Abstracts

Oils and Fats

Edited by
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PREPARATION OF FATTY ACID BETA-MONOGLYCERIDES. B. F. Daubert. *J. Am. Chem. Soc. 62,* 1713-4 (1940).

DIRECT ESTERIFICATION OF HIGHER FATTY ACIDS WITH GLYCEROL. I. FORMATION OF MONO- AND DIGLYCERIDES AND THEIR SEPARATION. S. Kawai and H. Nobori. *J. Soc. Chem. Ind., Japan 43,* Suppl. binding 59 (1940). 1. Esterfication was almost completed within 3 hrs. when the temp. of reaction was kept at 234-240°; prolonged heating (15-20 hrs.) was necessary at 170-180°. 2. Glycerides formed from lauric and oleic acids consisted chiefly of mono- and diglycerides with a small amt. of triglyceride, but those from stearic acid consisted mainly of di- and triglycerides. 3. Glycerides obtained by prolonged heating at 170-180° contained less mono- and diglycerides than those obtained by heating at 230-240° for a short time. 4. The sepn. of resulting glycerides with 85% alc. was in good agreement with the calcn. from hydroxyl values. The opt. temp. for sepn. of glycerides formed was low (5°) for lauric acid and that of oleic acid was found at room temp., while that of stearic acid was high. For the sepn. of glycerides of oleic acid, the use of 80% alc. was more effective than 85% alc. (Chem. Abs.).

UNSAPONIFIABLE CONTENT OF COCOA SHELLS AND COCOA SHELL FATS. J. Grossfeld. *Z. Untersuch. Lebensm. 79,* 477-81 (1940). The fat content was 1.91-15.33% (21 samples). The husk and shell fats resp. contained hydrocarbons .01-0.19% (av. 0.07), 0.5-8.6 (3.0) sterols 0.18-0.56 (.28), 8.2-22.1 (12.4 and total unsapon. 0.21-0.69 (0.35), 9.3-28.5 (15.4). The unsapon. and sterol content should be preferable to hydrocarbon content as bases for estimating the husk fat content of cocoa fats (Chem. Abs.).

A NEW METHOD OF DETERMINING THE IODINE NUMBER OF OILS AND FATS. G. Scotti. *Olii minerali, grassi e saponi, colori e vernici 18,* 96-100 (1938). A new rapid method is described. The solns. used are easily prepd. for immediate use and their titer is remarkably stable. Weigh out 0.1 to 0.8 g. of sample depending on the degree of unsatn. Dissolve in 10-15 cc. of C_6H_6, add 25-35 cc. of a soln. of 25 g. of pure I in .11 of C_6H_6 and then 9 cc. of a 10% soln. of $Hg(OAc)_2$ in 97-8% AcHO. The order of addn. of the reagents is important. Shake, allow to stand for about 10 min. and add 20 cc. of a 20% KI soln. Shake vigorously, dil. with 50-100 cc. of water and titrate with 0.1 *N* $Na_2S_2O_3$ in the usual way. Complete reaction of the double bonds is attained quickly with no detectable tendency to halogenation by substitution (Chem. Abs.).

THE EFFECTS OF LIVER AND PANCREAS EXTRACTS UPON FAT SYNTHESIS AND METABOLISM. E. W. McHenry and G. Gavin. *J. Biol. Chem. 134,* 683-92 (1940). The administration of a crude liver fraction to rats causes marked synthesis of fat and the development of fatty livers highly resistant to the lipotropic action of choline. There are coincident increases in the amts. of cholesterol in the liver and body, apparently as a result of synthesis. The increase in fat and cholesterol in the liver can be prevented by feeding a pancreatic extract (lipocaic), rice polish concentrate, or brewers' yeast.

FATTY ACIDS SYNTHESIZED BY THE ACTION OF THIAMINE. H. E. Longenecker et al. *J. Biol. Chem. 134,* 693-9 (1940). When young rats were taken from a ration containing fat (Fox Chow) and fed for 3 wks. on a vitamin B complex-deficient ration which was free of fat, they lost fat gradually from their body stores. An increase in the I nos. of the total lipid fatty acids but not in the acetone-soluble lipids in both the body and liver was observed during the depletion period. Addn. of 12.5 micrograms of thiamine daily to the basal ration during a subsequent 12 day period caused a rapid deposition of fat in the body. The liver fat was also markedly increased owing to the absence of dietary choline. The total acetone-soluble lipids of a group of 48 young rats increased from 40.3 to 110.9 gm. following thiamine treatment. Expressed in terms of fatty acids/100 gm. of body wt., the increase due to thiamine was 1.81 gm. of which 49% was due to oleic acid, 32% to palmitic acid, and 14% to hexadecenoic acid. The synthetic fat was characterized by an increase in the C_{16} acids from 25 to 41% (molar basis) of the total mixed acids.

PATENTS

PROCESS OF REFINING ANIMAL AND VEGETABLE OILS. B. Clayton and B. H. Thurman (Refining, Inc.). *U. S. 2,205,971.* In a continuous process the step of adding an emulsion-breaking agent comprising oil and foots is added.

VEGETABLE OIL REFINING. B. H. Thurman (Refining, Inc.). *U. S. 2,204,109.* Hydrogen peroxide is used to ppt. the phosphatides from oils and they are sepd. by difference in sp. gr.

METHOD OF DEODORIZING OILS. H. J. Ullmann. *U. S. 2,203,373.* Neatsfoot oil is deodorized by subjecting it to the action of X-rays.

STABILIZATION OF SHORTENING. D. P. Grettie (Industrial Patents Corp.). *U. S. 2,201,692.* Lard is stabilized by incorporation therein of 1-10% hardened refined soy bean oil.

STABILIZATION OF FOODS C. Ellis and F. Dannerth (Ellis Labs., Inc.). *U. S. 2,204,728.* The macerated unripe fruit of an edible plant of the dicotyledon group is used to stabilize fats and oils.

TREATMENT OF PARTIALLY RANCID GLYCERIDES. C. Ellis and F. Dannerth (Ellis Labs., Inc.). *U. S. 2,204,729.* The comminuted edible mass of flowering plants is added to slightly rancid fats to eliminate the rancidity.

METHOD OF STABILIZING FATS AND OILS AND RESULTING PRODUCT. E. C. Crocker (Arthur D. Little, Inc.). *U. S. 2,205,620.* Components of licorice resins are used to stabilize fats and oils.

FAT SOLUBLE VITAMIN CONCENTRATE. K. C. Hickman (Distillation Products, Inc.). *U. S. 2,205,925.* A vitamin A concentrate is obtained by subjecting raw oils or fats to vacuum distn. at pressures below .1 mm.

METHOD OF PRESERVING THE CATALYTIC ACTIVITY OF A METALLIC NI HYDROGENATION CATALYST. H. R. Arnold (E. I. du Pont de Nemours). *U. S. 2,205,552.*

CATALYST AND PROCESS OF PRODUCING SAME AND PROCESS OF EMPLOYING SAID CATALYST IN HYDROGENATION REACTIONS. C. W. Lenth and R. Newell (Assocn. of Am. Soap and Glycerine Producers, Inc.). *U. S. 2,201,235.* A Cu-Al mixt. is used as a catalyst.