Abstracts

Oils and Fats

Edited by
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Agripole: soybean rubber. *Soybean Digest, 3,* No. 4, 4-5 (1943).

The component fatty acids of some vegetable seed phosphatides. T. P. Hilditch and A. H. Zaky. *Biochem. J. 36,* 815-21 (1942). From 6 instances now studied (which cover a fairly wide range of botanical families) the following generalizations may be tentatively suggested: (1) seed phosphatides contain characteristic, although minor proportions of highly satd. C_{20} and C_{22} acids which are not present in the corresponding glycerides; (2) acids (notably palmitic) of the satd. series form a greater proportion of seed phosphatide than do seed glyceride fatty acids; (3) all the acids present in any seed glyceride are also found in the corresponding seed phosphatide; (4) linoleic acid is on the whole the most characteristic acid of seed phosphatides and, although in 2 instances out of the 6 investigated it amts. to only 20-25% of the total fatty acids, in the majority it forms 45-55% of the total phosphatide fatty acids.

Chemistry of ketone rancidity. Part III. H. Thaler and W. Eisenlohr. *Biochem. Z. 308,* 88-102 (1941). In the present investigation it is attempted to det. whether α,β-unsatd. fat acids are likewise changed to methyl ketones by the molds. The following were used as substrates: crotonic, 2-hexenoic, 2-decenoic and 2-tetradecenoic acids. The expts. were carried out with *Penicillium glaucum.* The 2-decenoic acid yielded practically no methyl ketone at pH 4.6 or 6.5, but its formation increased rapidly at pH 7, remained high at pH 7.5 but declined again very abruptly at pH 7.7. After 12 days ketone could be demonstrated in considerable quantities, whereas in the expts. with satd. fat acids and with β-hydroxy acids of Thaler and Geist only traces could be found after the 11th day. Ketone formation from crotonic acid was max. at pH 6 on the 20th day, and the time-curve was also zigzag. Mycelium growth was slight, but proceeded best at pH 6. Ketone formation from 2-hexenoic acid was greatest at pH 7.5 on the 11th day. With 2-tetradecenoic acid the greatest formation of ketone took place at pH 7 on the 9th day, and the time curve was again zigzag. These results sustain the hypothesis that fat acid oxidation proceeds according to the Wieland scheme. *(Chem. Abs.)*

The influence of rancid fat on the sexual organs of the rat. Z. Kolodziejska and J. Duszynska. *Acta Biol. Exptl.* (Warsaw) *13,* 10-23 (1939); Expts. on rats, continued over a period of several months, are reported. In addn. to a basic diet contg. sufficient amts. of vitamins E and F, the exptl. animals received 10-25% of rancid fat while the controls received fresh fat. Definite injury to the testicles was observed in the exptl. animals, which could result in the complete disappearance of the germinal epithelium of the testicle. It appears, therefore, that rancid fat either contains products especially toxic to the germinal epithelium or that some kind of indispensible active principle not identical with vitamins E or F is inactivated by the constituents of the rancid fat. *(Chem. Abs.)*

Increase in the fat content of milk through the administration of vitamins. W. v. Lucadou. *Klin. Wochschr. 20,* 115-19 (1941). Feeding brewers' yeast, as well as the combined feeding of vitamin B_1 and B_2, raised the fat content by about 25% (abs. increase 0.9-1.5%); the increase lasted for several days. In the summer the fat content of the milk was not affected by feeding lactoflavin alone (6 mg. daily) or aneurine alone (50 mg. daily). In the winter the feeding of 0.2 g. aneurine and 0.02 g. lactoflavin raised the fat content by 13%. *(Chem. Abs.)*

Meat in nutrition. XXI. Distribution and partition of fats in certain tissues of rats fed a diet containing dried autoclaved pork muscle. E. B. Wilcox. *Iowa State Col. J. Sci., 17,* 158-160 (1942). The various findings are interpreted as indicating that fat metabolism is altered in the pregnant rat following the feeding of a diet contg. dried autoclaved pork muscle, but that the development of a fatty liver is not a basic cause of the pregnancy disease that so frequently occurs in rats maintained on the ration. *(Expt. Sta. Record.)*

