ABSTRACTS

Oils and Fats

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The biological fat synthesis. F. Fiedler. *Fette u. Seifen* **45,** 183-5 (1938).—According to Ger. Pat. 647,219, fats can be prepd. from carbohydrates by the action of seed enzymes. Experiments by Fiedler indicated that no fat was synthesized but the seeds were decompd. thus yielding a better extn. of the original fat. Decompn. of the seed material with acids also allowed an increased yield of fat.

Economy of caustic refining of fat. H. Kirchrath. *Fette u. Seifen* **45,** 172-5 (1938).—Data on refining, which included amt. of earth used, refining losses, and cost of neutralizing, bleaching and deodorization. A graph is prepared from which the cost of refining fats of various acidities can be approx. estimated.

A note on the digestion of fats by pancreatic lipase. G. A. Hartwell. *Biochem. J.* **32,** 462-6 (1938).—Coconut oil was digested by pancreatic lipase more rapidly than any other fat. Palm kernel oil and castor oil were digested more rapidly than butterfat, while almond oil, arachis oil, bacon fat, beef fat, beef oleo, beef stearin, cocoabutter, cod liver oil, cottonseed oil, lard, mutton fat, olive oil, palm oil, premier jus, soya bean oil, hardened whale oil and hardened arachis oil were digested appreciably more slowly, and at approx. equal rates.

The effect of melting point of fat upon its utilization by guinea pigs. C. M. McCay and H. Paul. *J. Nutr.* **15,** 377-82 (1938).—In order to determine if the melting points of a fat in region of body temp. is important in influencing its utilization in Herbivora, a series of balance studies was made chiefly with guinea pigs. The following oils were fed, incorporated at a 6% level in a diet of alfalfa hay and grain which had been extracted previously with isopropyl ether: castor, soybean, olive, cocoanut, salmon, cod liver, neats-foot, peanut, butter, cottonseed, hydrogenated cottonseed, corn, tallow and lard. The fecal lipid tended to be much higher after feeding the higher melting fats. The higher melting fats are not so well utilized as the oils by the guinea pig in contrast to the rat. Even castor oil seems well absorbed.

The influence of hydrogenation and of yeast in counteracting cod liver oil injury in herbivora, and the influence of salmon oil on milk fat secretion. C. M. McCay, H. Paul and L. A. Maynard. *J. Nutr.* **15,** 367-75 (1938).—Two experiments were run with lactating cows to determine the effect of feeding hydrogenated cod liver oil upon the secretion of milk fat. In contrast to the original oil, the hydrogenated product neither lowered the fat percentage of the milk nor significantly raised the I no. of the milk fat. Limited evidence from feeding this hydrogenated oil to guinea pigs also indicated that it does not produce muscle lesions over a period of 60 days, although such lesions are regularly produced with the oil before hydrogenation. The feeding of from ½ to 1 lb. of dried yeast daily with the usual amt. of cod liver oil did not counteract the lowering of the milk fat caused by the oil in lactating cows. Two additional studies of the influence of salmon oil on milk fat secretion in cows indicated that this oil does not react like cod liver oil. If the injurious factor is present it is probably in a lower concn.

Further studies on the unsaturated fatty acids essential in nutrition. O. Turpeinen. J. Nutr. 15, 351-365 (1938).—The following are the results of the effectiveness of the substances to cure the "fat-deficiency" disease in rats: Erucic, ricinoleic △12:13-oleic, and chaulmoogric acids proved ineffective. In experiments conducted with 4 levels of linoleic acid, it was found that the maximal growth response in plateaued "fat-deficient" females ensued when approx. 100 mg. of methyl linoleate were fed daily; twice this amt. did not further improve growth, whereas half of it was inadequate. Linoleyl alc. showed some curative properties, although it was less effective than linoleic acid. Arachidonic acid was found to be a powerful curative agent; it produced maximal growth response when 33 mg. of the methyl ester were fed daily, and was hence very definitely superior to linoleic acid in this respect.

PATENTS

Refining fatty oils and fats. Metallges. A.-G. Ger. 652,351 Cl. 23a 3. Oils are first refined with strong caustic (25° Be.) under vacuum and filtered; this refining is followed by refining with dilute caustic 3° Be. at 75° C.

Process of bleaching oils. B. Clayton and B. H. Thurman. U. S. 2,110,789. In a special app. the oil is passed under pressure through a heating zone where the temp. is raised sufficiently to reduce color and volatilize certain constituents. The press is lowered and the oil is cooled before its viscosity is altered.

Process for the continuous selective hydrogenation of oil and removal of by-products. M. W. Schuman. U. S. 2,111,573. Oil is forced into a chamber containing hydrogen under pressure and a stationary catalyst and the hydrogenated product is continually washed out of the chambers.

Water oil emulsions and process of producing same. B. R. Harris. U. S. 2,109,842. Polyhydric alcs. partially esterified with fatty acids of high molecular weight are used as emulsifiers with substances having alkaline reaction.

Margarine. F. J. Cahn and B. R. Harris. U. S. 2,111,042. Fat acids to which are attached hydrophilic radials at their ∝-carbon atoms are used as emulsifiers for margarine.

Stabilization of oil. V. C. Mehlenbacher (to Indus. Patents Corp.). The edible oil product contains 25 to 50% of hydrogenated kapok oil.

Apparatus for the continuous splitting of fats and oils. E. Morlock (Amer. Lurgi Corp.). U. S. 2,108,990. The invention comprises a drum-like autoclave, supplied with stirrers and divided into chambers. In operation the oils are forced progressively through the series of chambers.

Wool fat. Metallges. A.-G. Ger. 656,556 Cl. 23d Gr. 1. Wool fat is split and steam distilled at 460° C. and the distillate is separated into fat acids and alcs. by saponifying the acids and distilling off the alcs.

Composition of matter and method of making the same. W. J. Koenig (to Sloane-Blabon Corp.). U. S. 2,108,893. The manuf. of a resin product suitable for floor covering material from oils, phthalic anhydride, phenols, etc., is described.