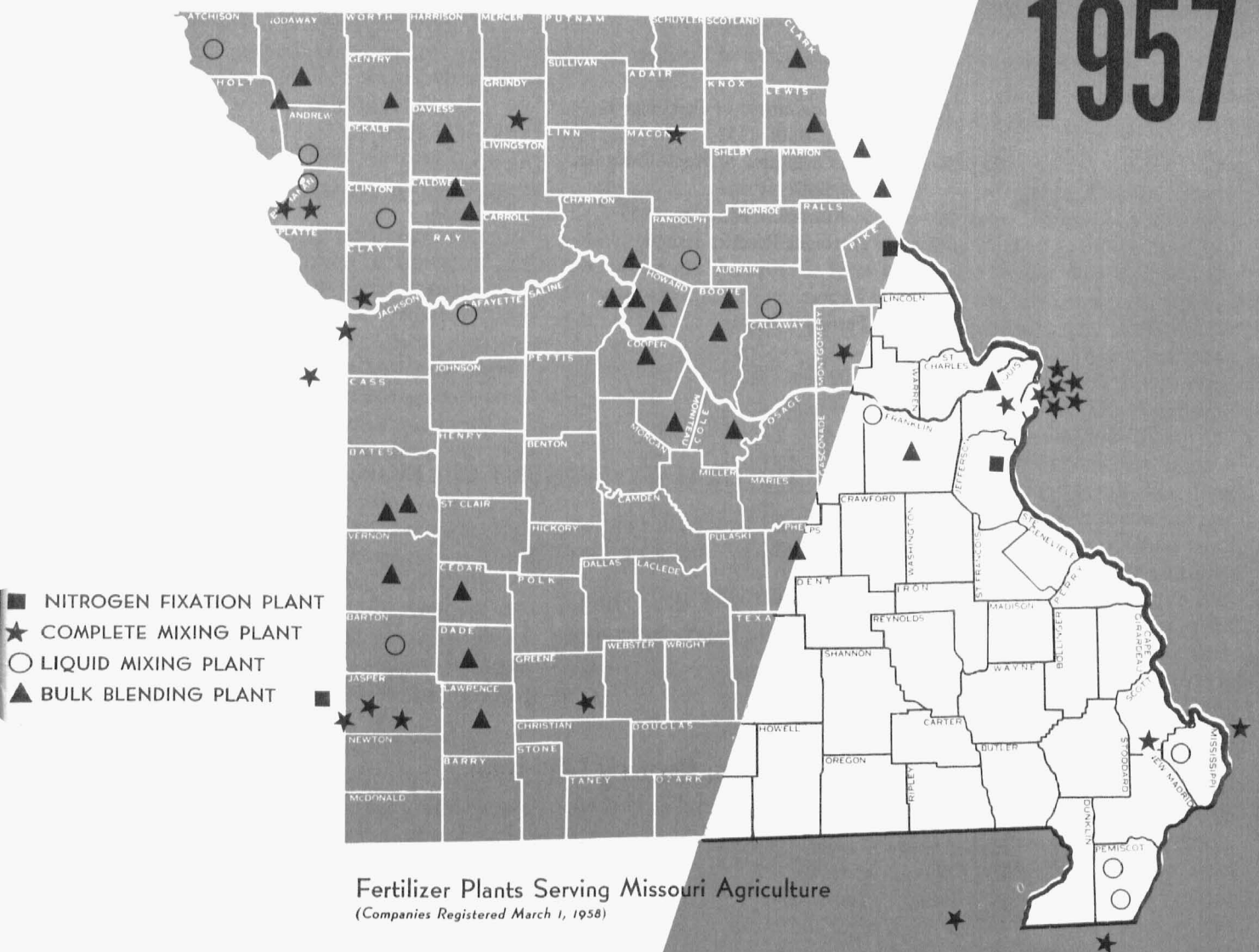


# MISSOURI

## Commercial Fertilizers

INSPECTION AND ANALYSIS

# 1957



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## Missouri Commercial Fertilizer Inspection and Analysis, 1957

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 1957.

