ABSTRACTS

Oils and Fats

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

Tobacco seeds not a waste product but a valuable raw material. I. Kruglyakov. *Tobachnaya Prom.* 1934, No. 5, 24.—Tobacco seeds contain, depending upon the climatic conditions and the type of plant, 28-50% of a fatty oil which gives very good films suitable for *varnishes* and can be utilized in the prepn. of *edible oils* and *semi-drying oils.* The pressings contain about 30% albumin and 32.2% protein.

A. A. BOEHTLINGK.

Effect of hydraulic pressure on the oil content of press cake. I. Kolpakov and M. Pasmanik. *Masloboino Zhirovoe Delo* 9, No. 5, 10-12 (1933); *Chimie & industrie* 31, 639.—With compound presses, contrary to a fairly common belief, the pressure does not play the predominant role in the variation of the oil content of the press cake; the most important factor from this standpoint is the preliminary treatment of the pulp: temp., moisture content, etc. In order to ext. the max. of oil it is essential to liberate the oily droplets by breaking open the cells contg. them. Retention of oil in the cake is also a function of its adsorption by the several constituents of the cake.

A. PAPINEAU-COUTURE.

The formation of isoöleic acid during sulfonation of oils. C. Riess. *Collegium* 1934, 566-8.—Not only hydrogenation but also sulfonation produces solid isoöleic acid; therefore the isoöleic acid test cannot be used for sulfonated oils. The amt. of isoöleic acid is a max. with 20% H_2SO_4; it is small at low sulfonation temps. but increases as the temp. increases.

I. D. CLARKE.

Hydrolysis of fats in the presence of activated charcoal. A. I. Rabinovich. *Masloboino Zhirovoe Delo* 9, No. 5, 26-30 (1934); *Chimie & industrie* 32, 1406.—The color of the fat acids and quality of the glycerol can be appreciably improved by the use of activated charcoals during hydrolysis. The charcoals must have been strongly activated and carefully washed with acid, preferably dil. HCl, which reduces the ash content to a min. and facilitates hydrolysis. The adsorbed fat can be recovered from the charcoal by extn. with a suitable solvent, gasoline giving best results. After extn. the charcoal must be reactivated.

A. PAPINEAU-COUTURE.

Preliminary notes on the sterol iodine values of oils and fats by the Bolton and Williams methods. A. C. Bose. *Analyst* 60, 160-3 (1935).—The method of B. and W. (*C. A.* 24, 1755) serves to distinguish between 3 classes of oils by detg. the sterol-I values. The values for cocogem and coconut oil (group I): "vanashpati" or vegetable ghee (group II); linseed oil, tori-seed oil, mixed mustard oil, arachis oil and castor oil (group III) and cod-liver oil (II and III) were detd. Since the values for animal ghee lie below those for cocogem and coconut oil, adulteration of ghee with oils of group I cannot be detected by the sterol-I value. On the other hand, this value serves to detect adulteration with oils of the other groups. W. T. H.

Ozonization of the fat acids of cottonseed oil. P. Rufimskii. *Masloboino Zhirovoe Delo* 9, No. 4, 41-2 (1934); *Chimie & industrie* 32, 1405.—Treatment of the fat acids of cottonseed oil with air or ozonized O exerts a considerable bleaching action and effects the following modifications in their analytical characteristics: solidification temp. of the fat acids increases (rises from 29.6° to 37.9°); the mean mol. wt. at first increases during the 1st stage of oxidation, and then decreases progressively; the I no. decreases steadily during the whole period of oxidation; the hydroxy acid content increases considerably (up to over 55%).

A. PAPINEAU-COUTURE.

Determination of sediment in vegetable oils. D. Kraft. *Masloboino Zhirovoe Delo* 9, No. 5, 23-4 (1934); *Chimie & industrie,* 32, 1406-7.—To 15 cc. of sample in a special centrifuge tube (shaped somewhat like a milk-analysis bottle) add 3 cc. of a satd. soln. of $CaCl_2$ in HCl and 5 cc. Me_2CO, shake, let stand 2-3 min., centrifuge 15 min. at 1500-2000 r. p. m., read the vol. of sediment collected in the narrow part of the tube, which is graduated in 0.02 cc., and multiply by 6.6 to obtain the percentage. This method showed that the increase in sediment in oils that have been strongly cooled (to —25° or —30°) is merely apparent, and is due to the increased vol. of the pptd. solids through swelling, and not to a further pptn. on cooling.

A. PAPINEAU-COUTURE.

Microchemical determination of the Hübl iodine number. M. Babkin. *Masloboino Zhirovoe Delo* 9, No. 5, 32-3 (1933); *Chimie & industrie* 31, 639-40.—Dissolve the sample (0.1 g. of fat or 0.03-0.05 g. of oil) in 2 cc. $CHCl_3$ in a 30-50-cc. glass-stoppered flask or bottle, add 3 cc. of Hübl's I soln. (if it decolorizes, add 1-2 cc. more), stir, let stand 3-4 hrs. in the dark, add 2 cc. of 10% KI and 10 cc. H_2O and titrate with 0.1 N $Na_2S_2O_3$, using a microburet graduated to 0.01 cc. A saving of 80-90% in reagents is effected.

