

decided that the centrifugal method as presently constituted be dropped. Because of the widespread use of the supercentrifuge in plant refining, however, it was not deemed advisable to drop the possibility of using a similar method for the determination of losses. After Mr. King's inquiry as to the possibility of getting a design for a centrifuge that would give laboratory results equivalent to those of the plant machine, Mr. Kruse moved that a committee be appointed for that purpose. Chairman Mitchell stated that such a committee would be appointed with Mr. King as chairman. Mr. King agreed to serve as a one-man committee to check this matter.

A discussion concerning the inability of the members to obtain refining cups and equipment followed. Mr. Mitchell stated that he would look into the cup situation and the ensuing comments led to the proposal by Mr. Kruse that the following resolution of the committee as representing the A.O.C.S. be brought before the proper authorities:

"We resolve that due to the fact that soybean oil may be traded on a new basis involving a refining loss test in accordance with methods prescribed by the A.O.C.S. and that such tests may be made on every tank car of oil, thereby requiring a considerable increase in laboratory refining equipment in the form of refining machines and refining test cups, we urgently request assistance from the W.P.B. in the granting of priorities to obtain such equipment greatly needed in the industry at an early date."

This resolution was approved by the committee.

After an inquiry from Mr. Mitchell, Dr. Milner declared that he was still looking for oils difficult to refine, such as the low phosphorus-low FFA type and expressed his willingness to attempt to refine as many samples of this kind as the group would send. He asked that 2-gallons of these freak oils be sent to

him at the N.R.R.L. and that 15-gallons be retained for use in case the oil proved to have unusual refining characteristics. Dr. Milner also suggested that it might be possible to have each solvent-extracting plant (12) send one sample per month to each member of the committee, or to the N.R.R.L., for refining tests and in this manner gather together a large quantity of unquestionably representative data. This suggestion was heartily received and at Mr. Mitchell's request, was recommended to the committee by Dr. Milner.

Mr. King stated that the situation in regards to the refining of peanut oil had cleared up as the season progressed and this problem was accordingly dropped from the program of the refining committee.

Mr. Agee brought up the point that because of the different methods of refining required for the different types of oil (extracted, expeller, etc.) it was essential that all samples sent to referee chemists be clearly marked as to type. It was recommended that this be brought to the attention of the industry by a notice in OIL & SOAP.

Mr. Kruse suggested that a date be set for another meeting of the committee. It was decided that the next meeting be held at Peoria but the date was left to the discretion of the chairman—to be called when developments warranted.

The meeting adjourned at 4:25 P. M.

(The Uniform Methods and Planning Committee has approved the printing of the minutes covering the meeting of the Refining Committee held on October 5, 1943, in Chicago. Attention is called to the fact, however, that any suggested methods or changes in methods cannot become tentative or official methods of the Society until such methods or changes have been passed upon in a meeting of the Society in the manner designated by the By-Laws.)

A b s t r a c t s

Oils and Fats

Edited by

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DETERMINATION OF THE IODINE NUMBER OF WHOLE PHOSPHOLIPID. P. L. MacLachlan. *J. Biol. Chem.* 152, 97-101 (1944). The use of CHCl_3 as a solvent for phospholipid, pptd. with acetone and MgCl_2 , results in very erratic and unreliable I no. This apparently is due to a tendency of the CHCl_3 soln. of phospholipid to hold appreciable amts. of MgCl_2 . Reliable and reproducible I no. were obtained when the CHCl_3 soln. of the phospholipid was evaporated to dryness and the phospholipid redissolved in CHCl_3 prior to carrying out the detn. Reliable I no. for phospholipid were also obtained when CHCl_3 -ether (1:1) and moist ether were employed as solvents.

ETHYLBIS-2,4-DINITROPHENYLACETATE, A NEW PH INDICATOR. DETERMINATION OF SAPONIFICATION EQUIVALENTS IN DARK-COLORED OILS. E. A. Fehnel and E. D. Amstutz. *Ind. Eng. Chem. Anal. Ed.* 16, 53-5 (1944). A new acid-base indicator, ethylbis-2,4-dinitrophenylacetate, has been studied and its prepn. described. The pH range over which the change from colorless

to deep blue occurs is found to be from 7.5 to 9.1 (pH ca. 8.3), making the indicator suitable for most titrations which are ordinarily performed with phenolphthalein. The indicator gives an accurate end point in amber-colored solns. where the phenolphthalein end point is not visible, and it is therefore recommended for use in the detn. of acid numbers and saponification equivalents of dark-colored oils.

THE PRODUCTION OF FATTY DEGENERATION OF HEART MUSCLE BY A HIGH-FAT DIET. A. D. Telford Govan. *J. Path. Bact.* 55, 351-6 (1943). Changes resembling those of fatty degeneration as produced by poisons or anemia can be induced in the rabbit heart by the intensive administration of fat in the diet. This change was more readily produced in well-nourished than in lean animals—14 references. (*Chem. Abs.*)

SALTS OF RESIDUAL DIMERIZED FAT ACIDS A NEW CLASS OF RESINOUS SUBSTANCES. J. C. Cowan and H. M. Teeter. *Ind. Eng. Chem.* 36, 148-52 (1944). Certain salts, in particular the Zn, Ca, and Mg salts, of

residual dimerized fat acids are found to possess marked resinous properties; they are capable of forming fibers, films, and viscous solns. While fibers are apparently too weak to be of use, the film-forming properties have been utilized in the formulation of shellac substitutes and varnish, the latter being compared with zinc resinate and ester gum varnishes.

