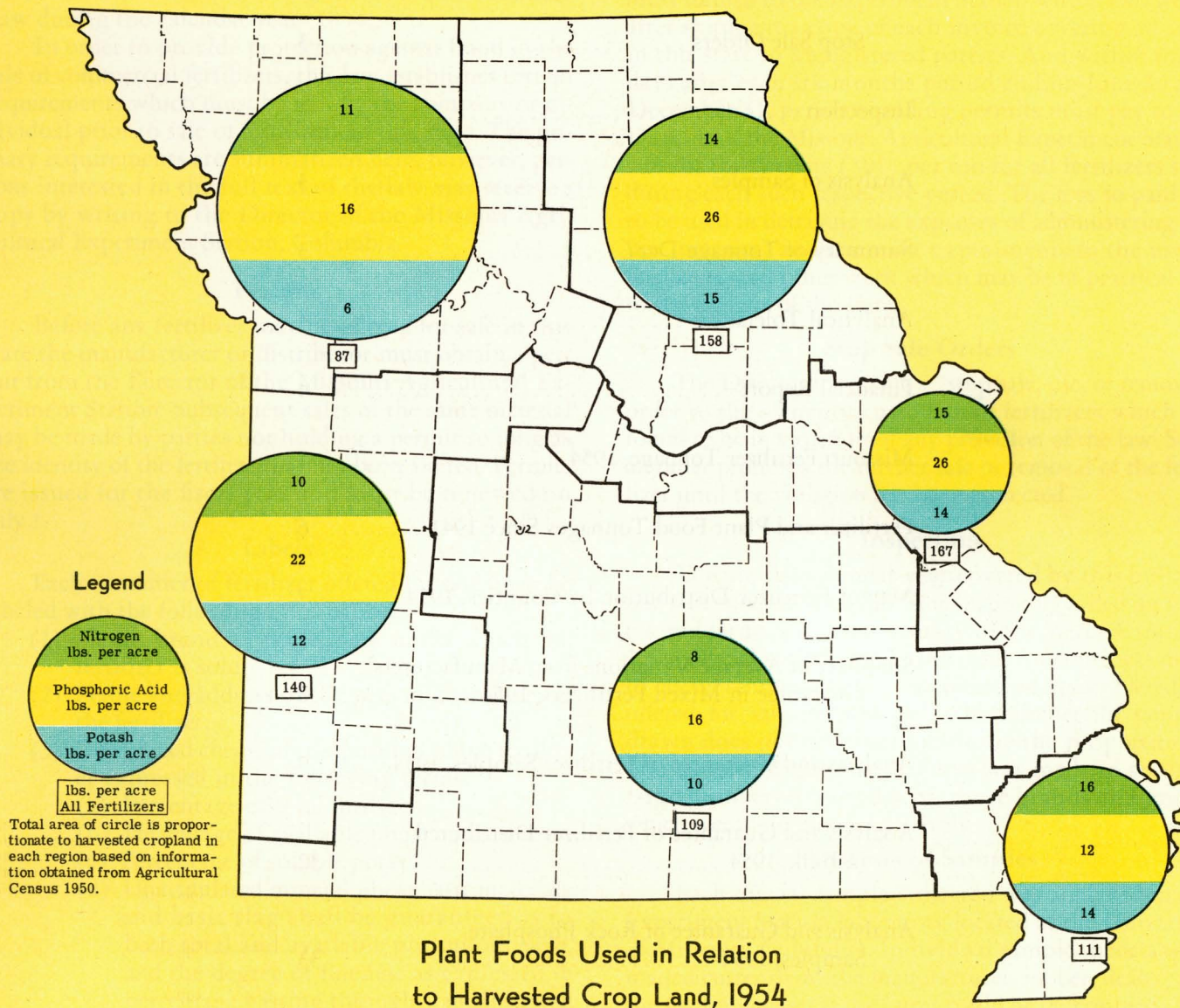


MISSOURI COMMERCIAL FERTILIZERS

Inspection and Analysis
1954



UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE
AGRICULTURAL EXPERIMENT STATION

J. H. LONGWELL, *Director*
COLUMBIA, MISSOURI

BULLETIN 653

APRIL, 1955

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Missouri Commercial Fertilizer Inspection and Analysis, 1954

J. H. LONGWELL, DIRECTOR

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The purpose of this bulletin is to report the results of work carried on by the Missouri Agricultural Experiment Station in administering the Missouri Fertilizer Law during the calendar year 1954.

In order to provide protection against fraud in the sale of commercial fertilizers, this law establishes certain requirements which must be met by the company or individual prior to sale of fertilizers in this state. The primary requirements are summarized here, however, persons interested in the full text of the law may receive a copy by writing to the Director of the Missouri Agricultural Experiment Station, Columbia.

Permits

Before any fertilizer may be offered for sale in this state the manufacturer or distributor must obtain a permit from the Director of the Missouri Agricultural Experiment Station. Subsequent sales of the same material may be made by parties not holding a permit so long as the identity of the fertilizer has not been altered. Permits are issued for the fiscal year and must be renewed on July 1.

Labels

Each container of fertilizer offered for sale must be labeled with the following information:

- (1) Name, brand, or trade mark under which the fertilizer is sold;
- (2) Name and address of the person guaranteeing the fertilizer;
- (3) Guaranteed chemical composition of the fertilizer expressed in the following terms;
 - (a) Percentage of total nitrogen
 - (b) Percentage of available phosphoric acid
 - (c) Percentage of soluble potash
 - (d) Unacidulated mineral phosphatic materials and basic slag shall be guaranteed as to both total and available phosphoric acid, and the degree of fineness as expressed in percentage passing through standard-mesh sieves. In the case of bone, tankage, and other natural organic phosphate materials, only total phosphoric acid must be guaranteed.

If any fertilizer is sold or offered for sale in bulk, such a label as described above must accompany each lot.

Reports and Fees

Persons holding permits to sell fertilizers in Missouri must furnish to the Experiment Station within two weeks after shipment a copy of each invoice covering all sales in this state to unregistered parties. And within thirty days after each six months period ending June 30 and December 31, persons holding permits must pay to the Director of the Missouri Agricultural Experiment Station a fee of thirty cents (30¢) per ton for all fertilizers sold during each such respective period. The fees so paid are to be used in defraying the expenses of administering the law, practical and scientific experiments in the use of fertilizers, and other work which may be of practical use to the farmers of the state.

Stop Sale Orders

The Director may issue a "stop sale, use, or removal" order to the owner or custodian of fertilizers which are found to be in violation of any provision of the law. Such an order prohibits the further sale or removal of the fertilizer until the violation has been corrected.

Inspection

During the calendar year covered by this bulletin one part time and two full time inspectors called on dealers and farmers in every county of the state. A total of 2,626 official samples were collected. An effort was made to obtain samples of every brand and analysis of fertilizer offered for sale in Missouri. The number of samples drawn does not necessarily indicate the proportion of brands sold, though an attempt was made to secure a large number of samples of those brands and grades which were sold more extensively.

Analysis of Samples

Each official sample collected was analyzed in the Experiment Station laboratory located at the University of Missouri, Columbia. Individual sample reports were mailed currently to the manufacturer, jobber, dealer, and the final purchaser if the latter could be determined. The results of these samples are presented in following tables.

Summary of Tonnage Data

Manufacturers reported a total of 771,375 tons of commercial fertilizers shipped for use in Missouri during the calendar year 1954. This represented an increase of

8,099 tons over the amount shipped in 1953. Though the increase tonnage wise was unimpressive, actual plant nutrients supplied by these fertilizers were for the most part considerably greater than in the preceding year. This gain was made in spite of the severe drought experienced in a large area of the state in 1954. Tonnage of actual nitrogen increased by one third, with a 12 percent increase in both available phosphoric acid and soluble potash. Rock phosphate sold for direct application decreased by approximately 40 percent, thus accounting for the slight overall tonnage increase. The trend toward higher analysis mixed fertilizers continued as in the past. The average ton contained 32.5 percent major plant nutrients as compared with 31.4 percent in 1953 and 19.3 percent in 1941. For additional tonnage data see tables 1 and 2.

ANALYTICAL TOLERANCES

The following schedule is used in determining deficient samples:

% Guarantee	% Tolerance		
	N	A.P.A	K ₂ O
0.0 to 2.0	0.20	0.40	0.20
2.1 to 3.0	0.25	0.40	0.30
3.1 to 4.0	0.35	0.40	0.40
4.1 to 8.0	0.40	0.40	0.50
8.1 to 10.0	0.50	0.40	0.60
10.1 to 20.0	0.50	0.50	0.60
20.1 to 25.0	0.50	0.50	1.00
25.1 to 30.0	0.50	0.75	1.00
30.1 and over	0.75	0.75	1.00

FERTILIZER CONTROL FUND
Financial Report
For the Year Ended December 31, 1954

Balance - January 1, 1954		\$56,622.20
Receipts:		
From Fertilizer Fees	\$205,732.68	
Disbursements:		
Personal Service	\$119,798.54	
Travel	9,675.20	
Transportation of Things	1,203.05	
Communication Service	1,910.03	
Rents & Utility Service	4,213.84	
Publications & Printing	6,139.08	
Repairs & Replacements	12,092.13	
Supplies & Materials	48,238.47	
Equipment	18,374.01	
Other Expense	1,543.58	
	<u>223,187.93</u>	
Excess Expenditures		<u>17,455.25</u>
Balance - December 31, 1954		<u>\$39,166.95</u>

TABLE 1--MISSOURI FERTILIZER TONNAGE REPORT, 1954

<u>GRADES</u>	<u>SPRING</u>	<u>FALL</u>	<u>NITROGENOUS MATERIALS</u>	<u>SPRING</u>	<u>FALL</u>
0-20-20	17,646	4,642	Ammonium Nitrate	25,916	21,334
2-12-6	1,370	1,226	Anhydrous Ammonia	18,373	3,421
3-9-18	5,407	179	Ammonium Sulphate	8,877	440
3-9-27	9,985	672	Nitrogen Solutions	5,059	386
3-12-12	33,466	28,411	Ammonium Nitrate-Lime	3,049	240
4-12-4	31,432	18,767	Amm. Sulphate-Nitrate	1,082	----
4-16-16	5,307	4,577	Urea	724	53
4-24-12	9,903	6,135	Sodium Nitrate	186	----
5-10-5	1,050	1,255			
5-10-10	674	----	<u>PHOSPHATIC MATERIALS</u>		
5-15-30	598	43			
5-20-20	3,222	2,127	Normal Superphos.	6,355	2,452
6-12-12	6,478	6,647	Concentrated Superphos	3,360	2,538
6-24-24	822	492	Calcium Metaphosphate	1,799	1,462
8-8-8	36,749	14,504	Rock Phosphate	76,401	42,199
8-24-8	47,414	32,069	Colloidal Phosphate	2,478	670
10-10-10	34,116	15,911			
10-20-0	2,495	842	<u>POTASSIC MATERIALS</u>		
10-20-10	1,306	3,136			
10-20-20	153	834	Muriate of Potash	14,188	6,078
10-30-10	480	741	Sul-Po-Mag	367	44
12-12-12	63,480	36,321			
12-24-12	2,360	1,871	<u>MISC. MATERIALS</u>		
13-13-13	2,033	2,244			
14-14-14	----	1,128	Organics	1,780	1,218
15-15-0	1,803	225	Other	1,227	375
16-20-0	1,757	527			
Misc. Grades	7,303	2,909			
Totals	328,809	188,435	Totals	171,221	82,910

GRAND TOTAL 771,375

TABLE 2 -- FERTILIZER AND PLANT FOOD TONNAGES SHIPPED FOR USE IN MISSOURI SINCE 1941

Year	Total Tons Fertilizer	Total Tons of Plant Food				Mixed Fertilizers			Fertilizer Materials*				Rock Phosphate
		Nitrogen	Available P ₂ O ₅	Total P ₂ O ₅ in Rock	K ₂ O	Total Tons	Average Composition	Per Cent	Total Tons	Tons N	Tons P ₂ O ₅	Tons K ₂ O	
1941	68,626	1,018	10,293	286	2,185	35,647	2.33-12.14-4.83	19.3	32,057	187	5,965	463	922
1942	59,854	801	9,236	168	2,368	28,420	2.17-11.99-6.90	21.1	30,892	184	5,828	407	542
1943	83,375	903	12,310	284	3,893	44,357	1.89-11.94-7.83	21.7	38,102	65	7,014	420	916
1944	120,937	1,811	17,849	418	4,800	67,005	2.30-11.88-6.82	21.0	52,585	270	9,889	230	1,347
1945	135,140	2,309	19,219	547	6,279	83,411	2.37-11.90-6.96	21.2	49,963	332	9,293	474	1,766
1946	221,753	4,665	31,045	1,231	9,964	149,829	2.60-11.95-6.43	21.0	67,953	769	13,140	330	3,971
1947	293,705	10,282	36,192	3,671	13,470	227,688	2.94-12.01-5.84	20.8	54,176	3,588	8,847	173	11,841
1948	355,283	11,366	45,138	9,085	17,278	263,936	3.03-12.11-6.25	21.4	62,041	3,369	13,175	782	29,306
1949	364,677	13,426	42,472	17,815	18,895	248,000	3.26-12.77-7.08	23.1	59,209	5,341	10,802	1,337	57,468
1950	482,123	21,865	52,641	36,100	26,047	290,497	3.80-13.93-8.19	25.9	75,175	10,826	12,175	2,255	116,451
1951	647,393	30,988	61,989	56,520	38,371	390,292	4.34-14.11-8.94	27.4	74,777	14,049	6,919	3,479	182,324
1952	847,284	48,478	75,344	85,702	52,590	468,347	5.30-14.75-9.40	29.5	102,478	23,656	6,263	8,565	276,459
1953	763,276	57,681	72,427	62,135	55,483	458,042	6.40-14.88-10.16	31.4	104,798	28,376	4,270	8,944	200,436
1954	771,375	76,960	81,136	37,332	68,070	517,244	7.30-14.42-10.80	32.5	132,383	39,185	6,529	12,232	121,748

*Does not include Rock Phosphate

TABLE 3 -- SUMMARY OF AVERAGE VARIATIONS FROM MANUFACTURERS' GUARANTEE IN MIXED FERTILIZERS, 1954

In order that the reader may tell at a glance the relative manner in which mixed fertilizer manufacturers have met guarantees this table summarizes the performance of companies from which ten or more samples were collected. Of all samples represented 40.3 percent were deficient in one or more plant food constituents. However, only 8.0 percent

were deficient to such an extent as to be considered misbranded. In these cases stop sale orders were issued provided the fertilizer was still on hand. Figures noted in the columns headed "Average % Value" refer to a comparison of plant food found with that guaranteed.

Manufacturer	Samples Analyzed			Nitrogen			Available P ₂ O ₅			Potash		
	Total	% Meeting Guarantee in all Respects	% Mis-Branded*	Samples Analyzed	% Deficient**	Average % Value	Samples Analyzed	% Deficient**	Average % Value	Samples Analyzed	% Deficient**	Average % Value
Mathieson Chemical Corp.	90	88.9	2.2	89	2.2	103.0	90	6.7	103.5	74	2.7	106.7
Thurston Chemical Co.	190	74.7	1.1	183	3.8	101.7	190	17.4	101.7	178	4.5	104.4
Missouri Farmers Ass'n.	244	74.6	3.3	218	7.8	103.9	244	13.1	104.5	240	6.7	106.6
Missouri Plant Food Co.	48	72.9	0	45	20.0	97.9	48	8.3	100.8	48	2.1	106.8
American Agricultural Chemical Co.	100	71.0	3.0	95	8.4	100.8	100	16.0	100.6	100	5.0	105.2
Fort Smith Cotton Oil Co.	26	69.2	19.2	24	20.8	97.4	26	15.4	99.4	26	11.5	106.8
Ark-Mo Plant Food Co.	44	65.9	4.5	43	7.0	102.0	44	27.3	98.7	44	4.5	105.9
Virginia-Carolina Chemical Corp.	132	63.6	9.8	127	6.3	102.7	132	26.5	99.4	125	6.4	107.0
Lange Brothers	69	60.9	1.4	68	2.9	101.5	69	34.8	99.3	69	1.4	104.8
Farm Bureau Service Company of Missouri	80	58.8	6.3	60	18.3	98.9	80	26.3	99.3	80	3.8	109.0
Farm Belt Fertilizer & Chemical Co.	69	58.0	13.0	68	20.6	101.3	69	29.0	99.8	64	4.7	109.2
Consumers Cooperative Ass'n.	50	50.0	14.0	47	19.1	102.5	50	24.0	103.6	39	17.9	99.6
Davison Chemical Corp.	76	50.0	15.8	71	15.5	98.3	76	30.3	99.8	67	13.4	103.1
Darling & Co.	160	50.0	11.9	148	28.4	96.5	160	24.4	98.9	160	5.0	104.9
Armour Fertilizer Works	239	46.0	9.2	222	28.8	96.4	239	27.2	99.6	224	8.0	105.6
La Plata Chemical Co.	56	44.6	12.5	50	28.0	98.9	56	33.9	100.4	55	3.6	108.4
Blytheville Fertilizer Corp.	27	44.4	11.1	19	42.1	94.8	27	40.7	96.7	27	7.4	102.1
Swift & Co.	122	43.4	8.2	121	28.1	97.0	121	27.3	98.9	121	8.3	104.8
Crawford Chemical Co.	32	37.5	34.4	32	21.9	108.4	32	25.0	102.2	32	28.1	101.8
Tri-State Chemical Co.	47	21.3	25.5	44	25.0	98.5	47	61.7	93.1	47	4.3	111.2
Totals	1901	59.7	8.0	1774	16.1	100.3	1900	23.5	100.6	1820	6.5	105.8

Results were omitted from this table if fewer than ten samples of field fertilizers were obtained.

*Percent samples deficient to such an extent as to be subject to "stop sale, use, or removal" orders.

**Percent samples deficient in excess of allowable tolerance indicated on page 4.

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954

This table presents in detail the guarantee and actual analysis of all samples collected, with the exception of rock phosphate and anhydrous ammonia. Results of these materials are given in the following tables.

The letter S preceding the sample number indicates the sample was collected during the spring, or first six months

of 1954. Likewise, the letter F indicates samples collected in the fall, or last six months of 1954.

Analyses not meeting the guarantee within set tolerance are indicated with an asterisk (*) and are considered deficient.

Indicated Source	Sample No.	Guarantor		Nitrogen %	PHOSPHORIC ACID		Potash %
					Available %	Insoluble %	
American Agricultural Chemical Co., National Stock Yards, Ill.	S- 734	Hugh Jamieson, Cyrene	Guarantee	10.00	10.00	---	10.00
			Found	9.74	9.79	.36	9.79
Darling & Company, East St. Louis, Ill.	F- 704	Hugh Jamieson, Cyrene	Guarantee	5.00	20.00	---	20.00
			Found	5.82	18.37*	.48	19.63
Farm Belt Fertilizer & Chemical Co., Kansas City, Mo.	F- 244	Steva Stone Co., Richmond	Guarantee	---	20.00	---	20.00
			Found	---	17.75*	1.00	18.42*
Farm Bureau Service Co. of Mo., Jefferson City, Mo.	F- 123	Lewis DeHart, Mexico	Guarantee	---	20.00	---	---
			Found	---	20.92	.33	---
Lange Brothers, Inc., St. Louis, Mo.	S- 747	Hugh Jamieson, Cyrene	Guarantee	20.50	---	---	---
			Found	20.74	---	---	---
	S- 758	Hugh Jamieson, Cyrene	Guarantee	---	---	---	22.00
			Found	---	---	---	22.14
	S- 759	Hugh Jamieson, Cyrene	Guarantee	---	---	---	60.00
			Found	---	---	---	59.58
LaPlata Chemical Co., LaPlata, Mo.	S- 509	Farm Fertilizer Service, Columbia	Guarantee	21.00	---	---	---
			Found	21.13	---	---	---
	S- 514	Hamill Phosphate Co., Kahoka	Guarantee	---	---	---	60.00
			Found	---	---	---	62.26
	S- 516	Lewis DeHart, Mexico	Guarantee	---	---	---	60.00
			Found	---	---	---	61.04
	F- 236	Lewis DeHart, Mexico	Guarantee	---	---	---	60.00
			Found	---	---	---	59.96
Lion Oil Co., Eldorado, Ark.	S- 507	Hamill Phosphate Co., Kahoka	Guarantee	20.50	---	---	---
			Found	20.89	---	---	---
Nitrogen Division, Allied Chemical & Dye Corp., New York, N. Y.	S- 513	Frank Snell, Centralia	Guarantee	32.00	---	---	---
			Found	31.81	---	---	---
	S- 596	Langfitt Elevators, Bethany	Guarantee	32.00	---	---	---
			Found	31.68	---	---	---
	S- 597	Mercer County Farm Bureau Service Co., Princeton	Guarantee	32.00	---	---	---
			Found	32.52	---	---	---
	S- 662	Carroll County Farm Bureau Service Co., Carrollton	Guarantee	32.00	---	---	---
			Found	32.09	---	---	---
	S- 663	Bill Abell Produce, Tarkio	Guarantee	32.00	---	---	---
			Found	31.96	---	---	---
	S- 665	Missouri Valley Feed Store, Marshall	Guarantee	32.00	---	---	---
			Found	31.69	---	---	---
	S- 751	Lincoln County Farm Bureau Service Co., Troy	Guarantee	32.00	---	---	---
			Found	32.10	---	---	---
	S- 974	Monroe County Farm Bureau Service Co., Paris	Guarantee	32.00	---	---	---
			Found	30.12*	---	---	---
	F- 425	St. Louis County Farm Bureau Service Co., St. Charles	Guarantee	32.00	---	---	---
			Found	33.13	---	---	---
	F- 749	Lincoln County Farm Bureau Service Co., Troy	Guarantee	32.00	---	---	---
			Found	32.84	---	---	---
	F- 978	Carroll County Farm Bureau Service Co., Carrollton	Guarantee	32.00	---	---	---
			Found	32.33	---	---	---
	S- 755	M.F.A. Farmers Exchange, Kirksville	Guarantee	40.00	---	---	---
			Found	39.55	---	---	---
	S- 756	Putnam County M.F.A. Exchange, Unionville	Guarantee	40.00	---	---	---
			Found	39.77	---	---	---
	F- 315	Putnam County M.F.A. Exchange, Unionville	Guarantee	40.60	---	---	---
			Found	40.07	---	---	---
	F- 316	M.F.A. Cooperative Ass'n., California	Guarantee	41.00	---	---	---
			Found	40.44	---	---	---
	F-1056	Langfitt Elevators, Bethany	Guarantee	15.00	15.00	---	---
			Found	16.73	8.49*	.02	---
Thurston Chemical Co., Joplin, Mo.	F- 592	Farmers Rock & Lime Co., Breckenridge	Guarantee	---	20.00	---	---
			Found	---	20.66	.49	---
	F- 622	Farmers Rock & Lime Co., Breckenridge	Guarantee	5.00	20.00	---	20.00
			Found	5.11	20.89	1.11	19.08*
	S- 580	Farmers Rock & Lime Co., Breckenridge	Guarantee	8.00	24.00	---	8.00
			Found	8.14	23.92	.56	8.27
	S- 590	Farmers Rock & Lime Co., Breckenridge	Guarantee	12.00	12.00	---	12.00
			Found	12.18	12.22	.33	13.05
	F- 656	Farmers Rock & Lime Co., Breckenridge	Guarantee	12.00	12.00	---	12.00
			Found	11.54	13.73	1.30	12.52
	S- 595	Farmers Rock & Lime Co., Breckenridge	Guarantee	15.00	15.00	---	---
			Found	15.16	15.19	.54	---
	F- 674	Farmers Rock & Lime Co., Breckenridge	Guarantee	---	---	---	60.00
			Found	---	---	---	61.01

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 934	9.99	----	9.93	.37	10.09
S- 936	10.30	----	10.06	.44	10.12
S-1042	9.56	----	10.56	.77	10.84
S-1334	9.47*	----	10.92	.53	10.32
F- 197	10.09	----	10.50	.55	10.65
F- 731	10.08	----	10.38	.60	10.58
F-1000	9.87	----	10.65	.55	10.21
F-1002	9.70	----	10.19	.56	10.06
F-1041	9.71	----	10.19	.11	10.14
AMERICAN CHEMICAL PAINT CO., AMBLER, PENN.					
Gro-Stuf 20-20-20					
Guarantee	20.00	----	20.00	----	20.00
S-1455	20.13	----	21.03	.02	20.93
AMERICAN CYANAMID CO., NEW YORK, N. Y.					
Aero Cyanamid					
Guarantee	20.00	----	----	----	----
S- 970	20.20	----	----	----	----
ARK-MO PLANT FOOD CO., WALNUT RIDGE, ARK.					
Ark-Mo 20% Superphosphate					
Guarantee	----	----	20.00	----	----
S- 73	----	----	19.92	.68	----
S-1308	----	----	20.75	.50	----
F- 238	----	----	20.88	.67	----
Ark-Mo 0-45-0					
Guarantee	----	----	45.00	----	----
S- 82	----	----	46.21	.79	----
Ark-Mo 0-20-20					
Guarantee	----	----	20.00	----	20.00
F- 452	----	----	20.19	.26	21.04
Ark-Mo 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 85	3.27	----	9.49	.36	18.32
S- 86	3.15	----	8.73	.54	18.06
S- 355	3.10	----	8.65	.62	19.41
Ark-Mo 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 91	3.18	----	9.05	.39	27.38
S- 92	3.14	----	9.11	.47	27.08
S- 94	4.11	----	9.69	.56	25.01*
S- 96	3.36	----	9.61	.72	25.04*
S- 366	2.83	----	9.46	.32	27.74
F-1095	3.17	----	9.10	.15	28.48
Ark-Mo 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 97	3.25	----	11.36*	.81	13.36
S- 99	3.15	----	11.47*	.96	12.80
S- 101	3.35	----	11.47*	.89	13.43
F-1097	3.50	----	11.78	.52	12.01
Ark-Mo 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 102	3.90	----	11.79	.69	5.54
S- 103	3.94	----	11.39*	1.11	5.99
S- 549	4.18	----	11.51	1.96	4.21
S- 548	4.04	----	11.70	1.65	4.58
F-1098	4.24	----	11.79	.64	4.38
Ark-Mo 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
F- 497	5.05	----	8.49*	1.89	5.14
Double Dutch 5-15-30					
Guarantee	5.00	----	15.00	----	30.00
S- 104	4.55*	----	13.83*	.44	31.50
S- 105	4.52*	----	13.41*	.58	30.58
Ark-Mo 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 107	7.95	----	7.94	.44	10.24
S- 571	8.54	----	9.34	.51	8.70

