

# Report of the Ammonia Committee

## Smalley Foundation Cooperative Meal Samples for the 1926-1927 Season

By H. C. MOORE, *Chairman*

IN tables Nos. 1 to 4 following will appear a summary of the results of cooperative analytical work of the Smalley Foundation for oil and ammonia for the past year. This work was concluded with sample No. 30, reported on April 13, 1927. During this year 88 collaborators have participated, as compared to 81, 75 and 78, respectively, for the three preceding years.

Table No. 1 gives the standing of the 43 collaborators who reported oil determinations on all of the samples. Last year only 35 collaborators reported on all of the thirty samples, as compared to 29 and 36, respectively, in the two previous years.

In table No. 2 appears the corresponding standing of the 53 collaborators who reported ammonia results on all of the samples. Last year only 52 collaborators reported on all of the samples, as compared to 42 and 50 in the two preceding years.

Table No. 3 gives the combined laboratory average standing for both oil and ammonia for the 43 collaborators who reported both oil and ammonia on all of the samples. Last year only 34 collaborators reported oil and ammonia results on all 30 samples, as compared to 28 and 36 for the two preceding years.

Table No. 4 gives the summary of the results of other collaborators who have failed to report on all samples, but whose results deserve recognition.

The prize awards for the best work done on the thirty samples are the same as for the past several years, and as published in the

TABLE I—Oil Results, All Samples  
(Average analysis, Oil 7.63)

Rank	An. No.	Points off	Av. per sample	Efficiency
1	52	28	.0093	99.878
2	33	34	.0113	99.852
3	57	39	.0130	99.830
4	24	41	.0137	99.818
5	78	45	.0150	99.803
6	45	53	.0177	99.768
7	20	54	.0180	99.764
8	21	55	.0183	99.760
9	23	60	.0200	99.738
10	74	61	.0203	99.734
	73	62	.0207	99.729
12	77	62	.0207	99.729
13	49	74	.0247	99.676
14	22	82	.0273	99.642
15	2	92	.0307	99.598
16	8	99	.0330	99.567
17	4	102	.0340	99.554
18	62	112	.0373	99.511
19	43	117	.0390	99.489
20	42	131	.0437	99.427
21	46	136	.0453	99.406
22	25	140	.0467	99.388
23	71	149	.0497	99.349
24	70	154	.0513	99.328
25	39	167	.0557	99.270
26	37	168	.0560	99.266
27	67	171	.0570	99.253
28	29	178	.0593	99.224
29	6	184	.0613	99.198
30	55	185	.0617	99.191
31	50	194	.0647	99.152
32	3	201	.0670	99.122
33	61	212	.0707	99.073
34	40	257	.0857	98.877
	69	257	.0857	98.877
36	41	285	.0950	98.755
37	76	388	.1293	98.305
38	7	411	.1370	98.204
39	54	446	.1487	98.051
40	82	473	.1577	97.933
41	72	557	.1857	97.566
42	58	608	.2027	97.343
43	63	677	.2257	97.042

TABLE II—Ammonia Results  
(Average analysis 8.16)

Rank	An. No.	Points off	Av. per sample	Efficiency
1	31	1	.0003	99.996
2	59	3	.0010	99.988
3	12	6	.0020	99.975
	45	6	.0020	99.975
6	10	6	.0020	99.975
	77	10	.0033	99.960
7	57	11	.0037	99.955
8	41	12	.0040	99.951
9	62	13	.0043	99.947
	33	13	.0043	99.947
11	74	14	.0047	99.942
12	78	15	.0050	99.939
	2	15	.0050	99.939
14	19	18	.0060	99.926
	23	18	.0060	99.926
16	75	19	.0063	99.923
17	73	21	.0070	99.914
18	52	23	.0077	99.906
	55	23	.0077	99.906
21	69	23	.0077	99.906
	24	25	.0083	99.898
23	43	25	.0083	99.898
	42	27	.0090	99.890
24	7	29	.0097	99.881
25	83	34	.0113	99.862
26	25	35	.0117	99.857
27	40	37	.0123	99.849
28	21	38	.0127	99.844
	61	38	.0127	99.844
30	8	39	.0130	99.841
31	72	40	.0133	99.837
32	67	41	.0137	99.832
33	32	42	.0140	99.828
34	27	43	.0143	99.825
35	37	45	.0150	99.816
36	20	49	.0163	99.800
	44	49	.0163	99.800
38	4	52	.0173	99.788
	49	52	.0173	99.788
41	76	52	.0173	99.788
	11	53	.0177	99.783
42	39	62	.0207	99.746
43	16	67	.0223	99.727
44	54	69	.0230	99.718
45	3	75	.0250	99.694
46	6	80	.0267	99.673
47	50	84	.0280	99.657
48	22	85	.0283	99.653
	66	85	.0283	99.653
50	70	86	.0287	99.648
51	17	87	.0290	99.645
52	26	88	.0293	99.641
53	82	106	.0353	99.567
54	64	118	.0393	99.518
55	29	123	.0410	99.498

