Report of the Smalley Foundation Committee, 1950-1951

FOLLOWING the custom initiated two years ago, the reports of the five subcommittees of the Smalley Foundation Committee are combined into one report. In doing this, it appears best to discuss the activities of the various subcommittees individually and briefly. In most cases individual detailed reports covering grades and methods of grading, etc., have been mailed to the collaborators by the subcommittee chairman. Over 3,300 samples were distributed and the results tabulated.

SMALLEY FOUNDATION COMMITTEE

R. T. DOUGHTIE JR.	S. W. GLOYER
W. C. AULT	R. W. BATES, chairman
A. S. RICHARDSON	,

Subcommittee on Oil Seed Meal

We are presenting herewith the 33rd report of the subcommittee on Oil Seed Meal. This year 15 samples were distributed to 115 collaborators. The samples were sent to 27 states, five Canadian provinces and two South American countries, as shown by the map. A graph has been prepared, showing the number of collaborators (based upon the percentage of the total) who were within the recognized tolerance of the accepted average. The general average of all samples was also calculated. The values for the past four seasons are hereby listed:

Percentage collaborators	'47-'48	'48-'49	'49-'5 0	'50-'51
within tolerance (Moisture)	48.13	60.63	60.63	60.00
Percentage collaborators				

within tolerance (Oil)......53.86 58.44 53.50 50.70 Percentage collaborators

within tolerance (Nitrogen).......52.76 51.12 50.98 48.40

The custmary tolerance was used, viz .:

- +0.1% on moisture
- + 0.03% on oil
- +0.02% on nitrogen

It will be noted that the moisture results continue to be excellent. Little change is noted in the oil and nitrogen results.

We also calculated the standard deviation on the determinations this year and obtained the average standard deviation on all results. The average standard deviations divided by the tolerances give some interesting figures. These values are hereby listed:

Moisture	Oil
A.S.D 0.26 _	A.S.D0.0820.7
Tolerance 0.1	2.6 $\frac{1}{\text{Tolerance}} = \frac{1}{0.03} = 2.7$

Nitrogen

A.S.D.	0.056	
Tolerance	=	2.8

These ratios would certainly indicate that our tolerances are as equitable as it is possible to have them.

We also sent out duplicate samples this year. Sample No. 9 and No. 12 were identical. The accepted averages are listed.

		N	foisture	Oil	Nitrogen
Sample	No.	9	6.5%	5.60%	6.78%
Sample	No.	12	6.5%	5.60%	6.78%

The accepted averages were identical. This certainly indicates that the sample preparation conforms to a statistical distribution of results.

The subcommittee has voted to adopt the median as the accepted average for the coming year. After careful study it was found that this value tends to throw slightly more results within the tolerance than the method used heretofore. Further, this is a standard statistical unit and much more easily calculated.

The winning collaborators were:

1. The award of the American Oil Chemists' Society Cup for the highest proficiency in the determination of oil and nitrogen will be awarded to P. D. Cretien (No. 62), Texas Test-





GEOGRAPHICAL DISTRIBUTION OF SAMPLES

ing Laboratories, Dallas, Texas. His proficiency was 99.991%. Last year this value was 99.985%.

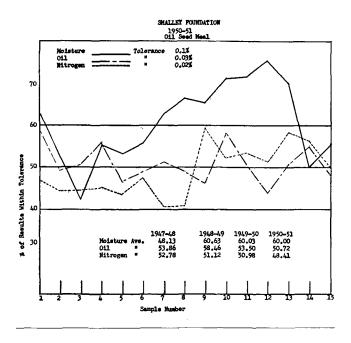
2. The certificate for second place will be awarded to R. C. Pope (No. 71), Pope Testing Laboratories, Dallas, Texas. His proficiency was 99.982%. Last year this value was 99.976%.

The other winners were as follow	ws:	Corresponding
3. Determination of Nitrogen	Percentage Proficiency	Value Last
 W. G. Wadlington (No. 16) Woodson-Tenent Laboratories Decatur, Illinois 	3,	100.000
2. Wales Newby (No. 8) Cotton		100.000
Products Co., Opelousas, La		99.990
2. P. D. Cretien (No. 62), Texas Testing Laboratories, Dallas, Tex.		
4. Determination of Oil		
1. P. D. Cretien (No. 62), Texa Testing Laboratories, Dallas, Tex.		99.989
1. E. H. Tenent (No. 67) Woodson-Tenent Laboratories Memphis, Tenn		
1. B. C. Pope (No. 71), Pope Testing Laboratories, Dallas, Tex.		
5. Determination of Moisture		
1. R. C. Pope (No. 71), Pope Testing Laboratories, Dallas, Tex.	100.000	100.000

Certificates of proficiency will be awarded to the winning collaborators.

A complete report listing all standings of the collaborators, previous cup winners, etc., has been mailed to all who took part in the work.

We again call attention to the preparation and distribution of samples. On behalf of the American Oil Chemists' Society



we wish to express our appreciation to Law and Company for their careful handling of this phase.

