

Report of the Neutral Oil Committee

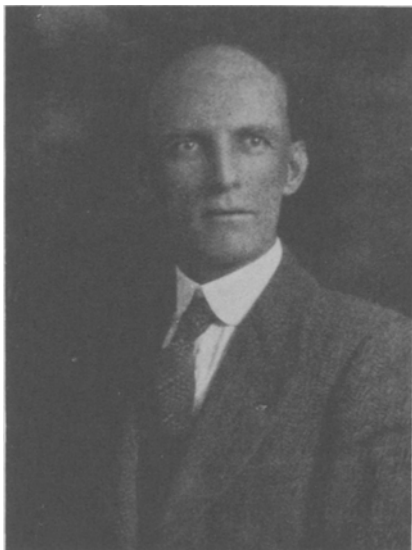
By CLAUDE E. McLEAN, *Chairman*

THE work of this committee was undertaken to try to establish a definite relationship, if any, between the refining loss obtained by the present official method and the percentage of neutral oil in the sample. The method used for determining the neutral oil is the one worked out several years ago by Dr. David Wesson with certain changes in the procedure suggested by Dr. George S. Jamieson.

Only a limited amount of work has been done this year. The results of the analyses are shown in the table. In the first column is shown the percentage of free fatty acids determined in the usual way. The second column gives the refining loss by the official method, that given being the best result, considered with color also, of from two to four refinings. The color, with Lovibond glasses, is given in the third column. While the neutral oil results of the three members of the committee are given in columns four, five and six.

It will be noted that Dr. Jamieson's analyses show remarkably close agreement, while those of the chairman are very erratic. This is explained by lack of familiarity with the technique of the method. Our experience so far is that a large number of tests are necessary in order to acquire the technique and also that directions given in the method must be followed exactly. Unless this is done one is likely to become discouraged and think the method unreliable. It is suggested also that until one is thoroughly familiar with the technique it will perhaps be much better to work only on thoroughly set-

tled or filtered samples of oil in order to be sure that the several portions weighed will be identical. We did not do that in this work but took the regular tank car shipping



Claude E. McLean

samples just as they came to the laboratory. Practically every sample contained an unusually large amount of settlings, which may have had considerable influence in checking.

The losses by the neutral oil method are uniformly from 45 per cent to 50 per cent of the losses by the best results of several refinings obtained by the official method. It might be of interest also to note that the color of the neutral oil obtained from a mixture of the first four samples was 20 yellow, 2 red while that from the last four, which were of a much poorer quality of crude oil, was 20 yellow, 3 red.

ANALYSES OF CRUDE COTTON SEED OIL

	F. F. A. %	Loss %	Color 35Y and Red	McLean %	Neutral Oil Jamieson %	Putland %
1	1.50	9.40	7.6	95.88 95.75		
2	2.90	14.00	7.4	93.12 93.02		
3	1.50	8.90	6.7	94.75 95.96 95.54		
4	1.60	7.60	5.0	96.30 96.00 96.37 96.10 97.69 } Same as No. 4, except oil 97.08 } thoroughly settled. 92.51		
5	3.70	14.30	9.2	91.86		
6	2.95	13.20	7.6	93.47 94.05 93.94 93.93	94.31 94.22 95.94*	93.60 93.60 94.25
7	3.10	12.20	8.3	94.73 94.45 94.44 94.42	94.60 94.65 94.70	93.20 92.80 92.90
8	2.00	8.40	5.7	95.35 95.36 94.60 95.54	95.87 95.87	93.50 93.70

* Filtered.

Every chemist who has to analyze vegetable oils knows that our present methods of determining the value of such oils are crude and unscientific. Even though the laboratory method simulates the refinery practice it is at best only fairly satisfactory for fixing the value and depends entirely too much on

the skill of the operator. We need better and more scientific methods of analysis for the evaluation of these oils. The neutral oil method we feel gives promise of good results and it is recommended that work with the method be continued.

CLAUDE E. MCLEAN, *Chairman.*

Continued from page 181

Acknowledgment

Instead of making personal acknowledgment of the assistance received from many individuals in the above work, the committee members will merely state that the work has been not primarily their own but that of the business organizations with which they are associated. Outside assistance has

also been received from the following: The Fort Worth Laboratories; Law & Co.; Portsmouth Cotton Oil Co.; and Seaboard Refining Co.

R. K. BRODIE, *Chairman,*
The Procter & Gamble Company,
Cincinnati, Ohio.

C. H. COX,
Barrow-Agee Laboratories,
Memphis, Tenn.

W. D. HUTCHINS,
The Southern Cotton Oil Company,
Savannah, Ga.