ABSTRACTS

Oils and Fats

Edited by
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The influence of silica gel upon the color and nitrogen content of soy-bean oil. R. Neu. *Fettchen. Umschau* 41, 70-1(1934).—SiO_2 gels when pptd. with concd. HCl from com. water glass removed little color and little N from soy-bean oil at 100°, but with increasing diln. of HCl the gels became more active, the greatest effect being obtained with a soln. of 0.1 mol. HCl per l. P. E.

Soy-bean extraction. M. Junker. *Allgem. Oel- u. Fett-Ztg.* 30, 492-5 (1933).—Mucilage (I) may be sepd. in the hydrated condition by treating the extd. oil with small amts. of H_2O; the oil is dried and centrifuged and I is worked up for recovery of oil, phosphatides, etc. B. C. A.

Semi-quantitative modification of the elaidin test. H. N. Griffiths and T. P. Hilditch. *Analyst* 59, 312-18 (1934).—Shake 10-20 g. of the oil, from which free fatty acids are almost if not entirely absent, with 0.2-0.4 g. of Hg and 0.5-1.0 ml. of HNO_3, *d.* 1.42, in a stoppered bottle which is immersed in water at room temp. for 1 hr. and then allowed to stand overnight. Wash the ethereal soln. of the product with dil. HNO_3 to remove Hg compds. and then with water till free from acid. Evap. off ether and water and heat in a vacuum at 95° for a short time. Take 5 g. of the dry product and crystallize from 20 ml. of acetone, allowing the soln. to stand at room temp. overnight and then cooling to 0° for 2 hrs. Collect the crystals, wash with four 5-ml. portions of acetone, dry in a vacuum desiccator and weigh. Det. the m. p., I value and sapon. value of the crystals. The results obtained with ***olive, tea-seed, almond, ground-nut, rapeseed, mustard-seed, cotton-seed, soy-bean, rubber-seed, hemp-seed*** and ***linseed oils*** are tabulated; the last 4 oils yielded no appreciable quantity and only the first 4 gave any considerable quantity of elaidinized product. The utility of the ***elaidin reaction*** for detecting ***adulteration of olive oil*** is discussed. W. T. HALL.

Determination of the oxidizing power of available oxygen of the peroxide and the ozonide of an oil or fat. Taichi Harade. *Bull. Chem. Soc. Japan* 9, 197-8 (1934).—One cc. or g. is shaken with 20 cc. of a 10% KI soln. and 3 cc. of a 20% H_2SO_4 soln. added. The free I_2 is titrated with 0.01 or 0.1 *N* thiosulfate, with starch as indicator. The soln. is heated on a boiling water bath till no more I_2 is set free. The usual Kingzett method is not suitable because of insoly. of the fat or oil in H_2O.
P. S. ROLLER.

H. P. Kaufmann's thiocyanate number of typical Indian oils and its application for determining linoleic and linolenic acids. N. N. Godbole, K. C. Trigunayat, Amarenda and Urba-Datt. *Allgem. Oel u. Fett.-Ztg.* 31, 143-5 (1934).—The following thiocyanate nos. for East Indian oils have been detd.: linseed 119.10, rye 87.34, sesame 75.2, rape 80.14, peanut 73.68, almond 83.25, castor 88.19, mohuwa fat 47.93, tallow 34.98, ghee butter 27.54 and coconut oil 10.92. The percentage of linoleic and linolenic acids is not shown. P. ESCHER.

Capillary index of some vegetable oils. Henri Marcelet. *Compt. rend.* 198, 2073-4 (1934); cf. *C. A.* 27, 5563.—Dubrisay's capillary index (cf. *C. A.* 18, 1074), detd. by the drop method with a 1% soln. of the oil in C_6H_6 and *N*/600 NaOH, shows marked and characteristic differences for crude and refined olive oil (averages 66.9 and 31.4, resp.), and between these and the indices of the usual substituents of olive oil: maize oil 15-19, soy bean 13, sesamum 58, ground-nut 24; thus affording a means of detecting adulteration. C. A. SILBERRAD.

The oil content of cottonseed. N. Sof'in. *Masloboino Zhirovoe Delo* 1932, No. 11, 57-63; *Chimie & industrie* 29, 1405.—The process of formation of oil in cottonseed is longer than in the seed of other plants, and to work economically it is necessary to accelerate maturation of the seed artificially by chem. treatment. Max. oil content corresponds chiefly to the period of maturation, and by supplying the soil at this period with a sufficient amt. of water the yield of oil is favorably influenced. On the other hand, N fertilizers have a neg. action in this respect, though they act favorably on the development of the plant as a whole. It is therefore necessary to combine the fertilizers used in such a manner as to neutralize only this unfavorable action without interfering with its beneficial action. P fertilizers exert the most beneficial action on the formation of oil in cottonseed. Small-seed, quick maturing varieties of cotton plants seem to have the most const. oil content, and to be less dependent on the nature of the soil. A. PAPINEAU-COUTURE.