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
Doubleton 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 108	7.97	----	23.76	1.54	9.95
S- 109	8.21	----	22.80*	2.00	8.93
S- 110	8.02	----	24.70	2.05	9.06
S- 112	8.31	----	23.65	1.55	10.68
S- 114	7.78	----	23.27*	1.68	9.02
S- 578	8.21	----	23.38*	1.75	9.26
F- 285	8.54	----	22.69*	1.74	8.57
F- 541	8.53	----	21.66*	1.68	9.13
F-1100	8.25	----	23.52	.98	9.44
Double Dutch 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 115	12.50	----	12.13	.32	12.18
S- 118	12.12	----	11.63	.40	12.63
S- 119	12.12	----	12.08	.40	12.49
S- 121	12.54	----	11.71	.36	12.38
S- 122	11.96	----	11.89	.36	12.95
F-1105	12.23	----	12.18	.30	12.36
F-1106	12.16	----	12.05	.31	12.68
F-1108	11.15*	----	13.41	.33	13.09
F-1109	11.71	----	12.31	.28	13.14
Ark-Mo 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
F- 308	12.22	----	13.34	.36	12.61
F- 574	11.89	----	12.33	.25	13.18
ARMOUR FERTILIZER WORKS, EAST ST. LOUIS, ILL. & NORTH KANSAS CITY, MO.					
Big Crop 0-20-0					
Guarantee	----	----	20.00	----	----
S-537	----	----	19.50	.85	----
F- 326	----	----	21.02	.68	----
Big Crop 0-45-0					
Guarantee	----	----	45.00	----	----
F- 756	----	----	39.79*	.51	----
Pebble 0-45-0					
Guarantee	----	----	45.00	----	----
S- 444	----	----	45.59	.51	----
S-1349	----	----	45.12	.78	----
F- 462	----	----	45.90	.70	----
F- 464	----	----	46.60	.25	----
Big Crop 0-16-16					
Guarantee	----	----	16.00	----	16.00
S- 252	----	----	16.05	.85	16.88
Big Crop 0-18-18 with Borax					
Guarantee	----	----	18.00	----	18.00
F- 39	----	----	17.74	.86	20.02
Big Crop 0-19-19 with Borax					
Guarantee	----	----	19.00	----	19.00
F- 242	----	----	19.35	.85	18.06*
F- 758	----	----	19.05	.65	19.98
Big Crop 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 74	----	----	18.93*	.62	20.22
S- 76	----	----	18.71*	.49	19.82
S- 156	----	----	20.91	.64	18.59*
S- 253	----	----	20.04	.56	19.43
S-1074	----	----	20.30	.65	18.71*
S-1189	----	----	16.66*	.94	21.44
F- 126	----	----	19.84	.66	20.08
F- 131	----	----	19.81	.69	20.43
F- 245	----	----	20.96	.69	19.67
F- 333	----	----	18.96*	.72	20.37
F- 334	----	----	18.84*	.56	21.20
F- 457	----	----	19.07*	.98	17.73*
F- 458	----	----	20.31	.69	19.90
Big Crop 2-12-6					
Guarantee	2.00	----	12.00	----	6.00
S- 257	3.06	----	11.86	1.19	12.50

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 541	2.10	----	11.88	.82	6.16
S- 986	2.49	----	11.61	1.11	7.06
S-1076	2.35	----	12.11	.74	7.06
F- 246	2.80	----	13.37	1.81	6.26
F- 339	2.65	----	12.23	1.77	7.36
F- 761	3.04	----	11.77	1.66	7.15
F- 763	2.24	----	11.56	1.80	6.02
F- 855	3.63	----	12.21	.99	6.86
Big Crop 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 84	3.09	----	8.79	1.00	18.62
S- 258	3.05	----	9.16	.92	18.29
S- 353	2.96	----	9.09	.86	19.14
S-1314	3.18	----	10.09	.94	16.20*
Big Crop 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 90	3.07	----	9.21	.57	27.02
S- 95	2.85	----	9.95	.50	24.96*
S- 365	3.02	----	8.85	.35	27.38
S- 623	3.50	----	8.50*	.65	27.61
S-1077	2.90	----	8.82	.78	28.16
Big Crop 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 15	3.16	----	11.36*	1.25	13.28
S- 170	3.00	----	11.27*	1.16	14.31
S- 261	3.20	----	11.89	.71	12.38
S- 264	2.77	----	11.18*	1.98	13.49
S- 795	3.27	----	11.99	.86	12.02
S- 796	3.19	----	11.41*	1.39	12.90
F- 13	3.34	----	11.00*	1.82	13.83
F- 57	3.45	----	10.95*	2.54	12.17
F- 148	3.03	----	11.89	1.54	12.50
F- 473	3.27	----	11.30*	.95	12.32
F- 603	3.63	----	10.38*	2.18	12.24
F- 606	2.79	----	10.79*	2.19	12.61
F- 764	3.25	----	11.59	.83	13.05
F- 770	2.86	----	11.71	.87	13.05
Big Crop 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 184	3.71	----	11.61	.98	4.46
S- 274	3.84	----	11.67	1.45	5.77
S- 282	3.88	----	11.30*	1.28	4.86
S- 280	4.23	----	11.72	1.27	5.05
S- 550	3.90	----	11.85	.75	4.08
S- 552	4.02	----	12.09	.74	4.74
S- 804	3.95	----	11.46*	1.34	4.02
S- 899	4.17	----	11.11*	1.64	4.68
S- 999	4.11	----	10.97*	1.73	5.18
S-1002	4.14	----	10.97*	1.82	4.23
S-1098	3.97	----	12.36	.79	4.51
S-1103	4.10	----	10.95*	1.58	4.00
F- 62	4.28	----	10.41*	2.99	5.02
F- 152	4.02	----	12.21	.52	4.09
F- 251	4.41	----	10.19*	2.34	6.11
F- 256	4.26	----	11.87	.98	5.37
F- 350	4.11	----	11.56	2.22	4.89
F- 353	3.88	----	11.50	1.29	5.16
F- 608	3.89	----	10.66*	2.97	4.33
F- 611	4.76	----	11.18*	1.34	5.22
F- 693	3.94	----	11.86	2.02	4.59
F- 697	3.80	----	12.02	1.06	4.53
F- 772	4.14	----	9.97*	2.52	4.72
F- 773	4.11	----	9.65*	2.99	3.99
F- 775	3.87	----	12.19	1.49	4.69
F- 778	4.16	----	12.60	1.08	5.68
F- 859	4.58	----	13.14	1.41	7.16
Big Crop 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 284	4.63	----	16.26	.59	17.29
S- 560	3.96	----	14.43*	.62	16.88
S- 902	4.36	----	16.02	.48	16.62
F- 260	4.13	----	17.17	.33	16.06
F- 488	3.73	----	14.98*	.35	18.43
F- 492	3.94	----	15.86	.34	16.19
F-1022	4.13	----	15.88	1.32	17.50
Big Crop 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S-1012	3.17*	----	8.66*	.64	27.21
S-1107	3.76	----	21.33*	.62	11.37*
S-1108	4.42	----	21.55*	.75	12.36
S-1111	3.89	----	21.68*	.90	11.02*
S-1278	3.82	----	23.52	.86	11.35*
S-1322	3.72	----	24.03	.62	12.89
F- 21	3.90	----	22.81*	.62	12.35
F- 65	4.20	----	23.07*	.41	13.05
F- 261	3.53*	----	24.42	.78	12.62
F- 361	3.64*	----	23.27*	.66	13.39
F- 364	3.99	----	21.78*	.59	13.92
F- 366	3.78	----	22.34*	.57	13.61
F- 493	3.72	----	22.93*	.67	12.77
F- 786	3.95	----	22.57*	.83	12.26
F- 794	4.18	----	23.47*	.61	12.46
F- 795	3.79	----	21.88*	.61	13.29
F- 861	4.91	----	20.53*	.75	12.13
F- 929	3.63*	----	23.16*	.84	12.35
Big Crop 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
S- 562	4.88	----	10.03	1.62	5.08
Vertagreen 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
S- 908	5.07	----	10.27	.98	5.34
S-1429	5.05	----	11.05	.79	5.24
Big Crop 5-20-20					
Guarantee	5.00	----	20.00	----	20.00
F- 499	5.04	----	18.79*	.76	19.41
F- 796	4.69	----	19.30*	.55	18.70*
Vertagreen 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 289	5.56*	----	12.88	.67	12.48
S- 293	5.91	----	11.74	.74	11.90
S- 458	6.02	----	11.89	.71	12.81
S- 564	5.70	----	12.76	.72	11.73
S- 565	5.97	----	11.71	.77	12.52
S-1327	5.89	----	12.33	.95	12.65
F- 68	5.96	----	11.77	1.01	12.75
F- 168	5.88	----	12.17	.91	12.42
Big Crop 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 43	7.40*	----	8.75	1.05	9.77
S- 299	7.67	----	9.23	.98	8.74
S- 570	7.93	----	7.99	.54	9.00
S- 573	8.35	----	9.16	.54	9.18
S- 820	6.78*	----	8.25	.28	12.91
S- 823	7.97	----	8.45	.63	8.09
S- 827	8.04	----	8.62	.53	9.26
S-1020	7.97	----	8.88	.42	7.88
F- 26	7.95	----	8.31	.82	8.57
F- 269	8.01	----	7.98	1.27	6.94*
F- 271	7.57*	----	8.23	1.02	9.26
F- 378	8.09	----	8.86	.92	9.52
F- 511	7.33*	----	7.85	1.05	8.61
F- 517	7.57*	----	8.29	.89	8.32
F- 711	7.78	----	8.27	.91	8.17
F- 717	6.65*	----	9.24	.59	9.23
F- 800	7.05*	----	11.85	.65	9.54
F- 870	7.54*	----	8.01	1.07	9.11
Big Crop 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 2	6.47*	----	22.20*	.55	8.40
S- 113	7.54*	----	22.35*	.60	9.46
S- 308	6.12*	----	25.75	.63	7.27*
S- 577	7.60	----	23.18*	.60	9.04
S- 579	7.70	----	23.93	.60	8.97
S- 831	7.44*	----	23.10*	.58	8.78
S-1035	6.21*	----	25.53	.72	7.95
S-1037	8.02	----	22.66*	.62	8.84
S-1145	7.68	----	20.66*	.61	8.03

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S-1286	8.06	----	23.32*	.61	9.30
F- 80	7.14*	----	24.44	.41	8.00
F- 186	7.46*	----	24.34	.51	8.49
F- 276	7.42*	----	24.33	.42	7.65
F- 282	7.34*	----	25.52	.43	7.33*
F- 388	7.93	----	22.41*	.61	9.34
F- 391	7.33*	----	24.81	.59	7.96
F- 525	7.63	----	24.06	.59	8.06
F- 810	6.98*	----	22.74*	.67	8.88
F- 817	6.59*	----	22.88*	.72	9.03
Pebble 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 48	7.84	----	24.32	.68	8.23
S- 304	7.74	----	23.75	.80	8.00
S- 311	7.65	----	24.09	.61	8.04
S- 471	7.60	----	23.81	.44	8.03
S- 725	7.56*	----	23.96	.49	7.99
S- 726	8.02	----	23.17*	.46	7.96
S- 727	7.96	----	23.65	.45	7.94
S- 728	8.08	----	23.03*	.46	7.88
S-1136	7.93	----	23.56	.52	7.42*
S-1369	8.25	----	23.29*	.76	7.23*
F- 180	7.88	----	24.06	.64	8.11
F- 184	8.01	----	23.95	.65	7.99
F- 392	8.04	----	23.32*	.86	8.03
F- 537	7.89	----	22.92*	.61	7.93
F- 807	8.10	----	23.30*	.88	7.93
F- 872	7.51*	----	23.80	.60	7.90
F- 875	7.44*	----	23.55	.36	8.53
F- 878	7.40*	----	23.12*	.38	7.92
F- 949	7.67	----	23.33*	.40	9.11
F- 998	7.55*	----	24.27	.48	7.49*
Vertagreen 10-6-4					
Guarantee	10.00	----	6.00	----	4.00
F- 30	9.22*	----	6.87	.61	5.36
F- 542	9.32*	----	6.45	.59	4.38
Big Crop 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 213	7.90*	----	11.53	.44	11.97
S- 942	9.16*	----	10.71	.24	10.26
S-1151	9.16*	----	10.40	.58	10.21
S-1157	10.11	----	9.96	.42	10.68
S-1290	9.79	----	9.97	.33	10.71
F- 293	9.04*	----	11.57	.52	10.04
F- 396	9.19*	----	11.27	.51	10.51
F- 547	9.07*	----	10.47	.46	10.71
F- 730	9.76	----	10.19	.39	10.24
F- 895	10.13	----	10.61	.47	10.74
F- 953	9.34*	----	10.08	.45	10.54
F- 819	8.58*	----	10.24	.69	10.84
Pebble 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 50	9.95	----	10.95	.43	10.78
S- 315	9.89	----	10.55	.63	10.35
S- 317	9.89	----	11.30	.58	10.28
S- 481	9.91	----	10.78	.40	9.89
S- 484	9.74	----	10.56	.44	10.24
S- 736	9.93	----	10.69	.39	10.10
S- 737	9.30*	----	11.27	.38	9.86
S- 738	9.48*	----	11.33	.20	9.76
S-1233	9.38*	----	10.59	.46	9.79
S-1415	10.00	----	10.17	.38	11.21
F- 196	9.47*	----	10.67	.31	10.77
F- 198	9.50	----	12.48	.34	11.18
F- 199	9.99	----	11.26	.27	10.46
F- 241	9.50	----	11.21	.54	10.94
F- 289	9.56	----	10.87	.46	10.95
F- 550	9.64	----	11.06	.35	10.58
F- 647	9.50	----	14.07	.35	8.40*
F- 889	9.41*	----	11.01	.36	10.51
F- 890	9.76	----	10.96	.37	10.33
F- 894	10.08	----	10.45	.50	10.57
F-1001	9.45*	----	10.56	.34	10.33
Pebble 10-20-0					
Guarantee	10.00	----	20.00	----	10.00
S- 491	9.50	----	21.82	.46	10.00
S- 698	10.22	----	20.81	.64	10.00
S- 700	9.63	----	19.88	.57	10.00
S- 701	9.74	----	21.25	.75	10.00
F- 422	9.47*	----	21.20	.55	10.00
F- 670	9.65	----	21.68	.75	10.00
F- 834	10.36	----	20.39	.66	10.00
F- 973	9.74	----	20.94	.56	10.00
F- 975	10.09	----	20.30	.40	10.00
Pebble 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 742	9.16*	----	20.22	.33	9.94
S- 743	9.48*	----	19.80	.45	10.13
S-1237	9.77	----	20.48	.22	9.88
F- 398	9.86	----	20.33	.32	10.48
F- 650	9.65	----	20.02	.73	10.20
F- 897	9.78	----	20.50	.65	9.40
Big Crop 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 116	11.46*	----	11.72	.16	12.74
S- 325	10.50*	----	13.70	.21	12.06
S- 409	10.95*	----	12.76	.09	12.29
S- 659	9.45*	----	13.45	.30	13.57
S- 951	11.75	----	12.28	.47	12.12
S-1339	10.47*	----	11.53	.28	11.19*
F- 95	10.71*	----	13.57	.25	13.05
F- 305	10.73*	----	13.87	.25	12.24
F- 410	10.61*	----	14.04	.24	12.83
F- 415	10.45*	----	13.28	.30	13.27
F- 743	10.79*	----	13.39	.26	12.99
F- 826	10.95*	----	13.39	.31	12.71
Pebble 15-15-0					
Guarantee	15.00	----	15.00	----	15.00
S- 705	13.94*	----	15.38	.22	15.00
S- 706	13.79*	----	15.88	.25	15.00
S- 708	14.64	----	15.01	.27	15.00
S- 711	13.83*	----	16.01	.23	15.00
S-1392	14.56	----	16.24	.56	15.00
F- 672	14.39*	----	15.27	.23	15.00
Sheep Manure					
Guarantee	1.50	----	1.00	----	2.00
S- 7	1.46	----	.98	.27	4.73
ASHCRAFT & WILKINSON CO., ATLANTA, GA.					
Duval Muriate of Potash					
Guarantee	----	----	----	----	60.00
S-1261	----	----	----	----	61.48
S-1298	----	----	----	----	61.62
F- 318	----	----	----	----	61.33
ASSOCIATED COOPERATIVES, INC., SHEFFIELD, ALA.					
Associated Cooperatives 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
F- 214	14.29	----	12.23	2.70	16.64
A-C-I-42					
Guarantee	14.00	----	14.00	----	14.00
F- 831	14.94	----	14.95	.65	15.27
F- 832	14.86	----	15.30	.78	14.62
F- 833	14.65	----	14.93	.32	15.95
ATLAS CHEMICAL CO., SAN FRANCISCO, CALIF.					
Atlas Fish Emulsion Fertilizer					
Guarantee	5.50	----	2.00	----	2.00
S-1431	5.45	----	1.27*	.04	1.70*
H. J. BAKER & BROTHER, NEW YORK, N. Y.					
Montansalpeter					
Guarantee	26.00	----	----	----	----
S- 512	25.95	----	----	----	----

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 973	25.85	----	----	----	----
S-1252	26.25	----	----	----	----
S-1253	26.10	----	----	----	----
S-1395	26.12	----	----	----	----
F- 580	26.16	----	----	----	----
BEST FERTILIZER CO., HOUSTON, TEXAS					
Best Sulphate of Ammonia					
Guarantee	21.00	----	----	----	----
S- 228	21.00	----	----	----	----
S- 511	21.00	----	----	----	----
S-1178	21.02	----	----	----	----
F-1058	20.79	----	----	----	----
BLYTHEVILLE FERTILIZER CORP., BLYTHEVILLE, ARK.					
B.F.C. 0-20-0					
Guarantee	----	----	20.00	----	----
S- 342	----	----	20.40	.70	----
B.F.C. 0-45-0					
Guarantee	----	----	45.00	----	----
F-1092	----	----	42.09*	.31	----
B.F.C. 0-10-20					
Guarantee	----	----	10.00	----	20.00
S- 346	----	----	10.65	.35	18.56*
B.F.C. 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 77	----	----	17.62*	.36	20.16
S- 78	----	----	17.72*	.43	21.10
S- 79	----	----	19.73	.30	22.22
S- 80	----	----	16.24*	.31	22.04
S- 81	----	----	19.86	.39	19.98
S- 350	----	----	19.76	.44	20.81
B.F.C. 0-23-26					
Guarantee	----	----	23.00	----	26.00
S- 352	----	----	25.22	.38	18.97*
B.F.C. 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 87	3.57	----	9.77	.48	18.58
S- 88	3.44	----	9.45	.48	19.04
S- 357	3.52	----	9.77	.51	18.44
S- 360	5.87	----	10.20	.48	17.97
B.F.C. 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 369	3.45	----	9.99	.41	26.86
S- 373	3.30	----	9.25	.28	27.50
S- 374	3.45	----	9.55	.43	27.14
S- 378	3.10	----	8.80	.30	27.78
B.F.C. 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 395	6.76*	----	22.42*	.48	8.72
B.F.C. 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S-1102	9.55	----	11.65	.37	11.44
B.F.C. 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 123	10.79*	----	11.48*	.35	12.96
S- 124	9.86*	----	10.21*	.33	11.72
S- 125	10.31*	----	11.48*	.52	13.19
S- 127	11.08*	----	11.59	.41	12.88
S- 128	9.45*	----	8.16*	.23	12.93
S- 405	10.82*	----	10.35*	.24	13.05
S- 410	10.50*	----	11.87	.33	13.15
F-1103	11.58	----	11.47*	.21	12.72
F-1107	11.96	----	10.81*	.31	12.21
B.F.C. 0-0-60					
Guarantee	----	----	----	----	60.00
S- 419	----	----	----	----	60.10

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
BRADLEY & BAKER, NEW YORK, N. Y.					
Nitrolime					
Guarantee	20.50	----	----	----	----
S- 332	20.02	----	----	----	----
S- 412	20.30	----	----	----	----
S- 661	20.41	----	----	----	----
S- 748	19.66*	----	----	----	----
S- 749	19.65*	----	----	----	----
S-1250	20.77	----	----	----	----
S-1394	20.48	----	----	----	----
CALIFORNIA SPRAY CHEMICAL CORP., RICHMOND, CALIF.					
Ortho-Gro 7-9-5					
Guarantee	7.00	----	9.00	----	5.00
S-1439	7.22	----	9.36	.97	5.82
CENTRAL FARMERS FERTILIZER CO., CHICAGO, ILL.					
T.V.A. Fused Tricalcium Phosphate					
Guarantee	----	28.00	16.00	----	----
F- 847	----	28.33	18.05	10.28	----
T.V.A. Concentrated Superphosphate 48%					
Guarantee	----	----	48.00	----	----
S- 793	----	----	47.83	2.47	----
S- 794	----	----	48.02	1.88	----
T.V.A. Calcium Metaphosphate 58%					
Guarantee	----	----	58.00	----	----
F- 239	----	----	58.26	4.64	----
T.V.A. Calcium Metaphosphate 60%					
Guarantee	----	60.00	----	----	----
F- 133	----	60.39	3.01	----	----
F- 466	----	59.96	3.04	----	----
F- 331	----	61.21	2.99	----	----
T.V.A. Calcium Metaphosphate 61%					
Guarantee	----	61.00	----	----	----
S- 618	----	61.02	2.78	----	----
S- 895	----	60.24*	3.86	----	----
S- 898	----	59.14*	4.26	----	----
S- 897	----	61.30	3.30	----	----
S-1187	----	59.55*	3.50	----	----
S-1350	----	61.26	2.24	----	----
F- 11	----	62.52	1.48	----	----
F- 49	----	61.62	2.08	----	----
F- 134	----	59.97*	4.03	----	----
F- 240	----	61.82	1.88	----	----
F- 330	----	58.52*	3.32	----	----
F- 757	----	62.73	1.32	----	----
F-1018	----	60.63	2.97	----	----
T.V.A. Calcium Metaphosphate 62%					
Guarantee	----	62.00	----	----	----
S- 540	----	61.58	2.55	----	----
T.V.A. Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
S- 64	33.41	----	----	----	----
S- 230	33.29	----	----	----	----
S- 975	33.60	----	----	----	----
S- 976	33.56	----	----	----	----
S-1182	33.32	----	----	----	----
S-1396	33.65	----	----	----	----
S-1397	33.45	----	----	----	----
S-1398	33.60	----	----	----	----
F- 228	33.55	----	----	----	----
F- 229	33.45	----	----	----	----
F- 231	33.45	----	----	----	----
F- 312	33.40	----	----	----	----
F- 314	33.57	----	----	----	----
F-1060	33.13	----	----	----	----

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
CENTRAL MISSOURI CHEMICAL & MINERALS, INC.					
Triple Superphosphate					
Guarantee	----	----	45.00	----	----
S- 343	----	----	44.79	1.11	----
C.M. Brand 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S-1315	4.03	----	10.38	.32	27.21
C.M. Brand 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S-1328	7.96	----	8.51	.49	8.03
C.M. Brand 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S-1333	10.66	----	10.95	.30	11.73
Ammonium Sulphate					
Guarantee	21.00	----	----	----	----
S- 413	21.02	----	----	----	----
Muriate of Potash					
Guarantee	----	----	----	----	60.00
S- 417	----	----	----	----	60.10
CHESMORE SEED CO., ST. JOSEPH, MO.					
"Sure Milke" 6-10-4					
Guarantee	6.00	----	10.00	----	4.00
F- 864	6.50	----	10.06	.54	4.94
CHILEAN NITRATE SALES CORP., NEW YORK, N. Y.					
Champion Brand Nitrate of Soda					
Guarantee	16.00	----	----	----	----
S- 130	15.92	----	----	----	----
COMMERCIAL SOLVENTS CORP., NEW YORK, N.Y.					
C.S.C. Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
S- 416	34.03	----	----	----	----
S- 666	33.47	----	----	----	----
S-1180	33.34	----	----	----	----
S-1181	33.42	----	----	----	----
S-1424	33.52	----	----	----	----
F- 428	33.32	----	----	----	----
F- 841	33.61	----	----	----	----
F- 844	33.61	----	----	----	----
CONSUMERS COOPERATIVE ASSOCIATION, KANSAS CITY, MO.					
Co-op. 0-20-0					
Guarantee	----	----	20.00	----	----
S- 690	----	----	18.28*	2.87	----
F- 591	----	----	21.01	.64	----
F-1014	----	----	20.15	1.25	----
Co-op 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 443	----	----	18.96*	1.57	18.80*
S- 885	----	----	22.62	.78	17.06*
S-1194	----	----	19.41*	1.12	20.52
Co-op 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 452	4.35	----	16.53	.61	5.24
Co-op 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 905	6.79	----	19.78*	1.45	11.77
Co-op 5-20-20					
Guarantee	5.00	----	20.00	----	20.00
S-1215	5.46	----	20.45	.55	20.08
F-1023	8.36	----	21.23	.77	11.36*
F-1024	7.40	----	21.62	.63	12.90*
Co-op 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 472	8.87	----	22.74*	.84	9.08
S- 473	8.34	----	23.10*	1.05	8.75
S- 731	10.15	----	21.30*	1.02	2.58*
S- 926	8.62	----	23.89	1.11	9.45
S-1227	10.00	----	24.30	.50	9.27
S-1229	8.31	----	25.15	.75	7.96
S-1368	7.77	----	22.54*	.69	9.34
F- 275	8.83	----	24.06	1.74	7.65
F- 535	8.68	----	22.39*	1.66	9.98
F- 629	8.47	----	22.10*	.90	9.67
F- 887	7.79	----	22.78*	2.05	7.82
F- 941	8.35	----	24.98	1.64	8.16
F- 943	8.63	----	24.52	1.33	8.74
F-1026	8.49	----	25.27	.98	8.93
F-1031	7.77	----	25.28	.97	10.06
F-1079	8.84	----	24.47	.93	9.55
F-1080	8.05	----	25.82	1.01	9.08
Co-op 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 485	9.71	----	11.03	1.20	10.24
S- 740	9.75	----	11.07	.93	9.84
S- 932	9.57	----	11.55	.65	9.69
S- 939	10.33	----	12.37	.86	9.33*
S-1236	9.72	----	9.40*	1.57	9.86
Co-op 10-20-0					
Guarantee	10.00	----	20.00	----	----
S- 931	10.78	----	25.21	2.07	----
S-1377	10.19	----	21.97	1.11	----
F-1082	10.14	----	20.37	1.88	----
F-1083	10.98	----	20.51	.92	----
Co-op 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 945	10.27	----	18.94*	.69	10.67
S-1378	9.33*	----	21.95	.93	9.24*
F- 959	10.48	----	22.03	.89	10.80
Co-op 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
F- 299	12.58	----	13.09	.54	12.87
F- 570	12.68	----	13.47	.48	12.08
F- 663	11.85	----	12.92	.31	13.05
F-1048	11.33*	----	14.17	.49	13.64
F-1084	11.38*	----	12.80	.55	13.66
F-1085	11.67	----	12.30	.80	13.63
Co-op 15-15-0					
Guarantee	15.00	----	15.00	----	----
S- 504	13.75*	----	17.94	.84	----
S- 505	13.08*	----	15.96	1.24	----
S- 709	13.71*	----	15.50	1.15	----
S- 712	13.10*	----	15.59	1.11	----
S-1391	15.07	----	16.42	.58	----
F- 103	13.88*	----	16.45	.95	----
F-1086	13.62*	----	16.55	.84	----
Co-op Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
F-1087	33.38	----	----	----	----
Co-op 0-0-60					
Guarantee	----	----	----	----	60.00
F-1064	----	----	----	----	60.37
F-1088	----	----	----	----	60.50
CRAWFORD CHEMICAL CO., BARTLESVILLE, OKLA.					
Sunset 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 23	4.99	----	16.07	1.33	15.75
S- 285	6.40	----	16.00	1.20	12.37*
S-1321	5.32	----	15.78	1.55	14.20*

