ABSTRACTS

Oils and Fats

Edited by
W. F. BOLLENS and M. M. PISKUR

Filter cloths for the oil and fat industries. Josef Hetzer. *Allgem. Oel- u. Fett-Ztg.* **32**, 395-7 (1935).—Several com. filter cloths were tested with oils contg. bleaching earths. There was considerable variation in the durability of those made with cotton. The poorest camel-hair filter cloth was 4 times more durable than the best cotton one which was $\frac{1}{3}$ cheaper. Since the material to be filtered is usually acid, H. recommends the use of animal-fiber filter cloths. (*C. A.* **30**, 633.)

The interchange of ester radicals of fats. Hans G. Meyer. *Allgem. Oel- u. Fett-Ztg.* **32**, 397-401 (1935).—The Bu and Me esters of fat acids and Ac esters of fatty alcs. were prepd. from the acids and alcs. derived from several fats. The characteristics of these as compared with the original fat are tabulated. These esters are purer than the original fat and M. suggests they are convenient for many tech. applications. The prepn. of Me esters is more difficult than that of the Bu and Ac. (*C. A.* **30**, 633.)

Use of the Wood light in analysis. Examination of Argentine olive oils under the Wood light and comparison with peanut, cottonseed, rape and sunflower oils of domestic origin. B. Berisso. *Rev. col. farm. nac.* (Rosario) **2**, 59; *Anales farm. bioquím., Suppl.* **6**, 89-90 (1935).—The adulteration of olive oil with 3% of any of the above oils can be detected by examn. of the fluorescence produced by irradiation with light of 365 mμ wave length. (*C. A.* **30**, 1249.)

The investigation of saturated acids of completely hydrogenated oils by the method of fractional distillation. I. Hardened cottonseed oil. Sei-ichi Ueno and Masayoshi Iwai. *J. Soc. Chem. Ind., Japan* **38**, Suppl. binding 602-3 (1935).—Hardened cottonseed oil (I no., Wijs 0.53, m. 60.6-1.8°) obtained from refined oil (I no. 107.3, sapon. no. 189.5), was sapond., purified with Et_2O and the mixed fatty acids were sepd. The mixed acids (neutralization no. 191.5, I no. 0.86, m. 63.5-4.3°, titer 60.6°) were esterified with MeOH contg. 2.5% HCl and the Me esters were fractionally distd. at 2 mm. pressure into 14 fractions. The results of the distn. were checked by the fractional crystn. of the free fatty acids in alc. The quant. compn. was calcd. by use of the mean mol. wt. of the Me esters computed from the neutralization nos. and the theoretical mol. wt. of the pure esters. The compn. was found to be: minute amt. of myristic acid, and about 17% palmitic, 76% stearic and 7% arachidic acids. Exptl. results are given. (*C. A.* **30**, 1249.)

Adulteration of arachis oil with coconut oil. Henryk Ruebenbauer. *Przemysl Chem.* **19**, 9-10 (1935).—Arachis oil contg. 10% of coconut oil can be distinguished from the pure product by its higher d., sapon., Reichert-Meissl and Polenske values, and by its lower *n* and I no. (*C. A.* **30**, 1249.)

Influence of "Stearine" on heat polymerization of sardine oil. Otho M. Behr. *Ind. & Eng. Chem.* **28**, 299-301 (1936).—It is estd. that 5% of satd. acid radicals removed constitute approx. 95% of the "stearin" which may be removed by winterization. Removing this 5% necessitates the loss of approx. 30% of the original oil. A practical min. of a 14-hr. chill test at 0° C. is recommended. Highly refrigerated oils will polymerize more rapidly under the same heat input than lightly winterized oils. The presence of glycerides, solid at freezing temps. are detrimental to polymerization. More reaction takes place between phenolic resins and sardine oil than with linseed oil, and a max. of reactivity takes place with thoroughly winterized oils.