The Fertilizer Law is a regulatory statute designed primarily to assure that all fertilizers offered for sale will be guaranteed in simple, standard terms and that these guarantees will be met. This not only protects the fertilizer consumer against misrepresentation, but also protects the manufacturer and dealer against dishonest competition. The full text of the law setting forth requirements to be met by the fertilizer manufacturer and powers and duties of the Director of the Missouri Agricultural Experiment Station is presented on page 41 of this bulletin.

### CUSTOM MIXED BULK FERTILIZERS

During 1957 steps were taken to secure more uniform enforcement of the fertilizer law with regard to the sale of fertilizers blended to the purchaser's specifications. Prior to November, 1957, mixers were permitted to label such lots with a statement of the weights and guarantees of materials contained with no percentage guarantee of the plant food content of the resultant mixture required. The Director ruled that this procedure was in violation of the intent of the fertilizer law and would, therefore, not be permitted subsequent to January 1, 1958. In the future bulk blended fertilizers will be required to be guaranteed on the same basis as bagged mixed fertilizers. The required labeling statement must accompany each lot of bulk fertilizer to its final destination. Any combining of two or more fertilizer materials prior to delivery to the final purchaser would be covered by this regulation.

### Inspection

During the calendar year 1957 three inspectors, calling on farmers, dealers, and manufacturers, secured approximately 2500 official samples of bagged and bulk fertilizers representing lots from every county in the state.

An attempt was made to secure a representative sampling of material from all manufacturers selling field fertilizers in sufficient volume for this to be achieved. Therefore, the number of samples drawn

is not necessarily proportionate to the amount of fertilizer sold; however, larger numbers of samples were taken of those brands and grades which were sold more extensively.

The percent of samples found misbranded in 1957 decreased markedly as compared to 1956 while the percent of samples meeting guarantee in all respects increased significantly. This is indicative of conscientious endeavor on the part of the industry toward better chemical control and the production of fertilizers of improved quality. For more detailed information in this regard please refer to Table 3.

### Chemical Analysis

All of the official fertilizer samples collected by the fertilizer inspectors were analyzed in the Experiment Station Chemical Laboratories located at the University of Missouri, Columbia. Each fertilizer sample, at least one pound in size, was divided by a sample riffle. One "half" of the sample was ground and prepared for the laboratories and analyzed for nitrogen, phosphorus and potassium and the other "half" was placed in reserve for possible future reference. For those samples which were found deficient in any one plant food element by the "first run" analysis, an additional independent determination was made to confirm the "first run" result. For those samples which were classed as "Misbranded" in any one plant food element on the basis of "first run" analysis, the laboratory portion of these samples were reanalyzed independently, and the reserve portion of the sample was divided and two more independent determinations were made. Before any sample is labeled "Misbranded" the results obtained on both the laboratory and reserve samples must agree within laboratory analytical tolerances.

The analytical procedures used for the determination of nitrogen and phosphorus were the official methods of the Association of Official Agricultural Chemists and as described in the Book of Methods, 8th edition. All "first run" potassium analyses were made by a flame photometric method developed in the Missouri laboratories. Any flame result for potassium which fell below the manufacturers guarantee was verified by the official gravimetric method for potash as described in the Book of Methods. In-

dividual sample reports were mailed to the manufacturer, jobber, dealer and the final purchaser if the latter could be determined. The results of these samples are presented in the following tables.