PATENTS

Refining cottonseed oil. I. G. Farbenind. A.-G. Brit. 405,398, Feb. 8, 1934. The oil is freed from mucilaginous, resinous and color-forming substances by heating with an anhyd. solid boric ester of an aliphatic polyhydric alc. and mechanically sepg. the pptd. impurities. The oil may first be partially freed from mucilaginous substances, *e. g.*, by emulsifying with H_2O or dil. solns. of H_3PO_4, NaCl or other electrolytes, and partially bleached by known methods. It may subsequently be heated with NaOH or KOH; deacidification, *e. g.*, by distn. under reduced pressure, preferably with steam or mists or vapors of inert liquids, may follow or accompany the treatment with esters.

Purifying oils and fats. Metallgesellschaft A.-G. Fr. 761,965, Mar. 31, 1934. Mucilages, phosphatides, etc., and fatty acids are removed from vegetable and animal fats or oils by treatment with an electrolytic salt or salt and acid soln., and neutralizing the fatty acids as well as acids still present from the first treatment by means of an alkali and then sepg. the pptd. impurities by sedimentation or otherwise.

Stabilizing oils and fats. Swift and Co. Ger. 595,968, Apr. 24, 1934 (Cl. 53*h.* 1.01). Oils and fats used in confectionery are stabilized by addn. of non-poisonous, tasteless and odorless derivs. of polyhydric phenols, *e. g.*, pyrogallol-stearic acid esters. The dimethyl ether of pyrogallol may be used.

Mono- and diglycerides. August Edeler and Albert S. Richardson (to The Procter and Gamble Co.). Can. 340,803, Apr. 10, 1934. In the presence of an alcoholate catalyst mixts. of glycerol, triglyceride and alkali metal alcoholate are agitated at 170-205°. The quantity of alcoholate used is more or less a matter of arbitrary choice. Sodium glyceroxide is preferably used in such quantity that the wt. of combined Na is equal to not less than 0.04% and not more than 2.0% of the total glycerol used.

Mono- and diglycerides. August Edeler and Albert S. Richardson (to The Procter and Gamble Co.). Can. 340,804, Apr. 10, 1934. Mono- and diglycerides are formed by treating fat with glycerol in the presence of a soap as catalyst. *Mono esters of glycol* can be similarly produced. Excellent results are obtained at temps. in the range 170-205°.

Mono- and diglycerides. August Edeler and Albert S. Richardson (to The Procter and Gamble Co.). Can. 340,805, Apr. 10, 1934. Monoglycerides and diglycerides are manufd. by reaction of triglycerides with glycerol in the presence of a catalyst of the class consisting of soaps and alcoholates. Water formed by side reactions is distd. from the reacting mixt.

Removing impurities from oils and fats. Arnold Freiburg (to Harburger Ölwerke Brinckman & Mergell). U. S. 1,964,875, July 3. The material to be purified is subjected to the action of small quantities of H_3PO_4 and the mixt. is slowly heated to about 70° with stirring; a small quantity of cellulose is then added, and the material is filtered after the desired action is completed. *Cf. C. A.* 27, 6001.

Removal of stearin from oil. George L. Parkhurst and Vanderveer Voorhees (to The Standard Oil Co.). Can. 341,710, May 15, 1934. Stearic, palmitic and other high-melting fatty acids are sepd. from oleic, linoleic and other low-melting acids by dissolving the mixed acids in a liquefied hydrocarbon gas and refrigerating the soln. by expanding a portion of the gas. The crystd. acids are sepd. from the soln. and the hydrocarbon gas is recovered from the sepd. acids and remaining soln. Low-boiling normally gaseous hydrocarbons as butane, propane, butylene, isobutylene, isobutane, propylene, ethane and ethylene are mentioned. Normally gaseous ethers as Me_2O, MeOEt or ethylene oxide may be used. Also low-boiling esters may be used. The process is used in the manuf. of salad oils from vegetable oils.

Deodorization of fish oil. Keiji Tamachi and Nenosuke Sakamoto. Japan. 101,432, June 9, 1933. Fish oil is heated at 270-300° *in vacuo* and mixed (after cooling) with cotton cloth, pulp or sand and then spread in a thin layer in a warm atm.; thus the odorous substance is driven off.

Bleaching oils, etc. Soc. des. produits peroxydés. Fr. 762,166, Apr. 5, 1934. Oils, fats, etc., are first bleached with per compds. and then treated with adsorbents, the first treatment being so controlled that the subsequent adsorption is not impaired. This is obtained by keeping the temp. below 75° and the reaction mixt. acid.

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