Abstracts

Oils and Fats

Edited by
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FACTORS IN THE BREEDING OF COTTON FOR INCREASING OIL AND NITROGEN CONTENT. N. I. Hancock. *Tenn. Agr. Expt. Sta., Circ. 79* (1942). There is an inverse relationship of the oil to the N character. This inverse relationship is caused largely by the noncompatibility of these characters with the environment, a wet cloudy season, being favorable to oil but unfavorable to N. Seasons exert more influence on the inverse relationship of oil and NH_3 than do locations. Opportunity is offered to obtain a variety having both high oil and high N content. *(Chem. Abs.)*

ANTIOXIDANT ACTIVITY IN SOURCES OF THE B VITAMINS. Paul Gyorgy and Rudolph Tomarelli. *J. Biol. Chem. 147,* 515-24 (1943). The coupled oxidation of butter yellow proceeds more slowly in the heterogeneous system consisting of cornstarch, methyl linoleate, and butter yellow than in a system in which linoleic acid is substituted for its methyl ester. Grains (oats, wheat, corn) and the com. oat flour prepn. Avenex exhibited high antioxidant activity in the linoleic acid-butter yellow system. Aqueous rice bran ext. contains a very potent antioxidant. Other sources of the vitamin B complex such as yeast, yeast ext., liver ext., molasses, and milk sugar residue have also shown antioxygenic properties. The antioxidants in rice (polished or unpolished), rice bran ext., Avenex, and yeast have been found to be heat-labile. In yeast ext. or in rice bran ext. no destruction by autoclaving at pH 10 was observed. The antioxidant of rice bran ext. is dialyzable and partially soluble in linoleic acid. Of all the known B vitamins only p-aminobenzoic acid has proved to be significantly antioxygenic, at least under the exptl. conditions chosen. The antioxidant of rice bran ext. and of potent liver fractions, however, is certainly not identical with p-aminobenzoic acid. Vitamin E and hydroquinone are only moderately actively antioxidants for the system under investigation.

DIGESTIBILITY OF SOME ANIMAL AND VEGETABLE FATS. Ralph Hoagland and G. S. Snider. *J. Nutr. 25,* 295-301 (1943). Each fat was incorporated in an otherwise adequate diet in the propns. of 5 and 15% by wt., corresponding to 12.5 and 32.7% of the total energy values of the diets. When the diets contd. 5% of fat, the following digestive coefficients were obtained: coconut oil 98.9, soybean oil 98.5, corn oil 97.5, butterfat 88.3, mutton tallow 74.6, oleo stock 74, and cacao butter 63.3%. When the diets contd. 15% of fat, the digestive coefficients were as follows: soybean oil 93.3, corn oil 98.3, coconut oil 96.5, butterfat 90.7, oleo stock 86.7, mutton tallow 84.8, and cacao butter 81.6%.

THE NUTRITIVE VALUE OF SOME FATS. B. Euler, H. v. Euler, and I. Särberg. Ernährung, 7, 65-74 (1942). Two expts. were described. In the first butter and margarine were compared. The margarine was made from 15% soya bean oil, 70% coconut oil, and 15% hard fat. The fat content was not less than 83%. The avg. initial wts. were: butter 32·9 g., margarine 33·1 g., the avg. wt. increases in the first 3 wks., 37·2 and 46·7 g., and in the second 3 wks. 39·8 and 56·0 g. The margarine rats therefore grew faster and they also had better coats and seemed stronger. In the second expt., under the same conditions, margarine was compared with a mixt. of fats, as described above, from which the margarine was made but without the addn. of milk, salt, or emulsifying agent, and with refined earthnut, coconut, soya bean and cottonseed oils. Four or 5 litters with from 30 to 38 rats received each of the fats. The results, referring to the fats in the order given above, are summarized as follows, the wt. gain with margarine being taken as 100: first 3-wk. period, 93, 66, 99, 89, 94; second 3-wk. period, 95, 91, 92.5, 86, 84. In general the condition of the coat and general health of the animals paralleled these values. The coconut, soya bean, and cottonseed oils caused diarrhoea during the first 2 wks. Particular emphasis is laid on the fact that these expts. were made with a diet suited to the animals and of adequate vitamin content. *(Nutr. Abs. & Revs.)*

PATENTS

OIL AND METHOD FOR STABILIZING SAME. S. Musher (Musher Foundation, Inc.). *U. S. 2,314,364.* A process of stabilizing glyceride oils, comprising adding and dispersing therein a small amt. of a combination of a phosphatide and a polyhydroxy benzene, and heating to in excess of 250°F.

STABILIZING GLYCERIDE OILS. S. Musher (Musher Foundation, Inc.). *U. S. 2,314,365.* A process of stabilizing glyceride oils, comprising adding and dispersing therein a small amt. of a combination of a phosphatide and gum guaiac, and heating to in excess of 250°F.

PROCESS OF REFINING OILS OF EDIBLE TYPE. W. Kelley (Filtrol Company of California). *U. S. 2,314,621.* A method in the purifying of glyceride oil, of recovering oil retained with adsorbent material of hygroscopic character as the result of bleaching a quantity of oil of the type being treated, consisting in mixing the adsorbent, with its retained oil, with a body of oil, and combining aqueous material with the adsorbent whereby it will release said retained oil into said body of oil.

MACHINE FOR PURIFYING LIQUIDS. Selden H. Hall (The DeLaval Separator Co.). *U. S. 2,313,540-1.* A centrifuge suitable for use in the fatty oil industry is presented.

FRACTIONATION OF FREE FATTY ACIDS. Stephen E. Freeman (Pittsburgh Plate Glass Co.). *U. S. 2,313,-636.* A process of fractionating fat acids into fractions of different degrees of satn. with the use of polar solvents is described. Solvents, with some of their properties related to the process, are tabulated.

SALAD DRESSING. Morris H. Joffe (Emulsol Corp.). *U. S. 2,313,033.* A salad dressing composition, effective upon incorporation into a starch-contg. salad dressing to produce a salad dressing of enhanced smoothness and substantial freedom from syneresis comprises carob gum, a water-soluble edible constituent, and starch.