Abstracts

Oils and Fats

Edited by
M. M. PISKUR and SARAH HICKS

EXTRACTION OF VEGETABLE OILS BY HYDRAULIC METHODS. R. D. Oilar. *Aceites Jubones Y Grasas 2,* No. 16, 34; No. 17, 32 (1944).

DEODORIZATION OF FOOD FATS AND OILS. Q. G. Draz. *Aceites Jabones Y Grasas 2,* No. 15, 16-19 (1944). Apparatus, efficiency and influence of temp. and vacuum are described.

TESTS AND STANDARDS FOR SHARK LIVER OIL FROM SHARKS CAUGHT IN FLORIDA WATERS. L. L. Rusoff and R. M. French. *Fla. Acad. Sci. Proc. 5,* 133-135 (1940). *Exper. Sta. Rec. 91* (1944).

CANADIAN LINSEED. I. THE EFFECT OF VARIETY AND ENVIRONMENT ON THE COMPOSITION OF LINSEED. H. R. Sallans. *Can. J. Res. 22F,* 119-31 (1944). II. RELATIONS BETWEEN IODINE VALUE AND FATTY ACID COMPOSITION OF LINSEED OIL. H. R. Sallans and G. D. Sinclair. *Ibid.,* 132-45. III. IODINE VALUES IN RELATION TO OIL AND MEAL PROPERTIES OF COMMERCIAL SAMPLES. H. R. Sallans. *Ibid.,* 146-56.

THE MANUFACTURE OF TURKEY RED OIL. S. Glicher. *Manuf..Chemist 15,* 276-8 (1944).

THE NEUTRAL RED FAT TEST ACCORDING TO SCHÖNBERG. *Rautmann and Tilgner. Z. Fleisch- u. Milchhyg. 53,* 191-4 (1943). The suitability of the test to support odor and taste tests on lard, bacon, butter and margarin is discussed. *(Chem. Abs.)*

HOW TO EVALUATE AND IMPROVE THE STABILITY OF FATTY FOODS. R. W. Riemenschneider and W. C. Ault. *Food Industries 16,* 892-4, 936-9 (1944).

PHYSICAL CONSTANTS OF METHYL ESTERS OF COMMONLY OCCURRING FATTY ACIDS. VAPOR PRESSURE. P. M. Althouse and H. O. Triebold. *Ind. Eng. Chem.,* Anal. Ed. *16,* 605-6 (1944). Me esters of caproic, caprylic, capric, lauric, myristic, palmitic, stearic, oleic, and linolic acids were obtained in a pure state by repeated fractional distn. Vapor pressure curves and decompn. pressures and temps. have been detd. for each of the Me esters by the method described by Ramsay and Young. With the exception of the C_{18} series, it has been shown that an ester fraction can be identified and its purity ascertained by means of its vapor pressure curve. With the aid of the decompn. data, it is possible to eliminate excess decompn. by controlling the pressure and hence the b. temp. of fractional distn.

COMPONENT FATTY ACIDS FROM THE FAT OF COW COLOSTRUM. A. R. Baldwin and H. E. Longenecker. *J. Biol. Chem. 155,* 407-12 (1944). A sample of colostrum fat from a cow fed a known diet was analyzed for fatty acid compn. The component acids were found to be not significantly different from those of the fat of mature milk.

NATURALLY OCCURRING GLYCEROL ETHERS. II. SYNTHESIS OF SELACHYL ALCOHOL. E. Baer *et al. J. Biol. Chem. 155,* 447-57 (1944). The comparison of the optical rotations of the synthetic selachyl alcs. and their acetyl derivs. with those of the natural selachyl alc. and its acetate confirmed our earlier inference that the natural selachyl alc., together with batyl alc. and chimyl alc., belongs to the *d* series. The synthetic selachyl alcs. are crystn. solids: *d*- and *l*-selachyl alcs. melt at 48.5-49.5°; the *dl*-selachyl alc. melts at 46.5-47.5°. The natural selachyl alc. up to now has been isolated only as an oil.

