ABSTRACTS

Oils and Fats

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Detection of the adulteration of cacao butter. Determination of the azelaic acid numbers of palm butter and illipé butter. G. Schuster. *J. pharm. chim.* 18, 527-35 (1933); 19, 206-9 (1934); cf. *C. A.* 28, 353[8].—A simplified method of det. t. based on the soly. of the K salts of azelaic glycerides and of pelargonates in boiling alc. is: Dry the insol. brown mass on the filter resulting from $KMnO_4$ oxidation, *in vacuo* over H_2SO_4 to expel all traces of acetone, and exhaust the powder in a Soxhlet app. with boiling alc. (7-8 times the wt. of the fat taken). Extn. is complete in about 30 min. To the hot alc. soln. add an excess of a hot concd. soln. of $MgCl_2$ and allow to stand 24 hrs. at 15°; the Mg salts of the azelaic glycerides are pptd. Collect and wash the ppt. with alc., then dry it and det. the azelaic no. as described before. For illipé butter, the no. is 121.1; for palm butter 132.8.

S. WALDBOTT.

Peanuts from the Argentine Republic and their oils. L. Margaillan and R. Favier. *Chimie & industrie* Special No., 898 (April, 1934).—One sample of peanuts from the Cordoba district of Argentina had the following compn.: wt. per cu. m. 190 kg. (unshelled), 680 kg. (shelled), H_2O 6.1, oil (extd. with petr. ether) 43.5, protein 21.0, crude fiber 1.9, ash 2.65 (P_2O_5 0.58), N-free ext. by difference 24.85%. Oil obtained by pressing in a small lab. press (which removed only about half the total oil present in the nuts) and oil obtained by extn. with petr. ether had the following characteristics: d_{20} 0.9187, 0.9171; n_{20} 1.4717, 1.4718; acidity as oleic acid 0.35, 0.95%; I no. 103, 101.

A. PAPINEAU-COUTURE.

A study of oil stains. Henri Marcelet. *Chimie & industrie* Special No., 916-31 (April, 1934).—An extensive study of the rise of oils in vertical strips of paper or their spreading on horizontal sheets led to the following conclusions. (1) *Marine animal oils.*—The rise or spread of these oils varies inversely as their mol. wts., irrespective of their chem. constitution or viscosity; atm. oxidation of the oil has a marked effect on the phenomenon in certain oils. (2) *Vegetable oils.*—The rise or spread varies inversely as their mol. wts., and their chem. constitution apparently has no effect whatsoever on the phenomenon. (3) *Mineral oils.*—The rise or spread follows the same rule; contrary to the case of marine animal oils, however, the viscosity varies practically as the mol. wt.

A. P.-C.

A new constant for fixed oils—hypochlorous acid value. M. Goswami and K. L. Basu. *Analyst* 59, 533-4 (1934).—The method for detg. the degree of unsatn. with HClO consists in sapong. the oil, neutralizing to bromothymol blue and then detg. the HClO absorbed by the Na salts of the fat acids. Place 5 mml. of approx. 0.025 *N* NaClO soln. (prepd. by adding an excess of Na_2CO_3 to a suspension of bleaching powder in water, filtering and dilg.), an excess of KI and some oil. H_2SO_4 in a conical flask. Titrate the liberated I with $Na_2S_2O_3$ soln. Repeat the test with standard H_2SO_4. Take 0.12-0.125 g. of oil and saponify in the usual way with 25 ml. of approx. 0.2 *N* KOH in alc. Neutralize the excess of KOH with standard HCl with bromothymol blue as indicator and evap. the alc. Dissolve the residual soap in water and dil. to 600 ml. To this add 5-8 ml. of NaOCl soln. and then just sufficient H_2SO_4 of known strength to neutralize the Na_2CO_3 and to liberate HClO. Close the flask and introduce through a dropping funnel some KI soln. After 5-15 mim. in a dark, cool place, make acid with an excess of dil. H_2SO_4 and titrate the liberated I with $Na_2S_2O_3$. The HClO values of peanut oil, buffalo ghee, coconut oil, olive oil, mustard oil, sesame oil, linseed oil and fish oil are given.