### Summary of Tonnage Data

Manufacturers reported a total of 801,210 tons of commercial fertilizers shipped for use in Missouri during 1957 as compared to 785,949 tons in 1956. The most noticeable trend during this two year period lies in the decreased usage of bagged mixed fertilizers and a corresponding increase in consumption of single nutrient materials, especially nitrogenous materials. The sale and application of fertilizers in bulk continues to increase yearly. Liquid mixed fertilizers jumped from a first significant volume of 3300 tons in 1956 to over 10,000 tons in 1957. The average primary plant nutrient content of mixed fertilizers rose to 34.9% in 1957 due to a .7% increase in nitrogen content. Fertilizer grades of a 1-1-1 ratio comprised 55% of all mixed fertilizers in 1957. Rock phosphate for direct application registered a slight increase to 208,779 tons. For additional tonnage data see tables 1 and 2.

### Missouri Tolerance for Determining Misbranded Fertilizers

For any one element the tolerance shall be 10% of the guaranteed percentage up to maximum of one unit (one percent plant food), plus the deficiency tolerance stated below. For samples containing more than one guaranteed primary element, the combined deficiencies shall not exceed three units of plant food. No credit to be given for overages.

#### TOLERANCE FOR DETERMINING DEFICIENCIES

% Guarantee	% Tolerance		
	N	A.P.A.	K <sub>2</sub> 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



TABLE 1 -- MISSOURI FERTILIZER TONNAGE REPORT, 1957

<u>GRADES</u>	<u>SPRING</u>	<u>FALL</u>	<u>NITROGENOUS MATERIALS</u>	<u>SPRING</u>	<u>FALL</u>
0-20-20	12,011	2,350	Ammonium Nitrate	66,042	26,121
0-25-25	1,399	300	Anhydrous Ammonia	12,950	7,500
3-9-18	945	46	Nitrogen Solutions	10,040	3,530
3-9-27	5,568	265	Ammonium Sulfate	1,727	2,700
3-12-12	19,783	12,424	Urea	249	29
4-12-4	13,766	5,975			
4-16-16	2,802	1,981			
4-24-12	1,136	700	<u>PHOSPHATIC MATERIALS</u>		
5-10-5	2,137	943	Normal Superphosphate	2,191	552
5-10-10	670	147	Concentrated Superphosphate	6,100	3,764
5-15-30	1,755	156	Calcium Metaphosphate	3,668	2,945
5-20-20	8,718	5,110	Rock Phosphate	81,028	126,631
6-12-12	3,713	5,134	Colloidal Phosphate	800	320
6-24-24	2,235	1,850			
8-8-8	16,309	6,788	<u>POTASSIC MATERIALS</u>		
8-24-8	16,875	13,243	Muriate of Potash	14,418	9,718
9-9-9	506	130	Sul-Po-Mag	189	18
10-6-4	684	423			
10-10-10	7,807	5,670			
10-20-10	2,547	1,947	<u>MISCELLANEOUS MATERIALS</u>		
10-20-20	1,324	980	Organics	2,630	1,659
10-30-10	409	562	Other	313	334
11-48-0	439	1,052			
12-6-6	727	123			
12-12-12	110,177	66,743	Total Materials	<u>202,345</u>	<u>185,821</u>
12-24-12	1,094	1,209			
12-36-12	1,527	520			
13-13-13	2,101	2,226	<u>SUPPLEMENTARY INFORMATION</u>		
14-14-14	3,408	1,860	(Included in tonnages listed above)		
15-10-10	2,490	1,492	Bulk Rock Phosphate	77,385	124,720
15-15-15	3,087	978	Other Bulk Dry		
16-20-0	649	283	Fertilizers	20,890	18,922
16-48-0	217	953	Liquid Mixed Fertilizers	7,647	2,594
Misc. Grades	14,538	4,928	Fertilizers with Pesticides	4,621	23
			Fertilizers with Borax	1,051	554
Totals	<u>263,553</u>	<u>149,491</u>			