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 615	8.99	----	12.90*	1.08	16.25
F- 616	7.83	----	14.98*	1.60	14.20*
Sunset 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
S- 30	6.48	----	14.68	1.44	7.21
S- 288	6.65	----	10.79	1.81	5.86
S-1326	6.69	----	10.38	1.95	6.82
F- 496	6.92	----	10.44	1.59	7.71
F- 495	4.86	----	10.53	1.72	7.52
F- 620	6.69	----	10.43	1.35	7.29
Sunset 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 47	9.10	----	21.73*	1.47	6.61*
S-1332	8.41	----	24.10	1.35	8.62
F- 523	9.80	----	22.39*	1.88	9.19
F- 632	10.04	----	21.96*	1.46	9.06
F- 634	8.57	----	21.75*	1.65	8.61
F- 642	8.75	----	22.05*	1.92	8.57
Sunset 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 946	9.71	----	20.76	1.34	8.54*
S-1337	9.47*	----	20.31	1.34	10.48
F- 553	9.49*	----	20.59	1.16	10.85
F- 649	11.20	----	17.86*	.99	10.23
F- 654	10.01	----	20.94	1.06	10.87
Sunset 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 56	10.63*	----	13.38	1.12	9.54*
S- 323	10.57*	----	14.08	.71	12.66
S-1342	11.89	----	12.27	.76	12.68
S-1343	12.20	----	16.45	.91	8.72*
S-1347	12.48	----	12.41	.74	9.82*
S-1348	10.63*	----	13.02	1.53	9.87*
F- 557	11.11*	----	13.57	.96	14.85
F- 561	11.52	----	13.45	.83	12.83
F- 666	11.93	----	14.59	1.06	12.49
F- 668	11.18*	----	14.70	.74	13.64
DARLING & CO., EAST ST. LOUIS, & CAIRO, ILL.					
Darling's 0-45-0					
Guarantee	----	----	45.00	----	----
F- 48	----	----	45.48	2.62	----
Darling's 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 889	----	----	20.88	.67	20.13
S-1191	----	----	18.27*	.78	21.50
S-1192	----	----	16.60*	1.03	19.21*
F- 8	----	----	19.18*	.50	20.08
F- 42	----	----	19.89	.91	20.26
F- 45	----	----	20.13	.77	21.24
F- 46	----	----	20.79	.81	21.51
F- 336	----	----	19.99	.79	21.45
F- 459	----	----	20.02	.88	21.25
F- 760	----	----	17.92*	.86	21.13
F- 852	----	----	18.70*	.98	21.65
Interstate 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 348	----	----	19.82	.73	19.44
Interstate 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 83	2.87	----	8.78	.40	18.44
Darlings 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 89	2.93	----	9.09	.49	27.62
S- 622	3.22	----	8.95	.45	27.78
S-1197	3.01	----	9.38	.35	27.25

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 600	3.07	----	8.90	.98	27.00
Interstate 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 367	2.80	----	8.80	.38	28.59
Darling's 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 14	2.90	----	11.72	1.02	12.14
S- 169	3.46	----	14.74	.84	8.72*
S- 171	2.94	----	11.78	1.07	12.08
S- 174	3.29	----	12.48	.52	12.11
S- 800	3.07	----	12.72	.78	12.02
S- 991	2.87	----	12.79	.99	10.99*
F- 53	3.43	----	12.84	.64	11.77
F- 147	3.26	----	12.97	.67	12.14
F- 765	3.15	----	13.12	.48	13.03
Interstate 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 98	2.78	----	13.38	.80	10.64*
Darling's 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 181	4.11	----	11.83	.57	4.66
S-1202	5.38	----	12.09	.44	6.95
F- 19	4.38	----	12.26	.82	5.04
F- 61	4.15	----	12.65	.55	5.49
F- 160	5.55	----	12.83	.57	6.54
F- 345	4.16	----	12.89	.79	5.90
F- 349	4.32	----	13.32	.83	5.80
F- 352	3.97	----	13.26	.78	4.77
F- 780	4.30	----	12.41	.79	5.62
F- 857	4.27	----	12.89	.51	6.30
F- 922	4.77	----	12.95	.53	5.73
F- 925	4.43	----	12.81	.68	4.81
Darling's 4-16-8					
Guarantee	4.00	----	16.00	----	8.00
F- 20	4.00	----	15.51	1.12	10.37
Darling's 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 22	3.85	----	15.84	1.01	15.80
S- 186	4.38	----	17.31	1.19	14.11*
S-1276	4.97	----	15.01*	.97	15.79
F- 355	4.30	----	15.25*	.88	16.55
F- 491	3.96	----	15.77	.91	16.38
Darling's 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 815	4.74	----	21.29*	.69	12.44
S- 903	4.74	----	22.03*	.55	12.72
S- 906	4.80	----	22.03*	1.12	12.99
S-1110	4.06	----	18.94*	.99	9.62*
S-1209	4.21	----	22.69*	1.09	12.25
F- 360	4.35	----	22.70*	.60	13.15
F- 618	4.58	----	22.91*	.84	14.05
F- 931	4.99	----	24.56	.69	12.59
F- 933	5.12	----	24.03	.75	13.51
Darling's 5-20-20					
Guarantee	5.00	----	20.00	----	20.00
S- 32	4.97	----	18.78*	.94	19.92
S- 909	4.84	----	19.85	.25	21.00
S-1113	5.84	----	17.63*	.75	19.35*
S-1211	5.07	----	18.51*	.54	20.08
F- 369	5.08	----	19.71	.69	21.02
F- 706	5.01	----	16.28*	.60	18.82*
F- 863	5.33	----	19.63	.75	19.46
F- 935	4.98	----	19.11*	1.04	20.08
Darling's 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 38	5.88	----	11.95	1.05	11.73
S- 196	5.46*	----	12.28	1.07	12.31
S- 566	5.96	----	14.15	.93	11.78

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 639	6.05	----	11.96	.64	12.28
S- 640	5.91	----	11.28*	.48	14.46
Darling's 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 199	7.46*	----	8.88	.37	8.38
S- 202	7.52*	----	8.86	.39	8.42
S- 569	7.97	----	8.41	.27	8.14
S-1119	7.81	----	8.27	.38	8.28
S-1125	7.67	----	8.65	.30	8.59
S-1130	8.05	----	8.55	.75	8.58
F- 27	7.39*	----	9.48	.60	9.48
F- 176	8.34	----	8.88	.40	8.03
F- 376	8.42	----	8.80	.40	8.74
F- 518	7.69	----	8.61	.27	8.88
F- 937	7.92	----	10.23	.30	8.49
Interstate 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 106	7.80	----	8.41	.29	8.03
Darling's 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 46	7.69	----	22.24*	1.11	9.45
S- 470	7.13*	----	22.05*	1.18	8.07
S- 585	7.81	----	23.68	.90	8.03
S- 835	7.89	----	23.47*	.83	8.65
S- 917	7.76	----	22.12*	.70	8.82
S- 923	8.09	----	23.78	.62	9.42
S- 928	7.74	----	21.79*	.94	8.88
S-1138	7.61	----	23.26*	1.27	8.60
S-1140	6.00*	----	18.46*	.72	10.33
S-1223	8.01	----	23.90	.75	7.88
S-1331	7.10*	----	17.39*	.64	12.23
F- 29	7.93	----	22.26*	.72	9.53
F- 76	7.90	----	23.76	.79	7.98
F- 82	7.97	----	23.40*	.83	8.53
F- 83	7.58*	----	22.55*	.72	9.15
F- 185	8.26	----	22.65*	.70	9.24
F- 379	8.27	----	22.15*	.93	9.49
F- 637	7.70	----	22.43*	.74	8.89
F- 721	8.81	----	19.85*	.77	8.68
F- 725	8.92	----	21.77*	.76	9.58
F- 809	9.14	----	24.96	.59	9.47
F- 879	8.35	----	24.13	.87	8.28
F- 881	8.48	----	21.16*	.96	8.58
F- 882	8.25	----	25.04	.81	8.65
F- 884	8.33	----	23.65	1.00	8.43
F-1030	8.44	----	19.93*	.42	9.87
F-1036	7.98	----	23.75	.45	8.68
Darling's 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 49	8.66*	----	10.27	.66	9.53
S- 397	9.51	----	9.99	.44	10.84
S- 653	9.85	----	10.17	.33	10.13
S- 839	9.52	----	10.74	.34	10.39
S-1046	9.22*	----	10.93	.65	10.18
S-1155	10.17	----	9.84	.36	10.11
S-1232	10.02	----	11.05	.18	10.22
F- 31	9.53	----	9.99	.84	11.16
F- 85	9.93	----	11.08	.40	11.13
F- 729	9.64	----	11.45	.38	10.54
Darling's 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 117	11.09*	----	11.60	.35	12.11
S- 216	11.17*	----	12.21	.42	11.42
S- 217	9.88*	----	11.67	.39	12.07
S- 219	10.73*	----	11.93	.32	12.21
S- 401	11.05*	----	12.20	.33	12.25
S- 404	11.08*	----	11.57	.36	11.92
S- 497	10.19*	----	12.52	.46	11.50
S- 848	11.00*	----	11.89	.34	12.11
S- 851	9.20*	----	13.17	.48	11.52
S- 952	10.85*	----	11.72	.28	12.00
S- 957	11.79	----	12.38	.30	12.26
S- 959	10.95*	----	11.71	.34	12.40
S-1055 10.80* ---- 11.50 .29 12.68					
S-1057 11.41* ---- 11.95 .15 12.42					
S-1165 11.65 ---- 11.81 .29 12.25					
S-1168 4.26* ---- 14.78 .96 15.37					
S-1341 10.57* ---- 12.91 .29 12.61					
S-1386 9.75* ---- 12.89 .29 13.36					
S-1417 10.51* ---- 12.15 .38 12.62					
S-1418 11.47* ---- 11.82 .33 12.72					
F- 90 10.75* ---- 11.47* .28 12.26					
F- 94 11.80 ---- 11.89 .24 13.42					
F- 97 11.36* ---- 11.91 .24 13.14					
F- 99 10.64* ---- 13.41 .39 12.33					
F- 208 10.76* ---- 13.03 .30 12.13					
F- 213 11.85 ---- 12.34 .19 13.27					
F- 216 11.20* ---- 12.94 .34 12.77					
F- 220 10.44* ---- 13.08 .40 12.05					
F- 298 10.82* ---- 13.17 .31 12.11					
F- 575 11.38* ---- 12.65 .28 12.14					
F- 576 10.06* ---- 12.04 .29 12.05					
F- 744 11.33* ---- 12.71 .24 12.07					
F- 745 11.68 ---- 11.50 .24 13.21					
F- 825 11.88 ---- 11.80 .23 13.37					
F- 903 11.33* ---- 12.56 .37 11.79					
F- 904 11.49* ---- 11.91 .24 12.53					
F- 965 10.67* ---- 11.97 .23 12.39					
F-1005 8.69* ---- 11.59 .25 11.74					
Darling's Granulated 13-13-13					
Guarantee 13.00 ---- 13.00 ---- 13.00					
F- 418 13.51 ---- 14.56 .17 13.43					
F- 578 12.97 ---- 14.23 .27 13.46					
F- 747 13.38 ---- 14.58 .20 13.35					
F-1052 12.64 ---- 14.34 .29 13.41					
F-1053 13.12 ---- 14.06 .14 14.10					
DAVISON CHEMICAL CORP., PERRY, IOWA & NASHVILLE, TENN.					
Davco 20% Superphosphate					
Guarantee ---- ---- 20.00 ---- ----					
S- 249 ---- ---- 20.19 1.31 ----					
S- 788 ---- ---- 21.37 .73 ----					
Davco Granulated 0-45-0					
Guarantee ---- ---- 45.00 ---- ----					
F- 327 ---- ---- 44.32 2.22 ----					
F- 755 ---- ---- 46.21 1.99 ----					
F- 917 ---- ---- 44.66 2.24 ----					
F-1016 ---- ---- 44.97 2.43 ----					
F-1017 ---- ---- 46.10 2.30 ----					
Davco 0-20-20					
Guarantee ---- ---- 20.00 ---- 20.00					
S- 886 ---- ---- 18.60* .63 19.33*					
S-1190 ---- ---- 19.42* 1.66 21.05					
S-1404 ---- ---- 19.19* 1.53 21.32					
Davco Gran-Ul-Mix 0-25-25					
Guarantee ---- ---- 25.00 ---- 25.00					
F- 338 ---- ---- 24.16* 1.30 25.96					
F- 599 ---- ---- 25.06 1.34 23.83*					
Davco 2-12-6					
Guarantee 2.00 ---- 12.00 ---- 6.00					
S- 9 2.39 ---- 11.60 1.23 6.48					
Davco 3-12-12					
Guarantee 3.00 ---- 12.00 ---- 12.00					
S- 259 3.23 ---- 11.63 .70 10.90*					
F- 343 3.50 ---- 12.44 1.19 13.05					
F- 474 3.27 ---- 12.49 1.19 13.34					
Davco 4-12-4					
Guarantee 4.00 ---- 12.00 ---- 4.00					
S- 272 4.01 ---- 11.88 .72 4.44					
Davco 4-12-8					
Guarantee 4.00 ---- 12.00 ---- 8.00					
S- 901 5.17 ---- 13.65 .70 8.64					

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
Davco 5-20-20					
Guarantee	5.00	----	20.00	----	20.00
S-1213	4.92	----	19.70	.50	18.82*
F- 266	4.80	----	20.59	.76	20.08
F- 367	5.14	----	21.09	.81	19.34*
F- 368	5.14	----	20.03	.52	20.71
F- 501	5.11	----	19.22*	.86	18.98*
Davco 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 36	5.90	----	11.85	.73	11.46
Davco 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 295	6.33*	----	10.07	.32	8.22
Davco 8-16-8					
Guarantee	8.00	----	16.00	----	8.00
S- 828	7.99	----	15.94	.51	8.55
Davco 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 303	8.22	----	23.74	.96	8.18
S- 476	6.51*	----	20.77*	.53	7.86
S- 729	8.25	----	20.52*	.76	9.83
S- 832	6.12*	----	18.88*	.62	8.95
S- 916	7.77	----	25.04	.71	8.03
S- 918	7.40*	----	25.52	.68	7.86
S- 921	7.69	----	25.04	.66	8.17
S-1225	7.84	----	23.90	.80	7.05*
S-1411	8.43	----	21.02*	.96	8.89
S-1412	7.79	----	23.94	1.21	8.97
F- 274	8.54	----	21.66*	1.26	8.91
F- 279	7.50*	----	23.80	.80	8.47
F- 380	7.79	----	23.38*	.85	8.51
F- 532	7.74	----	22.97*	.98	8.76
F- 540	8.04	----	22.34*	.89	8.94
F- 636	8.04	----	23.71	.89	8.19
F- 812	8.23	----	23.67	1.43	7.96
F- 873	8.25	----	23.28*	.80	8.15
F- 886	8.19	----	22.65*	.85	8.91
F- 888	8.02	----	23.32*	1.21	9.21
F-1027	8.08	----	23.31*	1.57	8.83
F-1028	8.57	----	21.45*	.85	9.18
F-1032	7.69	----	23.49*	.91	8.65
F-1034	8.18	----	23.31*	1.54	8.88
F-1037	8.47	----	21.05*	1.38	9.36
Davco 8-32-0					
Guarantee	8.00	----	32.00	----	----
F-1039	6.38*	----	32.60	2.30	----
Davco 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 314	9.52	----	9.82	.36	10.17
S- 318	8.83*	----	10.76	.22	10.06
S- 486	9.74	----	10.37	.23	10.90
S- 933	9.73	----	9.87	.13	11.38
S- 937	9.75	----	10.09	.19	10.89
S- 940	9.91	----	11.23	.35	10.14
S-1376	9.96	----	10.63	.35	11.66
S-1413	9.02*	----	12.92	.51	10.62
S-1414	9.55	----	11.09	.31	11.08
F- 393	9.69	----	11.06	.24	11.14
F- 395	9.65	----	11.17	.26	10.72
F- 551	9.46*	----	11.33	.20	10.92
F-1040	9.22*	----	12.84	.25	10.14
F-1042	9.51	----	10.47	.18	11.23
Davco 10-20-0					
Guarantee	10.00	----	20.00	----	----
S-1246	9.53	----	20.16	.99	----
F- 835	9.98	----	19.59	1.03	----
F- 908	9.73	----	20.53	.57	----
F-1043	10.29	----	19.64	.91	----
Davco 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
F-1046	9.56	----	20.21	.44	10.93
Davco 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
F- 407	12.34	----	12.11	.39	12.31
F- 567	12.36	----	11.52	.31	12.71
F- 573	12.12	----	12.38	.37	11.65
F- 662	10.72*	----	20.75	.60	6.99*
F- 664	12.14	----	12.72	.46	12.24
F- 900	12.44	----	12.40	.28	11.54
F- 967	11.69	----	15.01	.57	10.20*
F-1049	12.24	----	11.92	.21	12.05
Davco 14-14-0					
Guarantee	14.00	----	14.00	----	----
S- 502	14.54	----	13.77	.76	----
S- 703	13.69	----	15.76	.69	----
S- 965	14.04	----	11.89*	.31	----
S- 966	13.90	----	12.47*	.33	----
Davco 0-0-60					
Guarantee	----	----	----	----	60.00
S-1065	----	----	----	----	61.35
DEWITT CHEMICAL CO., KINGSTON, PENN.					
Dewitt's Chem-Grow					
Guarantee	10.00	----	52.00	----	17.00
S-1447	9.48*	----	49.52*	.03	16.45
E. I. DU PONT DE NEMOURS CO., WILMINGTON, DEL.					
Du Pont Soluble Plant Food					
Guarantee	19.00	----	22.00	----	16.00
S-1452	19.67	----	22.83	.02	17.28
Nu Green					
Guarantee	45.00	----	----	----	----
S- 539	45.50	----	----	----	----
F- 983	46.29	----	----	----	----
FARM BELT FERTILIZER & CHEMICAL CO., KANSAS CITY, MO.					
Farm Belt 0-20-0					
Guarantee	----	----	20.00	----	----
S- 691	----	----	19.42*	.81	----
Farm Belt 0-46-0					
Guarantee	----	----	46.00	----	----
S- 695	----	----	43.76*	.87	----
F- 465	----	----	42.57*	.36	----
Farm Belt 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 694	----	----	19.91	.74	21.49
Farm Belt 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S-1081	3.16	----	11.34*	2.30	11.58
S-1312	3.55	----	12.46	.59	12.81
Farm Belt 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 450	4.99	----	13.99	1.37	4.43
S- 451	4.93	----	11.94	1.56	5.68
S- 719	4.46	----	11.91	1.42	4.77
S-1097	5.45	----	12.93	1.15	5.55
S-1201	4.36	----	13.31	1.24	5.49
S-1318	4.49	----	12.18	1.02	4.87
S-1428	5.08	----	13.15	1.05	5.90
F- 924	3.90	----	12.46	1.04	6.82
F- 993	4.01	----	12.59	1.11	5.14
Farm Belt 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S-1361	5.73	----	21.10*	.93	12.71
Minor L 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 461	8.21	----	9.17	.86	8.03

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %	MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %			
		Total %	Available %	Insoluble %				Total %	Available %	Insoluble %				
Farm Belt 8-24-8						F- 463								
Guarantee	8.00	----	24.00	----	8.00	F- 679	----	46.96	.64	----				
S- 464	7.51*	----	26.15	1.15	8.25	Green Diamond 0-47-0	----	46.77	.48	----				
S- 466	6.67*	----	17.94*	1.29	6.43*	Guarantee	----	47.00	----	----				
S- 469	8.06	----	25.48	1.27	7.83	S- 162	----	46.32	.88	----				
S- 475	8.41	----	22.74*	1.59	8.47	S- 344	----	46.01*	2.07	----				
S- 477	8.78	----	24.38	.87	7.58	S- 345	----	44.65*	.90	----				
S- 724	8.50	----	23.18*	1.40	8.10	Green Diamond 0-62-0	----	62.00	----	----				
S- 730	8.05	----	26.73	1.15	7.58	Guarantee	----	59.40*	3.30	----				
S- 732	8.50	----	23.23*	1.57	7.98	S- 163	----	61.80	3.00	----				
S-1134	8.94	----	23.34*	1.04	9.01	F- 849	----	10.00	----	30.00				
S-1218	8.59	----	21.84*	.79	9.70	Guarantee	----	10.16	.32	32.10				
S-1226	8.91	----	21.56*	.72	9.34	S- 68	----	10.54	.36	30.86				
S-1228	8.78	----	24.82	.78	8.28	S-1188	----	9.85	.15	33.12				
S-1410	8.24	----	23.77	1.48	8.01	S-1266	----	10.44	.19	30.71				
S-1441	8.55	----	24.00	.90	8.93	F- 124	----	10.69	.26	30.20				
F- 273	6.42*	----	21.46*	1.76	10.11	Green Diamond 0-20-20	----	20.00	----	20.00				
F- 520	6.62*	----	22.69*	1.46	10.31	Guarantee	----	18.83*	.65	20.51				
F- 533	7.36*	----	24.08	1.37	8.89	S- 5	----	20.20	.60	21.22				
F- 631	7.00*	----	24.28	1.27	9.34	S- 159	----	19.99	.61	20.60				
F- 876	8.34	----	19.45*	1.45	10.42	S- 349	----	19.65	.58	23.75				
F- 948	7.43*	----	21.57*	1.33	9.75	S- 888	----	18.51*	.79	25.59				
F- 997	7.58*	----	23.19*	1.14	9.24	F- 5	----	17.99*	.86	25.82				
F- 996	7.02*	----	22.06*	1.27	10.68	F- 6	----	20.31	.34	20.51				
F-1035	6.80*	----	19.10*	1.15	9.74	Green Diamond 0-30-30	----	30.00	----	30.00				
F-1038	7.73	----	22.53*	1.15	9.45	Guarantee	----	22.35*	1.20	36.62				
Farm Belt 10-10-10						S- 892								
Guarantee	10.00	----	10.00	----	10.00	S- 892	----	29.43	1.25	31.64				
S- 480	10.32	----	11.70	.87	8.18*	S-1195	----	29.61	1.09	28.95*				
S- 483	9.89	----	9.78	.66	10.10	S-1267	----	27.70*	1.15	28.60*				
S- 487	10.17	----	10.51	.97	10.36	F- 10	----	29.55	1.30	30.30				
S- 488	10.13	----	10.75	.85	10.00	F- 460	----	28.62*	1.18	29.14				
S- 735	10.27	----	11.70	.73	9.11*	F- 461	----	30.95	1.15	29.22				
S- 739	10.36	----	11.81	.97	10.58	F- 682	----	30.81	1.24	30.20				
S- 741	10.70	----	10.58	.72	10.67	Green Diamond 3-9-27	3.00	9.00	----	27.00				
S-1149	10.76	----	10.08	1.73	10.04	Guarantee	3.12	9.65	.13	27.58				
S-1231	10.46	----	10.13	.60	11.04	S- 10	2.72*	9.61	.24	30.05				
S-1235	10.10	----	10.78	.62	10.80	S- 372	3.55	9.13	.22	29.07				
F- 287	9.70	----	10.47	1.08	10.46	S-1078	2.94	9.68	.20	27.46				
F- 288	10.50	----	10.35	1.00	10.14	F- 139	2.91	9.97	.13	28.47				
F- 290	10.19	----	10.17	.78	10.81	Green Diamond 3-12-12	3.00	12.00	----	12.00				
F- 543	10.19	----	10.92	.96	10.37	Guarantee	2.83	12.68	.62	13.70				
F- 549	10.37	----	10.66	.87	10.68	S- 176	3.42	12.00	.30	13.05				
F- 644	9.04*	----	11.20	1.45	11.37	S-1091	2.98	11.41*	.49	12.93				
F- 645	10.74	----	10.85	.75	10.13	S-1268	3.43	12.94	.36	13.13				
F- 733	10.01	----	12.11	1.12	10.54	S-1357	3.28	11.76	.97	13.85				
F- 891	9.82	----	11.71	1.13	11.46	F- 15	3.19	11.43*	.39	13.53				
F- 956	10.23	----	10.02	1.28	11.52	Green Diamond 4-24-12	4.00	24.00	----	12.00				
F- 958	9.57	----	11.98	1.29	11.15	Guarantee	4.40	22.44*	1.59	13.71				
F- 999	7.50*	----	11.35	1.50	12.90	S- 25	4.10	24.09	1.81	13.27				
Farm Belt 10-10-10 with Aldrin						S- 386								
Guarantee	10.00	----	10.00	----	10.00	S- 386	4.20	24.05	1.40	13.65				
S-1374	10.17	----	10.32	.61	10.96	S- 388	3.96	23.65	1.40	14.19				
Minor L 10-10-10						S- 904								
Guarantee	10.00	----	10.00	----	10.00	S- 904	4.39	24.70	1.10	13.83				
S-1150	10.77	----	10.37	.83	9.97	S- 907	4.28	24.67	1.23	13.84				
S-1234	9.56	----	10.74	.89	10.57	S-1112	4.38	24.62	1.48	13.60				
F- 892	8.75*	----	11.94	1.04	10.30	S-1208	4.00	23.74	1.76	13.54				
Farm Belt 10-20-0						S-1277								
Guarantee	10.00	----	20.00	----	----	S-1277	4.70	23.48*	1.32	13.66				
S- 699	10.38	----	18.26*	1.39	----	S-1364	4.44	23.76	1.24	14.70				
S- 702	11.13	----	18.39*	1.94	----	F- 161	4.55	23.49*	.99	14.03				
Farm Belt 15-15-0						F- 494								
Guarantee	15.00	----	15.00	----	----	F- 494	4.31	24.08	.82	13.59				
S- 704	15.43	----	15.02	.66	----	F- 928	5.17	21.82*	1.00	14.36				
S- 707	14.44*	----	16.39	.79	----	Green Diamond 5-20-20	5.00	20.00	----	20.00				
S- 713	15.84	----	13.65*	.70	----	Guarantee	4.99	21.25	1.00	21.38				
FARM BUREAU SERVICE COMPANY OF MISSOURI, JEFFERSON CITY, MO.						S- 194								
Green Diamond 0-45-0						Guarantee					5.00	20.00	----	20.00
Guarantee					----	45.00	----	----	----	----	21.25	1.00	21.38	
F- 132					----	47.88	.82	----	----	----	19.58	1.12	21.85	

