ABSTRACTS

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Quantitative Study of Kreis Test

IN A quantitative examination of the Kreis rancidity reaction, one drop (0.5 milligram) of a fresh aqueous 1 per cent solution of acrolein is mixed with three drops of 3 per cent hydrogen peroxide solution in a stoppered cylinder, and after three hours in darkness 5 cubic centimeters of concentrated hydrochloric acid (specific gravity 1.19) is added and the mixture shaken for one minute. After the addition of 5 cc. of a 1 per cent solution of phloroglucinol in ether a bright red color is obtained, reaching a maximum after five minutes, and if produced from 0.5 milligrams of acrolein, the color may be matched in shade by 1.2 milligrams of permanganate of potassium in 100 millilitres of water (or 3.8ml of 0.001 normal solution). In this modification of the Kreis test the acrolein is completely oxidized by the hydrogen peroxide to epihydrinaldehyde, the sensitiveness of the test being 1:100,000, and the upper detectable limit 10 milligrams of aldehyde in 100 cubic centimeters of oil. Ten year old samples of olive, soya and corn oils, two year old peanutoil, one year old lard and fourteen year old butter fat were found to contain 60, 60, 20, 100, 200 and 400 milligrams of epihydrinaldehyde per 100 grams, respectively. Since, in the extreme case, the proportion of decomposed fat corresponds with about thirteen times the amount of aldehyde found, these samples were decomposed to the extent of 0.3 to 5 per cent. *Z. Untersuch. Lebensun.* 57, 358-60 (1929).

In the analysis of green olive oils, the moisture determination is preferably conducted in water ovens heated to 100°, as discordant results may be obtained in hot air ovens due to local temperature variations within the oven. Best results are obtained in the free fatty acid determination on these oils when warm 95% alcohol is used as a vehicle for the phenolphthalein indicator. *Ind olii min. e grassi* 9, 93 (1929).

Animal or vegetable oils may be refined as follows: the oil or fat to be purified is treated with a solvent such as benzine or trichlorethylene and the mixture is subjected to the action of an aqueous alcoholic ammonia solution; the product thus formed is further mixed, (preferably while warm), with about one percent of sodium sulphate previously dissolved in ten times its quantity of aqueous alcoholic ammonia solution. The products form into layers on standing and may be readily separated. U. S. Pat. No. 1,729,809.

Wool fat extracted from crude merino wool by means of petrolic ether is said to contain small quantities of free fatty acids or alcohols and no glycerol. A sample so extracted consisted largely of the fatty acid esters of the higher aliphatic alcohols, of cholesterol and the alcohol known as isocholesterol. Negligible traces of fatty substances containing nitrogen and phosphorous were present. The fatty acids consisted of the saturated acids, cerotic, palmitic and stearic; with a trace of myristic acid. No evidence was obtained of lanopalmitic acid, lanoceric acid or the lactone of lanoceric acid. The unsaponifiable matter consisted of cholesterol, isocholesterol, cetyl alcohol and ceryl alcohol. No detectable amounts of ergosterol were found. *J. Soc. Chem. Ind.* 48, 232-8T (1929).

The following method is proposed for the detection of annatto in fats: Extract with 5 cc. of water a mixture of 50 grams of oil or melted filtered fat with 50 cc. of a mixture of equal parts of ethyl alcohol, ether and petroic ether in the presence of a little sodium bicarbonate. Filter the water-alcohol solution of the color. If the filtrate has no color, annatto is excluded. If it is yellow, corn oil, palm oil or soy bean oil pigments, or other natural or artificial colors soluble in alkaline water may be present besides annatto. With more than traces of annatto, the filter becomes slowly pinkish-orange, stronger after washing with ether. To detect traces of annatto filter the alcohol-water solution into a small crucible and dip one end of a slip of blotting paper into the solution. The solution is slowly absorbed and the immersed part and near zone of the paper becomes pink. *Ind. olii min. e grassi* 9, 73-4 (1929).