GRAND TOTAL 801,210

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

Year	Total Tons Fertilizer	Total Tons of Plant Foods				Mixed Fertilizers			Fertilizer Materials*				Rock Phosphate
		Nitrogen	Available P <sub>2</sub> O <sub>5</sub>	Total P <sub>2</sub> O <sub>5</sub> in Rock	K <sub>2</sub> O	Total Tons	Average Composition	Per Cent	Total Tons	Tons N	Tons P <sub>2</sub> O <sub>5</sub>	Tons K <sub>2</sub> 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
1955	771,556	66,771	70,223	65,601	61,379	449,871	7.88-14.19-11.19	33.3	109,270	31,339	6,398	11,019	212,415
1956	785,949	74,337	71,302	63,403	65,953	454,525	8.33-14.10-11.85	34.3	126,344	36,357	7,040	11,972	205,080
1957	801,210	90,845	67,419	64,592	63,418	413,044	9.02-14.06-11.83	34.9	179,387	53,589	9,331	14,560	208,779

\*Does not include Rock Phosphate

Thousands of Tons

## TRENDS IN KINDS OF FERTILIZER USED IN MISSOURI SINCE 1945

\*Bulk Blended Fertilizer tonnages prior to 1956 are estimates.

†Liquid Fertilizers include anhydrous ammonia, nitrogen solutions, and liquid mixed fertilizers.