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %					
		Total %	Available %	Insoluble %						
S- 910	4.89	----	20.57	.78	22.84					
F- 22	5.03	----	21.22	.78	19.32*					
F- 23	4.34*	----	18.73*	.52	25.31					
F- 164	4.84	----	19.76	1.49	21.44					
F- 166	4.81	----	20.01	1.34	21.24					
Green Diamond 8-24-8										
Guarantee	8.00	----	24.00	----	8.00					
S- 45	8.14	----	22.92*	1.71	9.86					
S- 207	8.07	----	23.96	2.64	8.80					
S- 927	8.07	----	23.86	1.49	9.14					
S- 929	7.79	----	22.78*	2.05	9.60					
S-1028	8.12	----	21.77*	1.56	9.37					
S-1147	7.32*	----	24.85	1.60	8.11					
S-1217	7.99	----	23.81	1.34	9.59					
S-1222	7.61	----	25.22	1.68	8.56					
S-1285	7.81	----	23.53	1.95	9.24					
S-1372	7.91	----	22.78*	1.60	9.67					
F- 78	8.02	----	23.78	1.52	9.58					
F- 191	7.91	----	22.13*	1.83	9.72					
F- 527	8.53	----	23.37*	1.83	9.63					
F- 942	7.99	----	23.28*	2.00	8.84					
Green Diamond 12-12-12										
Guarantee	12.00	----	12.00	----	12.00					
S- 220	10.91*	----	12.66	.50	13.91					
S- 958	11.06*	----	12.62	.31	13.31					
S-1053	11.24*	----	12.82	.33	12.55					
S-1172	11.53	----	11.74	.36	12.95					
S-1239	11.28*	----	12.29	.24	13.13					
S-1242	11.81	----	12.93	.30	12.19					
S-1384	11.52	----	12.49	.41	13.12					
F- 32	11.68	----	13.05	.25	13.37					
F- 92	11.37*	----	12.58	.50	13.84					
F- 212	11.39*	----	13.80	.50	13.05					
F- 222	11.78	----	12.92	.41	13.35					
F- 568	11.70	----	11.15*	.45	13.92					
F- 742	11.71	----	12.66	.32	13.65					
F- 966	11.15*	----	13.86	.42	13.05					
Green Diamond 12-12-12 with Aldrin										
Guarantee	12.00	----	12.00	----	12.00					
S-1291	11.03*	----	12.76	.37	12.85					
Green Diamond 0-0-60										
Guarantee	----	----	----	----	60.00					
S- 421	----	----	----	----	61.34					
F- 36	----	----	----	----	61.11					
F- 751	----	----	----	----	61.50					
FARM FERTILIZERS, INC., OMAHA, NEBR.										
Bumpero 10-20-0										
Guarantee	10.00	----	20.00	----	----					
S-1379	9.75	----	22.89	1.36	----					
FERTILENE CORPORATION OF AMERICA, WORTHINGTON, OHIO										
Fertylene 10-15-5										
Guarantee	10.00	----	15.00	----	5.00					
F-1003	10.92	----	15.06	.02	5.09					
Fertylene 32% Nitrogen										
Guarantee	32.00	----	----	----	----					
S- 664	29.99*	----	----	----	----					
FORT SMITH COTTON OIL CO., INC., FORT SMITH, ARK.										
Rais-Mor 0-20-0										
Guarantee	----	----	20.00	----	----					
F- 593	----	----	20.97	.63	----					
Rais-Mor 0-20-20										
Guarantee	----	----	20.00	----	20.00					
S-1310	----	----	19.62	.56	16.19*					
F- 597	----	----	20.84	.31	20.20					
Rais-Mor 3-12-12										
Guarantee	3.00	----	12.00	----	12.00					
S-1313	3.28	----	12.32	.58	13.60					
F- 602						3.28	----	11.88	.35	13.28
F- 607						3.46	----	12.02	.46	12.57
Rais-Mor 4-12-4										
Guarantee	4.00	----	12.00	----	4.00					
S- 16	4.16	----	11.49*	.74	4.59					
S-1319	4.07	----	11.95	.88	4.69					
S-1320	4.08	----	12.38	.67	4.64					
F- 613	4.37	----	12.21	.72	5.67					
Rais-Mor 5-10-5										
Guarantee	5.00	----	10.00	----	5.00					
S- 28	4.97	----	10.42	.58	4.86					
S-1323	5.50	----	10.05	.43	5.89					
S-1324	5.13	----	10.21	.44	5.81					
S-1325	5.23	----	10.10	.53	5.63					
F- 621	5.39	----	9.72	.41	5.92					
Rais-Mor 6-12-12										
Guarantee	6.00	----	12.00	----	12.00					
F- 625	6.23	----	12.52	.48	13.05					
Rais-Mor 8-24-8										
Guarantee	8.00	----	24.00	----	8.00					
F- 633	7.62	----	22.43*	.89	9.38					
F- 641	6.50*	----	20.47*	.86	9.57					
Rais-Mor 10-20-10										
Guarantee	10.00	----	20.00	----	10.00					
S-1335	9.34*	----	19.95	.80	11.75					
S-1336	7.75*	----	17.43*	.80	8.32*					
F- 653	10.00	----	19.92	1.18	11.32					
Rais-Mor 12-12-12										
Guarantee	12.00	----	12.00	----	12.00					
S-1344	11.86	----	11.55	.19	13.90					
S-1345	10.37*	----	13.25	.23	10.60*					
S-1346	10.98*	----	12.07	.33	13.48					
F- 658	12.06	----	13.23	.20	13.38					
F- 660	11.85	----	13.57	.24	12.39					
F- 667	12.08	----	12.21	.37	13.12					
GARDEN RESEARCH LABORATORIES, NEW YORK, N. Y.										
R X - 15										
Guarantee	15.00	----	30.00	----	15.00					
S-1451	14.88	----	32.15	.05	14.90					
GAYLORD CHEMICAL CO., KANSAS CITY, MO.										
Sup-Ro										
Guarantee	6.00	----	6.00	----	6.00					
S- 33	3.21*	----	6.09	1.61	7.81					
S-1433	6.21	----	6.59	1.16	4.17*					
GOULARD & OLENA, INC., SKILLMAN, N. J.										
G & O Rose Food										
Guarantee	7.00	----	8.00	----	5.00					
S-1438	7.52	----	8.47	.38	5.36					
D. B. GRAY FARMERS ELEVATOR, HULL, ILL.										
Triple Superphosphate										
Guarantee	----	----	45.00	----	----					
S- 893	----	----	47.20	.90	----					
11.6-11.6-11.6										
Guarantee	11.60	----	11.60	----	11.60					
S- 948	11.90	----	11.74	.44	11.38					
11.6-11.7-11.7										
Guarantee	11.60	----	11.70	----	11.70					
S-1052	11.96	----	10.22*	.15	12.62					
13.5-8.8-9.0										
Guarantee	13.50	----	8.80	----	9.00					
S-1058	13.79	----	8.00*	.24	10.07					
Muriate of Potash										
Guarantee	----	----	----	----	60.00					
S- 977	----	----	----	----	60.75					

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
HYDROPONIC CHEMICAL CO., INC., COPLEY, OHIO					
Hyponex					
Guarantee	7.00	----	6.00	----	19.00
S-1437	7.36	----	6.78	.22	20.62
INTERNATIONAL MINERALS & CHEMICAL CORP., CARLSBAD, N. M.					
Sul-Po-Mag					
Guarantee	----	----	----	----	21.00
S- 134	----	----	----	----	21.38
S- 231	----	----	----	----	22.14
S- 757	----	----	----	----	21.66
50% Muriate of Potash					
Guarantee	----	----	----	----	50.00
S- 135	----	----	----	----	50.12
S- 232	----	----	----	----	52.01
58% Granular Muriate of Potash					
Guarantee	----	----	----	----	58.00
F- 232	----	----	----	----	58.41
60% Muriate of Potash					
Guarantee	----	----	----	----	60.00
S- 235	----	----	----	----	60.12
F- 233	----	----	----	----	60.07
JESPERSON, INC., OMAHA, NEBR.					
Calsintone					
Guarantee	----	----	22.00	----	----
S- 891	----	----	20.26*	5.07	----
LANGE BROTHERS, INC., ST. LOUIS, MO.					
L. B. 20% Superphosphate					
Guarantee	----	----	20.00	----	----
S- 981	----	----	20.44	.76	----
S- 982	----	----	21.27	.58	----
L. B. 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 619	----	----	19.49*	.96	19.63
L. B. 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 987	3.11	----	10.05	.60	16.95*
L. B. 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 626	3.18	----	11.81	1.12	12.86
S- 627	3.26	----	12.28	.80	12.57
S- 715	3.31	----	13.09	1.09	11.88
S- 988	3.21	----	11.84	1.06	12.50
S- 989	3.22	----	12.10	.90	12.07
S- 990	3.04	----	12.55	.68	12.14
S- 994	3.11	----	12.16	.77	12.12
S- 995	3.51	----	12.62	.98	11.88
F- 56	3.11	----	12.76	.74	13.49
F- 477	3.04	----	12.15	1.08	12.52
F- 683	3.08	----	12.27	.86	13.25
F- 684	3.19	----	12.36	1.12	13.17
F- 692	3.06	----	12.17	.96	12.67
L. B. 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 631	4.04	----	11.47*	1.62	4.32
S- 632	3.95	----	11.52	1.72	4.19
S- 993	4.00	----	11.13*	1.52	4.12
S- 998	3.88	----	11.38*	1.34	4.00
S-1000	4.21	----	11.76	1.28	4.35
S-1004	4.25	----	11.46*	1.53	4.55
F- 695	4.00	----	15.10	1.47	5.86
F- 696	4.26	----	11.55	1.49	4.73
F- 779	4.26	----	11.00*	1.67	4.93
L. B. 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S-1008	4.12	----	23.41*	1.72	11.89
MANUFACTURER, BRAND, AND LABORATORY NUMBER					
NITROGEN %					
PHOSPHORIC ACID					
Total %					
Available %					
Insoluble %					
POTASH %					
S-1009					
	4.20	----	21.82*	2.03	12.24
S-1010					
	4.22	----	21.56*	1.82	13.86
S-1013					
	4.23	----	22.89*	1.54	13.02
F- 703					
	4.03	----	22.88*	1.15	12.83
F- 790					
	3.95	----	22.22*	1.16	13.40
L. B. 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S-1015	6.22	----	12.45	.83	12.48
L. B. 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 643	7.41*	----	9.16	.44	7.70
S- 913	7.30*	----	9.47	.38	8.31
S-1018	8.07	----	8.10	.50	8.02
S-1019	7.96	----	9.11	.39	8.28
S-1021	7.79	----	8.66	.59	8.44
S-1022	7.93	----	8.57	.23	8.27
S-1026	7.92	----	8.49	.51	8.64
S-1027	7.90	----	8.70	.55	8.01
S-1129	8.29	----	8.05	.20	8.56
F- 707	8.20	----	9.37	.53	8.27
F- 708	8.27	----	8.59	.51	8.75
F- 709	8.24	----	8.51	.67	8.33
F- 712	8.14	----	8.65	.55	8.18
L. B. 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 648	7.95	----	22.95*	1.38	8.09
S- 723	7.67	----	23.18*	1.65	8.19
S-1030	8.38	----	22.63*	1.72	8.67
S-1031	8.26	----	22.23*	1.32	8.21
S-1038	8.00	----	22.75*	.98	8.30
S-1039	7.95	----	22.84*	1.96	8.59
S-1040	7.92	----	22.57*	1.21	8.66
S-1144	8.17	----	22.48*	1.39	8.96
F- 190	8.05	----	23.21*	1.42	8.96
F- 718	8.18	----	23.86	1.09	8.55
F- 722	8.14	----	23.41*	1.27	8.75
F- 814	7.92	----	23.14*	1.68	8.93
L. B. 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 652	10.08	----	10.06	.29	10.01
S-1044	10.54	----	9.26*	.47	9.57
S-1047	10.00	----	9.85	.48	10.07
S-1049	9.81	----	10.33	.62	10.54
S-1050	10.02	----	9.72	.58	10.61
S-1051	10.32	----	10.30	.38	11.00
F- 201	10.60	----	10.64	.34	10.36
F- 726	10.43	----	9.79	.69	10.04
F- 727	10.06	----	10.51	.54	10.35
F- 732	10.53	----	10.34	.49	10.04
F- 735	10.07	----	10.41	.67	10.46
F- 820	9.96	----	10.64	.51	9.82
F- 822	10.10	----	10.39	.56	11.04
L. B. Ammonium Sulphate					
Guarantee	21.00	----	----	----	----
S-1060	20.05*	----	----	----	----
L. B. 0-0-60					
Guarantee	----	----	----	----	60.00
S- 669	----	----	----	----	59.65
S-1061	----	----	----	----	60.34
S-1062	----	----	----	----	60.66
F- 750	----	----	----	----	58.73*
LA PLATA CHEMICAL CO., LA PLATA, MO.					
Chariton Valley 0-20-0					
Guarantee	----	----	20.00	----	----
S-1401	----	----	20.23	1.42	----
Chariton Valley 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 693	----	----	19.34*	.54	22.11
S- 887	----	----	20.02	.18	21.39
S-1403	----	----	19.72	.98	21.95

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 451	----	----	18.48*	.94	19.18*
F- 455	----	----	20.51	.84	20.14
F- 680	----	----	16.04*	.58	20.08
Chariton Valley 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 445	4.56	----	12.32	.43	12.11
F- 341	4.50	----	12.49	.89	13.92
F- 475	4.86	----	13.73	.71	12.36
Chariton Valley 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
F- 483	4.83	----	13.08	.50	6.08
Chariton Valley 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 453	4.73	----	15.36*	.39	15.16*
S-1408	4.79	----	14.79*	1.66	17.60
F- 489	4.80	----	16.34	1.31	17.47
Chariton Valley 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 454	4.67	----	22.02*	.86	13.73
S- 720	3.97	----	23.84	.76	11.93
F- 263	4.98	----	24.48	1.12	13.12
Chariton Valley 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 459	8.22	----	8.86	.22	9.68
S- 912	7.54*	----	9.47	.36	9.37
F- 270	8.81	----	9.76	.53	9.64
F- 513	8.37	----	10.16	.62	9.47
Chariton Valley 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 462	6.76*	----	23.47*	.78	9.91
S- 924	7.94	----	21.81*	1.54	10.14
S- 925	6.74*	----	24.22	1.03	8.64
F- 280	7.88	----	23.14*	2.59	8.39
F- 521	7.90	----	23.35*	2.25	8.12
F- 529	7.92	----	22.33*	2.52	8.55
F- 530	8.12	----	24.01	1.99	8.12
F- 531	7.88	----	23.37*	2.36	8.21
F- 536	8.08	----	23.43*	2.50	8.18
F- 539	8.09	----	20.12*	2.55	9.28
F- 724	8.62	----	22.81*	1.19	8.38
Chariton Valley 8-32-0					
Guarantee	8.00	----	32.00	----	----
S- 478	8.74	----	26.27*	1.67	----
Chariton Valley 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 479	10.74	----	10.86	.32	12.13
S- 733	9.47*	----	10.94	.29	11.07
S- 938	10.22	----	11.31	.49	9.87
S-1416	9.95	----	11.61	1.00	11.09
F- 292	10.60	----	10.68	.80	11.51
F- 544	9.74	----	12.81	.59	11.35
F- 548	8.97*	----	12.04	.53	12.10
Chariton Valley 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 494	10.55*	----	11.46*	.30	12.99
S- 956	12.16	----	11.36*	.93	12.26
S- 953	11.11*	----	12.49	.41	12.74
S- 955	12.46	----	11.49*	.95	11.95
S-1419	10.84*	----	11.98	1.25	12.45
F- 302	11.81	----	12.65	.33	13.21
F- 405	11.39*	----	13.55	.53	12.65
F- 406	11.89	----	12.41	.54	13.05
F- 560	11.53	----	12.57	.58	13.18
F- 564	11.62	----	11.61	.90	13.22
F- 565	11.14*	----	13.18	.62	13.21
F- 566	10.75*	----	13.91	.31	13.33
F- 571	11.50	----	13.32	.43	12.43
F- 572	11.97	----	12.31	.39	12.93
Chariton Valley 15-10-10					
Guarantee	15.00	----	10.00	----	10.00
S- 503	11.16*	----	11.93	.36	11.81

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 746	13.66*	----	10.22	.16	11.62
F- 579	13.65*	----	11.33	.51	10.37
LINCOLN SERVICE & SUPPLY, INC., GRAND ISLAND, NEBR.					
Lincoln 0-20-20					
Guarantee	----	----	20.00	----	20.00
S-1352	----	----	21.52	2.06	21.85
Lincoln 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S-1370	8.07	----	22.83*	1.12	9.50
Lincoln 13-13-8					
Guarantee	13.00	----	13.00	----	8.00
S-1388	13.04	----	13.56	.59	7.98
S-1389	13.08	----	11.91*	.63	10.43
Lincoln 0-0-60					
Guarantee	----	----	----	----	60.00
S-1399	----	----	----	----	59.96
LION OIL CO., EL DORADO, ARK.					
Lion Sulphate of Ammonia					
Guarantee	21.00	----	----	----	----
S- 414	21.07	----	----	----	----
S- 972	20.99	----	----	----	----
Lion Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
S- 131	33.15	----	----	----	----
S- 132	33.53	----	----	----	----
S- 133	33.35	----	----	----	----
S- 415	33.64	----	----	----	----
S-1296	33.35	----	----	----	----
F- 230	33.40	----	----	----	----
F- 313	33.57	----	----	----	----
F- 427	33.24	----	----	----	----
F- 429	32.97	----	----	----	----
F- 673	33.57	----	----	----	----
F- 842	33.66	----	----	----	----
F- 911	33.47	----	----	----	----
F-1061	33.18	----	----	----	----
MATHIESON CHEMICAL CORP., LITTLE ROCK, ARK.					
T.V.A. Concentrated Superphosphate 47%					
Guarantee	----	----	47.00	----	----
S- 696	----	----	47.72	1.88	----
T.V.A. Calcium Metaphosphate 61%					
Guarantee	----	----	61.00	----	----
S-1186	----	----	61.12	1.98	----
T.V.A. Calcium Metaphosphate 62%					
Guarantee	----	----	62.00	----	----
S-1019	----	----	61.67	1.73	----
Mathieson 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 538	----	----	19.03*	.90	20.72
Mathieson 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 354	3.46	----	9.68	.35	17.84
Mathieson 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 364	3.64	----	9.36	.67	24.89*
S- 546	3.75	----	9.90	.70	24.54*
Mathieson 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 381	4.04	----	11.86	.59	13.45
S- 628	3.45	----	12.07	.56	14.34
Mathieson 5-15-30					
Guarantee	5.00	----	15.00	----	30.00
S-1014	4.81	----	14.79	.26	30.74

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
Mathieson 6-24-24					
Guarantee	6.00	----	24.00	----	24.00
S- 198	6.60	----	23.39*	1.71	24.80
S- 568	6.90	----	28.14	.43	24.30
S- 642	6.71	----	24.75	1.70	23.31
S-1216	6.72	----	27.04	1.14	25.20
F- 371	6.56	----	25.35	2.35	24.69
F- 372	6.47	----	26.96	1.24	24.81
F- 509	6.40	----	24.71	1.74	24.60
F- 627	6.38	----	22.37*	1.95	25.72
F- 798	6.64	----	28.36	.23	26.36
F- 799	6.54	----	25.83	.97	25.83
F- 865	6.58	----	24.03	1.52	25.00
F- 866	6.33	----	27.17	1.33	24.76
Mathieson 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 645	8.43	----	8.66	.44	9.17
S- 825	3.54*	----	9.86	.62	16.58
Mathieson 10-20-20					
Guarantee	10.00	----	20.00	----	20.00
S- 212	9.96	----	20.71	.24	20.88
F- 206	10.16	----	21.09	.16	20.47
Mathieson 10-30-10					
Guarantee	10.00	----	30.00	----	10.00
S- 319	11.04	----	30.23	.87	10.69
S- 320	10.60	----	30.24	1.16	11.20
S- 655	10.31	----	30.39	1.41	10.58
S-1159	11.36	----	30.41	.52	10.04
S-1381	10.31	----	29.68	1.27	12.75
S-1445	11.40	----	30.30	.75	11.26
F- 296	11.46	----	30.82	.33	11.28
F- 297	10.99	----	31.50	.80	11.77
F- 399	11.39	----	30.28	.17	12.09
F- 400	10.82	----	30.68	.22	12.20
F- 401	10.97	----	31.63	.22	11.93
F- 737	11.25	----	31.03	.22	11.19
F- 738	10.39	----	29.64	1.21	11.58
F- 962	11.04	----	31.47	.38	11.15
F- 963	11.00	----	31.37	.73	12.24
Mathieson 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 589	10.82*	----	12.64	.41	12.05
Mathieson 12-24-12					
Guarantee	12.00	----	24.00	----	12.00
S- 226	11.98	----	23.49*	.31	12.94
S- 330	11.97	----	24.48	.35	12.04
S- 660	11.98	----	24.92	.38	12.76
S- 744	11.90	----	24.54	.26	12.46
S- 854	11.75	----	24.35	.20	12.05
S-1174	12.41	----	24.17	.18	12.05
S-1175	12.31	----	24.05	.20	12.24
S-1245	12.01	----	24.28	.07	12.05
S-1387	12.10	----	24.19	.16	13.42
S-1422	12.30	----	24.37	.13	12.23
S-1449	12.05	----	24.27	.23	13.25
F- 100	11.89	----	25.10	.05	13.93
F- 101	11.97	----	23.93	.22	13.02
F- 224	12.02	----	26.02	.21	12.41
F- 416	12.13	----	24.30	.05	13.05
F- 417	11.95	----	23.29*	.11	13.25
F- 746	12.10	----	24.86	.24	12.42
F- 830	11.86	----	25.25	.10	13.76
F-1050	11.74	----	22.90*	.25	13.59
F-1051	11.96	----	23.91	.11	12.30
Mathieson 13-13-13					
Guarantee	13.00	----	13.00	----	13.00
S- 331	13.06	----	14.23	.32	14.07
S- 501	13.18	----	13.58	.27	14.14
S- 594	13.58	----	13.82	.31	13.20
S- 745	13.16	----	13.95	.28	13.75
S- 855	13.26	----	14.05	.30	14.32
S- 856	13.24	----	13.75	.30	13.55

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S-1176	13.41	----	13.99	.16	13.61
F- 225	13.51	----	14.23	.22	13.57
F- 310	13.76	----	14.77	.12	14.05
F- 419	13.35	----	13.76	.14	13.79
F- 420	13.03	----	13.05	.10	14.66
F- 577	13.05	----	12.93	.27	14.22
F- 906	13.60	----	13.34	.34	13.40
F-1054	13.38	----	13.64	.09	13.57
F-1055	12.96	----	13.77	.08	13.93
Mathieson Ammo-Phos 13-39-0					
Guarantee	13.00	----	39.00	----	----
S-1390	13.63	----	38.64	.36	----
F- 423	13.23	----	39.64	.56	----
F- 838	13.44	----	39.10	.63	----
Mathieson Ammo-Phos 16-20-0					
Guarantee	16.00	----	20.00	----	----
S- 506	16.22	----	22.08	.45	----
S- 714	16.39	----	20.76	.27	----
S- 969	16.40	----	20.86	.54	----
S-1177	16.47	----	21.54	.31	----
S-1248	16.43	----	20.55	.25	----
S-1249	16.39	----	20.85	.45	----
S-1393	16.08	----	21.48	.50	----
F- 104	16.43	----	20.88	.32	----
F- 424	16.00	----	21.88	.30	----
F- 910	16.63	----	20.37	.43	----
F- 976	16.11	----	20.91	.39	----
F- 977	16.47	----	21.85	.43	----
F-1057	16.04	----	20.01	.24	----
MID-SOUTH CHEMICAL CO., MEMPHIS, TENN.					
Diamond 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 351	----	----	20.12	.58	20.58
Diamond 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 363	3.16	----	10.29	.31	19.07
Diamond 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 380	2.87	----	9.32	.26	28.40
Diamond 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 408	10.91*	----	12.66	.42	13.05
Diamond 0-0-60					
Guarantee	----	----	----	----	60.00
S- 422	----	----	----	----	59.44
MISSISSIPPI CHEMICAL CORP., YAZOO CITY, MISS.					
M.C.C. Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
S- 754	33.50	----	----	----	----
S-1425	33.62	----	----	----	----
F- 35	33.40	----	----	----	----
F- 105	33.62	----	----	----	----
F- 426	33.62	----	----	----	----
F- 843	33.71	----	----	----	----
F- 980	34.01	----	----	----	----
F- 982	33.83	----	----	----	----
MISSOURI FARMERS ASSOCIATION, INC., COLUMBIA, MO.					
M.F.A. 20% Superphosphate					
Guarantee	----	----	20.00	----	----
S- 251	----	----	20.65	.70	----
S- 790	----	----	20.78	.52	----
S- 884	----	----	21.14	.31	----
M.F.A. 0-45-0					
Guarantee	----	----	45.00	----	----
S- 894	----	----	46.63	.87	----
S-1185	----	----	46.55	.55	----
F- 47	----	----	44.95	1.95	----
F- 848	----	----	43.23*	.73	----

