ABSTRACTS

Oils and Fats

Edited by
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Ketone rancidity in fats and soaps. *The American Perfumer and Essential Oil Review,* Vol. XXVIII, No. 10, page 546, December, 1933.—H. Schmalfuss, H. Werner, and A. Gehrke (Fettchem. Umschau, 1933, 40, 102-104).—Sterilized fats, etc. (including coconut oil, beeswax, etc.), free from microorganisms may develop ketone rancidity (positive reaction according to Taufel and Thaler, B., 1932, 515) on storage, the process being accelerated by exposure to light and heat. Fatty acids (from C_8 upwards), glycerol, and soaps (K laurate) give the Taufel ketone reaction after irradiation, volatile acidic products being formed in the case of the higher fatty acids and glycerol.—British Chemical Abstracts.

New oil recovery process. *Chemical Industries,* Vol. XXXIV, No. 1, page 48, January, 1934.—A new Swiss process for oil recovery is reported in foreign papers. Heretofore, accumulation of large quantities of spent bleaching clay constituted a serious handicap for the vegetable and mineral oil, fat and wax trade. Danger of spontaneous ignition arising from prolonged storage made the rapid recovery of oil and fat from spent bleaching clay a matter of considerable importance, especially as bleaching clay saturated with oil could only be sold at a very low price. Methods for extraction of the oil and fat contained in the spent clay after evacuation from the filter presses have been in existence for some time either by means of volatile solvent treatment or by extraction under pressure in autoclaves with or without an admixture of lye or soda. These methods had serious drawbacks, largely of expense but including excessive steam consumption and the nuisance of unpleasant gases. In the new process, treatment takes place under atmospheric pressure in an open vessel with an agitator of special construction. It is claimed to be considerably cheaper than the old methods, 200 lb. of spent bleaching clay requiring roughly three-quarters the same amount of steam, 100 gals. of water, and the chemical products necessary. Power consumption is also very low, attaining a maximum of 5.6 h. p. for an installation for the treatment of about 2,000 lb. of oil-laden bleaching clay for 8 hours. No special operator is required, for, it is claimed, the process is so simple that it can be attended to by the staff of the refining plant in their spare moments. Another advantages of the system is said to be the reactivation of the spent bleaching clay after the oil and fat have been extracted. Information reaching this country unfortunately does not supply the information as to the chemicals used.

The reaction of castor oil with citric acid and phthalic anhydride. Ryohei Oda. *J. Soc. Chem. Ind., Japan* 36, Suppl. binding 623-5 (1933); cf. C. A. 28, 668^2.—Expts. were carried out at atm. and reduced pressure and temps. of 150° to 170°. Some reaction between the substances was noted in both cases.

K. KAMMERMEYER.

Bleaching of palm oil with bleaching earths. W. Schaefer and G. Bitter. *Seifensieder Ztg.* 60 789-91 (1933).—S. and B. describe a bleaching process for palm oil in which the oil is rapidly stirred at 130° for 1 min. with 4% of bleaching earth plus 0.10-0.30% concd. H_2SO_4 (exact amt. detd. by preliminary test); 10 min. addnl. stirring results in a color equal to a bleach with 10% earth.

P. ESCHER.

Bleaching of palm oil at Serdang. C. D. V. Georgi and T. D. Marsh. *Malayan Agr. J.* 21, 505-6 (1933).—Air bleaching tests with a catalyst Co borate were carried out as follows: oil from a De Laval separator was heated to 90° with closed steam in an iron tank while being agitated with air through a perforated pipe. About 0.01% of powd. Co borate was then dusted over the oil and color changes were noted at the end of 1 and 2 hrs. The max. change occurs at 2½ hrs. The bleaching effect is permanent for more than 1 yr.

E. SCHERUBEL.

Sampling of oil-press cakes. R. Heublyum. *Seifensieder Ztg.* 60, 807-8, 828 (1933).—The oil content of press cakes decreases from the top of the press toward the middle and increases again toward the bottom. In the individual cakes the oil content decreases from the center toward the edge, the difference amounting to 1% and over. Protruding edges may contain a high percentage of oil. A sampling method is outlined according to which a no. of samples are cut, increasing from the center to the edge, to represent the av. oil content.

P. ESCHER.

Examination of soy-bean lecithin products. L. Allen. *Fettchem. Umschau* 40, 218-19 (1933).—To distinguish between soy-bean lecithin and egg lecithin A. exts. the oil with acetone, evaps., saponifies, seps. the liquid fatty acids and dets. in the latter the hexabromide no. which is considered proof of the presence of soybean oil, accompanying the soy lecithin.