R. W. BARTLETT	T. L. RETTGER
R. R. HAIRE	L. H. Hodges
R. T. DOUGHTIE, JR.	H. C. BLACK
T. C. LAW	R. W. BATES, chairman

Subcommittee on Oilseeds

During the 1950-51 season the subcommittee on oilseeds handled three separate check series, namely, cottonseed, peanuts, and soybeans. The number of collaborators on each series of samples were: 46 on cottonseed, 19 on peanuts, 27 on soybeans.

Grades obtained by collaborators on the peanut and soybean series, on the whole, showed general improvement over preceding seasons while grades on the cottonseed series were somewhat lower and more erratic than in prior years. This being due primarily to more analysts being outside of tolerance on free fatty acid results.

Certificates for proficiency in analysis on each series will be awarded to the following chemists:

On the Cottonseed Series:

FIRST PLACE to G. R. Thompson, District Chemist, Southern Cotton Oil Company, Savannah, Ga., who received a grade of 99.28.

SECOND PLACE to L. W. Purdy, Raleigh Testing Laboratories, Raleigh, N. C., and Edw. R. Hahn, Hahn Laboratories, Columbia, S. C., who tied with grades of 98.80.

On the Peanut Series:

FIRST PLACE to M. L. Hartwig, Battle Laboratories, Montgomery, Ala., who received a grade of 100.00.

SECOND PLACE to C. L. Manning, Fort Worth Laboratories, Fort Worth, Tex., who received a grade of 99.60.

On the Soybean Series:

FIRST PLACE to L. W. Purdy, Raleigh Testing Laboratories, Raleign, N. C., who received a grade of 100.00.

SECOND PLACE to W. N. Kesler, Woodson-Tenent Laboratories, Little Rock, Ark., who received a grade of 99.70.

A complete report showing all grades was mailed to the collaborators.

EDWARD R. HAHN R. T. DOUGHTIE JR., chairman G. CONNER HENRY

Subcommittee on Tallow and Grease

During the past year this subcommittee distributed five samples of tallow and grease to 42 collaborators. Only two collaborators failed to report on any samples. The results reported were free fatty acid, color, titer, moisture, insoluble impurities, and unsaponifiable. The results showed improvement over those of previous years, which has always been true of check sample work.

Some of the collaborators still insist reporting results to meaningless decimal places, and occasionally the unofficial R. B. and G. B. color tubes are used.

We believe that the sample preparation was greatly improved. One sample (No. 3) caused some concern, due to the increase in free fatty acid content after shipment. Collaborators were not graded on this determination on sample No. 3.

A new grading system has been used this year, and just how equitable it is will develop with use. While we are formally designating the two top collaborators, we do not feel that the work is sufficiently standardized to give certificates for proficiency.

We would like an expression from the collaborators on including a bleach test on next year's work. A complete report of the work has been mailed to collaborators.

The winning collaborators were:

H. C. Bennett, Los Angeles Soap Company, Los Angeles, Calif	99.56
T. S. McDonald, Procter and Gamble Company, Dallas, Tex	98.31
C. H. CARLSON D. L. HENRY	

J. L. TRAUTH W. C. AULT, chairman

Subcommittee on Crude Vegetable Oils

Six samples of crude vegetable oil were distributed to 79 collaborators. Three were cottonseed, and three were soybean oil.

As usual, the grades on the cottonseed oil were based on refining loss, refined color, and free fatty acid. The spectrophotometric method was used on the refined oil colors.

On the soybean oils the grades were based on the refining loss, bleached color, and free fatty acid. In general, both Lovibond and spectrophotometric colors were reported, and in these cases the color deduction was the average of the deductions by the two methods.

The grading was complicated a bit by the confusion existing on the reading of color. We believe the results in general were as good as those in previous years, however. A complete tabulation has been mailed to all collaborators.

The collaborators receiving the highest grades were:

FIRST PLACE-W. F. Beedle, Geo. W. Gooch Laboratories, Los Angeles, Calif., 99.72%.

SECOND PLACE-Edw. R. Hahn, Hahn Laboratories, Columbia, S. C., 98.34%.

Certificates will be awarded to the winners.

A. A. KIESS F. R. EARLE

F. G. DOLLEAR A. S. RICHARDSON, chairman

Subcommittee on Drying Oils

During the period four sets of samples were distributed to 18 collaborators. Three sets have been tabulated and mailed. Each set consisted of two samples. Sixteen collaborators reported.

The samples included alkali refined linseed oil, crude linseed oil, castor oil, a chemically modified oil, a solvent segregated soyaoil, and a solvent segregated fish oil.

The determinations made were Gardner color, Spectrophotometric color, Refractive Index, Iodine value, Acid value, Saponification value, and hydroxyl value.

The hydroxyl value was initiated on set No. 3 and the diene value requested on set No. 4.

The correlation of most results were good except the hydroxyl values. On this latter value considerable improvement is needed.

Though the number of collaborators have been relatively small, considerable value has been derived from the work. The subcommittee recommends that it be continued next year if it is possible to do so.

D. S. BOLLEY	R.	\mathbf{L} .	TERRILL	
F. Scofield	s.	W.	GLOYER,	chairman