ABSTRACTS

Oils and Fats

Edited by
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Direct determination of calcium soap in fats. Bergell. *Allgem. Oel- u. Fett-Ztg.* 30, 301-2 (1933).—After refluxing 10 g. of fat for a few min. with 200 cc. of Me_2CO, the soln. is cooled and decanted through a filter; the residue is again extd. with 100 cc. of Me_2CO, collected, washed with Me_2CO, and treated with acid to liberate the fatty acids, which are extd. with ether and weighed as usual. Loss by soln. of Ca soap is not more than 6 mg. B. C. A.

Oleic-elaidic acid transformation as an aid in the analysis of mixtures of oleic, linoleic and linolenic acids. H. N. Griffiths and T. P. Hilditch. *J. Soc. Chem. Ind.* 53, 75-81T (1934).—A method has been developed whereby oleic acid, in admixture with linoleic and linolenic acids, can be detd. by analysis of the mixed fatty acids after treatment with the oxides of N_2 until the oleic-elaidic acid equil. has been reached. The elaidinization method is useful as an independent procedure whereby the results by thiocyanogen value may be checked, but its execution is more intricate and tedious than the latter. Its use has served strongly to support the validity of the Kaufmann process in the instances studied. W. J. PETERSON.

New determining influences in oil- and fat-spoilage. Th. Ruemele. *Seifensieder-Ztg.* 61, 125 (1934).—The action of light and the compn. of the fatty acid mixt. det. the speed in fat spoilage. Methyl oleate turns rancid more quickly than the mixed Me esters of oleic plus linoleic acid. The smaller the amt. of linoleic and linolenic acids in a fat, the easier does it turn rancid. P. ESCHER.

Processing of cottonseed meats. W. R. Woolrich and E. L. Carpenter. *Chem. Met. Eng.* 40, 291-2 (1933).—The functions and efficiency of the rolling and cooking operations prior to the hydraulic pressing of cottonseed oil are discussed. Expts. indicate that the cooking period can be considerably reduced by (*a*) good stirring of the meats, which are bad conductors of heat, and (*b*) adding the moisture immediately before the cooking and then heating to 99° with dry steam. With rapid heating to 110° the cell walls are ruptured by the steam enclosed. The pressure expelling process also is described. B. C. A.

Extracting oils from comminuted animal wastes with dichloroethane and trichloroethylene. T. A. Fodoseeva. *Schriften zentral. Forschungsinst. Lebensmittelchem.* (U. S. S. R.) 4, 20-32 (1933).—As solvents for extg. fats from bone meal, fish meal and the like, $C_2H_4Cl_2$ and C_2HCl_3 are very effective and almost as rapid as petr. ether. They are easily removed from the residue, which has high N content and little of the original odor. The solvent cannot be readily removed from the ext. without the aid of vacuum or aeration, and the fat undergoes a chem. change (decreased I no.). JULIAN F. SMITH.

The autoxidative spoilage of fats. VI. The carrying out and evaluation of the Kreis reaction. K. Täufel and P. Sadler. *Z. Untersuch. Lebensm.* 67, 268-73 (1934); cf. *C. A.* 27, 4702.—The significance and limits of the Kreis reaction are discussed on the basis of new investigations. This reaction which has previously been referred to generally as a 'spoilage test" should be referred to rather as a test for the autoxidative changes in fats. The properties of epihydrinaldehyde, the carrier of the Kreis reaction, are described. Three methods of carrying out the Kreis reaction are given, which have proved of value in varied investigations. Their advantage, as compared with the previous method of conducting the test, consists particularly in the fact that the color reaction is conducted apart from the substance being investigated, and hence free from such influences as may otherwise destroy it. Seventeen references. F. L. DUNLAP.

Determination of moisture in fatty acids. Ludwik Rzadkowski. *Przemysl Chem.* 17, 219-20 (1933).—The acid value of a fatty acid is detd. before and after drying by means of Na_2SO_4, and the ratio subtracted from 1 gives percentage of H_2O. This is sufficient for calcg. the amt. of moisture in mixts. in which free fatty acids predominate, *i.e.*, in mixts. in which the acid value is greater than the ester value. When the acid value is lowered by the presence of neutral fats as much as ⅓, then the detn. of the span. value is also needed. This method is likewise applicable to mixts. of free fatty acids with soap. Comparison with the distn. method shows that this method is accurate and simple. A. C. ZACHLIN.