A. PAPINEAU-COUTURE.

Effect of the method and the degree of refining on the properties of polymerized oil. 1. Changes of the acid value and the iodine value. Masao Murata and Katuzi Masumori. *J. Soc. Chem. Ind., Japan* 38, Suppl. binding 51 (1935).—Sardine and herring oils were refined with 0, 50, 100 and 120% alkali, where

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100% means the amt. used to neutralize the total free fat acid in the oil. Part of the oils were then polymerized and another fraction was treated with acid clay before polymerization. The acid value decreases as polymerization proceeds and the degree of the decrease is larger when the original acid value is large. The effect of acid-clay refining is negligible. The I no. also decreases with polymerization but the effect of both alkali- and acid-clay refining is negligible. **II. Changes of the specific gravity and the specific viscosity.** *Ibid.* 51.—The effect of refining upon the sp. gr. in polymerization is very small. The sp. viscosity is increased by polymerization and it is very high when there are both free fat acid and alkali soap. **III. Changes of the color and the index of refraction.** *Ibid.* 51-2.—In general, the color is decreased by both alkali- and acid-clay refining. With polymerization, the color of the imperfectly refined oil increases, while that of the fully refined oil decreases. The n^{20}/D was increased by alkali refining but not by acid-clay refining. Polymerization increased it considerably, and the imperfectly refined polymerized oil showed a greater index than the fully refined oil.

K. K.

The alcohol-extraction process for fatty oils. III. Extraction of cottonseed oil. M. Satô, T. Inaba and K. Kitagawa. *J. Soc. Chem. Ind., Japan* 38, Suppl. binding 50 (1935); cf. *C. A.* 29, 1272[9].—In extn. at higher temps. the ratio of extd. oil to total ext. increases with decreasing alc. concn. Extn. should be carried out at about 78° with an alc. concn. of 85% by wt. The oil from the lower layer (extd. oil) is much lighter in color and far superior in free fat acid content to the benzine- (gasoline-) extd. oil. The N_2 content of the extd. oil reaches 8.2-8.5%.

KARL KAMMERMEYER.

PATENTS

Fatty glycerides. The Procter & Gamble Co. Brit. 421,063, Dec. 13, 1934. Mono- and di-glycerides are prepd. by the reaction of a triglyceride with glycerol (I) at 140-205° in the presence of an alcoholate of an alkali metal, *e.g.*, Na glyceroxide, K. alcoholates and alcoholates prepd. from EtOH. In examples, Na is dissolved in I and the soln. treated with hydrogenated cottonseed oil. The products may be used as emulsifying agents for mixts. of fatty or mineral oils with H_2O in the production, *e.g.*, of cosmetics. In 421,284, Dec. 13, 1934, fatty esters contg. unesterified OH groups are prepd. by the reaction of a triglyceride of a fat or fatty oil with a polyhydric alc. in the presence of an alk. catalyst while removing H_2O vapor from the reactive medium by means of a stream of inert gas or by vacuum distn. Suitable catalysts include soaps, alcoholates and alk. materials which react with fatty acids to form soap. Among examples, (1) coconut oil is caused to react with I in the presence of soap flakes, N being passed through the mixt., and (2) hydrogenated cottonseed oil is caused to react with ethylene glycol in a similar manner. The products have similar uses to those of 421,063.

Preserving fats, fatty oils, fatty esters, fat acid salts, soap stock and soap. Wm. S. Calcott, Wm. A. Douglass and Herbert W. Walker (to E. I. du Pont de Nemours & Co.). U. S. 1,993,771, March 12. *p,p'*-Dihydroxybiphenyl (suitably in a proportion of about 0.001-1.0%) is used as an oxidation inhibitor. Cf. *C. A.* 29, 1672[1].

Mineral oil soluble castor oil. I. Davidsohn and R. Strauss. Ger. 608,973. Cl 23c Gr 2. Feb. 5, 1935. Castor oil is made sol, in mineral oil by addn. of chlorinated paraffin or other chlorinated, high, mol. wt., aliphatic hydrocarbons and followed by heating to about 200°.

ABSTRACTS

Soaps

Edited by **M. L. SHEELY**

Textile Detergents. *Soap Perfumery and Cosmetics Trade Review,* 8, 5, 36 (May, 1935). Literature on the newer detergents increases. In Seifens, Zeit, 1935, 62, 135-8, a reprint is given of a paper read by Munch at the annual meeting of the German Chemical Society last year, on the fatty alcohol sulphonates, and fatty acid condensation products. This paper, already published in *Melliands Textilber,* 1934, (December) attempted to show the great superiority of the fatty acid condensation products over the sulphonates in respect to stability and especially colloid protective action. This view was strongly contested by K. Lindner, among others, and led to a lengthy polemic in the columns of *Melliands Textilber* (1934, pp. 417-18, 557, 558-61). Both groups are now being manufactured under various trade names (Igepons, Neopols, etc.) of widely differing properties, as is fairly well known by now; and each type would seem to have its own special sphere of application and usefulness. If the claims are not too widely drawn, each type has its advantages if properly used under the right conditions. In his articles on the fatty alcohol sulphonates (*Der*