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %	MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %				Total %	Available %	Insoluble %	
M.F.A. 0-20-20											
Guarantee	----	----	20.00	----	20.00	F- 18	5.03	----	12.72	2.27	5.44
S- 155	----	----	20.67	1.58	18.69*	F- 254	4.37	----	12.75	1.33	6.71
S- 157	----	----	20.66	1.44	20.14	F- 255	4.58	----	11.88	1.42	4.93
S- 791	----	----	20.61	1.34	19.94	F- 257	4.38	----	12.45	1.50	5.81
S- 792	----	----	20.50	1.35	19.68	F- 346	4.18	----	12.13	1.55	4.90
S- 983	----	----	21.09	1.16	21.86	F- 348	4.57	----	13.48	1.07	5.93
S-1070	----	----	21.17	1.03	20.34	F- 484	5.71	----	15.55	1.18	7.37
S-1071	----	----	21.02	1.08	19.05*	F- 774	4.37	----	11.81	.96	4.87
S-1351	----	----	22.53	1.00	20.08	F- 776	4.33	----	11.57	.86	4.98
S-1402	----	----	21.08	1.27	20.92	F- 782	6.14	----	15.16	.97	9.19
F- 40	----	----	20.39	.91	20.65	F- 783	4.08	----	12.64	.66	4.78
F- 41	----	----	21.77	.96	20.60	F- 784	4.42	----	12.15	1.25	5.04
F- 44	----	----	20.85	.85	20.43	F- 860	4.08	----	11.98	1.07	4.81
F- 127	----	----	21.67	.98	20.02	F- 921	4.23	----	11.80	1.10	4.37
F- 129	----	----	21.79	.90	20.60	F- 927	5.35	----	13.39	1.28	6.61
F- 243	----	----	20.83	.97	19.38*	M.F.A. 4-24-12					
F- 335	----	----	20.06	.84	21.62	Guarantee	4.00	----	24.00	----	12.00
F- 453	----	----	19.30*	.83	19.45	S- 26	4.27	----	23.30*	1.87	12.75
F- 595	----	----	22.14	.89	20.45	S- 192	4.70	----	24.83	.67	12.08
F- 596	----	----	21.42	.93	18.17*	S- 286	4.48	----	20.04*	2.88	12.82
F- 850	----	----	21.41	.92	20.19	S- 287	4.54	----	21.05*	1.85	14.07
F- 854	----	----	20.11	.89	20.97	S- 556	4.66	----	22.17*	1.63	12.09
M.F.A. 0-20-20 with Borax						S- 557	4.26	----	24.41	1.84	12.85
Guarantee	----	----	20.00	----	20.00	S- 558	4.25	----	23.94	1.54	13.05
S-1072	----	----	21.01	1.19	18.84*	S- 635	4.17	----	23.99	2.36	13.53
F- 9	----	----	20.98	1.02	17.42*	S- 811	4.35	----	22.04*	1.49	14.60
F- 43	----	----	19.46*	.87	21.90	S- 812	4.46	----	23.70	1.60	12.96
F- 128	----	----	21.29	1.01	19.20*	S- 817	4.46	----	23.58	1.42	12.63
F- 853	----	----	20.28	.92	19.14*	S-1106	4.37	----	23.25*	.80	13.08
M.F.A. 3-9-27						S-1363	4.64	----	24.39	1.96	12.59
Guarantee	3.00	----	9.00	----	27.00	F- 64	4.76	----	25.41	1.34	11.12*
S-1198	3.54	----	9.92	.73	25.69*	F- 162	5.29	----	26.02	1.36	10.69*
M.F.A. 3-12-12						F- 262	4.45	----	23.33*	1.50	13.21
Guarantee	3.00	----	12.00	----	12.00	F- 264	4.36	----	24.04	1.31	12.69
S- 13	3.35	----	10.29*	1.78	14.08	F- 358	5.10	----	24.23	1.42	13.47
S- 167	3.29	----	12.71	1.54	12.96	F- 359	4.30	----	23.55	1.35	12.49
S- 172	3.08	----	11.93	1.22	12.70	F- 363	4.50	----	23.17*	1.24	13.21
S- 179	3.54	----	13.36	1.19	12.30	F- 365	4.39	----	26.20	1.36	12.26
S- 260	3.30	----	11.62	1.30	12.54	F- 617	4.32	----	25.07	1.23	12.99
S- 544	3.50	----	11.84	1.16	12.19	F- 787	4.31	----	23.47*	.88	13.08
S- 545	3.21	----	11.61	1.11	12.05	F- 788	3.98	----	24.07	.58	12.05
S- 797	3.19	----	12.39	.79	12.47	F- 792	5.29	----	24.12	1.53	11.22*
S- 992	3.41	----	11.72	.88	11.84	F- 793	4.46	----	23.04*	1.04	13.42
S-1090	4.02	----	12.07	2.48	10.92*	F- 934	4.43	----	23.55	1.08	13.17
S-1271	3.66	----	11.58	1.29	12.92	M.F.A. 6-12-12					
S-1356	4.62	----	11.46*	2.59	9.46*	Guarantee	6.00	----	12.00	----	12.00
S-1406	5.02	----	13.11	1.79	12.95	S-1115	6.85	----	11.80	.65	13.05
F- 51	3.71	----	12.30	2.28	12.77	F- 267	6.50	----	12.15	.78	13.89
F- 52	4.27	----	13.82	1.03	13.05	F- 505	6.20	----	12.02	.78	12.11
F- 55	4.59	----	14.31	1.22	12.87	F- 506	6.32	----	12.01	.87	12.90
F- 145	4.15	----	13.62	1.52	12.85	M.F.A. 8-8-8					
F- 248	3.60	----	12.04	1.21	13.18	Guarantee	8.00	----	8.00	----	8.00
F- 471	3.01	----	11.38*	1.61	12.83	S- 201	8.24	----	11.07	.62	8.60
F- 604	3.16	----	11.82	1.16	12.43	S- 204	8.89	----	8.74	.71	8.67
F- 767	2.98	----	12.16	.57	13.89	S- 294	8.49	----	8.18	.45	8.17
F-1020	3.15	----	12.12	1.21	12.97	S- 296	8.31	----	8.46	.39	8.04
M.F.A. 4-12-4						S- 574	7.99	----	8.51	.42	8.19
Guarantee	4.00	----	12.00	----	4.00	S- 575	8.18	----	8.67	.45	8.26
S- 271	4.06	----	12.41	.87	4.42	S- 576	8.32	----	8.48	.42	8.03
S- 273	4.20	----	13.14	1.04	6.20	S- 818	8.28	----	8.75	.38	8.05
S- 278	4.42	----	12.49	.96	5.07	S- 819	8.09	----	8.43	.42	8.35
S- 283	4.33	----	12.18	.85	4.88	S- 821	7.95	----	8.52	.58	8.14
S- 553	4.68	----	12.49	.76	5.68	S-1120	8.49	----	8.10	.52	8.15
S- 802	3.98	----	10.76*	1.54	4.46	S-1122	8.44	----	8.18	.57	8.30
S- 805	4.26	----	11.33*	1.35	4.69	S-1281	7.63	----	9.04	.61	8.56
S- 806	4.29	----	12.21	.77	4.73	S-1283	8.49	----	8.57	.46	8.36
S- 900	4.11	----	12.01	1.09	4.10	S-1284	8.37	----	9.25	.43	8.89
S-1003	4.45	----	12.40	1.83	4.84	F- 70	8.83	----	8.79	.54	9.85
S-1093	4.56	----	11.80	1.08	4.44	F- 71	9.37	----	8.72	.53	9.54
S-1099	4.44	----	11.89	2.31	4.78	F- 177	8.41	----	11.03	.69	9.40
S-1275	4.47	----	11.76	1.29	4.74	F- 374	8.20	----	8.28	.80	8.23
S-1359	4.66	----	11.94	2.29	4.31	F- 377	7.67	----	8.91	.47	9.03
S-1407	5.39	----	12.89	2.16	5.38	F- 515	8.08	----	8.76	.54	8.82
						F- 803	8.13	----	8.86	.37	8.81

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %	MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %				Total %	Available %	Insoluble %	
F- 805	8.26	----	8.59	.41	8.82	M.F.A. 12-12-12					
F- 868	8.38	----	8.50	.33	8.38	Guarantee	12.00	----	12.00	----	12.00
F- 871	7.96	----	9.53	.57	7.57	S- 55	11.62	----	14.85	.73	12.28
F- 936	8.10	----	8.66	.52	8.29	S- 218	11.94	----	13.01	.82	12.97
F- 939	7.68	----	16.49	1.05	8.90	S- 223	11.98	----	13.74	.81	12.49
M.F.A. Garden Grow						S- 321	11.88	----	12.88	.50	13.77
Guarantee	8.00	----	8.00	----	8.00	S- 322	11.83	----	12.67	.46	12.44
S- 200	7.39*	----	11.18	1.04	8.74	S- 327	12.11	----	12.84	.51	12.20
S- 301	8.55	----	8.26	.34	8.70	S- 591	12.18	----	12.68	.55	11.98
S-1124	8.81	----	8.65	.88	8.25	S- 592	11.38*	----	11.67	.46	11.50
S-1366	8.70	----	8.60	.90	8.74	S- 593	11.15*	----	13.41	.57	12.57
M.F.A. 8-24-8						S- 656	11.93	----	11.89	.59	13.05
Guarantee	8.00	----	24.00	----	8.00	S- 843	11.88	----	12.49	.41	12.13
S- 210	8.66	----	21.99*	1.51	9.56	S- 844	12.02	----	11.79	.71	12.23
S- 307	7.80	----	24.44	1.96	8.50	S- 845	12.38	----	12.02	.71	11.98
S- 313	8.81	----	22.53*	1.77	8.74	S- 846	11.74	----	12.88	.60	12.30
S- 581	8.41	----	23.77	1.53	8.69	S- 852	12.32	----	12.06	.39	12.08
S- 584	8.36	----	23.35*	1.40	8.60	S- 949	13.51	----	14.62	.73	12.26
S- 829	8.22	----	22.95*	1.48	8.41	S- 954	12.22	----	11.63	.52	11.90
S- 830	8.21	----	24.25	.65	8.43	S- 962	13.27	----	13.84	.71	13.05
S- 915	8.61	----	25.17	1.28	9.10	S-1056	12.53	----	13.31	.64	13.02
S- 922	8.03	----	22.10*	.88	8.83	S-1162	10.18*	----	14.50	.79	12.37
S-1033	8.86	----	24.87	1.63	9.00	S-1164	11.43*	----	14.18	.37	12.69
S-1137	8.07	----	23.41*	1.34	9.30	S-1167	11.01*	----	13.80	.50	12.88
S-1139	8.59	----	23.26*	1.62	8.05	S-1170	12.27	----	13.42	.48	12.63
S-1143	8.70	----	23.62	1.88	8.46	S-1241	12.99	----	15.42	.63	12.07
S-1220	9.88	----	22.22*	1.46	9.30	S-1292	13.28	----	11.38*	.51	12.97
S-1224	6.01*	----	24.27	1.43	9.76	S-1295	12.24	----	13.23	.45	12.94
S-1288	9.17	----	24.26	2.09	9.35	S-1382	12.19	----	13.04	.56	13.02
S-1367	8.71	----	24.76	1.04	7.53	F- 34	12.70	----	10.95*	.33	13.70
S-1373	8.92	----	25.36	1.14	8.32	F- 88	12.40	----	12.87	.41	13.36
F- 75	9.36	----	24.54	1.26	8.00	F- 96	12.24	----	12.91	.44	13.14
F- 81	8.64	----	24.28	.72	9.78	F- 207	12.62	----	12.39	.34	13.39
F- 181	9.49	----	23.62	.91	10.04	F- 211	11.87	----	13.68	.39	13.14
F- 192	9.61	----	23.67	1.03	9.41	F- 215	12.19	----	13.20	.45	12.80
F- 194	8.84	----	24.94	1.31	8.03	F- 217	11.71	----	14.75	.48	12.85
F- 277	8.68	----	23.63	.97	8.72	F- 300	10.76*	----	14.60	.47	13.15
F- 281	8.66	----	25.64	.96	11.12	F- 303	11.56	----	14.01	.43	13.38
F- 283	7.71	----	25.11	.89	8.78	F- 306	12.24	----	13.93	.40	12.92
F- 381	8.10	----	25.08	1.02	8.89	F- 309	11.94	----	12.77	.41	13.45
F- 384	8.33	----	24.38	1.47	8.62	F- 408	12.02	----	12.85	.40	13.38
F- 385	8.55	----	23.45*	.98	8.86	F- 411	11.75	----	14.03	.42	13.29
F- 389	8.77	----	24.73	1.47	8.01	F- 412	10.63*	----	13.64	.61	14.04
S- 806	8.05	----	24.54	.71	8.89	F- 413	11.85	----	13.49	.37	13.42
S- 811	8.21	----	24.37	.86	8.57	F- 414	11.81	----	13.21	.44	13.18
S- 815	8.47	----	24.29	1.36	9.09	F- 559	11.93	----	13.21	.29	12.27
S- 883	8.25	----	24.60	.97	8.18	F- 665	10.56*	----	15.06	.36	12.69
S- 885	8.30	----	24.93	.87	8.36	F- 827	11.94	----	13.08	.37	13.10
S- 945	7.90	----	23.00*	.90	9.03	F- 829	12.38	----	13.33	.32	12.89
S- 950	8.49	----	22.97*	1.44	9.20	F- 901	11.53	----	13.21	.57	14.33
M.F.A. 10-20-0						F- 968	11.28*	----	13.50	.76	13.94
Guarantee	10.00	----	20.00	----	----	F- 970	11.46*	----	13.53	.76	13.69
S- 841	10.51	----	19.65	.93	----	F- 971	11.83	----	12.03	.67	14.09
S-1041	7.29*	----	25.38	1.02	----	M.F.A. 0-0-60					
S-1158	8.22*	----	23.52	1.26	----	Guarantee	----	----	----	----	60.00
F- 204	10.30	----	20.31	1.24	----	S-1426	----	----	----	----	55.53*
M.F.A. 10-20-10						S- 585	----	----	----	----	60.24
Guarantee	10.00	----	20.00	----	10.00	MISSOURI PLANT FOOD CO., SIKESTON, MO.					
F- 86	9.12*	----	21.81	.79	11.53	Mule 0-20-0					
F- 205	10.10	----	21.73	.82	11.16	Guarantee	----	----	20.00	----	----
F- 397	9.67	----	21.69	.84	10.88	F-1091	----	----	19.77	.18	----
F- 648	9.75	----	21.33	.72	11.68	Mule 0-45-0					
F- 823	10.13	----	19.35*	.75	11.40	Guarantee	----	----	45.00	----	----
F- 898	10.75	----	20.59	1.01	11.34	F-1093	----	----	43.59*	1.07	----
F- 961	10.48	----	20.82	.83	11.04	Mule 0-20-20					
F-1045	10.47	----	20.39	.96	11.04	Guarantee	----	----	20.00	----	20.00
M.F.A. 10-20-20						S- 75	----	----	20.32	.63	20.02
Guarantee	10.00	----	20.00	----	20.00	S- 347	----	----	20.07	.63	19.57
F- 295	9.20*	----	24.29	.84	19.54	S- 620	----	----	20.56	.54	19.43
F- 554	7.64*	----	18.98*	.47	19.33*	Mule 3-9-18					
F- 555	9.60	----	24.12	.58	16.80*	Guarantee	3.00	----	9.00	----	18.00
						S- 356	3.01	----	9.32	.43	20.29

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

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MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 358	3.05	----	9.35	.33	19.28
S- 359	2.93	----	9.42	.36	18.90
S- 361	2.94	----	9.32	.36	19.61
F- 467	3.28	----	9.65	.55	18.26
Mule 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 93	2.97	----	9.10	.28	29.66
S- 368	2.96	----	9.31	.29	28.55
S- 371	3.04	----	9.17	.26	28.91
S- 375	2.96	----	8.66	.24	30.12
S- 377	2.93	----	9.40	.25	28.47
F-1094	3.10	----	9.20	.25	28.22
Mule 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 100	3.10	----	11.80	.78	12.91
S- 382	3.10	----	11.69	.76	13.61
S- 383	3.19	----	11.85	.80	13.05
S- 384	3.19	----	11.81	.82	13.13
F-1096	3.37	----	11.62	.60	13.20
Mule 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
F- 157	4.08	----	12.17	.68	4.87
F- 481	3.98	----	11.90	.92	4.79
Mule 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 387	4.11	----	24.23	1.20	12.67
S- 636	4.18	----	23.74	1.36	12.03
Mule 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 638	6.11	----	11.66	.96	13.57
Mule 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 390	8.08	----	8.54	.36	8.86
S- 391	8.12	----	8.64	.44	8.71
S- 644	7.98	----	8.74	.31	8.90
S-1016	8.04	----	8.23	.25	8.89
F- 174	8.13	----	8.70	.20	9.03
F- 175	8.28	----	8.54	.21	9.03
F-1099	8.40	----	8.29	.26	8.64
Mule 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 111	7.70	----	22.50*	2.65	9.33
S- 393	7.69	----	22.15*	2.85	8.75
S- 394	7.61	----	22.46*	2.51	9.10
S- 649	7.47*	----	23.66	2.44	8.11
F- 189	8.05	----	24.22	1.68	8.40
F-1101	7.98	----	23.81	1.14	8.64
Mule 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 654	8.86*	----	20.34	2.06	10.32
Mule 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 120	11.43*	----	11.65	.38	13.18
S- 400	11.23*	----	11.97	.41	12.77
S- 402	10.35*	----	14.98	.47	11.18*
S- 403	11.12*	----	12.76	.39	12.51
S- 406	11.27*	----	12.07	.41	12.57
S- 407	11.33*	----	11.97	.36	13.25
S- 657	11.23*	----	12.85	.38	12.02
F- 563	12.38	----	12.11	.27	13.84
F-1104	11.82	----	11.42*	.23	12.88
F-1110	11.50	----	12.38	.26	12.36
Mule Sul-Po-Mag					
Guarantee	----	----	----	----	22.00
S- 668	----	----	----	----	23.33
Mule 0-0-60					
Guarantee	----	----	----	----	60.00
S- 137	----	----	----	----	60.15
S- 418	----	----	----	----	61.30

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 670	----	----	----	----	60.24
F- 234	----	----	----	----	60.38
F-1111	----	----	----	----	60.56
MONSANTO CHEMICAL CO., ST. LOUIS, MO.					
Folium					
Guarantee	20.00	----	20.00	----	20.00
S-1454	19.99	----	20.93	.02	20.02
NITROGEN DIVISION, ALLIED CHEMICAL & DYE CORP., NEW YORK, N. Y.					
Arcadian 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 225	12.54	----	13.39	1.58	14.04
OKLAHOMA FERTILIZER & CHEMICAL CO., OKLAHOMA CITY, OKLA.					
Fig Boy 0-45-0					
Guarantee	----	----	45.00	----	----
F-1015	----	----	44.61	----	----
Big Boy 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 474	8.53	----	24.27	1.33	8.84
S-1371	8.14	----	23.70	1.70	7.58
Big Boy 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S-1375	10.80	----	11.25	.43	9.80
Big Boy 10-20-0					
Guarantee	10.00	----	20.00	----	----
S- 492	10.41	----	20.66	1.54	----
Big Boy 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 493	9.00*	----	18.31*	1.62	8.00*
PEARSON-FERGUSON CHEMICAL CO., KANSAS CITY, MO.					
Rose Food 8-10-4					
Guarantee	8.00	----	10.00	----	4.00
S-1440	8.12	----	15.63	2.46	4.74
PHILLIPS CHEMICAL CO., BARTLESVILLE, OKLA.					
Phillips 0-46-0					
Guarantee	----	----	46.00	----	----
F- 984	----	----	44.15*	3.33	----
F-1075	----	----	46.63	3.37	----
F-1076	----	----	44.49*	3.31	----
Phillips 66 Ammonium Sulphate					
Guarantee	21.00	----	----	----	----
S- 59	21.01	----	----	----	----
S- 333	20.99	----	----	----	----
S- 510	21.14	----	----	----	----
S- 750	20.94	----	----	----	----
S- 971	21.03	----	----	----	----
Phillips 66 Ammonium Nitrate					
Guarantee	33.00	----	----	----	----
S- 60	33.59	----	----	----	----
S- 61	33.62	----	----	----	----
S- 752	33.50	----	----	----	----
S-1254	33.70	----	----	----	----
F- 227	33.60	----	----	----	----
F- 581	33.40	----	----	----	----
F- 839	33.66	----	----	----	----
F- 840	33.49	----	----	----	----
PLANTABS CORP., BALTIMORE, MD.					
Plantabs 11-15-20					
Guarantee	11.00	----	15.00	----	20.00
S-1448	11.59	----	18.60	.05	26.45

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
PLANT-CHEM, INC.,					
Lawn-Chem Salts 14-9-7					
Guarantee	14.00	-----	9.00	----	7.00
S-1450	15.15	----	12.42	.10	7.75
POTASH COMPANY OF AMERICA, CARLSBAD, NEW MEXICO					
Muriate of Potash 60%					
Guarantee	----	----	----	----	60.00
S- 139	----	----	----	----	59.24
S- 237	----	----	----	----	60.94
S- 238	----	----	----	----	61.12
S- 334	----	----	----	----	61.00
S- 335	----	----	----	----	61.42
S- 518	----	----	----	----	61.85
S- 600	----	----	----	----	61.92
S- 978	----	----	----	----	61.52
S-1260	----	----	----	----	60.81
S-1262	----	----	----	----	61.74
F- 109	----	----	----	----	60.84
F- 110	----	----	----	----	61.49
F- 431	----	----	----	----	61.21
F- 845	----	----	----	----	61.72
F- 913	----	----	----	----	61.79
F-1006	----	----	----	----	61.57
F-1063	----	----	----	----	60.65
F-1067	----	----	----	----	60.81
PULSE PHOSPHATE CO., CANTON, MO.					
0-45-0					
Guarantee	----	----	45.00	----	----
F- 328	----	----	45.20	2.64	----
Ammonium Sulphate					
Guarantee	21.00	----	----	----	----
S- 508	20.99	----	----	----	----
F- 748	20.90	----	----	----	----
Muriate of Potash					
Guarantee	----	----	----	----	60.00
S- 515	----	----	----	----	61.75
F- 432	----	----	----	----	62.29
RA-PID-GRO CORPORATION, DANSVILLE, N. Y.					
Ra-Pid-Gro 23-21-17					
Guarantee	23.00	----	21.00	----	17.00
S-1456	23.57	----	20.01*	.03	16.22*
O. M. SCOTT & SONS, MARYSVILLE, OHIO					
Scott's Turf Builder 9-7-4					
Guarantee	9.00	----	7.00	----	4.00
S-1443	9.43	----	7.24	.24	5.23
THE SEWERAGE COMMISSION OF MILWAUKEE, MILWAUKEE, WIS.					
Milorganite 6-2-0					
Guarantee	6.00	----	2.00	----	----
S-1432	5.59*	----	3.20	.61	----
Milorganite 6-4-0					
Guarantee	6.00	----	4.00	----	----
F- 907	5.47*	----	3.93	.77	----
SMITH-DOUGLAS COMPANY, INC., STREATOR, ILL.					
S. D. 5-20-10 Pelleform					
Guarantee	5.00	----	20.00	----	10.00
S- 193	4.91	----	19.82	1.68	8.93*
S. D. Pelleform 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 197	5.57*	----	12.01	1.09	12.40
S. D. Soil Saver 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 214	8.89*	----	10.92	.93	11.46

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
SOIL-AID CORPORATION, COFFEYVILLE, KANSAS					
All-N-One 4-3-4					
Guarantee	4.00	12.00	3.00	----	4.00
S-1427	5.45	10.29*	2.82	7.47	6.80
SOILTONE FERTILIZER CO., INC., LINCOLN, NEBR.					
Soiltone 6-2-0					
Guarantee	6.00	----	2.00	----	----
F-1025	4.55*	----	.67	.16	----
SOUTHWEST POTASH CORPORATION, CARLSBAD, NEW MEXICO					
High K Muriate of Potash 60%					
Guarantee	----	----	----	----	60.00
S- 234	----	----	----	----	61.02
S-1256	----	----	----	----	60.65
S-1258	----	----	----	----	60.46
S-1297	----	----	----	----	61.50
F- 584	----	----	----	----	60.23
F- 846	----	----	----	----	61.95
F- 985	----	----	----	----	62.69
SPENCER CHEMICAL CO., KANSAS CITY, MO.					
Spencer's Ammonium Nitrate					
Guarantee	33.50	----	----	----	----
S- 62	33.92	----	----	----	----
S- 63	33.91	----	----	----	----
S- 65	33.94	----	----	----	----
S- 229	33.94	----	----	----	----
S- 753	33.90	----	----	----	----
S- 857	33.75	----	----	----	----
S-1179	33.79	----	----	----	----
S-1255	33.90	----	----	----	----
F- 106	33.80	----	----	----	----
F- 107	33.92	----	----	----	----
F- 311	33.90	----	----	----	----
F- 582	33.72	----	----	----	----
F- 583	33.92	----	----	----	----
F- 912	34.02	----	----	----	----
F- 979	34.08	----	----	----	----
F- 981	34.03	----	----	----	----
F-1059	33.51	----	----	----	----
SWIFT & CO., PLANT FOOD DIVISION, NATIONAL STOCKYARDS, ILL.					
Red Steer 0-20-0					
Guarantee	----	----	20.00	----	----
S-1400	----	----	20.56	1.54	----
Red Steer 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 160	----	----	18.81*	.49	20.38
Red Steer 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 624	3.44	----	9.62	.28	26.94
Red Steer 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 168	3.25	----	12.44	.81	12.39
S- 173	3.42	----	11.94	.49	12.35
S- 177	2.96	----	12.28	.32	11.17*
S- 178	4.24	----	11.84	.41	12.16
S- 265	2.98	----	12.17	.41	11.23*
S- 630	3.25	----	11.25*	.52	13.36
S-1085	3.01	----	11.60	1.43	13.15
S-1088	2.97	----	12.13	2.05	11.62
S-1200	3.19	----	10.94*	1.98	12.69
S-1270	2.94	----	12.00	2.08	11.33*
F- 12	3.70	----	13.58	.81	12.05
F- 50	3.43	----	11.75	1.43	13.76
F- 54	3.45	----	10.99*	1.68	13.74
F- 146	3.29	----	11.87	1.67	12.72
F- 340	3.10	----	12.23	1.22	13.25
F- 342	3.29	----	11.55	1.15	13.15

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 344	3.63	----	11.44*	1.47	13.08
F- 690	3.27	----	12.41	1.19	12.05
F- 769	3.10	----	12.08	1.10	12.81
Vigoro 4-8-12					
Guarantee	4.00	----	8.00	----	12.00
S- 718	3.66	----	8.08	.55	12.51
Red Steer 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 182	3.75	----	11.32*	.83	4.31
S- 183	4.46	----	10.94*	1.21	5.01
S- 276	3.76	----	10.71*	1.56	4.48
S- 808	3.94	----	12.23	.27	4.55
S- 996	3.89	----	11.90	1.00	4.55
S-1100	4.07	----	11.90	1.00	4.29
S-1102	3.88	----	11.92	1.01	4.35
S-1203	3.88	----	11.19*	1.23	4.54
S-1317	3.93	----	12.42	1.18	5.58
F- 60	4.32	----	12.86	.99	5.02
F- 149	4.13	----	12.45	.75	4.51
F- 781	4.31	----	12.05	1.03	5.36
F- 856	3.95	----	11.89	1.16	4.75
F- 926	4.12	----	12.50	1.05	4.79
Red Steer 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 24	3.83	----	16.42	.48	16.98
S-1104	4.08	----	15.45*	.95	15.43
F- 66	3.93	----	15.87	1.08	16.94
F- 701	4.11	----	15.89	1.06	17.19
Blenn 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 185	4.43	----	15.73	1.02	16.14
S- 187	4.26	----	16.16	1.34	15.40
S- 189	4.64	----	14.41*	.59	17.15
S-1007	4.27	----	14.63*	.57	15.12*
S-1205	4.87	----	14.41*	.57	16.01
F- 67	4.48	----	14.64*	1.69	16.34
F- 163	4.37	----	16.20	1.50	15.26*
F- 259	4.20	----	16.58	.77	14.96*
F- 356	4.34	----	17.38	1.62	13.53*
F- 357	5.14	----	15.23*	1.57	16.24
F- 699	4.29	----	16.27	.78	13.22*
F- 702	4.01	----	16.15	1.30	16.38
Red Steer 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 27	3.83	----	24.67	.73	11.76
S- 191	4.14	----	22.36*	1.14	11.65
S- 814	4.17	----	18.73*	.95	14.64
S-1207	3.99	----	23.08*	1.20	12.81
F- 362	4.19	----	22.81*	1.74	12.29
Vigoro 6-10-4					
Guarantee	6.00	----	10.00	----	4.00
S- 637	5.70	----	10.06	.59	4.29
S-1409	5.84	----	10.88	.77	4.47
S-1434	5.77	----	11.40	.75	4.83
S-1435	6.87	----	11.00	.23	6.37
F- 502	6.01	----	9.92	.91	4.50
F- 797	5.72	----	10.31	.92	4.34
Brimm 6-12-18					
Guarantee	6.00	----	12.00	----	18.00
S- 39	5.77	----	12.01	.29	18.41
S- 641	5.94	----	11.66	.43	18.27
S-1114	6.12	----	11.99	.64	19.06
F- 69	5.46*	----	12.31	.87	19.07
F- 169	5.23*	----	13.39	.86	17.26*
F- 370	5.54*	----	12.01	1.04	19.74
Red Steer 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 646	7.89	----	8.46	.44	8.67
S-1127	7.60	----	8.43	.70	9.26
S-1183	8.12	----	7.88	.50	8.19
S-1330	7.93	----	7.92	1.03	9.26