Antioxygens of fatty oils. XIII. Inversion of oxidative catalysts due to the species of fatty oils. 4. Action of *p*-nitroaniline on the oxidation of fatty oils. Mitsuo Nakamura. *J. Soc. Chem. Ind., Japan* 37, Suppl. binding 86-9 (1934); cf. *C. A.* 27, 4703.—The action of *p*-nitroaniline (I) upon the oxidation of 2 groups of fatty oils was examd. under special conditions. It was found that I accelerates the oxidation of any fatty oil, natural or blended, in the earlier stage of oxidation, and that the proöxygenic activity increases nearly directly proportional to the I no. of the fatty oils. In oils, which have I nos. less than 120, I gradually begins to become an antioxygen in the course of oxidation and this phenomenon of inversion takes place more quickly as the I nos. become lower. This inversion was not observed for oils of higher I nos. The exptl. conditions have no effect on this inversion. From the fact that the relation between the catalytic action of I and the I nos. of fatty oils is analogous in both natural and blended oils, N. concluded that the inversion of catalysis in the case of I can entirely be attributed to the I nos. and not to the minor ingredients of the fatty oils.

KARL KAMMERMEYER.

Making lecithin from soy beans. A. N. Lebedev and V. S. Gryuner. *Schriften zentral. Forschunginst. Lebensmittelchem.* (U. S. S. R.) 4, 118-35 (1933).—Crushed soybeans, after Et_2O extn., gave 1.84% phosphatides by extn. with abs. alc. at 60-65°, and 2.06% phosphatides with 96% alc. at 60-65°. Whole beans contained 1.25% org. P, soybean grits 0.77%, and hulls only 0.24%. The ext. obtained with 96% alc. contained 16.07% lecithin. Extn. with gasoline gave only 0.51% yield of phosphatides; but gasoline contg. 15% alc. gave about the same yield as did 96% alc., and the phosphatides thus obtained were much richer in lecithin (84.17%) than the phosphatides extd. with alc. A new method of lecithin production, based on this observation, is to ext. oil from the beans with gasoline, ext. again with gasoline and lc. mixt. (85:15), distill off the solvent, purify the ext. with alc. and blend with 20-40% of a solid fat, e.g., cacao butter, to make the finished lecithin product. This prepn. compares favorably with imported (American) lecithin prepns. in its effect on the viscosity of chocolate. J. F. S.

PATENTS

Treating oils and fats. Schering-Kahlbaum A.-G. (K. Stephan, inventor). Ger. 592,972, Feb. 19, 1934 (Cl. 53*h*, 1.01).—Rancid oils and fats are restored by treatment with aldehydic or ketonic reagents, such as NH_2OH, N_2H_4, semicarbazide, etc., and filtering.

Refining oils and fats. I. G. Farbenind. A.-G. (Max Schellmann, inventor). Ger. 592,089, Feb. 2, 1934 (Cl. 23*a*. 3). Addn. to 569,797. (*C. A.* 27, 3841).—The method of 569,797 for refining oils and fats by treating them with anhyd. H_3BO_3 at temps. above 100° and distg., is modified by replacing the H_3BO_3 by its esters with polyhydric alcs. Examples are given.

Fatty glycerides. The Procter & Gamble Co. Fr. 757,763, Jan. 4, 1034.—Glycerides contg. more combined glycerol than necessary for the formation of triglyceride are prepd. by chemically combining a polyhydric alc. with a fatty ester of the type of those found in fats, fatty oils and waxes, agitating them together in the presence of an active catalytic compd. chosen from the group of alcoholates and soaps, and concurrently removing steam from the reaction mixt.

Purifying fatty oils. Standard Oil Co. Brit. 402,651, Dec. 7, 1933.—Fatty oils, *e.g.*, lard, sperm, cottonseed, soy or corn oil, are freed from high-melting constituents, *e.g.*, stearin, palmitin, free fatty acids, by dissolving in a liquefied, normally gaseous, org. solvent, *e.g.*, (iso-)butane, (iso-)butylene, C_2H_6, ethylene, propylene, Me_2O, MeOEt, ethylene oxide, chilling the soln. and sepg. the pptd. substances. App. is described.

COURTESY CHEMICAL ABSTRACTS