Abstracts

Oils and Fats

Edited by
M. M. PISKUR

Development and importance of oil fruit cultivation in Germany. G. Sessous. *Fette u. Seifen 47,* 10-12 (1940).

The present state of phosphatide research. I.W. Halden. *Fette u. Seifen 47,* 6-9 (1940). A review.

Iodine determination without iodine. H. P. Kaufmann. *Fette u. Seifen 47,* 4-5 (1940). Because of the price of I and KI, an I value method not requiring I is desirable. The Kormann method using Br_2 and titrating with As_2O_3 gives results which check Hanus I values.

New machinery for the margarine industry. L. Erlandsen. *Fette u. Seifen 47,* 15-8 (1940). The equip. is illustrated and described.

Spoilage of margarine. *III. The influence of the fat mixture.* H. Schmalfuss & Helene Schmalfuss. *Fette u. Seifen, 47,* 1-3 (1940). Two fat mixts., one contg. large portions of palm kernel oil and coco fat and the other contg. neither of these fats were investigated. The mixts. contd. hardened whale oil, hardened soy bean oil and peanut oil. The mixt. without palm kernel or coco fat was less stable. Mixts. contg. no milk or salt were more stable than those with these ingredients. Milk reduces the stability of the mixts. most. Salt reduces stability, but addn. of both milk and salt does not have as deleterious effect as milk alone. This effect of milk and salt is greater than that produced by the difference in fat mixt.

The fat of land crabs. (Seychelles Islands). T. H. Hilditch and K. S. Murti. *J. Soc. Chem. Ind. 58,* 351-3 (1939). The depot fat of the Seychelles Islands land crab contains, as component acids, octoic 1.5, decoic 5.3, lauric 47.5, myristic 19.0, palmitic 13.1, stearic 1.7, tetradecenoic 0.7, hexadecenoic 2.2, oleic 5.3 linoleic 1.5, and unsaturated C_{20-22} acids 2.2% (mol.). This unusual compn. (for a marine-animal fat) is explicable since *Birgus latro,* L., the coconut crab indiganous to the islands of the Indian Ocean, is known to feed on coconuts. The depot fat thus appears to be composed largely of glycerides deposited from ingested coconut fat, whilst the remaining, much smaller, part of the fat appears to include the acids typical of a marine-animal fat — palmitic, hexadecenoic, oleic, and other unsaturated C_{18} acids, and unsaturated acids of the C_{20-22} series.

Improvement and economizing drying oils in new coatings. H. F. Sarx. *Fette u. Seifen 47,* 18-22 (1940).

Preparation of unsaturated higher alcohols by zinc catalyzer. I. Formation of unsaturated higher alcohol from perilla oil. U. Sinozaki & S. Sumi. *J. Agr. Chem. Soc. Japan 15,* 531-6 (1939). Zn dust was the best catalyzer for the prepn. of unsatd. higher alc. by hydrogenation of oil under high pressure. When perilla oil was heated at 320° under 125 atm. for 2 hrs., the yield was max. A large amt. of linoleyl alc. was obtained from the reaction product. II. Influence of the addition of lower aliphatic alcohols upon the catalyzer. Ibid. 537-41. When Me esters of fatty acids or oils were hydrogenated, the formation of unsatd. higher alcs. increased. It may be that the Zn dust was activated by MeOH. When 2 mols. of MeOH and more were added to 1 mol. of soybean oil, the reaction was accelerated. This phenomenon was specific for Zn dust catalyzer; the action of MeOH was the opposite for other catalyzers. While MeOH & EtOH accelerated Zn dust catalyzer, other aliphatic alcs. had the opposite effect. When MeOH was added to Zn dust catalyzer, the yield of unstd. alc. was 80-90% (*Chem. Abs.*).

PATENTS

Continuous solvent extraction apparatus. E. C. Pattee (to National Distillers Products Corp.). *U. S. 2,187,890.* A simplified app. is described.

Extraction app. W. Engler & W. Depiner (to Hansa-Mühle a.g.) *Germ. 679,708* Cl.12i. Material to be extd. is passed on a sieve thru a chamber contg. solvent spray.

Rendering offal, garbage of other animal or vegetable products. Hans Haneschka. *Brit. 505,844.* The material is treated with NH_4H_2 PO_4 under pressure and heating until an aq. protein broth is formed from which the fat is separated.

Refining animal fat. E. Andersen-Orris. *Brit. 506,968.* The combination neutralizing and rendering process for oleo fat comprises heating to 75°, titrating the free fat acids, removing soap by brine spray, and running the fat into crystallizing tanks where it is exposed to temps. about 30-35° until crystallization; therefrom completing the process in known manner.

Deodorization of animal and vegetable oils. Foster Wheeler Ltd. *Brit. 505,810.* Oils to be deodorized are first subjected to vacuum for deaeration. The step reduces oxidation.

Production of glycerides suitable for edible fats and oil. I. G. Farbenindustrie A.-G. *Brit. 506,092.* Mixts. of carboxylic acid obtained by the oxidation of high molecular paraffin hydrocarbons are esterified with alcohol, fractional distd. to separate fraction with 12 to 24 carbon atoms and this fraction is converted to the glyceride.

Method of separating high molecular mixtures. S. Pilat and M. Godlewicz. (to Shell Development Co.). *U. S. 2,188,012-3.* A solvent method for separating constituents of different mol. wts. is described. The method can be applied to fats, oils or fat acids.