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 25	6.58*	----	8.69	.71	9.73
F- 802	7.71	----	9.39	.36	9.19
Red Steer 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 209	9.02	----	20.85*	1.10	8.88
S- 468	7.63	----	22.72*	.78	8.07
S- 650	7.90	----	22.55*	.90	8.54
S- 837	7.14*	----	23.67	.98	7.26*
S- 919	8.00	----	21.29*	.58	9.13
S-1029	8.22	----	21.65*	.85	8.83
F- 72	7.01*	----	23.45*	.78	10.68
F- 77	6.44*	----	24.65	.85	9.61
F- 179	6.55*	----	25.05	1.10	9.84
F- 390	6.92*	----	24.77	1.08	9.59
F- 719	8.16	----	23.33*	.72	9.03
F- 816	7.68	----	23.56	.91	9.03
F- 951	7.02*	----	17.58*	.80	9.58
Red Steer 8-32-0					
Guarantee	8.00	----	32.00	----	----
S- 697	7.54*	----	30.49*	1.56	----
Red Steer 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 221	11.92	----	11.91	.17	12.42
S- 222	11.34*	----	11.47*	.17	12.71
S- 658	10.93*	----	13.41	.27	11.65
S- 850	10.67*	----	12.95	.23	12.11
S- 853	10.91*	----	11.73	.32	12.87
S- 964	10.84*	----	12.21	.29	12.08
S-1054	11.86	----	12.04	.41	12.05
S-1169	11.66	----	12.00	.50	12.71
S-1171	11.30*	----	12.73	.42	12.05
S-1294	12.06	----	11.07*	.55	13.58
S-1338	10.73*	----	12.48	.57	13.40
F- 87	10.85*	----	12.06	.47	13.90
F- 219	11.01*	----	12.26	.52	13.42
F- 223	10.54*	----	13.13	.52	12.82
F- 304	11.07*	----	12.66	.44	13.63
F- 403	11.36*	----	12.58	.50	13.05
F- 740	11.18*	----	12.75	.25	13.08
F- 741	11.71	----	11.23*	.39	12.84
F- 828	11.10*	----	12.31	.29	12.76
F- 969	10.34*	----	13.35	.50	12.77
F-1047	11.50	----	12.50	.38	12.21
Vigoro 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 57	11.96	----	12.32	.26	12.77
S- 126	11.45*	----	11.18*	.34	13.19
S- 950	10.59*	----	12.49	.26	12.63
S-1243	11.91	----	11.83	.17	12.35
F- 739	11.09*	----	11.80	.48	12.96
Pasturgro 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S-1244	11.26*	----	13.51	.30	11.98
S-1420	11.42*	----	12.52	.28	12.40
F- 33	10.74*	----	12.92	.38	13.52
F- 91	11.83	----	10.61*	.33	13.31
F- 218	11.63	----	11.88	.42	12.25
F- 404	11.05*	----	11.97	.46	13.39
Red Steer 15-0-10					
Guarantee	15.00	----	----	----	10.00
S- 227	13.88*	----	----	----	11.54
Instant Vigoro 19-28-14					
Guarantee	19.00	----	28.00	----	14.00
S-1453	18.13*	----	28.43	.02	15.43
TENNESSEE CORPORATION, ALTANTA, GA., & CINCINNATI, OHIO					
Loma 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
S-1430	5.19	----	11.16	.19	5.79

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %	MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %				Total %	Available %	Insoluble %	
THURSTON CHEMICAL CO., JOPLIN, MO.						Bem 4-16-0					
Bem 0-20-0						Guarantee	4.00	----	16.00	----	----
Guarantee	----	20.00	----	----		S- 559	4.69	----	14.77*	3.56	----
S- 69	----	20.17	.38	----		Bem 4-24-12					
S- 536	----	20.25	1.45	----		Guarantee	4.00	----	24.00	----	12.00
S- 692	----	20.50	1.20	----		S- 813	4.18	----	22.42*	2.18	13.12
S- 789	----	20.20	.95	----		S- 816	4.17	----	23.35*	2.25	12.57
S-1065	----	20.49	1.06	----		F- 265	4.17	----	22.36*	2.66	13.08
S-1067	----	20.00	1.15	----		Bem 5-10-5					
S-1307	----	20.28	1.22	----		Guarantee	5.00	----	10.00	----	5.00
F- 237	----	21.07	.48	----		S- 29	5.12	----	10.05	.75	5.38
F-1013	----	20.17	.78	----		S- 456	4.83	----	10.75	.73	5.03
Bem 0-20-20						S- 563	5.15	----	9.76	.52	5.02
Guarantee	----	20.00	----	20.00		S-1279	5.14	----	10.22	.86	5.27
S- 70	----	19.40*	.82	20.32		Bem 5-10-10					
S-1193	----	18.63*	1.32	21.96		Guarantee	5.00	----	10.00	----	10.00
S-1309	----	19.46*	1.62	20.88		S- 721	4.82	----	10.76	.44	10.50
F- 454	----	19.02*	1.31	21.71		Bem 5-20-20					
F- 456	----	19.58	1.30	21.04		Guarantee	5.00	----	20.00	----	20.00
F- 759	----	20.64	1.51	19.38*		S- 195	5.46	----	20.03	.57	19.90
F- 851	----	19.84	1.36	21.92		S-1212	5.27	----	19.11*	.37	21.07
Bem 2-12-6						S-1214	5.90	----	18.61*	.37	21.54
Guarantee	2.00	----	12.00	----	6.00	S-1365	4.99	----	21.76	.57	19.02*
S- 8	2.25	----	12.60	.90	6.16	F- 498	5.09	----	21.12	1.73	18.39*
S- 256	2.00	----	11.90	.98	6.39	F- 623	5.10	----	21.02	.53	19.09*
Bem 3-9-18						Bem Nodulated 5-20-20					
Guarantee	3.00	----	9.00	----	18.00	Guarantee	5.00	----	20.00	----	20.00
S- 165	3.17	----	9.00	1.15	18.24	F- 165	5.39	----	22.11	1.24	18.48*
Bem 3-12-12						F- 500	5.01	----	20.77	1.23	19.92
Guarantee	3.00	----	12.00	----	12.00	F- 705	5.26	----	20.65	1.50	19.10*
S- 11	2.96	----	11.96	.97	12.02	F- 862	5.29	----	19.02*	.43	20.08
S- 12	3.05	----	11.96	.86	12.56	Bem 6-12-12					
S- 266	3.10	----	12.55	.58	13.41	Guarantee	6.00	----	12.00	----	12.00
S- 269	3.03	----	12.09	.94	12.06	S- 34	5.75	----	12.41	.89	11.60
S- 270	2.98	----	11.87	1.06	12.88	S- 35	5.98	----	12.11	1.13	11.91
S- 542	2.78	----	12.04	1.01	12.20	S- 37	6.02	----	11.75	1.08	11.94
S- 543	3.16	----	12.29	1.34	11.84	S- 292	6.13	----	11.83	1.00	12.84
S- 717	2.95	----	12.36	.99	12.21	F- 167	6.27	----	12.58	.62	12.05
S- 799	2.76	----	12.27	1.13	12.05	F- 503	6.13	----	11.83	.97	13.11
S-1082	3.08	----	12.08	1.25	12.83	F- 504	6.04	----	11.81	.92	12.99
S-1269	2.86	----	12.39	1.16	12.79	F- 624	6.78	----	11.98	.95	11.95
S-1405	2.98	----	12.21	1.39	13.29	Bem 8-8-8					
F- 141	3.03	----	11.80	1.45	13.02	Guarantee	8.00	----	8.00	----	8.00
F- 247	3.35	----	12.50	.90	13.25	S- 40	7.91	----	8.07	.48	8.34
F- 249	3.01	----	12.11	.94	13.25	S- 41	7.68	----	8.83	.37	8.03
F- 469	3.02	----	11.94	.91	12.58	S- 203	7.65	----	8.72	.33	8.60
F- 605	3.94	----	11.72	1.33	13.48	S- 300	8.39	----	8.36	.42	8.36
Bem 4-12-4						S- 460	8.23	----	8.72	.31	8.03
Guarantee	4.00	----	12.00	----	4.00	S- 824	8.17	----	8.55	.65	8.08
S- 17	3.97	----	11.55	1.28	4.26	S- 826	8.07	----	8.47	.66	7.95
S- 18	3.97	----	11.94	.99	4.10	S-1025	8.04	----	8.34	.61	8.16
S- 19	3.74	----	12.25	.59	3.90	S-1117	8.02	----	8.16	.34	8.32
S- 21	4.00	----	12.08	.72	4.11	S-1121	8.27	----	8.59	.61	8.08
S- 277	4.12	----	11.99	1.24	4.30	S-1123	8.27	----	8.48	.57	7.68
S- 279	4.08	----	12.31	1.14	4.28	S-1126	8.35	----	8.21	.59	8.16
S- 448	3.95	----	11.89	1.31	4.05	S-1131	8.42	----	8.17	.64	8.22
S- 547	4.06	----	12.09	1.56	4.56	S-1282	8.01	----	8.38	.60	8.66
S- 551	4.21	----	12.73	1.27	4.99	F- 171	7.91	----	9.17	.56	8.03
S- 809	3.79	----	12.39	.96	4.29	F- 268	8.10	----	9.04	.54	8.33
S-1092	4.00	----	12.15	1.50	4.02	F- 272	8.26	----	8.70	.33	8.36
F- 151	3.96	----	11.89	1.14	4.31	F- 375	7.90	----	8.57	.63	8.49
F- 153	4.16	----	12.22	1.21	4.57	F- 510	8.10	----	8.58	.27	8.15
F- 154	4.06	----	12.20	1.05	4.31	F- 512	8.22	----	8.05	.33	8.49
F- 250	4.07	----	11.79	1.64	4.36	F- 628	8.09	----	8.88	.30	8.69
F- 252	4.04	----	12.10	1.40	4.54	F- 869	8.34	----	8.27	.51	8.86
F- 253	3.92	----	11.93	1.40	4.38	Bem 8-24-8					
F- 258	4.09	----	12.08	.97	4.62	Guarantee	8.00	----	24.00	----	8.00
F- 347	4.29	----	13.37	.88	4.02	S- 44	8.24	----	23.77	1.58	8.38
F- 480	3.96	----	12.30	1.28	4.24	S- 208	8.36	----	21.63*	.99	8.69
F- 482	4.03	----	11.17*	1.31	4.64	S- 305	7.97	----	23.51	2.34	8.40
F- 612	4.03	----	12.28	.72	4.39	S- 310	8.40	----	22.46*	2.09	8.80
F- 694	3.98	----	12.54	1.16	4.12						
F- 858	4.14	----	12.81	1.07	4.46						

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 312	8.01	----	23.55	2.38	8.16
S- 463	8.31	----	23.35*	1.63	8.63
S- 833	7.99	----	22.94*	1.94	8.69
S- 836	8.30	----	22.40*	2.00	8.41
S- 930	8.09	----	22.62*	2.68	8.74
S-1036	7.99	----	24.05	2.20	8.18
S-1135	8.69	----	23.40*	.98	8.31
S-1141	8.11	----	24.56	2.69	8.07
S-1148	8.63	----	23.08*	.80	8.15
S-1219	9.27	----	22.56*	1.34	8.88
S-1221	8.91	----	22.59*	.41	8.47
S-1287	8.58	----	24.82	.63	8.57
S-1289	7.63	----	24.91	3.04	7.26*
F- 73	8.70	----	24.08	2.12	8.47
F- 182	8.42	----	24.06	2.69	8.46
F- 183	7.99	----	23.30*	2.40	8.83
F- 187	8.22	----	22.80*	2.75	8.34
F- 284	8.32	----	23.11*	2.14	8.63
F- 286	8.15	----	22.95*	2.55	8.70
F- 522	7.94	----	23.52	3.36	8.15
F- 526	7.99	----	23.93	2.50	9.03
F- 630	8.43	----	24.38	2.62	8.86
F- 638	8.75	----	24.09	3.08	9.09
F- 639	7.98	----	24.22	3.23	8.64
F- 874	8.00	----	22.59*	3.05	8.40
F- 880	8.13	----	24.40	2.80	8.03
F-1029	8.92	----	23.26*	1.57	8.80
Bem Nodulated 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
F- 79	8.87	----	24.19	1.71	8.68
F- 383	8.72	----	24.45	2.05	8.65
F- 387	8.76	----	24.44	2.06	8.29
F- 534	8.73	----	24.65	2.45	9.79
F- 538	8.73	----	24.73	2.32	8.48
F- 635	8.44	----	24.21	2.84	8.83
F- 940	8.41	----	25.59	.86	8.64
Bem Nodulated 8-32-0					
Guarantee	8.00	----	32.00	----	----
F- 972	8.01	----	33.04	1.36	----
Bem 10-20-0					
Guarantee	10.00	----	20.00	----	----
S- 842	10.19	----	19.30*	1.75	----
F- 294	10.46	----	19.23*	2.22	----
F- 836	10.10	----	20.52	1.63	----
Bem Nodulated 10-20-0					
Guarantee	10.00	----	20.00	----	----
S-1247	9.38*	----	21.54	.76	----
F- 669	10.30	----	21.33	1.70	----
Bem 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 51	10.20	----	19.78	1.22	10.57
S-1238	8.97*	----	20.34	.66	11.02
F- 652	10.40	----	18.87*	1.41	10.76
F- 896	9.75	----	20.08	1.77	10.88
F- 899	9.92	----	20.72	1.53	10.48
Bem Nodulated 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 947	9.25*	----	21.92	.88	9.47
Bem 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 52	11.88	----	12.79	.64	11.70
S- 53	11.54	----	13.49	.69	11.72
S- 499	12.34	----	11.74	.49	12.05
S- 847	12.11	----	11.76	.84	12.11
S- 849	12.04	----	12.31	.87	12.18
S- 960	12.10	----	12.51	.84	11.86
S-1160	12.49	----	12.04	.69	12.62
S-1166	12.51	----	12.80	1.00	12.05
S-1240	11.62	----	12.99	.34	12.40
S-1293	12.24	----	11.45*	.99	12.31
S-1340	12.18	----	12.27	1.03	12.53

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 89	12.08	----	13.20	1.05	13.58
F- 210	12.16	----	12.55	.95	12.73
F- 301	12.62	----	13.40	.88	12.62
F- 307	12.20	----	11.81	1.37	13.18
F- 409	12.12	----	13.47	.98	12.87
F- 562	12.37	----	11.38*	.92	12.93
F- 655	11.76	----	13.61	.97	12.80
F- 905	12.08	----	12.18	1.25	12.59
Bem Nodulated 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 224	12.16	----	12.85	.45	11.67
S- 326	10.45*	----	15.23	.61	13.63
S- 498	11.30*	----	15.08	.48	12.13
S- 961	12.80	----	11.90	.78	12.20
S-1163	12.21	----	13.16	.91	12.45
S-1173	11.51	----	15.38	.45	11.22*
S-1383	11.82	----	13.94	.94	12.62
S-1385	12.14	----	12.91	.94	12.88
F- 93	12.20	----	13.34	.91	12.20
F- 98	12.12	----	12.98	.90	13.21
F- 209	12.34	----	13.33	1.00	12.76
F- 221	12.16	----	13.59	.95	12.67
F- 569	12.16	----	12.82	.76	12.86
F- 661	11.83	----	13.97	1.08	12.95
F- 902	11.83	----	13.28	.91	12.64
F- 964	12.06	----	13.40	1.05	13.24
Bem 15-15-0					
Guarantee	15.00	----	15.00	----	----
S- 710	15.35	----	15.36	.67	----
F- 671	14.43*	----	16.80	1.20	----
F- 909	14.44*	----	15.36	1.02	----
Bem Nodulated 15-15-0					
Guarantee	15.00	----	15.00	----	----
S- 968	15.19	----	17.63	.27	----
F- 102	15.37	----	16.54	.51	----
Bem Sulphate of Ammonia 21%					
Guarantee	21.00	----	----	----	----
S-1251	20.82	----	----	----	----
F- 226	20.92	----	----	----	----
Bem 0-0-60					
Guarantee	----	----	----	----	60.00
S- 599	----	----	----	----	61.92
F- 108	----	----	----	----	61.96
F- 317	----	----	----	----	60.06
TOBIN SEED CO., KANSAS CITY, MO.					
Archer 6-12-6					
Guarantee	6.00	----	12.00	----	6.00
S-1436	5.80	----	1.63*	11.58	5.94
TRI-STATE CHEMICAL CO., WEBB CITY, MO.					
Gro-Mor 0-20-0					
Guarantee	----	----	20.00	----	----
S- 250	----	----	18.69*	2.34	----
F- 594	----	----	19.35*	1.38	----
Gro-Mor 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 254	----	----	16.71*	.99	17.21*
S-1068	----	----	16.30*	1.00	24.78
S-1069	----	----	17.24*	.88	23.25
Gro-Mor 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 262	3.22	----	11.04*	.95	14.31
S- 263	2.99	----	11.08*	1.12	13.22
S- 267	2.67*	----	10.25*	1.10	15.28
S-1080	3.21	----	11.80	1.05	12.68
F- 470	3.51	----	12.17	1.13	11.30*
F- 472	3.21	----	11.36*	1.00	12.58
F- 601	2.70*	----	11.72	.85	13.59
F- 771	4.30	----	11.94	1.19	13.29

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
Gro-Mor 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 20	4.11	----	9.70*	.95	4.61
S- 275	4.35	----	10.29*	.90	5.23
S-1094	4.41	----	11.48*	1.10	4.83
S-1095	4.66	----	12.93	1.15	4.68
S-1096	4.58	----	11.98	1.10	4.55
F- 478	3.96	----	9.95*	1.14	5.34
F- 479	3.80	----	10.39*	1.05	4.81
F- 609	4.09	----	11.47*	1.11	5.27
F- 610	4.03	----	11.52	.87	5.51
F- 614	4.01	----	10.61*	1.13	5.34
F- 777	3.94	----	12.82	.81	4.56
Gro-Mor 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 455	4.03	----	22.43*	1.07	13.78
Gro-Mor 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 290	6.10	----	10.93*	1.06	13.07
S- 457	5.69	----	12.34	.81	13.13
F- 507	6.01	----	11.47*	1.05	13.68
F- 508	4.84*	----	12.05	1.03	11.99
F- 626	6.27	----	11.09*	.91	14.68
Gro-Mor 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 42	7.07*	----	7.83	.65	9.41
S- 297	8.48	----	7.03*	.67	8.22
S- 822	8.03	----	7.95	.75	7.81
S-1118	8.79	----	7.92	.68	9.01
Gro-Mor 8-16-8					
Guarantee	8.00	----	16.00	----	8.00
S- 302	8.45	----	14.48*	.52	10.15
Gro-Mor 8-16-16					
Guarantee	8.00	----	16.00	----	16.00
F- 490	7.30*	----	16.94	.36	16.76
Gro-Mor 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 306	8.08	----	22.27*	.79	8.04
S- 309	7.83	----	17.29*	.81	11.44
S- 467	7.45*	----	20.99*	.70	9.72
S-1132	8.01	----	22.72*	.91	8.39
S-1133	8.37	----	21.98*	.85	8.85
F- 524	8.03	----	21.06*	.89	8.63
F- 813	8.37	----	22.72*	.36	8.98
Gro-Mor 12-12-12					
Guarantee	12.00	----	12.00	----	12.00
S- 54	11.16*	----	9.95*	.43	12.03
S- 496	11.29*	----	11.24*	.34	11.86
S-1161	12.27	----	11.82	.31	12.68
F- 558	9.55*	----	12.79	.51	12.83
F- 657	10.79*	----	13.01	.42	13.28
F- 659	9.90*	----	14.20	.62	12.40
Gro-Mor Sul-Po-Mag					
Guarantee	----	----	----	----	22.50
F- 598	----	----	----	----	22.25
Gro-Mor 0-0-60					
Guarantee	----	----	----	----	60.00
S- 66	----	----	----	----	60.02
S- 517	----	----	----	----	60.94
UNITED STATES PHOSPHORIC PRODUCTS, TAMPA, FLORIDA					
Florida Triple Phosphate 46%					
Guarantee	----	----	46.00	----	----
S- 161	----	----	46.79	.41	----
UNITED STATES POTASH CO., CARLSBAD, NEW MEXICO					
Sunshine State Potash 60%					
Guarantee	----	----	----	----	60.00
S- 136	----	----	----	----	59.16
S- 138	----	----	----	----	60.86

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
S- 140	----	----	----	----	59.44
S- 233	----	----	----	----	59.94
S- 236	----	----	----	----	59.82
S- 420	----	----	----	----	60.30
S- 519	----	----	----	----	60.70
S-1257	----	----	----	----	60.51
S-1259	----	----	----	----	61.89
S-1263	----	----	----	----	60.65
F- 111	----	----	----	----	60.55
F- 235	----	----	----	----	61.44
F- 430	----	----	----	----	60.37
F- 914	----	----	----	----	61.34
F- 986	----	----	----	----	61.48
F- 987	----	----	----	----	61.94
F-1066	----	----	----	----	60.09
VICTOR CHEMICAL WORKS, CHICAGO, ILL.					
Take Hold 10-52-17					
Guarantee	10.00	----	52.00	----	17.00
S-1446	10.39	----	53.51	.04	17.42
VIRGINIA-CAROLINA CHEMICAL CORP., EAST ST. LOUIS, ILL.					
V-C 0-20-0					
Guarantee	----	----	20.00	----	----
S-1066	----	----	20.38	1.32	----
F- 754	----	----	21.17	.66	----
V-C 0-45-0					
Guarantee	----	----	45.00	----	----
F- 329	----	----	48.57	1.35	----
F- 918	----	----	46.69	1.74	----
V-C 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 255	----	----	20.38	.62	19.34*
S- 890	----	----	20.34	1.21	19.69
F- 7	----	----	20.01	1.44	19.62
F- 332	----	----	20.52	1.28	20.92
F- 919	----	----	20.10	1.05	21.97
V-C 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 362	3.26	----	9.68	.65	18.00
F- 136	3.42	----	9.27	.51	19.45
F- 137	3.72	----	9.38	1.15	16.69*
V-C 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 370	3.08	----	9.66	.42	24.80*
S- 379	3.49	----	9.42	.96	25.95*
S-1079	3.22	----	9.55	.68	26.80
V-C 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 180	3.40	----	11.80	1.75	12.85
S- 268	3.25	----	12.28	1.07	12.82
S- 385	3.54	----	11.99	1.31	12.63
S- 798	3.07	----	12.30	1.28	12.56
S- 801	3.44	----	12.44	1.86	12.10
S-1084	3.14	----	11.87	1.53	12.16
S-1086	3.32	----	11.84	1.39	11.96
F- 16	3.30	----	11.74	1.85	13.38
F- 142	3.29	----	12.51	.44	13.02
F- 685	3.30	----	12.28	.70	12.16
F- 686	3.32	----	12.83	1.02	12.39
F- 689	3.29	----	11.91	2.64	11.65
F- 766	3.22	----	12.75	.85	13.05
F- 768	3.30	----	12.02	1.01	12.73
F- 920	3.15	----	12.16	2.82	11.31*
V-C 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 281	4.02	----	12.27	.96	4.96
S- 449	4.27	----	12.90	1.68	4.74
S- 807	4.18	----	12.14	1.56	4.30
S- 810	4.16	----	13.63	.90	5.02
S-1101	4.24	----	12.4'	1.47	5.28

TABLE 4 -- ANALYSIS AND GUARANTEES OF FERTILIZER SAMPLES, 1954 (Continued)

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
F- 17	4.44	----	12.16	1.09	4.90
F- 155	3.81	----	13.03	1.92	5.20
F- 156	4.19	----	12.22	1.03	4.57
F- 158	4.18	----	12.10	2.15	4.54
F- 351	4.18	----	11.52	2.79	4.72
F- 923	4.33	----	13.85	.57	4.26
F- 994	4.25	----	11.76	2.17	4.48
F-1021	4.14	----	12.92	.66	4.42
V-C 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S-1006	3.92	----	16.36	.99	16.64
S-1105	4.87	----	14.90*	.93	14.61*
F- 354	4.09	----	16.82	.98	17.23
F- 487	4.04	----	15.39*	1.06	17.02
F- 698	4.20	----	15.39*	1.79	16.06
F- 700	4.22	----	15.18*	1.32	16.37
F- 785	4.28	----	16.93	1.12	15.09*
V-C 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S- 555	4.44	----	22.06*	4.12	12.28
S-1109	4.52	----	22.95*	1.93	13.05
F- 619	4.16	----	22.31*	2.77	13.35
F- 791	4.34	----	21.82*	1.23	12.63
F- 930	4.38	----	21.46*	2.84	13.17
F- 932	4.12	----	22.68*	.75	12.77
V-C 5-10-5					
Guarantee	5.00	----	10.00	----	5.00
S- 561	4.95	----	10.59	1.79	6.97
V-C 6-12-12					
Guarantee	6.00	----	12.00	----	12.00
S- 291	6.61	----	12.48	1.92	11.28*
S- 911	6.62	----	12.50	2.40	12.20
S-1116	6.26	----	12.57	.83	12.14
V-C 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 298	7.93	----	9.75	.82	8.78
S- 572	7.92	----	8.74	.46	7.80
F- 24	7.61	----	9.11	1.02	9.61
F- 172	7.90	----	8.95	.75	10.03
F- 178	7.80	----	9.20	.90	9.56
F- 373	8.59	----	8.59	1.29	9.20
F- 514	8.10	----	8.02	1.65	8.85
F- 710	8.04	----	8.69	1.04	9.40
F- 713	8.11	----	8.39	.89	8.97
F- 867	8.21	----	8.82	.41	8.96
F- 938	8.24	----	8.32	1.63	8.64
V-C 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 211	8.37	----	21.95*	2.50	9.44
S- 465	8.48	----	23.63	1.67	8.75
S- 583	8.45	----	23.06*	2.19	8.42
S- 647	8.25	----	22.92*	2.31	8.42
S- 834	8.25	----	23.76	1.69	8.76
S- 920	7.84	----	23.71	.79	8.67
S-1142	8.34	----	23.18*	1.25	8.25
S-1146	8.33	----	23.22*	1.21	8.20
F- 28	7.01*	----	22.91*	1.12	9.71
F- 74	8.75	----	22.59*	1.64	9.63
F- 188	8.05	----	22.22*	.88	9.31
F- 193	8.51	----	23.02*	.98	9.14
F- 278	8.77	----	21.27*	.91	11.01
F- 382	8.37	----	23.01*	.72	9.44
F- 386	8.64	----	20.01*	1.61	9.90
F- 519	8.16	----	22.62*	.91	9.23
F- 640	8.66	----	21.96*	1.24	9.18
F- 808	8.31	----	23.75	1.40	9.16
F- 818	8.72	----	21.30*	1.48	9.51
F- 877	8.56	----	22.65*	1.25	9.32
F- 944	9.05	----	21.41*	2.22	9.20
F- 946	8.97	----	21.98*	1.02	9.29
F- 947	8.59	----	21.17*	1.38	10.14

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
V-C 10-6-4					
Guarantee	10.00	----	6.00	----	4.00
S- 396	9.31*	----	6.70	.40	4.44
F- 195	9.62	----	7.93	.46	5.52
F- 952	10.42	----	6.87	.44	4.93
V-C 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 316	9.14*	----	11.46	.52	11.29
S- 398	9.44*	----	10.31	1.02	11.75
S- 482	10.13	----	10.48	.60	10.33
S- 489	10.09	----	10.14	.54	10.58
S- 838	10.00	----	10.30	.53	10.45
S- 840	10.26	----	9.60	.49	10.44
S- 935	9.75	----	12.28	.72	10.68
S- 944	9.78	----	10.62	.58	10.40
S-1043	8.84*	----	10.66	1.92	11.26
S-1045	10.22	----	10.60	.48	10.67
S-1048	10.21	----	10.44	.86	10.39
S-1152	10.48	----	10.13	.70	10.36
S-1153	10.60	----	9.93	.87	10.19
S-1156	10.36	----	10.95	.75	10.04
F- 84	10.29	----	10.87	.83	11.04
F- 200	10.46	----	10.33	.42	11.62
F- 202	10.23	----	11.22	.98	10.87
F- 291	9.39*	----	10.36	1.32	10.84
F- 394	10.01	----	10.99	.99	10.95
F- 545	10.16	----	10.29	1.27	11.35
F- 546	9.75	----	11.31	.67	10.43
F- 646	10.50	----	10.20	.40	11.52
F- 728	10.34	----	9.84	1.51	11.04
F- 734	9.98	----	10.11	1.34	10.71
F- 821	10.31	----	10.43	1.90	11.25
F- 893	10.11	----	10.27	1.16	11.29
F- 955	10.37	----	10.05	1.43	11.33
F- 957	10.82	----	9.76	1.72	11.19
V-C 10-20-0					
Guarantee	10.00	----	20.00	----	----
S- 490	8.81*	----	19.12*	2.31	----
S- 586	9.81	----	21.08	1.07	----
F- 421	9.55	----	19.54	2.29	----
F- 837	10.56	----	17.21*	2.85	----
F- 974	10.63	----	18.56*	1.79	----
F-1004	10.20	----	19.07*	2.13	----
F-1044	9.62	----	18.17*	2.33	----
V-C 10-20-10					
Guarantee	10.00	----	20.00	----	10.00
S- 587	9.53	----	20.96	.64	9.85
F- 651	10.38	----	20.06	.34	10.88
F- 960	10.59	----	18.79*	.83	10.94
V-C 12-12--12					
Guarantee	12.00	----	12.00	----	12.00
S- 324	10.87*	----	11.94	.39	12.42
WICHITA FERTILIZER CO., WICHITA, KANSAS					
Booster 10-20-0					
Guarantee	10.00	----	20.00	----	----
S-1380	10.33	----	21.13	1.92	----
S-1444	10.55	----	21.14	1.51	----

TABLE 5 -- ANALYSIS AND GUARANTEE OF FERTILIZER DISTRIBUTED IN BULK, 1954

When fertilizers are sold to dealers in bulk they are subject to contamination with materials previously occupying the dealers truck or storage bin. Since the original manufacturer is no longer in control of the analysis of the material

the dealer must assume responsibility for making and meeting the guaranteed analysis. Therefore, in this and the following tables the dealer may be referred to as the "Guarantor."