W. T. H.

Richness of the material and number of extractors in a battery. A. Slashchev. *Masloboino Zhirove Delo* 1932, No. 11, 35-46; *Chimie & industrie* 29, 1406.—The chief factors governing the no. of extractors in a battery, the no. of distg. app. and of condensers are: the oil content of the material to be extd. and the time required for extn. With sunflower seed and soy bean, most of the oil is extd. in 0.5-2 hrs. Extn. comprises 2 periods: in the first, the solvent passing through the freshly charged extractor immediately comes in direct contact with the oil liberated from the seed cells; the second period corresponds to diffusion and osmosis of the solvent which must pass through the cell walls to reach the oil.

A. P.-C.

Measurement and expression of the acidity of highly acid fats and oils. L. Margaillan and E. Allemand. *Chimie & industrie* Special No., 894-5 (April, 1934).—The error committed in expressing the acidity of ordinary com. oils and fats (except copras but including palm oils) as oleic acid irrespective of the true nature of the acid does not exceed a max. of 5% of the amt. of free acid, and with palm oils the error in expressing it in terms of oleic is smaller than expressing it as palmitic acid. Conclusion: The present practice of expressing acidity as oleic acid (except for copras) has much to commend it and there are no truly valid reasons for changing it.

A. P.-C.

Vegetable oils and the U. S. S. R. Family of Compositae. S. L. Ivanov. *Izvestiya Tzentral. Nauch.-Issledovatel. Inst. Pishchevoi Vkusovoi Prom.* Separate,, 1931, 8pp.—Oils are described with respect to compn. and properties, as compared with like oils from foreign sources. A table shows the oil content of the seeds and the sp. grs., m. ps., *ns*, sapon. nos. and I nos. of the oils from numerous Compositae, including ironweed, cardoon, goatsbeard, goldenrod, thistles, daisy, dandelion, prickly lettuce, yarrow, safflower and sunflower.

JULIAN F. SMITH.

Cedar-nut oil. K. P. Kardashev. *Izvestiya Tzentral. Nauch.-Issledovatel. Inst. Pishchevoi Vkusovoi Prom.* Separate, 1931, 18 pp.—Cedar-nut oil is such an excellent edible oil that its use should be greatly extended, and its other com. uses should be limited to crude or off-grade oils which for any reason are unsuitable for edible products. The phys. and chem. properties are stated, and analytical consts. are presented in a table.

JULIAN F. SMITH.

Esterification of fatty acids and reconstruction of oils. Ettore Vassallo. *Olii minerali, olii grassi colori vernici* 14, 9-10 (1934).—Highly acid oils treated in the presence of antiovidants with glycerol in stoichiometric quantity gave a product having a residual acidity of 2-5% (as oleic acid). And of 95% oleic acid acidity, treated with 96% EtOH and Fe_2Cl_6 63%, was esterified.

R. S.

New apparatus for determining the temperature of crystallization of cacao butter. S. A. Ashmore. *Analyst* 59, 515-17 (1934).—The temp. at which solid fat deposits on cooling a melt can be regarded as a const. for distinguishing between Borneo tallow and cacao butter. The temp. can be detd. rapidly and precisely by the app. described. The Tyndall effect is utilized by projecting a beam of light through a small tube contg. the molten fat, and this tube is suitably housed in a darkened chamber. As soon as particles of solid are formed, a scattering of light occurs and the tube contg. the fat appears luminous against a dark background.

W. T. H.

Walnut oil in Russia. S. L. Ivanov and E. E. Berdichevskii. *Schriften zentral. biochem. Forschangsinst. Nahr.-Genussmittelind.* 3, 246-50 (1933).—Walnut oils from widely distant parts of the U. S. S. R. vary but little in compn. Climatic temp. is an important factor only during the active growing reason. Like soy beans and peanuts, the nuts are rich in protein and poor in cellulose. The acid compn. of a representative sample is: linoleic 62.7, oleic 17.6, linolenic 10.0, satd. acids 9.4%.

JULIAN F. SMITH.

Color reactions of olive oil. E. J. Batter and J. Szimkin. *Fettchem. Umschau* 41, 72-3 (1934).—The Baudouin test for the presence of sesame oil is reliable only when the acid layer retains the red color for some time, and retains it also when a few drops of H_2O are added immediately upon the appearance of the red color. The distinction between a true and a deceptive color reaction by the addn. of concd. NH_4OH is unreliable. Some virgin oils of the "Canossa" type (northern Italy) show a deceptive Baudouin reaction. Olive oils also show a characteristic green color in the acid layer when their ether soln. is shaken with HCl (sp. gr. 1.18).

P. ESCHER.