REPORT SMALLEY FOUNDATION COMMITTEE 1938 - 1939

WE ARE presenting herewith the 21st report of the Smalley Foundation Committee of the American Oil Chemists' Society. During these past twenty-one years considerable progress has been made in the accuracy of the determination of Oil and Nitrogen on cottonseed meal.

As usual, thirty samples of cottonseed meal were distributed to the collaborators. There has been a general improvement in results this year, with the exception of the oil determinations.

There are attached to this report four tables indicating the standing in percentage of the members taking part. Table No. I gives the standing of 56 collaborators who reported Oil determinations on all samples. Table No. II gives the standing of 64 collaborators who reported Nitrogen results on all samples. Table No. III gives the standing of 56 collaborators who reported Oil and Nitrogen on all samples. In these tables we have taken into consideration the results of those reports which were received within the time specified in our original announcement of the Smalley Foundation work. In Table No. IV we have given the standing of those collaborators who reported on all samples, but some of whose reports were received too late to be included under the rules.

The winning collaborators are as follows:-

The "American Oil Chemists' Society Cup" for the highest efficiency in the determination of both Oil and Nitrogen on all samples is awarded to Analyst No. 50, Dr. W. F. Hand, Mississippi State College, State College, Miss., with an average of 99.964 per cent. The average efficiency is higher than that of last year, which was 99.959 per cent. The certificate for second place goes to analysts No. 23 and 69, Mr. E. H. Tenent, Woodson-Tenent Laboratories, Memphis, Tenn., and Mr. A. G. Thompson, Jr., Southern Cotton Oil Company, Columbia, S. C., who had an efficiency of 99.942 per cent, as compared with 99.952 per cent for last year.

It might be well to call attention at this point to the fact that Dr. W. F. Hand, Mississippi State College, State College, Miss., has now obtained permanent possession of his second cup. This means that since the beginning of the Smalley Foundation cooperative work in 1918 his laboratory has been first six times. We believe that this is an exceptional achievement and speaks well for the analytical accuracy of Dr. Hand's Laboratory.

The certificate for the highest efficiency in the determination of Oil only is awarded to Analyst No. 17, Mr. W. D. Hutchins, Southern Cotton Oil Company, Savannah, Ga., with an average of 99.947 per cent, as compared with 99.971 per cent for last year. The certificate for second place goes to Analyst No. 50, Dr. W. F. Hand, Mississippi State College, with an efficiency of 99.943 as compared with 99.947 per cent for last year.

The certificate for the highest efficiency in the determination of Nitrogen is awarded to Analyst No. 26, Mr. R. H. Fash, Fort Worth Laboratories, Fort Worth, Texas, with an average of 99.996 per cent, as compared with 99.990 for last year. The certificate for second place goes to Analysts No. 9 and 60, Mr. N. C. Hamner, Southwestern Laboratories, Dallas, Texas, and Mr. A. G. Bedell, Pine Bluff C. O. Co., Pine Bluff, Ark., with an average of 99.990 per cent, as compared with 99.981 per cent for last year.

We thought it might be well to include in this report a list of the previous winners of the highest award for both Oil and Nitrogen. They are as follows:

1918-1919 G. C. Hulbert
Southern C.O.Co., Augusta, Ga.
1919-1920 G. C. Hulbert
Southern C.O.Co., Augusta, Ga.
1920-1921 C. H. Cox
Barrow-Agee Lab's, Memphis, Tenn.
1921-1922 Battle Lab's
Montgomery, Ala.
1922-1923 Battle Lab's
Montgomery, Ala.
1923-1924 L. B. Forbes
Memphis, Tenn.
1924-1925 E. H. Tenent
International Sugar Feed Co. No. 2, Memphis, Tenn.
1925-1926 Battle Lab's
Montgomery, Ala.
1926-1927 W. F. Hand
Miss. State College, State College, Miss.
1927-1928 E. H. Tenent
International Sugar Feed Co., Memphis, Tenn.
1928-1929 Geo. W. Gooch Lab's
Los Angeles, Calif.
1929-1930 Southwestern Lab's
Dallas, Texas
1930-1931 W. F. Hand
Miss. State College, State College, Miss.
1931-1932 J. N. Pless
Royal Stafolife Mills, Memphis, Tenn.
1932-1933 J. B. McIsaac
International Veg. Oil Co., Savannah, Ga.
1933-1934 W. F. Hand
Miss. State College, State College, Miss.
1934-1935 W. F. Hand
Miss. State College, State College, Miss.
1935-1936 N. C. Hamner
Southwestern Lab's., Dallas, Texas
1936-1937 N. C. Hamner
Southwestern Lab's., Dallas, Texas
1937-1938 W. F. Hand
Miss. State College, State College, Miss.
1938-1939 W. F. Hand
Miss. State College, State College, Miss.

We wish again to commend the careful and painstaking work of T. C. Law in the preparation and distribution of samples. As we have stated previously, few of us realize the amount of work required to handle this phase of our collaborative endeavors and members as a whole should be grateful to him for assuming this burden.