The effect of the ingestion of cottonseed oil before and after hydrogenation on the composition of the body fat of the rat. J. M. Spadola and N. R. Ellis. J. Biol. Chem. **113**, 205-217. The ingestion of fats of varying degrees of unsaturation affected the composition of the saturated acid fraction of the body fat to a less extent than it did the unsaturated acid fraction. The rats fed cottonseed oil deposited more palmitic and stearic acids than those fed partially hydrogenated cottonseed oil or the low fat diet. The ingestion of linoleic acid resulted in its deposition in the adipose fat. The amount deposited was approximately proportional to the amount ingested. Increased deposition of linoleic acid was accompanied by a decreased deposition of palmitoleic and oleic acids. The body fat of rats fed cottonseed oil or hydrogenated cottonseed oil contained small amounts of arachidonic acid and a saturated acid of higher molecular weight than C_{18}. Ingested iso-oleic acid was deposited in the depot fat.

Oil from Ricinus zanzibarinus. A. Steger, J. van Loon and C. Smelt. *J. Soc. Chem. Ind.* **55**, 41-2T. The analysis indicates that the oil from *Ricinus Zanzibarinus* has, in general, the same properties and the same composition as that of *Ricinus communis* (castor oil) and may be used for the same purposes. There are indications, however, that the former bears a larger number of fruits, with a higher oil content than the latter, so that from a botanical and industrial point of view it is of importance to ascertain if a more profitable production of seeds and castor oil is possible in this way in the more tropical areas. The samples analyzed were grown in Paraguay and comparison was made with commercial samples of castor oil.

Progress in hydrogenating fatty oils. R. Heublum. *Mat. grasses* **27**, 589-90, 618-19. Reviews hydrogenation technic with stationary catalyst, composed of Al-Ni alloy. The advantage of the process is claimed to be production of lesser quantities of iso-oleic acid. (*Chem. Zentr.* **107** [I], 917.)

Decomposition of fat acids by molds. K. Taufel, H. Thaler and M. Loweneck. *Fettchem. Umsch.* **43**, 1-4 (1936).—The decomposition of fat acids by several mold fungi was studied. With *Penicillium glaucum* and *Aspergillus niger* it was shown that formation of methyl ketone takes place within certain limits of acid pH values. With foods containing palmitic, stearic, and oleic mold, formation takes place without development of methyl ketone. The molds yield Me-ketone with Undecan (I) acid (II) but not with oleic acid. It is suspected that the unsatd. acids of the oleic acid series behave similarly to the satd. members.

Studies on the polymerization of fatty oils. The polymerization of ethyl elaeostearate. A. Steger and J. van Loon. *Fettchem. Umschau* **43,** 17-21 (1936).—During the heating of Et elaeostearate at high temps. two types of reactions take place; i.e., (1) formation of high polymers and (2) cyclization and isomerization. With treatment at high temps. (above 300°) isomerization is most prevalent, and this is more so in presence of sulfur. The isomers formed are not capable of polymerization. Wood oil containing sulfur does not gel or the gelatinization may be severely hindered because of this isomerization.

PATENTS

Fats, etc. Swift and Co. Ger. 618,836, Sept. 17, 1935 (Cl. 53h. 1.01).—Fats, oils or their mixts., especially lard, is rendered stable by adding 1-5% of crude cottonseed oil. (*C. A.* **30,** 1251.)

Neutralizing oils. The Sharples Specialty Co. Fr. 787,555, Sept. 25, 1935.—App. is described for continuously mixing fatty oils and an alkali at high speed in carefully proportioned quantities and for sepg. the soap and neutral oil at suitable temp. (*C. A.* **30,** 1251.)

Oxidation products of castor oil. Melvin De Groote and Bernhard Keiser (to Tretolite Co.). U. S. 2,025,806, Dec. 21. Castor oil is oxidized with air at a temp. of about 120-150° and under a gage pressure of 25-125 lb., with 10-20% of octadeca-9, 11-dienoic acid glyceride as an autoöxidizer-catalyst. U. S. 2,025,807 relates to a similar oxidation of castor oil with air of normal moisture content, with use of hendecenoic acid glyceride as an autoöxidizer-catalyst. U. S. 2,025,808 involves the similar use of a-pinene as catalyst. U. S. 2,025,809 involves a like use of dipentene as catalyst. (*C. A.* **30,** 1251.)