Process of making a viscosity lowering condensation product from higher fatty acids and esters thereof. S. Jordan. *U. S. 2,185,592.* The products are phosphoric acid salts of fat acids.

Autoclave for continuously splitting fats or oils. E. Morlock (Metallgesellschaft A.-G.). *Ger. 679,723* Cl.23d.

Wool fat product. H. Friedrich (I. G. Farbenindustrie A.-G.) *Ger. 672,720.* Cl.23a. Wool fat is dried and treated with alkali metal in water immiscible org. solvent.

Process of treating oils. R. S. McKinney. *U. S. 2,185,414.* The drying properties of weak drying and semi-drying oils are increased by heating the oils to 200-250° for 2-18 hrs. with about 0.1% alkaline hydroxide.

Polymerization of drying oils. H. I. Waterman and C. Van Vlodrop (to Imperial Chemical Ind.

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Ltd.) *U. S. 2,188,273.* Gaseous SO_2 is used as a catalyst in the process.

CONDENSATION PRODUCT AND METHOD. E. T. Clocker. *U. S. 2,188,885-90.* The products suitable for resins, lacquers, varnishes, enamels, plastic masses, etc., are condensation products of fat acids and phenols, acyclic olefinic alc., acyclic olefinic aldehydes, their esters or like material.

CONDENSATION PRODUCTS OF HIGHER FATTY ACID COMPOUNDS WITH BORIC ACID. K. Stickdorn (to Deutsche Hydrierwerke A.-G.). *U. S. 2,187,334.* A hard wax-like product is prepd. by the condensation of hardened castor oil, boric acid and acetic acid anhydride.

GLYCERIN FROM CARBOHYDRATES. Heinkel and Cie G.m.b.H. *Ger. 682,911 Cl6b30.* Example: The fermented sludge is mixed with sawdust, dried, extd. with ethyl acetate at 70°; glycerine is exted. from the solvent with water and separated from the latter by distn.

FERMENTATION GLYCERINE. Deutsche Gold- und Silber-Scheideanstalt. *Ger. 684,014* C16b30. Glyerine is extd. from fermentation mash with pyridine, separated by distn. and treated in a known manner with activated carbon.

Abstracts

Soaps

Edited by M. L. SHEELY

DRY-CLEANING VS. CLOTH SCOURING. Roland E. Derby. *Textile World 89,* (11), 73 (1939). Experience indicates that the continuous dry-cleaning process is safe and economical. It eliminates one of the most causes of streaky, cloudy, and shady fabrics. The method leaves the cloth in excellent condition for subsequent processing. No wool oil is present; hence, soap in fulling mills has but one duty — felting. Fulling now can be done without consideration of dirt removal; and methods already known, such as acid fulling, can be applied to many fabrics. If in some cases it is found necessary to use soap to obtain a certain finish, the amount required is far less than that necessary to full a greasy piece. Cold-water soaps and sulphated fatty alcohols are all that are needed for scoured finishes, and no hot water is required for rinsing. In no instance is addition of more soap required for scouring operations.

LABORATORY DETERGENCY TESTS. Frank A. Lucy. *Textile World 89,* (11), 73 (1939). In the case of some soaps, other investigators have noticed a similar correlation, the temperature for greatest efficiency being roughly the melting point of the fatty acids of the soap. However, soaps of oleic acid, while effective in cold water, are reputed to be more efficient at higher temperatures, so the correlation may be accidental.

Adsorption of the detergent from solution onto the fiber and dirt is thought to be the principal factor in detergent action. The shape of these curves can be explained in a general way by assuming that at low temperatures, the solution, as molecules, of the detergent from colloidal particles and coarser aggregates is slight and perhaps rather slow, so that the process of cleaning is correspondingly retarded. At somewhat higher temperatures the conditions become more favorable, but when the temperature is too high, the adsorption will be reduced by much redissolving of the agent from the adsorbed layers, and the stability of the complex with removed soil will also be reduced. This explanation is capable of considerable refinement, but further discussion here is unnecessary.

The general rule is that detergents composed of large molecules work best at high temperatures. Structurally related compounds with molecules that are too small will be most efficient below the freezing point of water, while if the molecules are too large, a temperature above the boiling point will be required for good cleaning. Thus the size of molecules to be used is restricted. The tests confirm the fairly well-known fact that for each detergent there is a set of conditions for which this detergent is most effective, and that no one agent can be expected to work well under all conditions.

COLD PROCESS SOAPS — II. J. M. Vallance. *Soap 16,* (2), 30 (1940). Up to 10% of Na silicate or 5% soda crystals are reasonable minimums for addition to cold process soaps. Both exert a hardening effect, while the carbonate will effloresce to form an unsightly white powdery film on the surface of the cake if an excessive quantity is incorporated. 2-5% of buffered sodium metaphosphate and sodium pyrophosphate deserve inclusion in good quality, lightly filled soaps by virtue of their ability to increase lathering power and disperse lime soaps. Methyl cellulose has also been suggested as a filler. 5% of Cornish China clay or bentonite have been proved to be efficacious as colloidal detergents, and can also absorb and neutralize free alkali. Bentonite may be incorporated with the fats, the alkali being added last of all, which is said to facilitate complete and rapid emulsification and saponification. As to perfuming, only the most alkali-stable essential oils, synthetics and isolates should be employed, such as geranium, Java citronella,