MANUFACTURER OR DEALER INDICATED SOURCE	GUARANTOR		Phosphoric Acid		Fineness
			Total	Avail.	
American Agricultural Chemical Co., National Stock Yards, Ill.	Same	Guarantee	30.00	3.00	50.0/200
S- 72		Found	31.45	3.18	58.9/200
S- 145		Found	32.15	3.45	67.2/200
S- 337		Found	31.45	3.10	55.6/200
S- 424		Found	32.15	3.30	72.2/200
S- 430		Found	31.20	3.45	57.8/200
S- 431		Found	31.40	3.45	76.1/200
S- 432		Found	31.15	2.90	59.4/200
S- 433		Found	31.40	3.35	56.0/200
S- 606		Found	31.30	3.05	59.0/200
S- 677		Found	30.70	3.10	51.4/200
S- 678		Found	29.98	2.70	58.4/200
S- 679		Found	30.70	2.95	54.8/200
F- 3		Found	31.10	4.50	56.4/200
		Guarantee	30.00	3.00	70.0/200
S- 144		Found	31.15	3.65	76.2/200
S- 874		Found	30.65	3.82	73.0/200
F- 114		Found	32.45	3.95	74.4/200
F- 115		Found	31.35	4.40	77.2/200
	R. L. Aggeler Coal Co., Boonville	Guarantee	30.00	3.00	50.0/200
S- 763		Found	30.45	3.70	60.6/200
	C. E. Arndt, Higginsville	Guarantee	30.00	3.00	50.0/200
S- 607		Found	31.05	3.40	64.4/200
F-1069		Found	30.50	3.70	73.7/200
	John Atkins, Lathrop	Guarantee	30.00	3.00	70.0/200
F-1089		Found	30.90	3.80	78.7/200
	Auxvasse Stone & Gravel Co., Auxvasse	Guarantee	30.00	3.00	70.0/200
S- 875		Found	30.70	4.35	73.0/200
	Barton County Soil Service, Lamar	Guarantee	30.00	3.00	50.0/200
S- 770		Found	30.85	3.75	56.2/200
F- 587		Found	30.60	3.50	51.0/200
	Raymond Bethel, New Florence	Guarantee	30.00	3.00	70.0/200
S- 338		Found	31.55	3.52	73.6/200
F- 438		Found	29.65	3.10	71.4/200
	Bissell Phosphate Co., Memphis	Guarantee	30.00	3.00	50.0/200
S- 429		Found	31.65	3.30	63.0/200
	Frank Blum, Sullivan	Guarantee	30.00	3.00	50.0/200
F- 442		Found	30.98	2.98	52.0/200
	C. A. Brickhaus, McBride	Guarantee	30.00	3.00	50.0/200
S- 143		Found	30.55	3.47	58.4/200
	Concordia Lumber Co., Concordia	Guarantee	30.00	3.00	50.0/200
S- 608		Found	31.10	3.67	70.7/200
	Farmers Cooperative Elevator Ass'n., O'Fallon	Guarantee	30.00	3.00	50.0/200
S- 873		Found	31.70	3.85	59.4/200
F- 440		Found	31.55	3.05	67.0/200
	Farmers Elevator Co., Monroe City	Guarantee	30.00	3.00	50.0/200
S- 434		Found	31.15	3.13	57.8/200
	Farmers Rock & Lime Co., Chillicothe	Guarantee	30.00	3.00	70.0/200
S- 526		Found	30.15	3.49	72.2/200
	Fowler Brothers, Hughesville	Guarantee	30.00	3.00	50.0/200
S- 764		Found	30.90	3.45	63.4/200
F-1009		Found	30.70	3.65	58.4/200
	Glasgow Co-op. Association, Glasgow	Guarantee	30.00	3.00	50.0/200
S- 609		Found	31.15	2.70	55.6/200
	M. D. Grider, Appleton City	Guarantee	30.00	3.00	50.0/200
F- 113		Found	31.65	4.40	56.6/200
	Edward G. Hemsath, St. Charles	Guarantee	30.00	3.00	50.0/200
F- 441		Found	31.32	3.12	55.0/200
	Hugh Jamieson, Bowling Green	Guarantee	30.00	3.00	50.0/200
S- 676		Found	30.90	3.20	58.0/200
F- 116		Found	31.85	4.00	60.6/200
	Kersting & Fennewald, Martinsburg	Guarantee	30.00	3.00	50.0/200
S- 673		Found	30.83	2.83	57.0/200
F- 117		Found	32.00	3.60	54.2/200
	Lincoln Plant Food Supply Co., Moscow Mills	Guarantee	30.00	3.00	50.0/200
F- 753		Found	31.05	3.40	61.2/200
	Littrell & Butterfield, Wheeling	Guarantee	30.00	3.00	50.0/200
S- 527		Found	31.35	2.95	55.2/200
	Macon County Soil Service, Macon	Guarantee	30.00	3.00	50.0/200
S- 427		Found	31.28	3.75	66.0/200
S- 672		Found	31.25	2.90	52.0/200
F- 321		Found	30.50	2.95	48.4/200
F- 323		Found	31.15	2.93	57.1/200
	Montague Phosphate Co., Edina	Guarantee	30.00	3.00	70.0/200
F- 435		Found	31.50	3.30	76.0/200

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1954

When bulk fertilizers such as rock phosphate have passed into the storage bin of a dealer, and are subject to contamination with materials previously occupying the bin, the original producer is no longer in control of the analysis of the material. Therefore, the dealer assumes the responsibility of making and meeting the guaranteed analysis.

When the following samples were drawn from storage bins or trucks the dealer was requested to state the source of

the material sampled. This indicated source is shown for all samples guaranteed by dealers.

If the guarantor is indicated as "same" the reader may assume the sample was drawn from a railroad car or bags bearing the label of the manufacturer.

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
AMERICAN AGRICULTURAL CHEMICAL CO., NATIONAL STOCK YARDS, ILL.					
18% Normal Superphosphate					
Guarantee	----	----	18.00	----	----
S- 154	----	----	18.38	.17	----
S- 689	----	----	18.48	.22	----
S- 980	----	----	18.68	.17	----
F- 122	----	----	18.71	.44	----
F- 678	----	----	18.58	.07	----
Agrico Phosphate & Potash 0-20-20					
Guarantee	----	----	20.00	----	20.00
S- 158	----	----	20.48	.52	20.01
S-1073	----	----	19.07*	.91	20.04
F- 125	----	----	21.64	1.14	17.08*
F- 681	----	----	19.44*	.79	19.48
F- 991	----	----	19.88	1.27	19.75
AA Quality 2-12-6					
Guarantee	2.00	----	12.00	----	6.00
S- 621	1.96	----	11.72	1.15	6.27
S- 985	2.82	----	12.01	.54	6.68
S-1075	2.97	----	12.15	.90	6.67
S-1354	6.89	----	12.66	.52	9.38
F- 135	3.11	----	11.94	.76	7.03
F- 762	1.98	----	12.31	.74	6.85
F- 992	2.23	----	11.79	1.46	6.64
Agrico for Corn 3-9-18					
Guarantee	3.00	----	9.00	----	18.00
S- 164	2.94	----	9.45	.45	17.75
Agrico for Corn 3-9-27					
Guarantee	3.00	----	9.00	----	27.00
S- 166	2.96	----	9.46	.47	26.43
S-1355	2.99	----	9.92	.46	25.85*
F- 138	2.79	----	9.37	.38	28.04
AA Quality 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 625	3.20	----	12.14	.56	11.47
S- 716	3.15	----	12.21	.62	12.10
S-1083	2.77	----	12.08	.52	13.46
S-1089	3.18	----	12.63	.67	12.00
F- 144	3.06	----	12.65	.60	10.93*
F- 476	2.98	----	12.02	1.03	12.37
F- 688	3.02	----	11.98	1.00	13.32
Agrico for Midwest 3-12-12					
Guarantee	3.00	----	12.00	----	12.00
S- 175	3.02	----	11.81	1.09	12.60
S- 629	3.11	----	12.16	.99	12.19
S-1087	3.04	----	12.01	1.19	12.66
S-1199	2.96	----	11.72	1.18	12.80
S-1311	3.51	----	12.32	.48	12.27
S-1358	3.15	----	12.19	.71	13.67
F- 14	3.20	----	12.48	.84	12.50
F- 58	3.00	----	12.29	.54	13.46
F- 140	3.15	----	11.82	1.38	13.24
F- 143	3.39	----	12.32	.38	12.79
F- 687	3.13	----	12.07	.96	12.74
F- 691	2.94	----	12.16	.92	12.08
AA Quality 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S-1274	4.45	----	11.82	.86	4.74
F- 59	4.50	----	11.34*	1.10	5.71
F- 63	4.44	----	11.51	1.07	5.38
F- 485	4.07	----	11.53	1.16	4.92

MANUFACTURER, BRAND, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID			POTASH %
		Total %	Available %	Insoluble %	
Agrico for Cereals 4-12-4					
Guarantee	4.00	----	12.00	----	4.00
S- 554	4.36	----	12.51	1.29	4.51
S- 633	3.91	----	11.72	1.68	4.42
S- 803	3.96	----	12.16	.79	4.46
S- 997	3.93	----	11.88	.90	4.30
S-1001	4.17	----	11.96	.92	5.40
S-1204	4.23	----	11.76	.62	5.08
S-1272	3.98	----	11.41*	.94	4.59
S-1273	4.06	----	11.72	.56	4.70
S-1316	3.70	----	12.69	.64	5.37
F- 150	4.05	----	11.72	1.89	4.31
F- 159	3.98	----	12.27	.88	5.02
F- 486	4.02	----	12.05	1.08	4.24
F- 995	3.97	----	11.35*	1.94	4.19
Agrico for Corn 4-16-16					
Guarantee	4.00	----	16.00	----	16.00
S- 188	4.29	----	15.73	.80	15.36*
S- 634	4.06	----	15.72	.63	16.71
S-1005	4.15	----	15.28*	1.22	16.03
S-1360	3.89	----	15.34*	.64	17.75
AA Quality 4-24-12					
Guarantee	4.00	----	24.00	----	12.00
S-1011	3.98	----	22.68*	1.60	12.05
S-1210	4.21	----	22.90*	1.68	12.10
S-1362	4.50	----	21.66*	1.42	12.81
F- 789	3.97	----	22.31*	1.70	12.95
Agrico for Top Dressing 8-8-8					
Guarantee	8.00	----	8.00	----	8.00
S- 205	7.99	----	8.27	.31	8.40
S- 914	7.80	----	8.74	.21	8.10
S-1017	7.25*	----	9.55	.33	8.22
S-1023	7.64	----	8.47	.33	8.84
S-1024	7.01*	----	8.78	.22	9.75
S-1128	7.88	----	8.46	.29	8.03
S-1280	7.22*	----	8.29	.51	9.15
S-1329	8.18	----	8.37	.31	8.27
S- 722	7.92	----	8.41	.27	8.09
F- 173	8.04	----	8.43	1.05	8.83
F- 716	7.99	----	8.52	.43	8.77
F- 170	7.93	----	8.76	.27	8.92
F- 516	7.57*	----	8.84	.69	9.41
F- 714	7.88	----	8.70	.55	8.81
F- 715	7.87	----	8.67	.56	8.84
F- 801	7.20*	----	9.53	.41	8.93
F- 804	7.78	----	8.50	.43	8.99
AA Quality 8-24-8					
Guarantee	8.00	----	24.00	----	8.00
S- 206	8.38	----	23.99	2.01	7.35*
S- 582	7.99	----	23.36*	1.52	8.16
S-1032	8.23	----	20.73*	.70	8.25
S-1034	7.90	----	22.91*	1.52	8.66
F- 720	7.84	----	23.83	1.71	8.38
F-1033	7.70	----	23.24*	1.19	8.75
AA Quality 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 651	9.64	----	10.04	.29	10.49
S- 943	9.77	----	10.72	.76	10.25
S-1154	10.06	----	10.99	.54	10.14
F- 203	9.38*	----	11.05	.73	10.51
F- 552	9.10*	----	10.58	.65	10.53
F- 736	10.16	----	9.87	.78	10.96
F- 954	9.98	----	10.40	.40	10.99
Agrico for Top Dressing 10-10-10					
Guarantee	10.00	----	10.00	----	10.00
S- 215	9.90	----	9.58*	.27	10.37

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1954 (Continued)

MANUFACTURER OR DEALER INDICATED SOURCE	GUARANTOR		Phosphoric Acid		Fineness
			Total	Avail.	
S- 529	Jackson Naylor, Salisbury	Guarantee	30.00	3.00	50.0/200
		Found	31.00	3.10	72.6/200
S- 675	Frank Niemeyer, Bowling Green	Guarantee	30.00	3.00	50.0/200
		Found	30.30	2.85	54.4/200
S-1299	Producers Grain Co., El Dorado Springs	Guarantee	31.00	2.00	70.0/200
		Found	31.00	4.10	71.0/200
F- 437	Pulse Phosphate Co., Canton	Guarantee	30.00	3.00	50.0/200
		Found	31.10	2.95	47.4/200
S- 142	Rolla Ice & Fuel Co., Rolla	Guarantee	30.00	3.00	70.0/200
		Found	31.55	3.85	71.8/200
F- 38	Henry A. Schulze, Pendleton	Guarantee	30.00	3.00	50.0/200
		Found	31.20	3.10	56.0/200
F- 439	Siemers Plant Food Co., Jackson	Guarantee	30.00	3.00	70.0/200
		Found	31.45	3.80	84.1/200
F-1112	Southwest Lime Co., Neosho	Guarantee	30.00	3.00	50.0/200
		Found	30.25	3.25	53.2/200
S- 771	Stark Service Co., Powersville	Guarantee	30.00	3.00	50.0/200
		Found	30.78	4.03	52.0/200
S- 671	Steva Stone Co., Richmond	Guarantee	30.00	2.80	55.6/200
		Found	30.00	3.00	70.0/200
F- 322	T & O Rock Phosphate Co., Sedalia	Guarantee	30.00	3.00	50.0/200
		Found	30.60	3.40	54.0/200
S- 765	Turner Feed, Knobnoster	Guarantee	30.00	3.00	70.0/200
		Found	31.45	3.70	72.5/200
F-1008	Williams Rock Co., Post oak	Guarantee	30.00	3.00	50.0/200
		Found	31.65	3.60	57.6/200
S- 767	Same	Guarantee	30.00	3.00	50.0/200
		Found	31.20	3.85	59.1/200
F-1010	Same	Guarantee	30.35	4.05	71.0/200
		Found	31.30	4.65	64.8/200
S- 766	Same	Guarantee	30.00	3.00	50.0/200
		Found	31.15	4.45	55.8/200
F-1007	Same	Guarantee	30.00	3.00	70.0/200
		Found	31.35	5.35	78.8/200
S- 768	Same	Guarantee	31.00	3.00	70.0/200
		Found	32.45	4.37	73.2/200
S- 769	Same	Guarantee	31.63	4.26	69.9/200
		Found	30.60	3.90	73.2/200
American Cyanamid Co., New York, N. Y.	Same	Guarantee	33.00	3.00	70.0/200
		Found	33.80	3.60	84.4/200
F- 4	Same	Guarantee	33.00	3.60	71.8/200
		Found	33.70	4.10	70.0/200
F- 121	Same	Guarantee	33.65	4.15	73.8/200
		Found	33.05	4.15	76.6/200
F- 443	Same	Guarantee	33.15	4.25	74.0/200
		Found	33.50	4.27	70.9/200
S- 535	Same	Guarantee	33.00	3.00	85.0/200
		Found	32.88	4.58	85.4/200
S- 615	M. F. A. Central Coop., Union	Guarantee	33.00	3.00	70.0/200
		Found	33.65	4.30	73.0/200
S- 688	N. J. Cooksey, Moberly	Guarantee	33.00	3.00	70.0/200
		Found	33.85	3.65	86.0/200
S- 779	M. F. A. Central Coop., Owensville	Guarantee	33.00	3.00	70.0/200
		Found	33.50	4.30	70.6/200
S- 780	M. F. A. Central Coop., Truesdale	Guarantee	33.00	3.00	70.0/200
		Found	33.15	3.90	77.4/200
S-1064	M. F. A. Central Coop., Union	Guarantee	33.00	3.00	70.0/200
		Found	33.25	4.25	72.2/200
S-1265	Nichols Brothers, Southwest City	Guarantee	33.00	3.00	80.0/200
		Found	33.50	4.20	72.0/200*
M. C. Boyle Phosphate Co., Chicago, Ill.	Same	Guarantee	30.00	3.00	90.0/200
		Found	31.00	2.90	93.4/200
S- 425	Same	Guarantee	30.43	2.50	94.4/200
		Found	29.53	2.61	92.5/200
S- 426	Same	Guarantee	30.70	3.30	96.5/200
		Found	31.00	3.00	70.0/200
F- 676	Same	Guarantee	30.70	3.15	70.4/200
		Found	31.70	3.85	70.6/200
F- 752	Same	Guarantee	31.00	3.00	70.0/200
		Found	31.00	3.85	70.0/200
Columbia Phosphate Co., St. Louis, Mo.	Same	Guarantee	31.00	3.00	70.0/200
		Found	31.45	3.75	77.0/200
S- 681	Same	Guarantee	31.00	3.00	70.0/200
		Found	31.00	4.15	65.5/200
S- 882	Same	Guarantee	31.00	3.00	70.0/200
		Found	31.20	4.15	65.5/200
S- 151	Same	Guarantee	31.00	3.00	70.0/200
		Found	31.20	4.15	65.5/200
F- 120	Same	Guarantee	31.00	3.00	70.0/200
		Found	30.89	2.09	58.8/200*
Highland Mining Corp., Nashville, Tennessee	Same	Guarantee	31.00	2.90	78.4/200
		Found	31.00	2.00	70.0/200
S- 3	Same	Guarantee	30.53	1.88	73.6/200
		Found	31.00	2.00	70.0/200
S- 341	Same	Guarantee	30.30	1.87	58.6/200*
		Found	32.00	2.00	70.0/200
S- 141	Same	Guarantee	30.18*	1.98	82.4/200
		Found	30.18*	1.98	82.4/200

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1954 (Continued)

MANUFACTURER OR DEALER INDICATED SOURCE	GUARANTOR		Phosphoric Acid		Fineness
			Total	Avail.	
S- 240	Dean Rickman, Savannah	Guarantee	31.00	2.00	70.0/200
		Found	30.13*	2.23	71.8/200
S- 876	Schlimme & Lowes, Cape Girardeau	Guarantee	31.00	3.00	70.0/200
		Found	29.68*	2.00	60.0/200*
International Minerals & Chemical Corp., Chicago, Ill.	Same	Guarantee	31.00	3.00	70.0/200
S- 423		Found	31.30	3.65	75.0/200
S- 682		Found	31.25	3.50	70.6/200
S- 979		Found	31.80	3.85	70.6/200
F- 990		Found	32.15	3.55	59.4/200*
		Guarantee	33.00	3.00	70.0/200
S- 883		Found	32.90	4.30	70.8/200
F- 446		Found	33.25	3.75	72.4/200
	Barton County Soil Service, Lamar	Guarantee	31.00	3.00	70.0/200
S- 777		Found	31.90	4.00	65.5/200
F- 589		Found	31.23	3.93	68.1/200
	Oliver Bockelman, Cole Camp	Guarantee	33.00	3.00	70.0/200
S- 150		Found	33.25	3.75	71.4/200
	Boonville Mill & Grain Co., Boonville	Guarantee	31.00	3.00	70.0/200
S- 772		Found	30.95	4.10	71.4/200
	Harold Campbell, Versailles	Guarantee	33.00	3.00	70.0/200
S- 149		Found	32.98	3.15	70.8/200
	Carroll County Farm Bureau Service Co., Carrollton	Guarantee	31.00	2.00	70.0/200
F- 988		Found	32.00	3.95	77.0/200
		Guarantee	31.00	3.00	70.0/200
S- 610		Found	31.25	2.95	73.2/200
	DeKalb County Farm Bureau Service Co., Maysville	Guarantee	31.00	2.00	70.0/200
F- 915		Found	31.28	4.15	78.0/200
		Guarantee	31.00	3.00	70.0/200
S- 612		Found	30.95	3.42	71.0/200
	Emma Coop. Elevator, Sweet Springs	Guarantee	31.00	2.00	70.0/200
F-1090		Found	30.38	3.73	68.1/200
		Guarantee	31.00	3.00	70.0/200
S- 613		Found	31.45	3.30	76.2/200
	Farmers Exchange, Brookfield	Guarantee	31.00	3.00	70.0/200
S- 532		Found	31.00	3.45	72.4/200
	Farmers Rock & Lime Co., Nettleton	Guarantee	33.00	3.00	70.0/200
F- 677		Found	32.83	4.03	73.3/200
	Ruby Green, Inc., Kirksville	Guarantee	33.00	3.00	70.0/200
S- 687		Found	32.60	2.85	70.4/200
	Kilkenny Limestone Co., West Plains	Guarantee	33.00	2.00	70.0/200
S-1300		Found	33.08	4.53	82.0/200
	La Grange Elevator Co., La Grange	Guarantee	31.00	3.00	70.0/200
F- 444		Found	31.05	3.50	70.6/200
	Linn County Farm Bureau Service Co., Linneus	Guarantee	31.00	3.00	70.0/200
S- 531		Found	31.38	3.40	70.6/200
F- 590		Found	31.60	4.30	69.1/200
	Logan & Cook, Memphis	Guarantee	33.00	3.00	70.0/200
S- 439		Found	33.25	3.70	76.2/200
	Marblehead Lime Co., Hannibal	Guarantee	33.00	3.00	70.0/200
S- 441		Found	32.50	4.25	72.0/200
	Marion County Farm Bureau Service Co., Palmyra	Guarantee	31.00	2.00	70.0/200
F- 434		Found	31.35	4.32	76.4/200
	M. F. A. Central Coop., Bernie	Guarantee	31.00	2.00	70.0/200
S- 871		Found	31.65	2.65	70.6/200
	M. F. A. Central Coop., Centerview	Guarantee	31.00	2.00	70.0/200
F-1011		Found	30.85	5.25	74.1/200
		Guarantee	31.00	3.00	70.0/200
S- 773		Found	31.75	4.15	78.8/200
	M. F. A. Central Coop., Chillicothe	Guarantee	31.00	3.00	70.0/200
S- 530		Found	30.55	3.05	76.4/200
	M. F. A. Central Coop., Gallatin	Guarantee	31.00	3.00	70.0/200
S- 611		Found	30.95	3.62	72.8/200
	M. F. A. Central Coop., Sedalia	Guarantee	33.00	3.00	70.0/200
S- 782		Found	33.35	4.15	76.8/200
F-1012		Found	33.20	5.28	81.8/200
	M. F. A. Coop. Ass'n. # 1 Slater	Guarantee	31.00	3.00	70.0/200
S- 614		Found	31.30	3.30	72.2/200
	M. F. A. Seed Division, Marshall	Guarantee	31.00	3.00	70.0/200
S- 605		Found	31.80	3.45	70.8/200
	Putnam County M. F. A. Exchange, Unionville	Guarantee	31.00	3.00	70.0/200
S- 680		Found	31.15	3.40	70.6/200
	Randolph County Phosphate Co., Cairo	Guarantee	33.00	3.00	70.0/200
S- 534		Found	32.90	2.95	70.2/200
	Riddle & Smith, Buell	Guarantee	31.00	2.00	70.0/200
F- 433		Found	30.80	3.40	76.2/200
		Guarantee	31.00	3.00	70.0/200
S- 684		Found	31.00	3.05	74.4/200
	Smith Brothers, Queen City	Guarantee	33.00	3.00	70.0/200
S- 686		Found	33.00	3.55	70.2/200
	Tipton Farm Service Co., Tipton	Guarantee	33.00	3.00	70.0/200
S- 152		Found	33.40	3.40	74.4/200
	Verona Farmers Sales Ass'n., Verona	Guarantee	31.00	3.00	70.0/200
S- 778		Found	33.20	6.65	63.1/200*

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1954 (Continued)