MINERAL OIL (LIQUID PETROLATUM) IN FOODS. Council on foods and nutrition. *J. Am. Med. Assoc.* 123, 967-9 (1943). The effects of its prolonged use have not been thoroughly investigated, but there is sufficient evidence of possible harmful effects to justify the conclusion that its indiscriminate use in foods or in cooking is not in the interests of good nutrition and any such use should be under careful supervision of a physician.

ESSENTIAL FATTY ACID DEFICIENCY IN THE MOUSE. E. A. White, J. R. Foy, and L. R. Cerecedo. *Proc. Soc. Exptl. Biol. Med.* 54, 301-2 (1943). Albino mice kept on a diet devoid of fat developed the Burr and Burr syndrome. The deficiency could be cured or prevented by the administration of lard.

EFFECT OF TOCOPHEROLS AND SOYBEAN PHOSPHATIDES ON UTILIZATION OF CAROTENE. J. L. Jensen, K. C. D. Hickman, and P. L. Harris. *Proc. Soc. Exptl. Biol. Med.* 54, 294-6 (1943). A vitamin A-enhancing property of crude soybean phosphatides is due principally to the tocopherols present in these phosphatides.

THE EFFECT OF FAT UPON THE DIGESTION OF NUTRIENTS BY DAIRY COWS. H. L. Lucas and J. K. Loosli. *J. Animal Sci.* 3, 3-11 (1944). Digestion studies were conducted comparing the effects of different levels and different sources of fat upon the apparent digestibility of nutrients in the rations of dairy cows. The differences in fat intake were obtained by using concs. of different ether-extract content. Timothy hay and dried beet pulp were also fed. There was no difference in the apparent digestibility of rations contg. 1.6 to 2.6% ether extract. The difference in fat level of these two rations was obtained by using conc. mixts. contg. 1.8 and 4.4% ether extract. Using soybean products as the sole concs., rations contg. 1.0 and 7.0% of ether extract were studied. The crude fiber and nitrogen-free extract of rations contg. soybeans and solvent-extracted soybean meal plus corn or soybean oil were less digestible than the crude fiber and nitrogen-free extract of rations contg. solvent-extracted soybean meal. The ether extract of rations contg. soybean meal plus oil or plus fatty acids was more digestible than the ether extract of a ration contg. soybeans. Although protein digestibility was lowest on the soybean ration and highest on the ration contg. soybean meal plus fatty acids, the significance of the difference in protein digestibility was questionable.

INCREASED RED BLOOD CELL FRAGILITY AFTER FAT INGESTION. J. Longini and V. Johnson. *Am. J. Physiol.* 140, 349-53 (1943). After fat ingestion an agent

which increases the fragility of red blood cells is present in dog's serum. Neutral fat is not this agent. Previous work indicates that free fatty acids and soaps, reaching the blood stream by way of the lymphatics, are probably responsible for the effect. Ingestion of carbohydrates and proteins does not increase red cell fragility. On the contrary, meals rich in these substances produce serum which may actually protect red cells from water hemolysis. It is suggested that those physiological mechanisms which delay the absorption of fat and its entrance into the blood stream are probably significant in the prevention of anemia.

PATENTS

EXTRACTION OF FOOD AND SIMILAR ANTIOXYGENS FROM CANE AND BEET MOLASSES. S. Musher. *U. S.* 2,342,162. A method of retarding oxidative deterioration of food compns. comprises adding thereto a small amt. of a water miscible org. solvent ext. of molasses, said ext. contg. a smaller proportion of sugar to non-sugar solids than said molasses.

MARGARINE MANUFACTURE. J. Schaub (The Best Foods, Inc.). *U. S.* 2,339,883.

MIXING APPARATUS FOR REFINING OR HYDROLYZING FATS. R. H. Fash (Anderson, Clayton & Co.). *U. S.* 2,341,536.

DERIVATIVES OF BLOWN FATTY AMIDES. G. D. Davis and W. L. ABRAMOWITZ (National Oil Products Company). *U. S.* 2,340,112. A process for prepg. sulfates of blown fatty amide compns. comprises blowing an unsatd. fat acid, reacting the blown compd. with an amine to form an amide, and sulfating the amide thus formed.

PROCESS FOR MAKING MIXTURES OF UNSATURATED FATTY ACIDS. J. B. Brown (Ohio State University Research Foundation). *U. S.* 2,340,104. This process is a crystallization procedure in which the fat acids of semi-drying oils are fractionated by crystallization from org. solvent soln. at temps. between 0 and -80°C.

PROCESS OF FORMING ALCOHOLS. A. S. Richardson and J. E. Taylor (Procter and Gamble Company). *U. S.* 2,340,688-90. Metal soaps are hydrogenated to fatty alcs. in a continuous process.

PROCESS FOR FORMING ALCOHOLS OR ESTERS. A. S. Richardson and J. E. Taylor (Procter and Gamble Company). *U. S.* 2,340,343.

PROCESS FOR FORMING UNSATURATED ALCOHOLS OR ESTERS. A. S. Richardson and J. E. Taylor (Procter and Gamble Company). *U. S.* 2,340,344.

ISOMERIZATION OF RICINOLEIC COMPOUNDS. W. E. Hanford, R. S. Schrelber and H. W. Gray (E. I. du Pont de Nemours & Company). *U. S.* 2,340,745. A process for catalytically isomerizing a ricinoleic compd. to ketostearic acid derivatives comprises heating said ricinoleic compd. in the presence only of an alloy skeleton Ni catalyst prepd. by the caustic extn. of finely divided Ni-Al alloy at temp. of 90°-100°C.