Oxygen consumption and ketone body production in the carbon tetrachloride and phosphorus fatty livers. A. H. Ennor. *Australian J. Exptl. Biol. & Med. Sci. 20,* 73-80 (1942). The O_2 consumption (calcd. on basis of dry fat-free wt.) of liver slices from CCl_4 and P treated guinea pigs is considerably in excess of normal. The rate of ketogenesis is also markedly increased and such livers show no impairment in their abilities to oxidize added fatty acids. There is no apparent association between the metabolic behavior and the histological findings. The increase in O_2 consumption is possibly partly associated with the increase in fat and further is possibly indicative of an increase in general metabolism. *(Biol. Abs.)*

PATENTS

Soybean flaking machine. Harry Truax. *U. S. 2,306,655.*

Separating oil from corn gluten. H. H. Schopmeyer and G. V. Sharps (American Maize-Products Co.). *U. S. 2,310,184.*

Fish reduction process. G. R. Henshall. *U. S. 2,309,392.* A fish reduction process comprises treating the fish with a mixt. of Na-bi-sulphate in combination with $FeSO_4$ and $Al_2(SO_4)_3$ just before the fish enter the cooker for deoiling.

Method for incorporating gum guaiac in fats. J. L. Doegey (Industrial Patents Corp.). *U. S. 2,308,912.* The method of incorporating gum guaiac into animal fats to effect stabilization thereof comprises dissolving the gum guaiac in acetic acid, adding the resulting soln. to the fat and thereafter removing the acid by steam deodorization.

Condensation product. W. L. Morgan and E. D. McLeod (Arnold, Hoffman & Co., Inc.). *U. S. 2,304,369.* A process for forming a substituted urea compd. comprises heating an aliphatic polyamine with a satd. fatty acid of at least 6 C atoms at 130° to 200° to form an amide condensation-product contg. free amino groups and thereafter chemically combining at 170° to 200° with urea. This product is a wetting agent.

Process of treating vitaminiferous materials. Loran O. Buxton (National Oil Products Co.). *U. S. 2,306,776.* A process of removing objectionable color, odor and taste from fish liver oils comprises admixing activated C with a hydro-carbon solvent, deaerating the carbon-solvent mixt. by means of agitation, addg. the fish liver oil to the deaerated carbon solvent mixt. agitating the entire mass to effect adsorption of impurities on the carbon and sepg. the refined fish liver oil and solvent from the C and impurities adsorbed thereon.

Abstracts

Soaps

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SAVING IN USE OF SOAP. G. Ullmann. *Textile Mfr. 68,* 210 (1942). Detergency can be improved with savings in the amt. of soap required by using a small quantity of a suitable dispersing agent. The Hydrosan processes invented by U. are described. Small amts. of dispersing agents resistant to metals and salts are added to the soap baths. Highly sulfonated oils, particularly castor oil, exhibited this property. Other compds. are considered also. The theory of the mechanism of the dispersing medium is discussed. The process also removes deposits of lime soap which are highly detrimental to final finish. A remarkable reduction in the soap used can be achieved. Ultramicroscopic examn. shows that the Hydrosan process results in bringing the conditions, when using hard water, nearly to those of soap in distd. water. Even with distd. water the activity of the soap is increased by the process. The mechanism of the soaping lather is improved by sulfonated castor oil. A lather is not formed by sulfonated bodies but if mixed with soap in the correct proportion the density of the lather is much increased also. *(Chem. Abs.).*

BUILDERS FOR SOAPS. *Am. Perfumer & Essential Oil Rev. 45,* No. 2, 50 (1943). New builders include: sodium phosphometa-borate, sodium thiotetraphosphate, sodium aluminate, sodium alumino-silicates. The alumino-silicates find their chief use in base-exchange water softening.

AVOIDING SPOTTED SOAP. *Am. Perfumer & Essential Oil Rev. 45,* No. 2, 49 (1943). In tropical countries packed soap occasionally spots, due to the growth of molds. Soap is usually infected by spore laden air or by contaminated wrapping paper. The latter is particularly important as the size on the surface of the paper serves as an ideal media for the growth of fungi. To remove this danger the wrappers for soap intended for tropical countries should be exposed to formaldehyde vapor in a sealed room for 48 hours before use. The inclusion of antioxidants or preservatives is an additional safeguard.