Prices

Candles, adamantine 6s 16 oz.			
20-set cases	set.	.14½	.15¾
40-set cases	set.	.14	.14½
Candles, paraffin, cs., 14 oz., case of 40 sets	set.	.10	.10¼
6s 14 oz., case of six cartons containing 36 sets	set.	.11	.11¼
6s 12 oz., 40 set cases	set.	.09	.09¼
6s 12 oz. cases of six cartons containing 36 sets	set.	.10	.10¼
Patent ends	set.	.17¾	.18
Stearin 6s 16 oz., plain, cases	set.	.16¾	.17
Castor, No. 1, bbls.	lb.	.13¼	.13½
No. 3, bbls.	lb.	.12¾	.13
Chinawood, bbls. or drs.	lb.	.13½	—
Coast, tanks, spot	lb.	.12	—
Futures	lb.	.12	—
Coconut, Ceylon grade, bbls.	lb.	.08⅛	.08¼
Coast, Tanks	lb.	.06⅝	.07
Cochin grade, bbls.	lb.	.08¾	.09
Manila, bbls.	lb.	.08¼	—
Tanks, N. Y.	lb.	.07	.07⅛
Coast, tanks	lb.	.06⅝	.06⅞
Fatty acids, mill, tanks	lb.	.10¾	nom.
Cod, Newfoundland, bbls.	gal.	.59	.60
Copra, bags, coast	lb.	.04⅜	—
Corn, tanks, mills	lb.	.07⅝	.07¾
Bbls., New York	lb.	.10	nom.
Refined, bbls.	lb.	.10½	nom.
Fatty acid	lb.	.08¾	nom.
Cottonseed, crude, tanks, mills	lb.	—	nom.
P. S. Y.	lb.	.08⅜	.08⅝
Fatty acids, mill, bbls.	lb.	.09	—
Degras, domestic, bbls.	lb.	.04¼	.05½
English, bbls.	lb.	.04½	.05
German, bbls.	lb.	.03½	.04
Neutral, domestic, bbls.	lb.	.07¾	.09½
English, bbls.	lb.	.08	.09
German, bbls.	lb.	.07	.07½
Greases, choice white, bbl. N. Y.	lb.	.06⅞	.08¾
Yellow	lb.	.06⅛	.06¼
Brown	lb.	.06	.06⅛
House	lb.	.06⅛	.06¼
Herring, coast tanks	gal.	—	nom.
Horse, bbls.	lb.	.09½	nom.
Lard, city, tierces	lb.	.10¼	—
Compound, tierces	lb.	.10¾	.11
Middle Western, tierces	lb.	.10½	—
Neutral, tierces	lb.	.12¼	—
Prime Western, tierces	lb.	.10¾	—
Lard oil, No. 1, bbls.	lb.	.11¾	—
No. 2, bbls.	lb.	.11½	—
Extra bbls.	lb.	.12½	—
No. 1, bbls.	lb.	.12	—
Winter strained, bbls.	lb.	.12¾	—
Prime, bbls.	lb.	.15	—
Linseed Oil, boiled, tanks	lb.	.1390	—
Car lots, bbls.	lb.	.1470	—
Less car lots, bbls.	lb.	.1510	—
Less than 5 bbls.	lb.	.1550	—
Double boiled, less than 5 bbls.	lb.	.1580	.1610
Raw, tanks	lb.	.1350	—
Car lots, bbls.	lb.	.1430	—
Less car lots, bbls.	lb.	.1470	—
Less than 5 bbls.	lb.	.1510	—
Refined, bbls.	lb.	.1500	.1540
Varnish grades, bbls.	lb.	.1520	.1570
Linseed cake, bags	ton	48.50	—
Meal, bags	ton	58.00	—
Menhaden, crude, tanks, Baltimore	gal.	.45	nom.
Light pressed, bbls.	gal.	.67	.70
Yellow bleached, bbls.	gal.	.69	.72
White bleached, bbls.	gal.	.72	.75
Mustard, bbls.	gal.	.85	.90
Neatsfoot, cold pressed, bbls.	lb.	.17⅜	—
Extra, bbls.	lb.	.12½	—
No. 1, bbls.	lb.	.12	—
Pure, bbls.	lb.	.14½	—
Oleo, No. 1, bbls.	lb.	.11⅞	—
No. 2, bbls	lb.	.10⅝	—
No. 3, bbls.	lb.	.10¼	—
Olive, denatured, bbls. N. Y.	gal.	.92	.95
Shipments	gal.	.90	—
Foots, bbls.	lb.	.08	—
Shipments	lb.	.07⅞	—
Edible, bbls.	lb.	2.00	2.30
Palm, Lagos, casks, spot	lb.	.07¼	.07⅜
Shipments	lb.	.07¼	—
Niger, casks, spot	lb.	.07⅛	—
Shipments	lb.	.07	—
Palm Kernel, pkgs.	lb.	.07¾	—
Tank cars	lb.	.07¼	—
Peanut, crude, bbls.	lb.	.11½	nom.
Mills, tanks	lb.	.07¾	nom.
Refined, bbls.	lb.	.13¼	nom.
Perilla, bbls.	lb.	.14	nom.
Poppy Seed, bbls.	gal.	1.70	—
Rapeseed, blown, bbls.	gal.	1.00	1.02
Refined, bbls.	lb.	.73	.74
Red Oil, distilled, bbls.	lb.	.10⅝	.11⅛
Tanks	lb.	.09¾	—
Saponified, bbls.	lb.	.10⅝	.11⅛
Tanks	lb.	.09¾	—
Salmon, coast, tanks	gal.	.44	nom.
Sardine, coast, tanks	gal.	.48	—
Sesame, refined, drums	lb.	.12½	.14
Soya Bean, blown, bbls.	lb.	.12	.13½
Crude, bbls.	lb.	.12	.12½
Orient, coast, tanks	lb.	.09½	.09¾
Sperm, bleached f.o.b., New Bedford, bbls.	gal.	.84	.85
Natural, f.o.b., New Bedford, bbls.	gal.	.78	.80
Stearic Acid, Double pressed, bags	lb.	.15¾	.16¼
Triple pressed, bags	lb.	.18¼	.18¾
Stearine oleo, bbls.	lb.	.09½	.09¾
Tallow, edible, bbls.	lb.	.08¾	.08⅞
City, extra, works, loose	lb.	.07⅝	—
Special, works, loose	lb.	.07⅜	—
Tallow oil, acidless, bbls.	lb.	.11¼	—
Tanks, N. Y.	lb.	.11	—
Vegetable tallow, coast, mats	lb.	.07⅜	—
Whale, crude, No. 1, coast, tanks	lb.	.07	—
No. 2, coast, tanks	lb.	.06½	—
Refined, winter bleached, bbls.	gal.	.80	—
Extra, bbls.	gal.	.82	—
Natural, bbls.	gal.	.78	—