(Continued in the next column)

TABLE II—Continued

56	51	126	.0420	99.485
57	71	127	.0423	99.482
58	34	129	.0430	99.470
59	46	130	.0433	99.469
60	36	134	.0447	99.452
61	58	135	.0450	99.449
62	65	140	.0467	99.428
63	30	168	.0560	99.314
64	81	265	.0883	98.918
65	63	277	.0923	98.869

TABLE III—Oil and Ammonia Results, All Samples.

Rank	Analyst	Efficiency
1	33	99.899½
2	57	99.892½
3	52	99.892
4	45	99.871½
5	78	99.871
6	24	99.858
7	77	99.844
8	74	99.838
9	23	99.832
10	73	99.822
11	21	99.802
12	20	99.782
13	2	99.719
14	62	99.729
15	49	99.722
16	8	99.704
17	43	99.694
18	4	99.671
19	42	99.659
20	22	99.648
21	25	99.618
22	6	99.586
23	55	99.549
24	67	99.543
25	37	99.541
26	39	99.508
27	70	99.488
28	61	99.459
29	46	99.437
30	71	99.416
31	7	99.408
32	50	99.405
33	69	99.392
34	40	99.363
35	29	99.361
36	41	99.353
37	76	99.047
38	7	99.042
39	54	98.885
40	82	98.750
41	72	98.702
42	58	98.396
43	63	97.956

Cotton Oil Press in 1923. The winners of these awards for the past year are as follows:

The laboratory cup for the highest efficiency in the determination of both oil and ammonia is awarded to No. 33, Dr. W. F. Hand, State Chemist, A & M College, Mississippi, whose average is 99.899½ per cent. The certificate for second place is awarded to No. 57, A. W. Horrell, Jackson, Mississippi, whose average efficiency is 99.892½ per cent. The corresponding percentages for last year were 99.901 and 99.869, respectively, and for the previous year 99.895 and 99.892.

It should be noted here again that the laboratory cup originally provided for this purpose was awarded finally to the Battle Laboratory, Montgomery, Alabama, having become their permanent property after being won on three different occasions. The cup awarded this year, to be retained by Dr. Hand for one year, is the one which has been provided and offered to the Smalley Foundation by Dr. H. B. Battle.

The certificate for the highest efficiency in the determination of oil is awarded to No. 52, George W. Gooch Laboratories, Los Angeles, California, whose average is 99.878 per cent, and the certificate for second place is awarded to No. 33, Dr. W. F. Hand, State Chemist, A & M College, Mississippi, whose average is 99.852 per cent. The corresponding percentages for last year were 99.871 and 99.786 respectively and for the preceding year 99.880 and 99.848.

The certificate for the highest efficiency in the determination of ammonia is awarded to No. 31, Dr. E. M. Bailey, State Chemist, New Haven, Connecticut, whose aver-

TABLE IV—Results of Other Collaborators Whose Results Deserve Recognition.

Analyst	No. samples reported on	Points off	
		Oil	Amm.
5	29	(28S) 192	65
9	28	(27S) 134	39
14	29		38
15	28		85
16	29		152
18	29		116
28	23		182
35	29	639	171
38	29	98	61
68	29	214	433
80	23		61
81	26	428	*
84	29	341	93
85	25	235	12

\* 30 samples; reported in Table 2.

age is 99.996 per cent, and the certificate for second place is awarded to No. 59, F. B. Carpenter, Virginia-Carolina Chemical Corporation, Richmond, Virginia, whose average is 99.988 per cent. The corresponding percentages for last year were 99.966 for both first and second place, and for the previous year, 99.956 and 99.942.

In accordance with the resolution adopted by the American Oil Chemists' Society, the identity of the other collaborators will not be disclosed.

It will be observed from the foregoing that the percentage efficiency for the oil work and also for the ammonia work is slightly higher than for last year, although the highest average for both oil and ammonia is slightly under last year's result.

