ABSTRACTS

Oils and Fats

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Development of rancidity in linseed oil. A. von Bock. *Farm. Notisblad,* 1927, 175-86.—Unfiltered, filtered and heated (100° for 1 hr.) oils were kept for 693 days in light or in the dark. Stamm's diphenylcarbazide reaction indicates the degree of rancidification. Filtered cold-pressed oil was the most resistant. Heating does not confer resistance. B. C. A.

Refining of castor oil. R. Heublyum. *Allgem. Oel-u. Fett-Ztg.* **30,** 77-8 (1933).—Details are given of successful commercial refining of expressed castor oil by treatment with NaOH without prefiltration. the presence of albuminous matter favors the separation of a coarse-grained soap stock which readily settles out. B. C. A.

Mucilage content of castor oil. F. Wittka. *Allgem. Oel-u. Fett-Ztg.* 30, 5-10 (1933).—A new process is mentioned (description and patents are pending) whereby the mucilaginous matter can be pptd. from castor oil (4 per cent from oil of first pressing [*A*] and 0.78 per cent from second-pressing oil [*B*] as a granular material which can readily be sepd. by filtration, etc., with a min. loss of oil about 0.12 per cent. The mucilage from oils *A* and *B* contained 12.8 and 10.2 per cent N, resp., and consisted principally of vegetable proteins. Ordinary methods for the detn. of mucilage in oils fail with castor oil. B. C. A.

The determination of fatty alcohols in their sulfonation products. *Chemical Abstracts,* Vol. 27, No. 15, page 3838, August 10, 1933.—K. Lindner, A. Russe and A. Beyer. *Fettchem. Umschau* 40, 93-6 (1933).—Reflux about 5-7 g. of the sulfonated fatty alcohol with HCl and take up the alcohol with petroleum ether; extract any "true" sulfonic acid present from the petroleum ether solution by shaking out with warm 70 per cent (by volume) alcohol. Evaporate the petroleum ether. The residue represents the alcohol sought. If volatile organic solvents are present in the original substance, they are removed from the final solution by vacuum drying at room temperature and later at 100°. The method is illustrated by examples of known mixtures. P. ESCHER.

The titer of animal fats and their mixtures. Adam Koss and Marceli Okrasinski. *Przemysl Chem.* 16, 196-9(1932).—The titer of all the fats examd. increases with prolonged exposure to air. The titer of a sample of the fatty acids which is not exposed to the action of the air decreases on repetition of the detns. Errors incurred by such procedure are eliminated by converting the fats into the Na salts by means of 30% NaOH. The object of this investigation, which is being continued, is to establish the purity of certain animal fats on the basis of their titer. A. C. ZACHLIN.

The autoxidation spoilage of fats. V. The behavior of epihydrinaldehyde and its acetals. K. Täufel and F. K. Russow. *Z. Untersuch. Lebensm.* 65, 540-51(1933); cf. C. A. 27, 617.—In this investigation, the following substances were prepd.: β-chloropropionaldehyde glycol acetal, b_{10} 71-72°; acrolein glycol acetal, b. 112-116°, a bright yellow liquid with a penetrating odor; α-chloro-β-hydroxypropionaldehyde glycol acetal, b_{12} 123-125°, a colorless aromatic liquid; epihydrinaldehyde glycol acetal, b_{15} 67-70°, b. 165-175°, a colorless liquid of an odor somewhat similar to that of spoiled flour. Epihydrinaldehyde was also prepd. from epihydrinaldehyde glycol acetal; it is a very volatile, unstable compd., melting considerably below 0°. For the colorimetric measurement of the Kreis reaction, and for the detn. of epihydrinaldehyde and its acetals, a color scale was used based on methyl red and $KMnO_4$ solns. The limit concn. of epihydrinaldehyde for the Kreis test is at a dilu. of about 1:2,000,000 and the amt. 0.5 γ. The substance in autoxidized fats which gives rise to the Kreis test is destroyed at 150° in a short time and it is very sensitive to alkalies. By the cold sapon. of an autoxidized fat, the substance responsible for the Kreis reaction is found in the soap and not in the unsaponifiable fraction. Epihydrinaldehyde is in autoxidized fat in a bound and non-volatile form. It is likely that it is in combination with glycerol as a glycerol acetal, as suggested by Powick. F. L. D.

