Smith for some of the chemical analyses reported here.

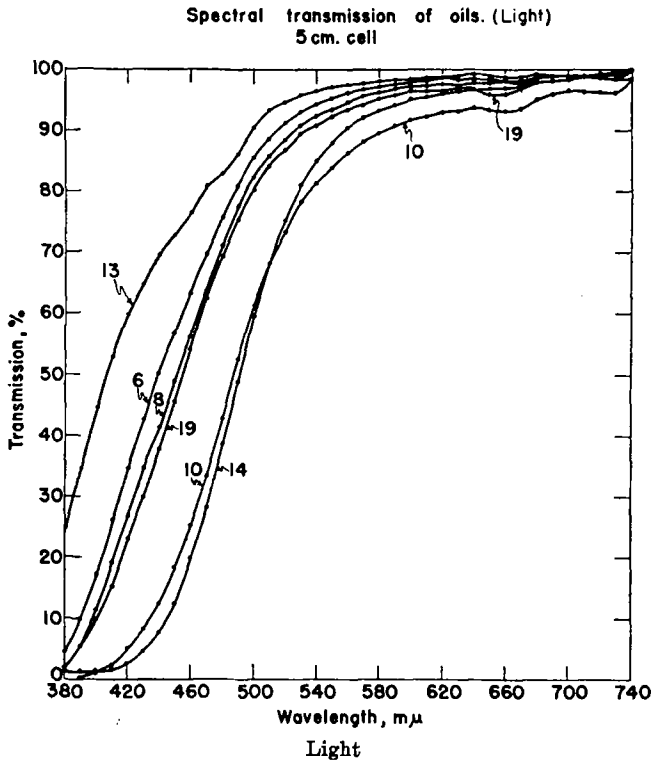
REFERENCES

1. Bailey, A. E., Feuge, R. O., and Smith, B. A., Oil & Soap, *19*, 169-176 (1942).
2. Bailey, A. E., and Fisher, G. S., Oil & Soap, *23*, 14-18 (1946).
3. Baldwin, A. R., and Longenecker, H. E., Oil & Soap, *22*, 151-153 (1945).
3a. Brice, B. A., and Swain, M. L., J. Opt. Soc. Am., *35*, 532-544 (1945).
4. Brice, B. A., Swain, M. L., Schaeffer, B. B., and Ault, W. C., Oil & Soap, *22*, 219-224 (1945).
5. Daubert, B. F., and Filer, Jr., L. J., Oil & Soap *22*, 299-302 (1945).
6. Fisher, G. S., Bickford, W. G., and Dollear, F. G., J. Am. Oil Chem. Soc., *24*, 379-382 (1947).
6a. Iselin, E., Mitt. Lebensmitt. Hyg., *36*, 377-386 (1945).
7. Kaufmann, H. P., Studien auf dem Fettgebiet, Verlag Chemie, G.M.B.H., Berlin, 1935.
8. Lambou, M. G., and Dollear, F. G., Oil & Soap, *22*, 226-232 (1945).
9. Lemon, H. W., Can. J. Research, *22F*, 191-198 (1944).
10. Mattil, K. F., Oil & Soap, *22*, 213-215 (1945).
11. Mitchell, Jr., J. H., Kraybill, H. R., and Zscheile, F. P., Ind. Eng. Chem., Anal. Ed., *15*, 1-3 (1943).
12. O'Connor, R. T., Heinzelman, D. C., Caravella, M., and Bauer, S. T., Oil & Soap, *23*, 5-9 (1946).
13. O'Connor, R. T., Heinzelman, D. C., and Dollear, F. G., Oil & Soap, *22*, 257-263 (1945).
14. American Oil Chemists' Society, Official and Tentative Methods, ed. V. C. Mehlenbacher, Chicago, 1946.
15. Pelikan, K. A., and von Mikusch, J. D., Oil & Soap, *15*, 149-150 (1938).
16. Progress Report of the Committee on Analysis of Commercial Fats and Oils, Oil & Soap *21*, 143-145 (1944).
17. Riemenschneider, R. W., Speck, R. M., and Beinhart, E. G., Oil & Soap, *22*, 120-122 (1945).

