ANALYSIS OF COTTON SEED OIL FROM GEORGIA

Samples of crude cotton seed oil produced in Northern Georgia, Rome Oil Mill Production. Submitted by the Lookout Oil and Refining Company, Chattanooga, Tennessee plant. This work was also conducted for the oil Characteristics Committee of the American Oil Chemists' Society.

	METHOD	SAMPLE NO. 1	2	3
Specific Gravity (25/25°C)	A.O.C.S.	0.9168	0.9168	0.9165
Specific Gravity (50/25°C)	A.O.C.S.	0.9014	0.9014	0.9012
Refractive Index (25°C)	A.O.C.S.	1.46972	1.46970	1.46974
Refractive Index (50°C)	A.O.C.S.	1.46262	1.46260	1.46261
Color (Lovibond 5¼" Yellow	N.C.P.A.	35	35	35
Red	N.C.P.A.	5.0	4.8	5.5
Free Fatty Acids (%)	A.O.C.S.	0.03	0.03	0.03
Saponification Number	A.O.C.S.	195.6	194.6	195.6
Acetyl Value	A.O.C.S.	7.5	9.7	8.0
Unsaponifiable Matter (%)	A.O.C.S.	0.55	0.54	0.50
Reichert Meissl Number	A.O.C.S.	0.40	0.45	0.40
Polenske Number	A.O.C.S.	0.50	0.53	0.50
Viscosity at 100° F (Sec.)	A.S.T.M.	187	188	186
Viscosity at 210° F (Sec.)	A.S.T.M.	56	57	55
Smoke Point (°F)	A.O.C.S.	435	435	435
Flash (°F)	A.S.T.M.	615	610	600
Fire (°F)	A.S.T.M.	665	665	665
Titer (°C)	A.O.C.S.	34.1	34.8	31.6
Solid Fatty Acids (%)	A.O.C.S.	24.65	24.76	25.30
Iodine Value (Of oil) (Wijs)	A.O.C.S.	109.7	109.2	108.2
Iodine Value (Of mixed fatty acids)[1] (Wijs)	A.O.C.S.	114.9	114.4	114.0
Iodine Value (Of solid fatty acids) (Wijs)	A.O.C.S.	3.3	3.6	4.9
Thiocyanogen Value (Of Oil)	A.O.C.S.	64.5	63.9	63.6
Thiocyanogen Value (Of mixed fatty acids)	A.O.C.S.	67.9	67.8	66.7
Thiocyanogen Value (Of solid fatty acids)	A.O.C.S.	2.3	2.4	3.9
N.Y.P.E. Cold Test (Hours to Cloud)	—	2½	2½	2½
Cloud (°F)	A.S.T.M.	28	30	28
Pour (°F)	A.S.T.M.	25	25	25
Fatty Acids (based on thiocyanogen results)				
Linoleic Acid (%)		51.89	51.41	51.12
Oleic Acid (%)		24.29	24.63	22.54
Saturated Acids (%)		23.82	23.96	26.34
Fatty Acids (based on lead-salt-ether results)				
Iso-oleic Acid (%)		0.90	0.99	1.37
Lin-oleic Acid (%)		50.50	50.30	50.10
Oleic Acid (%)		25.75	26.13	25.97
Saturated Acids (%)		23.75	23.57	23.93

[1]Calculated

Report Of The Moisture Committee

THE report of this Committee made before the 1938 Spring Meeting of the Society concerned itself with a study of the drying interval necessary for the drying of cottonseeds and cottonseed meal when the Freas forced draft oven, type 601233, was used. This report appeared in the August 1938 issue of OIL AND SOAP.

At that time a drying interval of four hours was recommended for cottonseeds, and a drying interval of three hours for cottonseed meal. The Uniform Methods and Planning Committee, however, felt that further work should be done in an attempt to establish whether a shorter drying interval could be used for cottonseed meal.

Mr. C. P. Brenner has conducted a number of tests on this matter and his report is attached hereto.

The Moisture Committee has considered the results obtained by Mr. Brenner and feels that there is a reasonable doubt that complete drying is obtained in the 2-hour intervals used by Mr. Brenner. It will be noted, however, that in the 3-hour drying time, satisfactory drying was obtained. The Committee, therefore, recommends that the 3-hour drying interval, recommended for cottonseed meal in 1938, be retained.

C. P. Brenner
N. C. Hamner
A. D. Rich
H. L. Roschen, Chairman.

C. P. BRENNER REPORT

Continuation of the Study of the Efficiency of the Forced Draft Oven — Type 601-233.

Conducted for the Moisture Committee of the A.O.O.S.

This report is an addition to the reports of the Moisture Committee, Oil and Soap, August 1938, in which it was found that this type of oven would dry 108 (full load) five-gram samples of Cottonseed meal in three hours at 101 degrees Centigrade.

It was suggested that further work be done to determine if it was possible to reduce the drying time of cottonseed meal to two hours at 101 degrees Centigrade.

A two hour drying time at 101 degrees C. for a fully loaded oven cannot be recommended.

This recommendation is based on the following results:

Freas Oven — 101 degrees C., 2 hrs., Max. 6.36, Min. 6.08, average 6.18%, 108 samples.

Dekhotinsky — 105 degrees C., 3 hrs., average 6.36%, 12 samples.

Freas Oven — 101 degrees C., 2 hrs., Max. 6.40, Min. 6.08, average 6.23%, 108 samples.

Dekhotinsky — 105 degrees C., 3 hrs., average 6.36%, 12 samples.

To confirm the work previously reported, another test was run using a three hour drying time.

Freas Oven — 101 degrees C., 3 hrs., average 6.45%, 108 samples.

Dekhotinsky — 105 degrees C., 3 hrs., average 6.41%, 12 samples.

In view of the fact that the samples were to remain in the oven only two hours it was thought advisable to take note of the room temperature. This test was conducted at a room temperature of 20 degrees C. with an outside temperature of 0 degrees Centigrade.