TABLE NO. I
Determination of Oil

Analyst No.	Points off	Per Cent Efficiency
17	11	99.947
50	12	99.943
66	13	99.938
7-69	14	99.933
23	16	99.924
77-86	21	99.900
24	22	99.895
65	23	99.890
83	28	99.867
31	30	99.857
2-21	33	99.842
70	34	99.838
28	36	99.828
57	38	99.818
10	39	99.814
32	41	99.804
18-88	42	99.799
59	44	99.789
67	45	99.785
68	48	99.771
15	49	99.766
6	52	99.752
20	56	99.732
13-27-63	57	99.728
62	58	99.723
9	59	99.717
11	62	99.703
1	66	99.684
55	67	99.680
16	68	99.674
39	70	99.666
76	71	99.660
26	72	99.656
78	76	99.637
4	79	99.623
12	81	99.613
33	86	99.588
84	93	99.555
75	94	99.551
72	108	99.484

60	112	99.465
25	113	99.459
14	133	99.365
61	144	99.312
89	145	99.307
71	168	99.197
74	186	99.111
80	201	99.039
5	226	98.920
40	361	98.275

TABLE NO. II
Determination of Nitrogen

Analyst No.	Points off	Per Cent Efficiency
26	1	99.996
9-60	2	99.990
50-59	3	99.985
2-76-83	4	99.981
29	6	99.971
86	7	99.966
12-23-32-67	8	99.960
11-70	9	99.956
31-53-62-69-77	10	99.951
6-10-15-28-30-85	11	99.945
24	12	99.941
7	13	99.937
14-43-88	14	99.931
66	15	99.926
17-68	16	99.922
18-65	19	99.907
61-71	20	99.901
78	22	99.892
80	23	99.886
1	26	99.872
27-55	27	99.867
39	30	99.853
73	31	99.848
72	33	99.838
42-57	35	99.828
16	36	99.823
33-84	38	99.813
13	40	99.804
20	43	99.789
63	44	99.783
89	49	99.760
75	50	99.754
4	56	99.724
21	61	99.701
52	70	99.656
74	75	99.631
5	88	99.568
25	93	99.543
40	274	98.654

TABLE NO. III
Determination of Oil and Nitrogen

Analyst No.	Per Cent Efficiency
50	99.964
69-23	99.942
17-7	99.935
86	99.933
66	99.932
77	99.926
83	99.924
24	99.918
2	99.912
31	99.904
65	99.899
70	99.897
28-59	99.887
32	99.882
10	99.880
67	99.873
88	99.865
15	99.856
9	99.854
18	99.853
6	99.849
68	99.847
62	99.837
11	99.830
26	99.826
57	99.823
76	99.821
27	99.798
12	99.787
1	99.778
55	99.774
21	99.772
13	99.766
78	99.765
20	99.761
39	99.760
63	99.756
16	99.749
60	99.728
33	99.701
84	99.684
4	99.674
72	99.661
75	99.653
14	99.648
61	99.607
71	99.549
89	99.534
25	99.501
80	99.463
74	99.371
5	99.244
40	98.465

TABLE NO. IV
Special Table

Analyst No.	Points off	Per Cent Efficiency
	Determination of Oil	
3	45	99.785
8	55	99.738
19	75	99.641
64	87	99.584
90	96	99.541
	Determination of Nitrogen	
79	32	99.842
3	36	99.823
19	42	99.794
64	44	99.783
90	47	99.769
8	90	99.558
45	93	99.543
	Determination of Oil and Nitrogen	
3		99.804
19		99.718
64		99.684
90		99.655
8		99.648

Personnel of Committee:
L. B. Caldwell
T. C. Law
W. C. Moor
J. N. Pless
E. H. Tenent
M. E. Whitten
J. J. Vollertsen, Chairman

Report of the Color Committee for 1938-39

YOUR Committee was requested to rearrange and rewrite the method or rules for determining the colors of oils and fats. This has been done, and the revised and rearranged method is attached. You will note that all reference to Color Reading is now under one head.

The method is in general the same, but it is a little more specific and has included all the specifications of the Color Reading Booth. It will be noticed that the optional use of the prismatic eyepiece has been omitted from the rules. This question was studied by the Committee for several years. It was the opinion then and is still the opinion, supported by the Bureau of Standards, that the prismatic eyepiece introduces more errors, due to the fact that no two prisms are identical and therefore do not reflect the same amount of light, nor the rays of light in the same direction.

Color Reading tubes are now available and far superior to those the industry has here-to-fore been able to obtain. Too much emphasis can not be placed upon the colorless tube.

We recommend that the incoming Color Committee consider the advisibility of the followng:

1. Adopting one and only one instrument as a standard for all Color Reading.
2. Having the Color Reading tubes checked as to the presence of coloring in the glass and for adherence to the specifications.
3. Painting the interior of the tintometer white, instead of the present dull black.
4. Specifying standard of illumination on the Magnesia Block. This has been studied by one member of your Committee, and it is his opinion that the illumination on the Magnesia Block should be between 15 and 22 ft. candles. This member of the Committee suggests that other work be done on this question in order that his work might be checked, and supported by the results obtained by other members of the Committee.

The necessity of improving the methods of determining the color of cottonseed meal, and the advisibility of changing the standards were also called to the attention of this Committee. It is recommended that the Society appoint a Special Committee to undertake this investigation, or that they designate this Color Committee to undertake the work. There is a question as to whether or not work of this nature be undertaken by a general color committee.

Respectfully submitted,
H. P. Trevithick
Harry Stevenson
James J. Lappen
N. T. Joyner
L. M. Gill
R. S. Estey
G. Worthen Agee
W. D. Hutchins, Chairman