PALM OIL CAROTENOIDS. III. EXAMINATION OF THE LIPOID PIGMENTS PRESENT IN "MALAY" AND "BISSAO" PALM OILS. R. F. Hunter, A. D. Scott and N. E. Williams. *Biochem. J. 38,* 209-11 (1944). IV. THE PROPERTIES OF *a*- TO *b*-CAROTENE IN UNRIPE AND RIPE PALM OILS AND ATTEMPTED INTERCONVERSION OF *a*- AND *b*-CAROTENES. R. F. Hunter and A. D. Scott. *Ibid.,* 211-13.

THE EFFECT OF THE METHOD OF MANUFACTURE OF BUTTEROIL ON ITS KEEPING QUALITY. M. S. El-Rafey, G. A. Richardson and J. L. Henderson. *J. Dairy Sci. 27,* 807-20 (1944).

FATS IN METABOLISM. Walter R. Bloor. *Nutr. Revs. 2,* 289-91 (1944). PREVENTION OF FATTY LIVER. *Nutr. Revs. 2,* 302-5 (1944). THIAMIN IN FAT SYNTHESIS. *Nutr. Revs. 2,* 308-9 (1944).

TOXICITY OF RANCID LARD. Editorial. *J. Am. Med. Assoc. 126,* 573 (1944).

DIFFERENTIATION IN THE ABSORPTION OF OLIVE OIL AND OLEIC ACID IN THE RAT. A. C. Frazer. *J. Physiol. 102,* 306-12 (1943). Neutral fat absorption gives rise to large globules in the intestinal cell, whereas fat acid absorption shows a fine, brown, granular deposit. Neutral fat absorption is accompanied by milky lacteals; not so with fat acid absorption. Neutral fat absorption gives a systemic lipemia but little change in the portal blood, whereas fat acid causes a marked portal lipemia with little change in the systemic blood. Neutral fat can be traced to the fat depots, and provided it is administered in moderate doses, it fails to give marked deposition in the liver. Fat acid does not appear in the fat depots but gives rise to marked deposition in the liver. These data cannot be correlated with the hypothesis of complete lipolysis prior to absorption but may be explained on the partition hypothesis of fat absorption. LIPOLYSIS AND FAT ABSORPTION. *Ibid.,* 329-33. Rats fed with neutral fat with added lipase show sequelae normally assocd. with the ingestion of fat acid. In human subjects under standard conditions, the systemic lipemia can be almost entirely prevented by the addn. of lipase to the fat-contg. food. The complete inhibition of lipolysis by Na cetyl sulfate in rats does not prevent triglyceride absorption in amts. comparable with, or greater than, those absorbed by the control groups in the same time. Thus, it is suggested that lipolysis is not an essential step in triglyceride absorption, but that, first, it det. the fate of the absorbed fatty material and secondly it provides fat acid for soap and phospholipide formation. *(Chem. Abs.)*

FAT AND CA METABOLISM. IV. THE EFFECT OF BUTTER AND OF MARGARINE ON THE CA ECONOMY OF THE ADULT ORGANISM. A Westerlund. *Lantbruks-Hogskolans Ann. 10,* 74-108 (1942). This is a repetition of the work reported previously upon this topic with rats, with some changes in the exptl. conditions, undertaken to resolve differences with other authors. When the math. evaluation of the results was done on the basis of the mean values of the results of the

groups of animals, with butter included in the diet in one case and with margarine replacing butter in the other, no differences could be found. (*Chem. Abs.*)

PATENTS

QUATERNARY AMMONIUM DERIVATIVES. A. L. Linch (E. I. duPont de Nemours & Co.). *U. S. 2,359,862-4.*

COMPLEX QUATERNARY AMMONIUM COMPOUNDS. J. M. Tinker and A. L. Linch (E. I. duPont de Nemours & Co.). *U. S. 2,359,884.* The process comprises mixing at room temp. 2 molar quantities of an alkyl ester of an *a*-bromo fat acid and approx. 3 molar quantities of trimethylamine in the presence of Me alc., said reaction being continued for a sufficient period of time to permit a further reaction between the quaternary ammonium compds. initially produced, then sepg. the excess trimethylamine from the resulting product.

REFINING VITAMIN-CONTAINING MATERIALS. L. O. Buxton (National Oil Products Co.). *U. S. 2,360,039.* A process for refining a fish liver oil comprises contacting a fish liver oil with dried milk whey in the presence of a solvent for said oil, sepg. the dried milk whey from the solvent soln. of the oil and removing the solvent from the refined oil.

