to 60 percent in the 1938 oil. It is also to be noted that transmittance in the 1939 oil is cut off at about 520 mμ compared with 490 mμ for the 1938 oil. It is evident that the 1939 oil actually contained more red, as well as considerably more green, pigment despite the low Lovibond red reading.

Both oils when refined and bleached yielded products of approximately the same spectral-transmissive properties (Curves 40 and 42).

In order to demonstrate the masking effect produced by chlorophyll on the Lovibond color reading of an oil, a small amount of chlorophyll was added to a normal soybean oil whose Lovibond color reading was 70 yellow and 4.56 red. With the same yellow glass, the Lovibond red color reading was reduced to 3.46. When twice as much chlorophyll was added, the red color was further reduced to 1.63. This observation clearly indicates the fact that green oils in general will give abnormally low red values when the official Lovibond color method is used.

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Summary

Eighty-four samples of soybean oils, representing various types of processing and different refining procedures, have been examined spectrophotometrically and the spectral-transmissive curves for 35 of them are reproduced in this communication. The spectral-transmissive properties of these oils have been discussed with particular reference to the effect which variations in processing have on these properties.

In the light of the results obtained in these studies it is apparent that: (1) The spectral-transmissive properties of soybean oils are influenced by the method used in removing the oil from the bean as well as by subsequent processing procedures; (2) the Lovibond color readings give at best only approximate information concerning the spectral color of an oil; and (3) the carotenoids are removed during refining operations, the greatest loss usually occurring during the deodorizing treatment. Chlorophyll, which is present in various concentrations in the crude oil, is completely absent from the finished oil so far as spectrophotometric evidence is concerned.

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Report of Soap Stock Committee-1939-40

DURING the past year the committee worked on a method for determining neutral fat in soap stock. Methods in use in several laboratories as well as published methods were reviewed. A modification of the Wesson method was approved for study by the committee.

Proposed Method for Neutral Fat in Soap Stock

Weigh out from a weighing bottle 8-10 grams of a well mixed sample and transfer to an extraction cylinder. Dissolve in 125 ml. of 50% alcohol, made up from redistilled alcohol. Add 50 ml. of petroleum ether (see specifications) and shake until a homogeneous solution is formed. Cool to 20-25°C. and add 10 ml. of a 14% solution of potassium hydroxide and shake until thoroughly mixed (avoid violent shaking). Add 25 ml. of 50% alcohol and shake until thoroughly mixed. Allow to settle until two layers are formed. Do not allow the petroleum ether solution of oil to remain in contact with the alcohol-alkali layer for longer than 30 minutes. Draw off the petroleum ether layer as closely as possible with a glass siphon into a 500 ml. separatory funnel. Make at least four more extractions, using 50 ml. of petroleum ether for each extraction.

Wash the combined extracts in a separatory funnel with three 25 ml. portions of 10% alcohol, or until neutral to phenolphtalein. Shake vigorously each time. Transfer the petroleum ether extract to a tared Soxhlet flask. Evaporate off the petroleum ether and heat in an oven at 105°C. to constant weight. Weigh as neutral oil and unsaponifiable matter.

Results using proposed method for neutral fat in soap stock. Each sample was sent to only part of the committee.

Sample	Barrow	Heider	Long	Marmor	Reese	Watkins	Average
*1. Cottonseed	.....	.....	15.01	.....	15.23	15.39	15.21
*2. Cottonseed	.....	.....	0.43	.....	0.66	0.75	0.61
*3. Cottonseed	17.41	17.64	.....	17.69	.....	17.88	17.66
*4. Soya Bean	5.80	5.63	.....	5.24	.....	5.72	5.60
5. Corn	18.76	18.24	.....	18.80	.....	18.15	18.49
6. Soya Bean	.....	.....	16.31	.....	16.36	17.55	16.74
7. Cottonseed	8.83	9.38	.....	8.45	.....	9.15	8.95
8. Cottonseed	.....	.....	14.04	.....	14.80	14.15	14.33

* Sample dissolved in 80 ml. of 50% alcohol. Combined extracts in separatory funnel washed with three 25 ml. portions of 10% alcohol.

Recommendations

The Committee recommends (1) tentative adoption of the above method for neutral fat in soap stock; (2) that the tentative official method for total fatty acids of soap stock or acidulated soap stock from copra and palm kernel oils be adopted as official; (3) that the Soap Stock Committee be discontinued.

E. R. Barrow
George Heider
C. P. Long
R. A. Marmor
W. J. Reese
W. T. Watkins, Chairman.