SURFACE TREATMENT FOR MAGNESIUM. H. K. DeLong & Wm. H. Gross. *Proc. Am. Electroplaters' Soc. 1942,* 110-17. Steps in cleaning Mg include solvent or emulsion degreasing. alk. cathodic or soap cleaning in a bath such as Na_3PO_4 4 oz./gal., Na_2CO_3 4 oz./gal., soap or wetting agent 0.1 oz./gal. (soap omitted in electrolytic cleansing), followed by hot, and cold-water rinsing. *(Chem. Abs.).*

NEW METHODS FOR UTILIZING THE HEMICELLULOSE AND WASTE CHEMICALS FROM THE VISCOSE STAPLE FIBER INDUSTRY. E. Elod. *Melliand Textilber, 22,* 629 (1941); *Bull. Inst. Paper Chem. 13,* 217. By a weak acid prehydrolysis a pulp with a high α-cellulose content can be recovered and the hemicelluloses (I) in the prehydrolyzate utilized. The chips or straw is heated at 130° with 0.5 N H_2SO_4 for several hrs. The residue is further pulped by the sulfate method. The I can be used for the manuf. of yeast, sylose, furfural or binding agents in the soap industry.

FREEZING POINTS, DENSITIES AND REFRACTIVE INDEXES OF THE SYSTEM GLYCEROL-ETHYLENE GLYCOL-WATER. J. A. Spangler and E. C. H. Davies. *Ind. Eng. Chem. Anal. Ed. 15,* 96-9 (1943). The freezing points of mixtures of these compds, and an easy method of analysis of any mixture of them is given. The refractive indexes and absolute densities (all weighings reduced to vacuum and water at max. density taken as unity) were detd. at 25° C. From the tables given it is possible to det. accurately the amt. of glycerol and ethylene glycol in an aq. soln, by using the density and refractive index for that soln.

PATENTS

PARTITIONED SOAP AND PROCESS OF FORMING THE SAME. J. W. Bodman and F. F. Pease (Lever Bros. Co.). *U. S. 2,310,931.*

REMOVING INORGANIC SALTS FROM ORGANIC SULFONATES. D. J. Potter (Colgate-Palmolive-Peet Co.). *U. S. 2,307,953.*

DRYING APPARATUS AND METHOD FOR SYNTHETIC DETERGENTS. W. Davey (Colgate-Palmolive-Peet Co.). *U. S. 2,307,995.*

THICKENING OF SOLUTIONS. M. Katzman and F. J. Cahn (Emulsol Corp.). *U. S. 2,307,047.* A substantially clear shampoo soln. of at least 5% of an alkylolamine salt of a H_2SO_4 ester of a fat alc. and contg. a small proportion of a caprylic acid mono-ester of diethylene glycol, which ester is sol. in said soln. sufficient to appreciably thicken the same is described.

SOAP. R. Thomas and H. B. Oakley (Lever Bros. Co.). *U. S. 2,310,475.* This soap of improved hard water characteristics is made from 10-30% satd. C_{18} or higher fat acids, 30% unsatd. and at least 30% of a stearic and palmitic acid mixt. in which the stearic does not exceed 15%.

PROCESS AND COMPOSITION FOR SOFTENING HARD WATER. N. B. Tucker (Procter & Gamble). *U. S. 2,311,008.* The process of reducing the amt. of soap required for washing in hard water comprises adding to said water a water-sol. salt derived from a polyglycollic acid ether of an aliphatic polyhydroxy substance selected from the group consisting of carbohydrates, polyhydric alcs. and polyhydroxy carboxylic acids and a base selected from the group consisting of alkali-metal bases, ammonia and org. N bases, said polyglycollic acid ether contg. at least 3 carboxyl groups per mol., the pH value of said salt in soln. being sufficiently great to prevent the pptn. of acid soap.

PINE-OIL COMPOSITION SUITABLE FOR USE AS PARASITICIDES OR CLEANSING AGENTS. J. N. Borglin (Hercules Powder Co.). *U. S. 2,291,205.* Pine oil is used with an emulsifying agent which is mainly an alkali soap of polymerized rosin, and with sufficient water to cause the formation of a clear mobile homogeneous mixt. but insufficient to cause the formation of a sep. aq. phase. *(Chem. Abs.)*