ABSTRACTS

Oils and Fats

Edited by
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Cleaning citrus fruit. *Perfumery and Essential Oil Record,* Vol. 24, No. 10, page 365, October 24, 1933.—This is the title of a bulletin issued by the California Fruit Growers' Exchange in which it is stated that in view of the inability of many of the smaller packing houses in California to clean their fruit successfully, an investigation of cleaning methods was undertaken. This included in its scope an analysis and comparison of the numerous detergents in use, a study of the various types of foreign matter on the fruit and the ease of their removal, a survey of washing equipment and a comparison of the efficiency of various washing units. The improved appearance of fruit washed in soft water alone justifies the expense of a softener. A table of comparison is given of the various methods used for softening water containing 165 parts per million of hardness and of the amounts of various soap products required to bring 100 gallons of water to a suds point. The composition of a number of soaps and soap powders is described, and a study is made of the relative efficiency of the various alkaline cleaners or soap aids, as also of soap products, 24 commercial brands of the latter being tested. The interesting fact emerged that the efficiency of the soap products was more or less proportional to their anhydrous soap content. The bulletin concludes with instructions as to the best method to be followed to insure thorough cleaning of extremely dirty fruit.

Beckman bacterial vegetable oil recovery process. *Industrial and Engineering Chemistry,* Vol. 11, No. 20, page 298, New Edition, October 20, 1933.—Plants using the Beckman process are to be erected in New Hebrides, Fiji, Solomon, and Society Islands, as well as in New Guinea, according to plans outlined by British interests which have recently taken over the rights in these territories.

Extensive tests of the process have been conducted in London. Copra and fresh coconuts were used in these trial runs, and the results were excellent in all cases. The plan is to erect the plants in the groves themselves. This eliminates the expense of drying the coconuts into copra, and in addition a superior quality of oil is obtained. It is virtually water-white and contains practically no free fatty acids.

Savings will thus be accomplished in recovery expense, since the Beckman process offers a very considerable reduction in costs over the present pressure method, in freight charges, and in eliminating losses due to the deterioration of copra. A chemical treatment of the oil is not necessary in order to eliminate the free fatty acids, nor is bleaching with clays essential to improve the color. The finished oil can be shipped in tankers to any port of the world, and thus the best markets can be supplied directly from these plants.

The Beckman process has met with success in other directions. The efficient treatment of linseed "foots" is one field where a complicated and troublesome product has been handled. The oil in the "foots" has been freed and recovered at a very slight cost. It is expected that the same results are obtainable with cottonseed "foots."

Extensive and promising work has been done in India on the recovery of oil from peanuts by means of the Beckman process.

A new method for the determination of the saponification value of waxes and fats. J. M. F. Leaper. *Textile Colorist,* 55, 601-2, 636 (1933).—A diethylene glycol Et ether ("carbitol") solution of KOH is used for saponifying waxes or fats. Results obtained with this method are shown to be comparable, in general, with those obtained by the standard Koettstorfer method, over which the former has several advantages of convenience and time. (C. A. 27, 30, 5206 (1933)).

Quality of Japanese fish oils from the standpoint of the hardened-oil industry. III. Quality of herring oils. 2. Sei-ichi Ueno, Gentarō Inagaki and Kaoru Koizumi. *J. Soc. Chem. Ind., Japan* 36, Suppl. binding 322-4(1933); cf. C. A. 21, 3758 and following abstr.—Results are reported for sapon. no., I no. and acid value of herring oils from Hokkaido, Karafuto, and small herring oils from Kokkaido produced during the spring period of 1931 to the autumn of 1932. E. SCHERUBEL.

Saponification of wax. Paul de Ceuster and Edmond Verstraete. *Natuurw. Tijdschr.* 15, 62-3(1933).—Waxes are saponified 4 times as rapidly (*i. e.,* usually within 10-20 min.) when PrOH, instead of EtOH, is used as solvent for the KOH, because of the higher b. p. Higher alcs. are less easy to purify and are prone to oxidize, and cause difficulty in titration because of their only partial miscibility. B. C. A.

