

Report of the Color Committee of A. O. C. S.

DURING the past season two samples of refined cotton seed oil were sent out to the members of the committee for color reading with the following results:

eter was equipped to use the bottle, and two others read the oil by natural light. They showed the oil much darker than by artificial light.

Mr. Cluff asked the Committee

SAMPLE "A."

	Color	No. Glasses	Temp.	Lamp.
Agee	6.3 R.35 Y.	4	31.C.	150 Watt.
Brownfield	6.0 R.35 Y.	3	21.C.	150 Watt.
Grant	6.0 R.35 Y.	3	28.C.	75 Watt.
Pelofsky	5.0 R.35 Y.	2	23.C.	150 Watt.
Evans	6.2 R.35 Y.	3	30.C.	150 Watt.
Burt	5.5 R.35 Y.	3	34.C.	150 Watt.

SAMPLE "B."

	Color	$\frac{3}{4}$ in. tube	4 oz. bottle	Temp.
Agee	5.	...	...	25.5C.
Brownfield	4.5	...	5.5 (Daylight)	21.0C.
Burt	4.8	...	5.3 (Daylight)	22.0C.
Pelofsky .....	...	...	4.3	33.0C.
Grant .....	...	Sample lost	...	...
Evans	4.9	...	...	23.0C.

All of the committee use the $\frac{3}{4}$ -in. glass tube, except one, who used the four ounce sample oil bottle. His readings were consistently lower than the rest.

One member uses the Baily modification of the Wesson tintometer. The others either use the Greiner or a modification of same. The apertures in the eyepieces were all approximately $\frac{1}{4}$ -in. diameter.

Mr. Trevithick was anxious for us to compare the results using 4-oz. sample bottles and the $\frac{3}{4}$ -in. tube. Only one member's tintom-

eter was equipped to use the bottle to investigate the apparent changes in the color of refined oils.

On the first sample sent out I asked the members of the Committee to return to me the samples of oils, being careful to expose them as little as possible to the action of light. The samples were sent out on Sept. first and I read them all on Oct. seventh, and they had all lost nearly a whole point in color.

Several of the Committee took a series of oils and kept them away from the light, reading them every three days.

MR. GRANT

	A	B	C	D	E
Feb. 14	5.2R	5.6R	4.8R	6.2R	7.1R
Feb. 17	5.3	5.6	4.8	6.2	7.1
Feb. 20	5.6	5.6	4.8	6.2	7.1
Feb. 24	5.3	5.5	4.7	6.0	6.5
Feb. 28	5.3	5.4	4.8	6.0	6.5
Mar. 1	5.3	5.4	4.8	6.1	6.6
Mar. 7	5.2	5.2	4.6	6.0	6.4

As you will note, the changes on all except one are negligible, but on one the difference is marked.

MR. PELOFSKY

	A	B
Feb. 22	6.2	6.1
Feb. 25	6.2	6.1
Feb. 28	6.2	6.1
Mar 2	6.2	6.1
Mar. 5	6.1	6.1

Mr. Pelofsky also took two samples and exposed them to light with the following results.

	A	B
Feb. 22	6.2	6.1
Feb. 25	6.2	6.1
Feb. 28	6.3	6.2
Mar. 2	6.2	6.1
Mar. 5	6.2	6.1

Mr. Pelofsky found no changes in the oils that he read.

Mr. Agee read two sets, one kept in the dark and one in the light. Reading them at intervals of three or four days.

Kept in Dark			
E	F	G	H
5.8	4.6	4.5	6.2
6.0	4.5	4.5	6.1
6.2	4.5	4.7	6.3
6.2	4.4	4.8	6.3
Kept in Daylight			
A	B	C	D
6.0	5.8	4.3	6.1
6.0	6.1	4.3	6.3
6.2	6.1	4.5	6.3
6.1	6.0	4.5	6.2

As you will note, the oils that Mr. Agee read showed a tendency to darken up a trifle. His readings were checked by two observers.

On Aug. 18, 1927, I took a sample of refined cotton seed oil that showed a reading of eight red and divided it, putting one bottle away from the light and exposing the other, on which I made readings as follows:

8/18	8R.35Y
9/17	6R.
10/18	5R
12/2	4.8R
2/14	4.8R
4/4	4.7

This oil bleached very rapidly at first and finally became stationary in color.

On the part kept away from the dark the color had gone down to seven, thus losing an entire point of red. I do not think there is any doubt but that some oils will change in color on standing, and that they should be read as soon as practicable.

I think that the matter of filter paper should be taken up next year, and a standard filter paper specified. There are undoubtedly differences that might be traced to different kinds of paper being used.

Some of the members of the Committee have suggested that there may be a difference in color readings on a very bright day and one that is dark and cloudy and also that it is difficult to match colors at night. It might be well to specify that oils be read, say, between nine and three.

I have heard the idea expressed that there may be a difference in the color of oil that comes through the filter at first and later. This would bear investigation, too.

One member has brought up the question of different quality of the color of light given off at different parts of the blue lamp. Another important question that should be investigated.

It seems to be the opinion of the Committee that we recommend that:

The Greiner or some modification of it, or the Bailey Tintometer be made standard.

Not more than three glasses be used.

The $\frac{3}{4}$ inch glass tube be used rather than the 4 oz. sample bottle.

The 75 watt lamp be used instead of the 150 watt one.

I wish to take this occasion to thank all the members of the Committee for their co-operation and the promptness with which they did what was asked of them.

The Color Committee of the A. O. C. S.

J. D. Evans, Chairman

G. Worthen Agee

H. E. Brownfield

J. C. Burt

Garry G. Grant

J. Pelofsky.

Report of Cake Color Committee

IN November, 1926, this committee proposed two possible procedures for making the color comparison of cake or meal samples with the official standards prescribed in Interstate Rule 102. Method I of the 1926 report was based upon the use of a rotating glass cup and Method II of the same report was substantially the same as the detailed method recommended herein and referred to in the tables as the "unaided eye" method.

These two methods and a third method, based upon use of a weak lens out of focus so as to blur individual particles of meal, have been tried on a number of samples by different observers and the gradings compared. Analysis of the results discloses no substantial advantage of method I (rotating cup) over the simpler Method II and no advantage at all in favor of the method using a weak lens out of focus, in spite of the fact that the individual observer may feel more confident of his judgments when using the rotating cup or a lens. Therefore the committee recommends official adoption of the simpler method with the rotating cup method as optional. Specifically, the following rule is proposed for making the color comparison:

"a. Meal. The meal to be graded should be placed in the center of a gray sheet or board at least eight inches square; it should be flattened out to make a level circle about three or four inches across, and a clean, one-inch square of the color standard laid on the center of the meal. The meal and standard, lying in a horizontal plane, should then be observed, in good daylight, from a position directly above them and at least 36 inches distant. For making close decisions, it is best to lay the board on the floor and observe it from a standing position directly above. To be graded 'prime' the meal must be as light or a lighter shade than the standard. If darker, it must be graded 'off' in color.

"Optionally, use may be made of a horizontal rotating cylinder of clear glass, containing meal at the bottom and a strip of color standard above the meal, both lying in close contact with the inner glass surface. The width of color standard, also of the band of meal exposed to view, should be not less than about one inch. The inside diameter of the cup should be about two inches. All gradings should be made in good daylight with a speed of rotation sufficient to blur the individual particles of meal.