MANUFACTURER OR DEALER INDICATED SOURCE	GUARANTOR		Phosphoric Acid		Fineness
			Total	Avail.	
S- 775	Walters Phosphate Co., Nevada	Guarantee	31.00	3.00	70.0/200
		Found	31.70	3.80	67.9/200
S- 783	Williams Rock Co., Clinton	Guarantee	33.00	3.00	70.0/200
		Found	33.20	3.60	71.6/200
Lange Brothers, Inc., St. Louis, Mo. S-1063	Same	Guarantee	31.00	2.00	70.0/200
		Found	31.73	3.85	71.0/200
Owens Agricultural Phosphate Co., Centerville, Tenn. F- 37	Same	Guarantee	30.00	2.00	70.0/200
		Found	28.25*	2.44	75.5/200
Robin Jones Phosphate Co., Nashville, Tenn. S- 1 S- 880 F-1113 F-1114 S- 340 F- 445 F-1072 S- 339	Same	Guarantee	31.00	2.00	70.0/200
		Found	31.40	3.95	73.2/200
		Found	31.88	2.53	74.8/200
		Found	32.40	3.15	69.3/200
		Found	31.78	2.60	64.7/200*
		Guarantee	31.00	3.00	70.0/200
		Found	32.55	3.35	77.0/200
		Found	32.10	2.90	75.2/200
		Guarantee	32.00	2.00	70.0/200
		Found	31.98	1.95	66.6/200
		Guarantee	31.00	3.00	70.0/200
		Found	31.23	2.40	71.4/200
Ruhm Phosphate & Chemical Co., Columbia, Tenn. S- 528 S- 881 F- 588 S- 435	Same	Guarantee	30.00	3.00	85.0/300
		Found	29.85	1.90	86.4/300
		Found	30.30	3.35	87.4/300
		Guarantee	30.00	3.00	85.0/300
		Found	29.25	2.90	86.1/300
		Guarantee	30.00	3.00	85.0/300
		Found	30.30	2.60	83.1/300
		Schrock Fertilizer Service, Congerville, Ill. S- 436 S- 774 S- 533 S- 786 S- 520 S- 885 S- 148 S-1302 S- 4 S- 522 S- 776 S-1184 F- 2 F- 319 F- 675 F- 916 S- 239 S- 242 F-1071 S- 604 S- 760 S- 601 S- 243 S- 762 S- 602 F-1070 S- 241 S- 603 S- 683 S- 761	Bower & Johnson, Clarence Davis Phosphate Co., Butler Farmers Rock & Lime Co., Breckenridge Delbert Johnson, Lockwood Elmer Parman, Sheridan Carl Partin Phosphate Co., Milan Virgil Smith, Belle Roy Worthington, Weableau Same Benton Feed Store, St. Joseph Consumers Oil Co., Maryville Davis Fertilizer Co., Maitland Dickmeyer Ready-Mix Concrete, Lexington Carl Divine, Iantha Dye Phosphate & Grain Co., Hale Everett & Clark, Plattsburg Jasper County Farm Bureau Service Co., Carthage King City Elevator Co., King City Dean Rickman, Savannah Rock Acres Lime Co., Blue Springs Soil Service Co., Laddonia Witter Soil Service, Asbury	Guarantee	33.00
Found	34.00			4.43	74.6/200
Guarantee	31.00			3.00	70.0/200
Found	31.70			4.10	76.0/200
Guarantee	33.00			3.00	70.0/200
Found	32.80			3.35	72.0/200
Guarantee	33.00			3.00	70.0/200
Found	33.05			3.90	75.8/200
Guarantee	31.00			2.00	70.0/200
Found	30.70			3.25	71.0/200
Guarantee	33.00			3.00	70.0/200
Found	33.90			3.75	78.0/200
Guarantee	31.00			3.00	70.0/200
Found	31.30			3.70	72.2/200
Guarantee	33.00			3.00	70.0/200
Found	33.63			5.33	74.2/200
Guarantee	31.00			2.00	80.0/200
Found	30.06*			3.52	81.9/200
Found	31.20	1.80	84.2/200		
Found	31.55	2.62	77.2/200		
Found	31.73	2.65	82.4/200		
Found	31.65	3.25	83.5/200		
Found	31.60	2.70	80.8/200		
Found	31.60	2.50	82.6/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.90	2.85	76.1/200		
Guarantee	31.00	2.00	70.0/200		
Found	31.45	1.98	76.8/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.05	2.70	85.8/200		
Guarantee	31.00	2.00	70.0/200		
Found	30.73	2.38	80.5/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.25	1.95	80.2/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.35	2.45	82.0/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.20	2.57	81.2/200		
Guarantee	31.00	2.00	70.0/200		
Found	30.75	2.38	82.4/200		
Guarantee	31.00	2.00	70.0/200		
Found	31.35	3.10	74.4/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.40	2.25	80.8/200		
Found	31.40	4.15	78.7/200		
Guarantee	31.00	2.00	70.0/200		
Found	31.50	1.80	81.2/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.80	1.55	82.8/200		
Guarantee	31.00	3.00	80.0/200		
Found	30.55	1.72	87.2/200		
Guarantee	31.00	2.00	80.0/200		
Found	31.20	1.95	86.8/200		

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1954 (Continued)

MANUFACTURER OR DEALER INDICATED SOURCE	GUARANTOR		Phosphoric Acid		Fineness	
			Total	Avail.		
Swift and Company, National Stock Yards, Ill.	Same	Guarantee	33.00	3.00	60.0/200	
F- 324		Found	33.10	3.75	86.2/200	
		Guarantee	33.00	3.00	90.0/100	
S- 442		Found	33.35	3.48	90.7/100	
S- 437		Found	33.00	3.00	60.0/200	
	Northeast Missouri Fertilizer Service, Shelbina	Found	32.60	2.90	66.4/200	
Thompson Sales Company, Montgomery, Alabama	Same	Guarantee	18.00	2.00	85.0/200	
S- 71		Found	18.85	2.65	92.8/200	
F- 1		Found	18.85	3.15	88.0/200	
F- 112		Found	20.00	1.70	94.8/200	
F-1068		Found	16.93*	2.53	94.3/200	
		Guarantee	18.00	2.00	90.0/200	
S- 336		Found	19.75	1.67	93.0/200	
S- 879		Found	18.73	2.85	88.1/200	
Thomson Phosphate Dept., International Mineral & Chemical Corporation, Chicago, Ill.		Same	Guarantee	30.00	3.00	90.0/200
S- 244			Found	31.00	2.73	91.0/200
S- 428	Found		30.53	2.38	92.0/200	
S- 524	Found		30.28	2.38	92.4/200	
S- 525	Found		30.23	2.05	91.4/200	
F- 436	Found		29.90	2.45	92.6/200	
	John Atkins, Lathrop		Guarantee	30.00	3.00	90.0/200
S- 245	Found		30.65	2.70	91.4/200	
	George F. Bailey, Curryville		Guarantee	30.00	3.00	90.0/200
S- 674	Found		30.45	2.57	93.8/200	
F- 118	Found		30.70	3.30	90.6/200	
	Central Farm Products Co., Trenton		Guarantee	30.00	3.00	90.0/200
F- 989	Found		32.40	2.33	95.0/200	
	James O. Cone, Memphis		Guarantee	33.00	3.00	85.0/200
S- 438	Found		33.35	3.70	85.8/200	
F- 447	Found		32.67	3.62	85.0/200	
	Day and Nelson, Pickering		Guarantee	33.00	3.00	85.0/200
S- 247	Found		33.08	4.45	86.0/200	
	Fowler Brothers, Hughesville		Guarantee	33.00	3.00	85.0/200
S- 781	Found		33.35	4.25	88.0/200	
	Hunt Limestone Co., Osceola		Guarantee	31.00	3.00	85.0/200
F- 119	Found		31.63	4.75	86.5/200	
	Odessa Canning Co., Odessa		Guarantee	33.00	3.00	70.0/200
S- 617	Found		32.65	3.25	73.6/200	
	Peterson-Prather Phosphate Co., Tarkio		Guarantee	30.00	3.00	90.0/200
S- 248	Found		30.28	2.75	90.9/200	
	Robinson Rock Phosphate Co., Clinton		Guarantee	33.00	3.00	85.0 to 90.0/200
S- 784	Found		33.05	4.00	87.4/200	
	Rock Acres Lime Co., Blue Springs		Guarantee	33.00	3.00	85.0/200
S- 616	Found		32.60	3.65	85.0/200	
	Siemers Plant Food Co., Jackson		Guarantee	30.00	3.00	90.0/200
S- 872	Found		30.40	3.80	90.6/200	
	Stewart Fertilizer Service, Kahoka		Guarantee	33.00	3.00	85.0/200
S- 440	Found		33.25	3.98	85.4/200	
F- 448	Found		33.24	4.39	86.2/200	

TABLE 7 -- ANHYDROUS AMMONIA SAMPLES, 1954

Anhydrous ammonia samples are analyzed by a simple volatilization test which can be performed in the field. A measured amount of the liquid ammonia is drawn into a graduated tube and then allowed to volatilize. Being more volatile than any impurity likely to be present, the ammonia will be released as a gas when exposed to the air. This leaves any water or other probable contaminant in the tube to be measured. Pure ammonia contains approximately 82.25% nitrogen.

Commercial Solvents Corp.
Dow Chemical Co.
Hercules Powder Co.
Lion Oil Co.
Mathieson Chemical Corp.

During the calendar year covered by this bulletin 82 samples of anhydrous ammonia were drawn from tank cars and dealer storage tanks. All samples collected either exceeded the guarantee of 82% nitrogen, or were well within the allowable tolerance range. These samples included materials manufactured by the following producers:

Mississippi Chemical Corp.
Nitrogen Division, Allied Chemical & Dye Corp.
Phillips Chemical Co.
Spencer Chemical Co.

Sample #	Dealer	Location	Date
S-1	Mid-South Chemical Co.	Jackson	3-2-54
S-2	Missouri Growers, Inc.	Barnard	3-8-54
S-3	Danco, Inc.	Maryville	3-8-54
S-4	Missouri Growers, Inc.	Tarkio	3-9-54
S-5	Missouri Growers, Inc.	Westboro	3-9-54
S-6	Holt County Fertilizer Co.	Forest City	3-9-54
S-7	M. F. A. Central Cooperative	St. Joseph	3-10-54
S-8	St. Joseph Fertilizer Co.	St. Joseph	3-10-54
S-9	Arnold Brothers Produce	Orrick	3-11-54
S-10	N. E. Missouri Fertilizer Service	Lakenan	3-23-54
S-11	Abboud Fertilizer Co.	Mexico	3-25-54
S-12	Producers Grain Co.	Centralia	3-25-54
S-13	Snowden Lumber Co.	Grant City	3-30-54
S-14	M. F. A. Central Cooperative	Grant City	3-30-54
S-15	M. F. A. Central Cooperative	Albany	3-30-54
S-16	M. F. A. Central Cooperative	Bethany	3-30-54
S-17	Missouri Growers, Inc.	Tindall	3-31-54
S-18	M. F. A. Central Cooperative	Chillicothe	3-31-54
S-19	Farmers Exchange	Brookfield	4-1-54
S-20	Missouri Growers, Inc.	Brunswick	4-1-54
S-21	Farmers Cooperative Ass'n.	Brunswick	4-1-54
S-22	Glasgow Cooperative Ass'n.	Glasgow	4-8-54
S-23	Missouri Growers, Inc.	Carrollton	4-5-54
S-24	Farmers Produce & Grain Co.	Hamilton	4-6-54
S-25	Freeman Bros. Farm Supply Store	Osborn	4-6-54
S-26	Turpin Fertilizer Co.	King City	4-6-54
S-27	K & H Liquid Fertilizer, Inc.	Blairstown	4-7-54
S-28	M. F. A. Central Cooperative	Higginsville	4-8-54
S-29	Emma Cooperative Elevator Co.	Sweet Springs	4-8-54
S-30	Tipton Farm Service Co.	Malta Bend	4-8-54
S-31	M. F. A. Seed Division	Marshall	4-8-54
S-32	M. F. A. Cooperative Ass'n.	Slater	4-8-54
S-33	Farm Service Corp.	Macon	4-13-54
S-34	Soil Service Co.	Ladonia	4-14-54
S-35	Farmers Elevator	Vandalia	4-14-54
S-36	M. F. A. Central Cooperative	Sedalia	4-19-54
S-37	M. F. A. Central Cooperative	Centerville	4-20-54
S-38	B. V. Nitrogen Fertilizer Co.	Butler	4-20-54
S-39	Jasper Farmers Exchange	Jasper	4-21-54
S-40	Witter Soil Service	Asbury	4-21-54
S-41	Stanley-Fogarty Fertilizer Co.	Essex	4-26-54
S-42	M. F. A. Central Cooperative	Bernie	4-27-54
S-43	Mid-South Chemical Co.	Clarkton	4-27-54
S-44	Stanley-Fogarty Fertilizer Co.	Hayti	4-27-54
S-45	Soil Services Co.	Caruth	4-27-54
S-46	Southeast Missouri Fertilizer Co.	Portageville	4-27-54
S-47	E. B. Gee Cotton Co.	Marston	4-27-54
S-48	Mid-South Chemical Co.	Matthews	4-27-54
S-49	Mid-South Chemical Co.	Morehouse	4-27-54
S-50	Missouri Plant Food Co.	Sikeston	4-27-54

TABLE 7 -- ANHYDROUS AMMONIA SAMPLES, 1954 (Continued)

Sample #	Dealer	Location	Date
S-51	Stanley-Forgarty Fertilizer Co.	East Prairie	4-28-54
S-52	Marshall Reeves	Charleston	4-28-54
S-53	Stanley-Forgarty Fertilizer Co.	Morley	4-28-54
S-54	Producers Grain Co.	El Dorado Springs	6-7-54
F-55	M. F. A. Central Cooperative	Louisiana	9-7-54
F-56	M. F. A. Farmers Elevator	Vandalia	9-9-54
F-57	Soil Service Co.	Ladonia	9-9-54
F-58	Tipton Farm Service Co.	Tipton	9-13-54
F-59	Farm Service Corp.	Macon	9-16-54
F-60	Arnold Brothers Produce	Orrick	9-16-54
F-61	Missouri Growers, Inc.	Henrietta	9-16-54
F-62	Farm Service Corp.	New Florence	9-21-54
F-63	Cooperative Association # 2	Labadie	9-23-54
F-64	Farmers Produce & Grain Co.	Hamilton	10-6-54
F-65	Northeast Missouri NH ₃ Co.	Elsberry	10-13-54
F-66	M. F. A. Plant Food Div.	Springfield	10-19-54
F-67	Missouri Growers, Inc.	Laredo	11-1-54
F-68	Missouri Growers, Inc.	Carrollton	11-2-54
F-69	M. F. A. Central Cooperative	Sedalia	11-8-54
F-70	M. F. A. Central Cooperative	Moberly	9-16-54
F-71	Robert M. Eisberg	Salisbury	9-16-54
F-72	Waltman Miller	Arbela	9-21-54
F-73	Home Gas Service	Kahoka	9-21-54
F-74	La Grange Elevator Co.	La Grange	9-23-54
F-75	Missouri Growers, Inc.	Laclede	9-29-54
F-76	M. F. A. Central Cooperative	Centerview	11-9-54
F-77	M. F. A. Central Cooperative	Bethany	11-16-54
F-78	M. F. A. Central Cooperative	Albany	11-17-54
F-79	Turpin Fertilizer Co.	King City	11-17-54
F-80	Emma Cooperative Elevator	Sweet Springs	11-22-54
F-81	Rea Grain and Feed	Rea	12-14-54
F-82	Missouri Growers, Inc.	Plattsburg	12-15-54

R. L. Aggeler Coal Co., West Water St., Boonville, Mo.	Davison Chemical Co., Division of W. R. Grace & Co., P. O. Box 269, Perry, Iowa
Agricultural Products Corp., 713 Des Moines St., Webster City, Iowa	Charles Denny & Co., 1505 Big Ben Blvd., St. Louis 17, Mo.
American Agricultural Chem. Co., Box "E", National Stock Yards, Ill.	DeWitt Chemical Co., 303 Market St., Kingston, Penn.
American Chemical Paint Co., Ambler, Penn.	E. I. du Pont de Nemours & Co., Wilmington, Dela.
American Cyanamid Co., 30 Rockefeller Plaza, New York 20, N. Y.	Eaton-Mann Phosphate Co., 301 Barber Building, Joliet, Ill.
American Liquid Fertilizer Co., Inc., 2nd St. at St. Clair, Marietta, Ohio	Economy Nursery Co., Branch Ave., Little Silver, N. J.
Anco Chemical Co., P. O. Box 482, Marion, Ohio	Excell Laboratories, Inc., 2732 Indiana Ave., Chicago, Ill.
Ark-Mo Plant Food Co., Inc., P. O. Box 447, Walnut Ridge, Ark.	Faesy & Besthoff, Inc., 325 Spring St., New York 13, N. Y.
Armour Fertilizer Works, 110 W. 19th St., North Kansas City, Mo.	Falls City Fertilizer, Inc., P. O. Box 922, Grand Island, Nebr.
Armour Fertilizer Works, P. O. Box 312, East St. Louis, Ill.	Farm Belt Fertilizer & Chemical Co., 23rd & State Line, Kansas City, Kans.
Armour Fertilizer Works, P. O. Box 750, Waterloo, Iowa	Farm Bureau Service Co. of Missouri, Inc., 223 E. Capitol, Jefferson City, Mo.
Armour Fertilizer Works, 3967 Weaver Rd., Memphis, Tenn.	Farm Fertilizers, Inc., 7500 S. 13th St., Omaha, Nebr.
Associated Cooperatives, Inc., P. O. Box 911, Sheffield, Ala.	Farm Fertilizer Service, Mexico Gravel Rd., Columbia, Mo.
Atkins & Durbrow, Inc., 165 John St., New York, N. Y.	Ferro Corp., 4150 E. 56th St., Cleveland, Ohio
Atlas Fish Fertilizer Co., 1 Drumm St., San Francisco 11, Calif.	Fertiline Corp. of America, 966 Proprietors Rd., Worthington, Ohio
H. J. Baker & Bro., 600 Fifth Ave., New York, N. Y.	Ford Motor Co., 3000 Schaefer Rd., Dearborn, Mich.
Barrett Fertilizer Co., 78th & Cleveland, Kansas City, Mo.	Foreign Products Corp., 283 McKinley Ave., East Orange, N. J.
Best Fertilizers Co., 8420 Manchester St., Houston, Texas	Ft. Smith Cotton Oil Co., Inc., 723 No. 1st St., Ft. Smith, Ark.
Better Homes Bureau, 165 East Union St., Newark, N. Y.	Garden Products Co., 3246 S. Grand Blvd., St. Louis, Mo.
Blytheville Fertilizer Corp., P. O. Box 619, Blytheville, Ark.	Garden Research Laboratories, 699 Madison Ave., New York 21, N. Y.
M. C. Boyle Phosphate Co., 407 So. Dearborn, Chicago 5, Ill.	Gaylord Chemical Co., 701 Woodswether Rd., Kansas City 5, Mo.
Bradley & Baker, 155 East 44th St., New York 17, N. Y.	Geigy Agricultural Chemicals, 89 Barclay St., New York 8, N. Y.
California Spray-Chemical Corp., Lucas & Ortho Way, Richmond, Calif.	General Fertilizer Co., 301 Washington, Fremont, Nebr.
Carbola Chemical Co., Inc., Natural Bridge, N. Y.	Goulard & Olena, Inc., Skillman, N. J.
Central Mo. Chem. & Min., 1300 Industrial Drive, Jefferson City, Mo.	Grace Chemical Co., P. O. Box 4906 North Station, Memphis, Tenn.
Chesmore Seed Co., 102 South 2nd St., St. Joseph, Mo.	D. B. Gray Farmers Elevator Co., Hull, Ill.
Cloverset Farm, 105th Wornall, Kansas City, Mo	Gulf Coast Organic & Minerals Co., 325 S. Cage Blvd., Pharr, Texas
Columbia Phosphate Co., 1007 Washington Ave., St. Louis 1, Mo.	J. Harris Manure Co., 121 Baugh Ave., East St. Louis, Ill.
Commercial Solvents Corp., 260 Madison Ave., New York 16, N. Y.	Heller Greenhouse Laboratories, 218 E. Peak Ave., Colorado Springs, Colo.
Consumers Cooperative Ass'n., 318 East 10th St., Kansas City 42, Mo.	Hercules Powder Co., Delaware Trust Building, Wilming- ton 99, Dela.
Crawford Chemical Co., Inc., P. O. Drawer 309, Bartles- ville, Okla.	A. H. Hoffman, Inc., Landisville, Penn.
Darling & Co., 4201 S. Ashland Ave., Chicago, Ill.	Home Products Co., 1439 S. Bannock St., Denver, Colo.
Davison Chemical Co., Division of W. R. Grace & Co., P. O. Box 1009, Nashville 1, Tenn.	Hoover Soil Service, 126-130 S. Thomas St., Gilman, Ill.
	Hydroponic Chemical Co., Inc., Copley, Ohio

International Min. & Chem. Corp., P. O. Box 928, Texarkana, Ark.	Pearson-Ferguson Chemical Co., 1400 Union Ave., Kansas City, Mo.
Jennings Fertilizer & Supply Co., Box 514, Calvert City, Ken.	Phillips Chemical Co., Adams Building, Bartlesville, Okla.
Kahn Bros. Co., 4425 S. Halsted St., Chicago, Ill.	Planetary Chemical Co., Ballas Road, Creve Coeur, Mo.
Kansas Agricultural Chemical Co., Inc., 403 E. 8th St., Junction City, Kans.	Plantabbs Corp., 1105 Maryland Ave., Baltimore 1, Maryland
Kaw River Valley Fertilizer Co., 102 Wall St., Joplin, Mo.	Proen Products Co., 9th & Grayson Sts., Berkeley 10, Calif.
Marie Kruse Nursery, R. R. # 1, Bloomington, Ill.	Pulse Phosphate Co., Canton, Mo.
Lange Brothers, Inc., 1 Angelica St., St. Louis, Mo.	Ra-Pid-Gro Corp., 88 Ossian St., Dansville, N. Y.
La Plata Chemical Co., La Plata, Mo.	C. M. Reed & Son, 302 McGregor St., Carthage, Mo.
Lawn-Tex., Inc., 1640 Fulton St., Chicago 12, Ill.	Robin Jones Phosphate Co., 804 Church St., Nashville 3, Tenn.
Lion Oil Co., Lion Oil Building, El Dorado, Ark.	Roigina Products, Box 345, Lincoln, Nebr.
Little Genie Corp., 366 Westminster, San Antonio, Texas	Rose City Cotton Oil Mill Co., P. O. Box 950, Little Rock, Ark.
Loanium Co. of America, 2 Kingsland Ave., Harrison, N. J.	Rose City Nursery, Tyler, Texas
McCormick & Co., Inc., McCormick Building, Baltimore 2, Maryland	Rose Manufacturing Co., 445 Main St., Beacon, N. Y.
McKesson & Robbins, Inc., 100 N. 4th St., Burlington, Iowa	Ruhm Phosphate & Chemical Co., Box 361, Columbia, Tenn.
Magnolia Fertilizer Co., P. O. Box 18, Vicksburg, Miss.	St. Louis National Stockyards Co., Exc. Bldg., National Stock Yards, Ill.
Marblehead Lime Co., 300 W. Washington St., Chicago 6, Ill.	San Francisco Chemical Co., 720 Washington St., Mont- pelier, Idaho
Mathieson Chemical Corp., P. O. Box 991, Little Rock, Ark.	Schrock Fertilizer Service, Congerville, Ill.
Mathieson Chemical Corp., Mathieson Building, Baltimore 3, Maryland	O. M. Scott & Sons Co., Marysville, Ohio
Earl May Seed Co., Shenandoah, Iowa	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago 7, Ill.
Mid-South Chemical Co., Inc., P. O. Box 162, Memphis, Tenn.	Sewerage Commission of Milwaukee, P. O. Box 2079, Milwaukee 1, Wis.
Midwest Phosphate Co., Essington Rd., Route 1, Joliet, Ill.	Smith-Douglass Co., Inc., Box 457, Streator, Ill.
Mississippi Chemical Corp., Yazoo City, Miss.	Smith Equipment & Supply Co., 1615 N. Central Ave., Chicago 39, Ill.
Missouri Farmers Ass'n., Inc., 201 S. 7th St., Columbia, Mo.	Snyder Chemical Co., Inc., P. O. Box 946, Topeka, Kans.
Missouri Plant Food Co., Inc., Highway 60, West, Sikeston, Mo.	Soil-Aid Corporation, 125 E. 8th St., Coffeyville, Kans.
Monsanto Chemical Co., 1700 S. 2nd St., St. Louis 4, Mo.	Soil Booster Corporation, 2501 N. E. 4th St., Oklahoma City, Okla.
"Na-Churs" Plant Food Co., 421 Monroe St., Marion, Ohio	Southern Agricultural Fertilizer Co., Box 728, Clarksdale, Miss.
National Fertilizer Co., 800 Arcade St., Fairbury, Nebr.	Southern Cotton Oil Co., 1351 Williams, Memphis, Tenn.
National Fertilizer Co., 625 Live Stock Exc. Bldg., Kansas City 2, Mo.	Soylaid, Incorporated, P. O. Box 8006, San Antonio 12, Texas
Natural Plant Food Co., 210 W. California, Oklahoma City 2, Okla.	Spencer Chemical Co., 610 Dwight Building, Kansas City, Mo.
Nitrogen Div., Allied Chem. & Dye Corp., 40 Rector St., New York 6, N. Y.	Stark Bro's. Nurseries & Orchards Co., Louisiana, Mo.
Northern Field Seed Co., 115 E. 2nd St., Winona, Minn.	Stern's Nurseries, Inc., 404 William St., Geneva, N. Y.
Nutritional Concentrates, Inc., P. O. Box 309, New Lexing- ton, Ohio	Stimulant Laboratories Co., P. O. Box 1955, Columbus 16, Ohio
Oklahoma Fertilizer & Chemical Co., P. O. Box 2665, Oklahoma City, Okla.	Stockdale Fertilizer Co., Morris, Ill.
Owens Agricultural Phosphate Co., P. O. Box 821, Bloomington, Ill.	Swift & Company, Plant Food Div., National Stock Yards, Ill.
	Swift & Co., Des Moines Feed Mill, Des Moines, Iowa
	Synthetic Nitrogen Products Corp., 285 Madison Ave., New York 17, N. Y.

Tennessee Corporation, 617-29 Grant Bldg., Atlanta, Ga.	United Seeds, Inc., Ralston, Nebr.
Tennessee Corporation, Lockland, Cincinnati 15, Ohio	U. S. Phosphoric Products, Division of Tennessee Corp., P. O. Box 3269, Tampa, Florida
Thompson Sales Co., 17 Molton St., Montgomery, Ala.	United States Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.
Thomson Phosphate Dept., International Min. & Chem. Corp., 20 N. Wacker Drive, Chicago 6, Ill.	Victor Chemical Works, 141 W. Jackson Blvd., Chicago 4, Ill.
Thurston Chemical Co., Division of W. R. Grace & Co., 102 Wall St., Joplin, Mo.	Virginia-Carolina Chemical Corp., P. O. Box 191, East St. Louis, Ill.
Topeka Mill & Elevator Co., Inc., E. 10th & Santa Fe Tracks, Topeka, Kans.	Western Mines, Inc., 1400 S. Lipan St., Denver 19, Colo.
Tri-State Chemical Co., P. O. Box 591, Webb City, Mo.	Wichita Fertilizers, Inc., P. O. Box 2337, Wichita, Kans.
Umbaugh Agricultural Chemical Co., 3593 Central, Memphis, Tenn.	