Detection of foreign [hardened] fats in cacao butter. B. Paschke. *Z. Untersuch. Lebensm.* 64, 561-4(1932).—The sample is refluxed with EtOH and H_2SO_4 for 6 hrs., the soln. dild., and the Et esters are extd. in a mixt. of Et_2O and light petroleum, the ext. being washed until acid-free and dried over Na_2SO_4. The Et_2O is then removed by evapn., the residue heated at 95° for 2 hrs. and distd. in a vacuum of 10 mm. until half (weighed, to within 0.3 g.) remains as residue (*R*). The corresponding distillate is redistd. in a similar way into 2 fractions (*A* and *B*). The sapon. value then is found in each case, the limits of (*B* — *R*) and (*B* — *A*) for pure expressed cacao butter being 7.1-8.1 and 3.9-5.1, resp. [refractivity at 40° (*r*) 47.0-47.4]. Since the values are, resp., 19.1 and 12.8 for hardened arachis oil (*r* 51.0), and 39.2 and 24.2 for hardened train oil (*r* 46.3), 10% of either in the sample is detectable (cf. C. A. 25, 3857). B. C. A.

The determination of solid and higher saturated fatty acids in food fats. J. Grossfeld. *Z. Untersuch. Lebensm.* 65, 305-11(1933); cf. *C. A.* 24, 1531, 5173-4; 27, 1951.—In detg. the limits of the lead-salt method, it is shown that considerable amts. of the satd. acids of the fat of coconut, palm kernel and of animals escape sepn. that are detd. by the $KMnO_4$ method. The difference between these 2 methods is for coconut fat 26.1%, palm-kernel fat 30.4%, butter fat 13.7%, beef fat 7.4%, mutton fat 7.5%, lard 4.4% and cacao fat 1.7%. In mixts. contg. myristic acid, notable amts. of the Pb salts remain dissolved. In the presence of larger amts. of the unsatd. acids, there is a loss of palmitic acid of over 5% and of myristic acid of over 17%. A method is indicated for the recognition of myristic acid and its near lower homologs by the size of the difference between the higher satd. fatty acids by the $KMnO_4$ method and the solid satd. fatty acids by the Pb method. F. L. DUNLAP.

High-pressure hydrogenation and fat chemistry. Walther Schrauth. *Agnew. Chem.* 46, 459-61(1933).—A discussion with 9 literature references. K. K.

Analysis of sulforicinates. H. Tatu. *Tiba* 11, 403-9, 483-91(1933).—A brief outline of the compn. of castor oil and of the reactions which can take place in the course of treatment with H_2SO_4, together with a brief discussion of the principal detns. carried out in the analysis of com. sulforicinates, of their significance and of their usefulness and shortcomings in detecting adulteration. A. PAPINEAU-COUTURE.

Castor breeding in the Bombay Presidency. N. G. Masur. *Agr. Live-stock India* 3, 125-43(1933).—Data are given on the oil content of a no. of strains of castor beans which exhibit a certain degree of heritability of high yield and high oil content. The percentage of oil is detd. by the chem. compn. of the kernel rather than by the size of the seed, and there is no definite relation between seed size and ratio of kernel to husk. Small variations in soil conditions have no significant effect on the oil content of the seed. K. D. JACOB.

PATENTS

Waterproofing agent for cement. *Chemical Abstracts,* Vol. 27, No. 16, page 4052, Aug. 20, 1933.—A. M. Lekhovitizer. Russian 23,399, May 11, 1931. A composition of NH_4 and Ca salts of fatty acids, $Al_2(SO_4)_3$ and tripoli is dried and converted to powder. Before use it is moistened with denatured EtOH to accelerate the formation of an emulsion.

Sulfonated oils. WM. SELTZER. Brit. 370,022, Oct. 4, 1929. Sulfonated fatty oils, fats or fatty acids or salts thereof are freed from residual unsulfonated material by treatment, in the presence of H_2O, with water-insol., sulfonatable, saponifiable oils or fats or fatty acids miscible with the oils, etc., and spen. of the insol. oily layer from the aq. layer.

Recovery of fatty acids from fatty material. *Chemical Abstracts,* Vol. 27, No. 15, page 3841, August 10, 1933.—Daniel S. Belden (to Filtrol Co. of California). U. S. 1,909,605, May 16. An active decolorizing agent such as H_2SO_4 activated clay is added to fatty material such as oleic, stearic or palmitic acid and the mixture is heated sufficiently that the fatty acids distill and is agitated with an inert gas during the distillation and the fatty acids are condensed. Apparatus is described.

Grease from mineral and fatty oils. *Chemical Abstracts,* Vol. 27, No. 16, page 4103, August 20, 1933.—Carl E. Lauer (to Texas Co.). U. S. 1,913,001, May 30. A mixture containing suitable proportions of mineral and fatty oils is passed in a confined stream (suitably through a heating coil) while being heated to a predetermined temperature and saponifying material such as alkali solution is introduced into the preheated mixture which is then further heated in a confined stream to effect saponification of saponifiable constituents and then is passed into an enlarged zone from which undesired vapors are withdrawn. Apparatus is described.