Special attention is called to the very high efficiency in ammonia for No. 31, Dr. E. M. Bailey. Dr. Bailey's record is one which will probably not soon be surpassed. Considering that a variation of two points, that is, .02 per cent is allowed each collaborator on his



*Smalley Foundation Prize Winners*

*A. W. Horrell*

*F. B. Carpenter*

results as compared with the accepted average on each sample, on only one of the thirty samples did Dr. Bailey's results differ from the average. On the first sample reported his results missed the average three points (.03 per cent). His record is the highest so far established. The record of F. B. Carpenter is not far behind, likewise the records of analysts 12, 45 and 10. The efficiencies of these four collaborators are higher than those of the highest in either of the two preceding years.

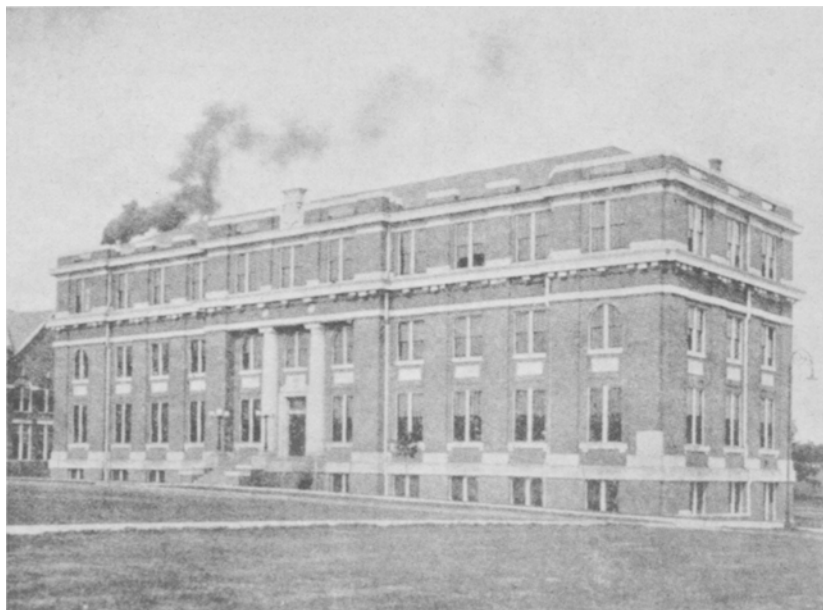
The method for determining the standing of the various collaborators and their per cent efficiency is the same as has been used before, and is fully described in the January, 1923, issue of the *Cotton Oil Press*, VI, No. 9, Page 33.

It is hoped that there is no mistake in the results appearing in

tables 1 to 4 inclusive. These have been double checked, and yet as there are so many figures involved, there may be some slight error.

The Chairman wishes to thank all the collaborators for their hearty cooperation in this work during the past year. There have been very few complaints on the samples, probably fewer than in former years, and the Chairman feels that a vote of thanks and appreciation is due R. F. Monsalvatge for his painstaking care in the preparation and handling of the samples. The Chairman further wishes to take this opportunity of recommending that this important work be again entrusted to Mr. Monsalvatge next year.

By way of confirming the Chairman's opinion that either the samples during the past year have been more uniform than heretofore



*The Mississippi State Chemical Laboratory, another prize winner*

or else the collaborators' work in general is improving, attention is called to the following:

Last year the average of all the accepted results for oil was 5.97 per cent; this year 7.63 per cent. The average number of points off in oil for the ten highest last year was 49.9; this year 46.9. The average efficiency in oil for the ten highest last year was 99.721; this year 99.795.

Likewise for the ammonia results, the average of the accepted values for last year was 6.79 per cent; this year 8.16 per cent. The average number of points off for the ten highest last year was 12.5; this year 8.1. The average efficiency for the ten highest last year was 99.939; this year 99.967.

It will therefore be noted that the average of both the oil and ammonia content of the samples this year is higher than last year, yet the average of the number of points

off is less and the efficiency higher. It will be noted from an examination of tables 1 and 2 in the report for this year, as compared to the report for last year, that not only is this true for the ten highest, but it is true for the entire list. This would seem to be good evidence of even greater uniformity in the samples this year than last.

An opportunity has been afforded all collaborators to be advised by wire collect, in case their reports are not received in time each week, or in case there seems to be a typographical error in their reports. Thirty-two of the collaborators have taken advantage of this offer, while one or two of the others have been disappointed in finding their results omitted from some report. According to our rule, only results which are received up to and including Tuesday of each week are to be accepted; however

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