P. ESCHER.

The oil of "karasumi." Mitsumaru Tsujimotor. *J. Soc. Chem. Ind., Japan* 30, Suppl. binding 676 (1933).—Karasumi is the salted and dried ovary of gray mullet, *Mugil japonicus.* The oil was found to be a liquid wax and resembled sperm oil and inguandarame oil, but differed from them in the higher unsatn. of the acids and the large content of cholesterol. Cetyl alc. and octadecenol were also present. The properties of the oil are $d^{20}_4 = 0.8818$, $N^{20}_D = 1.4695$, acid value = 16.0, sapon. no. = 120.1, I no. = 130.6, unsaponifiable matter = 40.64%.

KARL KAMMERMEYER.

Studies on Twitchell reagents. IX. The fat-splitting power of three kinds of Twitchell reagents and the darkening of fatty acids hydrolyzed by them. Kyosuke Nishizawa and Arihiro Tominaga. *J. Soc. Chem. Ind., Japan* 36, Suppl. binding 681-4 (1933); cf. *C. A.* 26, 1145; 27, 200.

KARL KAMMERMEYER.

A new unsaturated acid in the kernel fat of "akarittom," Parinarium laurinum. II. Mitsumaru Tsujimoto and Hanji Koyangi. *J. Soc. Chem. Ind., Japan* 36, Suppl. binding 673-5 (1933); cf. *C. A.* 27, 3099.—The chem. constitution of the new acid was investigated by the ozone method. As the chief product of decompn. azelaic acid and probably azelaic semialdehyde were obtained. The provisional formula given in the previous paper should be withdrawn as erroneous. No definite constitution is given for the acid, but it may be identical with couepic acid.

KARL KAMMERMEYER.

PATENTS

Purifying oils. I. G. Farbenind. A.-G. Fr. 41,676, Mar. 10, 1933. Addn. to 688.370 (*C. A.* 25, 837). Lecithins, phosphatides, etc., are removed from crude oils, particularly soy-bean oil, by dispersing a small proportion of water or steam in the oil at about 60-70° and cooling rapidly to normal or lower, and removing the products which are pptd.

Purifying hydrogenated fatty oils. Dietrich Hildisch. Brit. 397,039, Aug. 17, 1933. The oils are freed from objectionable taste and odor by treating the hot oil with substances which split off gases or vapors such as O, NH_3, CO_2, etc., *e.g.*, NH_4 carbamate, $(NH_4)_2CO_3$, NH_4NO_2, mixts. of NH_4Cl and $NaNO_2$, urea, di- or tri-ethanolamine, inorg. or org. peroxides, *e. g.*, Bz peroxide, or bicarbonates alone or mixed with acids. During evolution of the gas a current of steam, NH_3 or CO_2 may be passed into the oil, or the latter may be submitted to steam treatment *in vacuo* after deodorization.

Catalytic hydrogenation. Deutsche Hydrierwerke A.-G. Brit. 396,311, Aug. 3, 1933. Metallic salts of high mol. org. acids are used as catalysts for the reduction of fats, oils, waxes, fatty acids, etc., to high mol. alcs. Such salts are the Cu, Zn, Pb Mn, Co, Ni and Hg salts of palmitic, stearic, linseed oil, rosin and naphthenic acids. They may be formed within the substance to be reduced, *e. g.*, $CuCO_3$ and oleic acid may be added to coconut fat and the mixt. heated in an autoclave to 280-300° under 100-200 atm. of H pressure.

Disembittering and improving soy-bean material. Egon C. Winkler and Hubert Goller. U. S. 1,936,281, Nov. 21. Readily sol. substances are extd. by dialysis with water at a pressure other than atm. pressure (suitably either sub-or super-atm. pressure) and at a temp. of 65-80° so that the seed cases of the beans act like a semi-permeable diaphragm. App. is described.

Device for charging rotary cooling drums with liquid fats, fat emulsions, etc. Schröder & Co. Kühltrommel-u. Apparatebau and Rudolf Knollenberg. Ger. 578,693, June 16, 1933.

Separating mixtures of stearin and olein. Ernst A. Mauersberger. Ger. 578,858, June 17, 1933. The mixt. is heated and dissolved. in toluene or xylene. The soln. is given an addn. of a low-mol. alc. or ketone and cooled. The stearin seps. out and is filtered off and the olein is obtained by driving off the hydrocarbon and the alc. Examples are given. Cf. *C. A.* 27, 4945.

Hydrogenated oils. Dietrich Hildisch. Fr. 751,735, Sept. 8, 1933. See Brit. 397,039 (*C. A.* 28, 669^3).

COURTESY CHEMICAL ABSTRACTS.