Abstracts

Soaps

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IMPORTANT FACTORS IN DETERGENCY. Foster Dee Snell. *Am. Perfumer & Essential Oil Rev. 16,* No. 10, 65-9 (1944). A scientific method of determining the efficiency of soap and soap builders is discussed. The factors to be considered include: the initial alkalinity or the pH of the detergent solution, total alkalinity or the buffer value of the detergent solution, its effect in lowering the interfacial tension between soil and water, and the deflocculating and emulsifying power of the detergent solution.

Work on soiled fabric is one of the best means of determining effectiveness. A typical soil contains an inert dirt, saponifiable oils, free fatty acids, mineral oil, proteins and carbohydrates. This mixture is acid necessitating the use of alkaline cleansing materials. Soap has a pH of 10.2 and this is taken as the neutral point. Soap builders will increase this alkalinity and will start the cleansing process by neutralizing the dirt and leave the soap to perform other functions. This alkalinity can be shown by comparative electrometric titration curves.

Lowering of interfacial tension may be considered as an indirect measure of wetting power and can be measured by the stalagometer method or with the du Nouy tensiometer. The other function of soap is that of floating away dirt with its emulsifying power. By combining the effects of these factors which enter into evaluation of the rate of soil removal, the composite effect of various builders in descending order of efficiency is: sodium orthosilicate,sodium sesquisilicate, sodium metasilicate, caustic soda, trisodium phosphate and soda ash.

MEDICATED SOAPS. Milton A. Lesser. *Soap 20,* No. 10, 33-6 (1944). Medicated soaps, though long known and used, have not been widely accepted, particularly by the medical profession. Soaps offer a convenient way of applying medicaments, but there is no accurate method for measuring the efficiency through the medium of suds. However, it has been found that the bactericidal value varies with the soap base. Rosin soaps have unusual efficiency against pathological organisms and the combination of rosin and coconut oil is also good.

The germicidal soaps may contain such agents as phenol, cresol, mercury salts, certain perfumes, antiseptic dyes such as proflavine, and certain hardwood oils. Therapeutic soaps may contain tar, sulfur, a combination of tar and sulfur, and ichthyol. Formulations are given for various of these soaps and their value discussed.

REFINED TALL OIL IN SOAPS. Bennett Woods and George G. Johnston. *Soap 20,* No. 10, 37-8 (1944). Tall oil may be used in hard and soft or liquid soaps. Through improved refining processes its odor has been minimized and the dark color has been lightened. The presence of tall oil is comparable to the addition of an accelerating agent for the saponification of the fats and oils in the soap kettle. It has the added advantages of low cost (lower than rosin for which it is an excellent replacement), availability and high detergency. It is therefore worthy of further consideration by soapmakers.

PATENTS

PREPARATION OF WETTING, SUDSING, AND DETERGENT AGENTS. Nathaniel Beverley Tucker (The Procter & Gamble Co.). *U. S. 2,342,563.* Detergent produced by the condensation of a salt of a higher fatty acid with a low molecular weight halogen substituted alkyl sulfonate in the presence of formyl morpholine.

PROCESS FOR OBTAINING DETERGING, WETTING, FOAMING, METALLIC SALT DISPERSING, AND EMULSIFYING AGENTS. Jean Paul Amedee Vallernaud (Alien Property Custodian). *U. S. 2,350,000.* Powdered detergent produced by the condensation of the fatty acids of murumuru butter with an amine such as dodecylethanolamine and then treating the condensation product with an acid such as chloro-sulphonic acid or sulphuric acid.

DETERGENT COMPOSITION. Ernst Schubert and Heinz Piere (Alien Property Custodian). *U. S. 2,352,021.* A washing agent and detergent capable of operating in hard water without forming insoluble lime soaps, made from equal parts of water-soluble alkali lignin and soap.

SULFONATION OF OILS, FATS AND THE LIKE. Fraser Frase, Ltd. and Karl J. A. Partisch. *Brit, 553,598.* Aliphatic and aromatic compds. are sulfonated by spraying one of the reagents into a thin film of the other flowing over the surface of a wall while this is kept within required temperature limits. (*Chem. Abs.*).