Analysis of oils and fatty acid mixtures. W. Howard Hoback. *Oil, Paint & Drug Reptr.* 123, No. 24, 25, 44; 124, No. 3, 38, 44 (1933).—A scheme for the analysis of oils or fatty acid mixtures, based on various known methods and some addns. by H., is given. Special attention is given to the theory and the use of the *thiocyanate value.* G. G. S.

Oil rancidity caused by light. Mayne R. Coe and J. A. LeClere. *Oil, Paint and Drug Reporter,* Vol. 124, No. 14, page 19, October 2, 1933.—As the result of continued exposure to light an oil on becoming rancid has a peroxide value characteristic for that oil. When properly protected from light this oil may develop a much higher peroxide value without being rancid. An oil, protected from light and having developed an abnormally high peroxide value, will on exposure to light become rancid. It is light that causes the changes which give rise to rancid odor and taste; it is possible that these same changes are formed independent of the cleavage products of an oil, which, heretofore, have been considered responsible for rancidity.

PATENTS

Impregnating and adhesive composition suitable for treating textile materials, paper, etc. *Chemical Abstracts,* Vol. 27, No. 18, page 4693, September 20, 1933.—Wilhelm Pungs (to I. G. Farbenind. A.-G.). U. S. 1,916,584, July 4: A composition is used comprising a heat-reaction product of a pitch such as stearin-pitch together with a vegetable oil such as wood oil, a S-supplying material such as S itself and an organic S-bearing substance extracted from a tar of a bituminous coal with an organic alcohol solvent.

Preserving fats, oils, fatty esters, and the like. *Chemical Abstracts.* Vol. 27, No. 17, page 4433, Sept. 10, 1933.—William S. Calcott, William A. Douglass and Herbert W. Walker (to E. I. du Pont de Nemours & Co.). U. S. 1,913,367, June 13. About 0.00-0.1 per cent of p-hydroxydiphenylmethane is added as an oxidation inhibitor and rancidification preventive. U. S. 1,913,368 relates to the similar use of a similar proportion of p-hydroxydiphenyl ether.

Refining Oils and Waxes. *The Oil and Colour Trades Journal.* Vol. LXXXIV, No. 1829, page 1190, November 3, 1933.—British Patent 387,962. Convention date, September 26, 1931. L. Rosenstein and W. J. Hund, 112 Market Street, San Francisco, U. S. A. —Animal and vegetable oils, fats and waxes are purified by reducing the free fatty acid content, as by distillation, and then treating with liquid ammonia and/or one or more alkylolamines. The fatty acid content is preferably reduced to at least such an extent that the fatty acids under equilibrium conditions are soluble in the glycerides and in the liquid ammonia or alkylolamines to the same extent. This limiting content is determined by test; it is about 3 per cent for cocoanut, linseed, cottonseed, and similar vegetable oils.

Eliminating Impurities Such as Mucilaginous Substances and Lecithins From Vegetable and Animal Oils and Fats. *Chemical Abstracts.* Vol. 27, No. 22, page 6000, November 20, 1933.—Wilhelm Gensecke (to American Lurgi Corporation). U. S. 1,928,531, September 26. The material, e.g., crude soy bean oil, is treated with dilute HCl and a solution of an electrolyte salt such as $CaCl_2$ (suitably at a temperature of about 50°) to facilitate separation and quick settling of impurities. Various details of procedure are described.

Refining Non-Drying Oils. *Chemical Abstracts,* Vol. 27, No. 22, page 6001, November 20, 1933.—Matthew G. Barradas (to Best Foods, Inc.). U. S. 1,928,613, October 3. In refining an oil such as cocoanut or palm-kernel oil, etc., the free fatty acid in the oil is neutralized with a caustic solution such as NaOH and the soap stock is settled and drawn off, and suspended particles are separated by agitating the oil with less than 1% of a caustic solution such as NaOH of a concentration of not less than about 50° Bé. and in a quantity sufficient to precipitate the suspended particles of soap without substantial saponification of the oil.

Refining of Vegetal Oils and Fats. U. S. 1,927,850, September 26, 1933. Max Schellmann, Oppau, and Hans Franzen, Mannheim, assignors to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany. Eight claims.

1. In refining crude fatty oils and fats containing mucilaginous matter, the step which comprises heating the said oils and fats at from about 100 to about 280° C. with from 0.5 to about 5% of their weight of anhydrous boric acid.