demonstrating that solubilizing occurs in nonaq. solvents. Many solubilizers or detergents that operate in water are likewise effective in other solvents, provided that they are themselves sol. therein. Many are not sol. and very few, even if sol.,