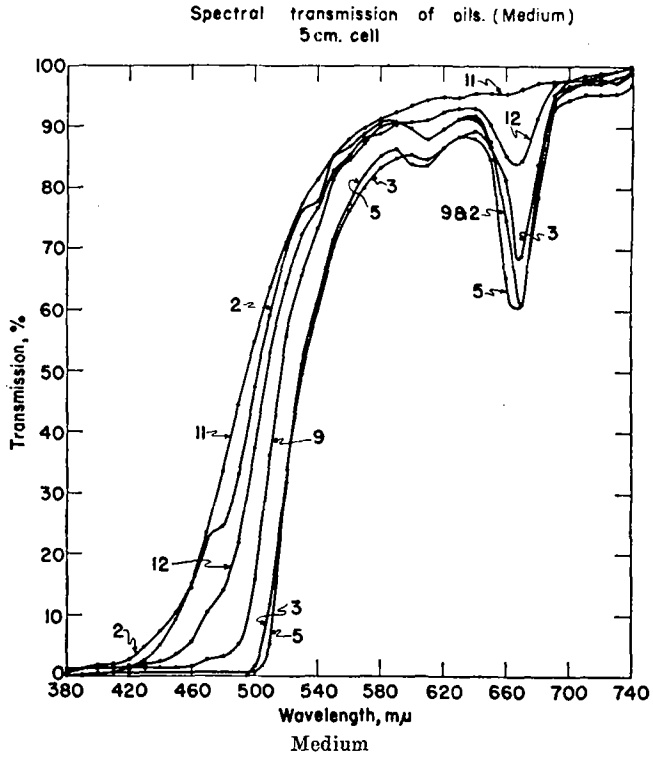
Methods of Reading Color Without Lovibond Glasses

MANY of the producers of soybean oil do not have Lovibond type and cannot secure them. Tintometer, Limited, will not sell loose glasses except to replace breakage. They will sell complete instruments fitted with their new small glasses. Since they insist that their glasses are not susceptible to spectrophotometric calibration, there are some misgivings about their use. A subcommittee of the Color Committee has been working on the development of a filter-photocell instrument to yield values comparable to Lovibond red colors. Good progress has been made, but no filter-photocell instrument now on the market will do the work.

On account of the unsatisfactory situation in color determination, G. W. Agee called a meeting of a "task force" of the Color Committee for Saturday before the Chicago meeting. At that time it was brought out that recently three different companies started, independently, to use for color evaluation, the same model of a small photoelectric spectrophotometer.



Light



Medium

At Procter and Gamble our selection of wave length was based on the 19 oils studied by the Color Committee in 1943, the characteristics of which are shown herewith.

As the dark oils do not transmit below 500 and the first chlorophyll dip starts about 580, a choice between these was indicated. 550 was picked as representing about the peak of the visibility curve. The rank order correlation between 550 transmission and Lovibond red is .965. A fairly good fit is shown by the curve Lovibond red = (10 cm. density at 550 mμ) 11.2 + .4. Our readings were made on a 25-mm. tube and calculated to 10 cm.

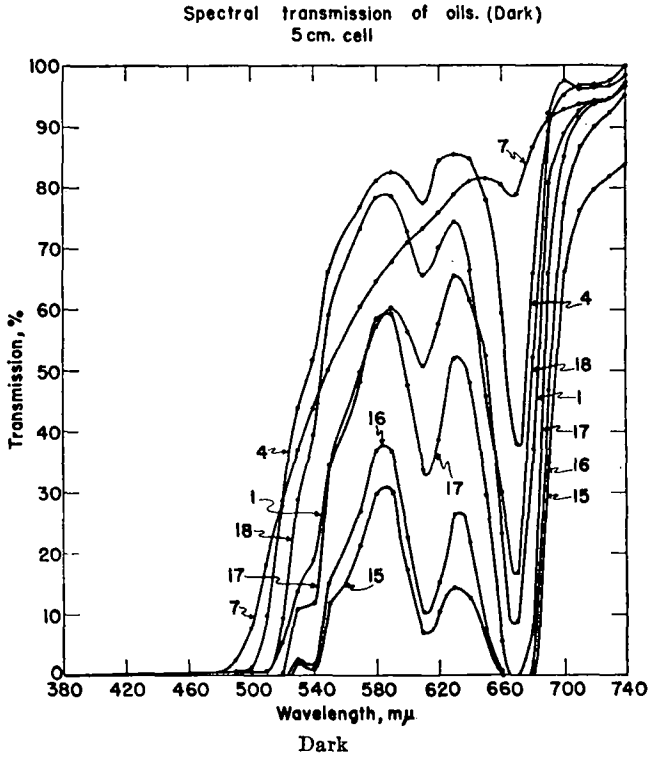
Archer-Daniels-Midland have used the small spectrophotometer to keep track of the color of soybean oil. Because they are concerned with light oils, they

read transmissions at 430 and 480 in a 13-mm. rectangular cell. Their data fit the curve Lovibond red = 6.34 — T/28, where T is the sum of transmissions at 430 and 480 in the 15-mm. rectangular cell.