Removing the "Catalyst taste" from hydrogenated oils. Dietrich Hildisch. U. S. 2,021,552, Nov. 19. —Hydrogenated oils such as those from fish oils and oils from other sea animals and from drying vegetable oils are treated with an alk. compd. such as NH_4 carbonate or carbamate, alkali metal carbonate, diethanolamine or triethanolamine (suitably at a temp. of about 70-130°) until evolution of gas ceases. (*C. A.* **30,** 637.)

Oils and fats. Sidney Musher. Fr. 785,927, Aug. 22, 1935.—These are preserved from rancidity by incorporating therewith or infusing thereunto a vegetable material such as barley, oats, maize, soybean seed, cottonseed or tournesol. The vegetable material is removed after the treatment. (*C. A.* **30,** 636.)

Method of refining fats and oils. V. Jersey. U. S. 2,029,722. Such oils as are derived from carrots, palms, sweet potatoes and are valued because of their vitamin A content, are refined with alkali in such a manner that alkali is added slowly to prevent a rise in temp. Cooling jackets or coils also surround the reaction vessel to assist in preventing rise in temp.

Soybean phosphatides. W. W. Ginn. (Chemical Novelties Corp., Cincinnati, Ohio.) U. S. 2,029,261 — Soybeans are hot pressed. The phosphatides are recovered from the oil by centrifuging.

Catalyst. W. W. Myddleton. U. S. 2,029,786. —The process of prepg. Ni catalyst consisting of mixing NiO with ethyl ortho-silicate adding NH_4OH to coagulate, breaking into granules and drying and finally reducing by the heating in presence of H_2.

Auto-oxidation and polymerization catalyst. F. Visser't Hooft. U. S. 2,032,554.—Dibenzoyl peroxide or a diacyl peroxide is added to oils used in paints.

Preparation of dehairing agent for animal hides and skins. Jan. W. Archibald. Australian 19,020. Five per cent S is added to an animal or vegetable oil and heated at 140-180° for 2 hrs. The sulfured oil is then sapond. with KOH. Dehairing is accomplished by soaking the softened skins in a 1% water soln. of the treated oil for about 20 hrs. and then removing the hair.

Castor machine oils. A. L. Blount. (Union Oil Co.) U. S. 2,031,405.—Mixt. of castor oil and mineral contg. 0.1-5.0% mono-butyl ether of diethylene glycol and 1.0-5.0% of an aluminum soap of a higher satd. fat acid.

ABSTRACTS

Soaps

***Edited by* M. L. SHEELY**

Estimation of Soap in Pharmaceutical Preparations. W. Stüwe. *Apoth. Ztg.* **50,** 1545-8 (1935).—Certain procedures are outlined and discussed for the examination of various soaps as potash, glycerinated liquid, potash spirit, liquid cresoli saponified, spirit saponified, camphorated spirit, medicated, jalap, camphorated liniment, ammoniated liniment, liquid formaldehyde and H_2O in medicinal. (*C. A.* **30,** 569.)

Hydrogenation of Fats in Presence of Nickel Carbonate and Formate Reduced in the Oil. E. Etinburg and M. Popov. *Masloboino Zhirovoe Delo* **11,** 363 (1935).—$NiCO_3$ can be used in the hydrogenation of high-grade oils with low-pressure steam for heating the oil before hydrogenation. A mixture of $NiCO_3$ and Ni formate can be used for the hydrogenation of low-grade oils when effective refining of the oil is not feasible. cf. *C. A.* **29,** 8369, 8373. (*C. A.* **30,** 889.)

Distilled Fatty Acids for Toilet Soap. *Perfumery and Essential Oil Review* 27, 1, 43 (January, 1936).—Among the more recent processes for distilling fatty acids the following may be noted: those of Hoffmann, Volkmar Hanig and Company, Stiepel, Bergell, and the so-called Dünnschict-Distillation (thin-layer distillation).