At Swift and Company they have been working on a scheme that will enable them to grade fats and oils over a wide range of color. For this purpose it is necessary to have readings at three points in the spectrum as dark tallows do not transmit much light below 600. The transmissions selected by Swift were 400, 540, and 670 mμ, the readings being made on a 19-mm. tube. The sum of the three is called color index. A water white oil will have a color index of 400 and a dark tallow (FAC 45) will have a color index of 4.

It seems certain that the spectrophotometer can be used to give values that are proportional to Lovibond red colors. The correlation will not be exact, but that is due to the fact that Lovibond red values are erroneously low on oils containing green. The spectrophotometric values will need to be obtained on not more than 3 wave lengths and will represent the color value of the oil better than Lovibond red. Further work is being done to arrive at a system that will work for all vegetable oils and can be recommended for general use. However, it should be kept in mind that official trading values will have to be determined with Lovibond glasses.

PROCTER THOMSON.



Dark

Abstracts

Oils and Fats

Edited by
M. M. PISKUR and SARAH HICKS

CERAMIC CHEMICAL LININGS IN THE OIL, FAT, AND SOAP INDUSTRY. L. Kogel. *Fette u. Seifen 51,* 455-8 (1944).

SOLVENT EXTRACTION OF COTTONSEED AND PEANUT OILS. IV. PILOT PLANT BATCH EXTRACTIONS. J. Pominski, L. J. Molaison, A. J. Crovetto, R. D. Westbrook, E. L. D'Aquin, and W. F. Guilbeau (Southern Regional Research Lab., New Orleans, La.). *Oil Mill Gaz. 51,* No. 12, 33-9 (1947). A portable batch solvent extraction and apparatus used at the authors' laboratory are described in detail. Some data on the use of this plant for extraction of cottonseed, okra seed, and rice bran oil are tabulated. Hexane and Et ether were the solvents used. (*Chem. Abs.*)

REPORT OF PROGRESS OF A STUDY OF FACTORS AFFECTING THE PRESSURE EXTRACTION OF COTTONSEED OIL. W. H. Baskervill, J. A. Glass, and A. H. Morgan (Eng. Expt. Sta., Knoxville, Tenn.). *Oil Mill Gaz. 51,* No. 11, 56-63 (1947). The tests were made on flaked meats of 7% moisture, cooked in a laboratory cooker, pressed in a cylinder, cylinder jacket was at 200° F., and pressures were to 2500 lb. per sq. in. As cooking temperatures of 15 min. cook increased from 5 to 45 lb. per sq. in. steam pressure the oil content of the pressed cake decreased to a minimum of 4%. Moisture content of cake varied from 2.5 to 8% as the steam pressure of cooking meats increased from 5 to 60 lb. (temperature of meats 275 to 315° F., respectively). The pressing times in minutes, when plotted on log-log coordinates against oil remaining in cake, fell in a straight line. The results on effect of cake thickness indicated there was no advantage in decreasing thickness of cake below common oil mill practice. Increasing pressing time from 30 to 60 min. decreased oil in the cake from 5.2 to 4.4%. All the data are represented graphically. (*Chem. Abs.*)

FUMARIC ACID AS AN ANTIOXIDANT FOR FATS. E. Glimm and M. Rozdilskyj. *Fette u. Seifen 54,* 389-91 (1944). Fumaric acid was inactive as an antioxidant on several vegetable oils and butter. This is contrary to American reports.

INHIBITING OILY TASTE OF BUTTER BY REGULATION OF THE PH. Nis Petersen (Egernsund, Danemark). *Fette u. Seifen 51,* 440 (1944). Improvement in keeping quality of butter by buffering with the AIV-butter salts developed by Virtanen has been confirmed by tests in Sweden.

DEVELOPMENTS IN THE KNOWLEDGE OF SPOILAGE OF BUTTER. F. Kieferle and Charlotte Feichtner. *Fette u. Seifen 51,* 427-30 (1944). Butters preserved with boric acid, Na benzoate and a hypochlorite rinse were compared with controls in storage tests at 3-5° and at 10-12°, using various deterioration criteria. Spoilage reaction did not agree closely to organoleptic observations. Boric acid and Na benzoate markedly inhibited ketonic rancidity; hypochlorite rinses were only slightly active in this respect.

STANDARD METHODS FOR ANALYSIS IN THE FAT AND WAX INDUSTRIES. III. CHEMICAL CHARACTERISTICS. I. H. P. Kaufmann and H. J. Heinz. *Fette u. Seifen 51,* 258-67 (1944). The publication includes: fatty acids; saponification, ester, lower fat acid, R.-M.