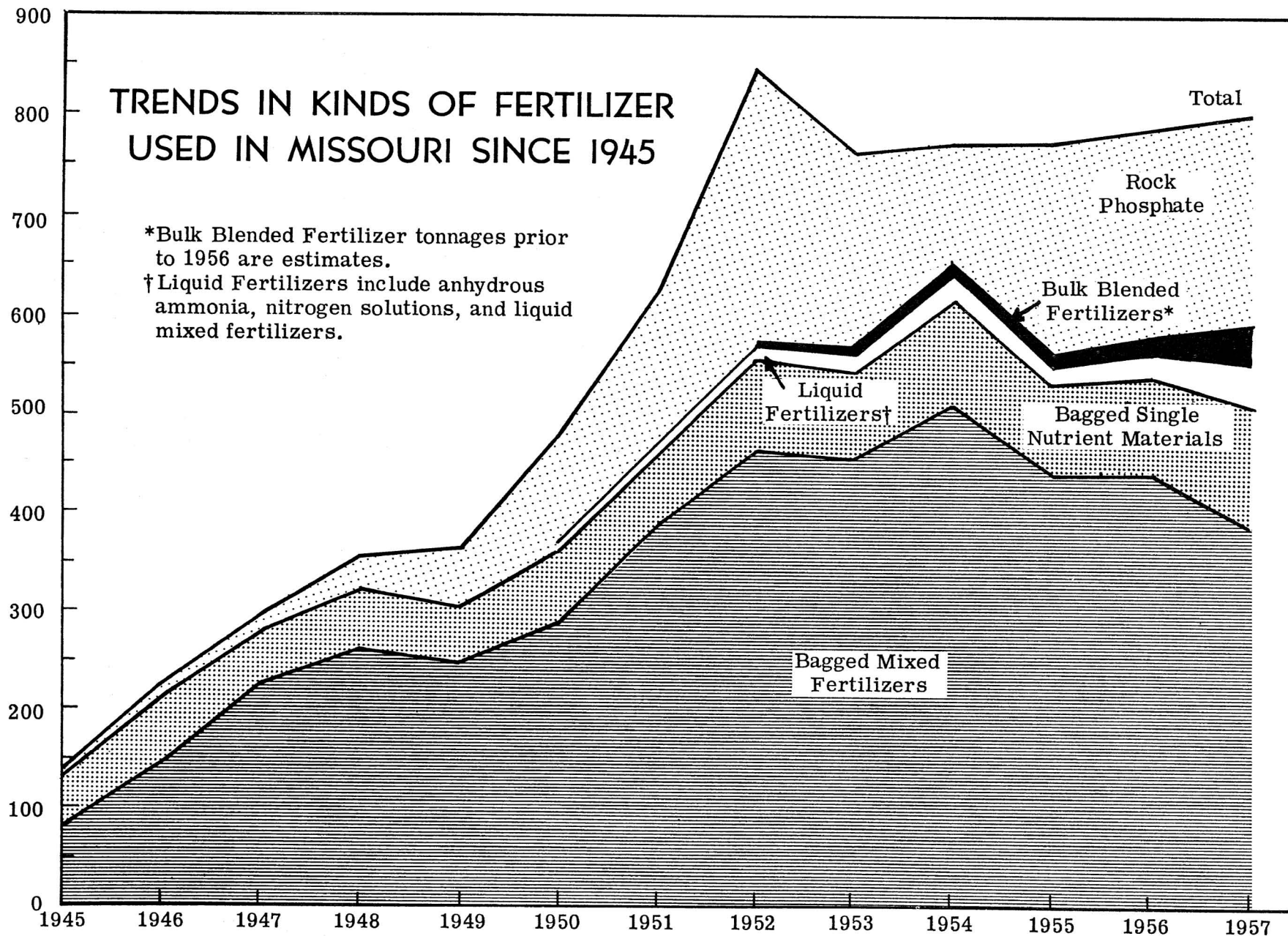




TABLE 3 -- SUMMARY OF AVERAGE VARIATIONS FROM MANUFACTURERS' GUARANTEES  
IN MIXED FERTILIZERS, 1957

In order that the reader may readily ascertain 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, 34.1 percent were deficient in one or more plant food constituents. However, only 6.8% were deficient to such an extent as to be considered misbranded. Fertilizers sampled in 1957 show significant improvement as compared to 1955 and 1956.

The fourth column in this table is a comparison of the value of total plant food found to that guaranteed, expressed as percentage. To arrive at this figure, a unit of nitrogen was assumed to be equivalent in value to two units of available phosphoric acid or to three units of potash. While the cost of these plant nutrients will vary according to the material in which they are contained, this is thought to be a reasonably accurate average value relationship for this section of the country.

Manufacturer	Samples Analyzed				Nitrogen			Available P <sub>2</sub> O <sub>5</sub>			Potash		
	Total	% Meeting Guarantee in All Respects	% Mis-branded**	(Value Found) (Value Guar.) Percent	Samples Analyzed	% Deficient*	(Found) (Guaranteed) Percent	Samples Analyzed	% Deficient*	(Found) (Guaranteed) Percent	Samples Analyzed	% Deficient*	(Found) (Guaranteed) Percent
American Agricultural Chemical Co.	83	65.1	6.0	101.2	79	27.8	96.6	83	3.6	104.0	82	6.1	104.2
Ark-Mo Plant Food Co.	79	63.3	5.1	100.8	71	8.5	99.8	79	8.9	101.6	78	26.9	101.0
Armour Fertilizer Works	203	62.1	6.4	100.3	193	20.7	96.3	203	16.3	102.1	202	4.0	104.6
Blytheville Plant Food Co.	18	83.3	11.1	100.8	10	10.0	96.4	18	0	104.1	18	11.1	100.9
Consumers Cooperative Ass'n.	37	59.5	10.8	101.8	33	39.4	97.4	37	2.7	105.5	34	5.9	105.4
Darling and Co.	181	61.9	6.6	101.6	175	23.4	99.5	181	13.3	102.5	179	3.4	103.9
Davison Chemical Co.	176	73.3	2.3	99.9	164	13.4	98.2	176	7.4	101.3	171	8.2	100.6
Farm Belt Fertilizer and Chemical Co.	60	51.7	5.0	101.2	57	47.4	96.2	60	5.0	104.7	58	1.7	106.0
Farm Bureau Service Co. of Missouri	64	42.2	14.1	100.5	58	29.3	98.3	64	20.3	101.4	64	14.1	102.1
Fort Smith Cotton Oil Co.	15	66.7	13.3	104.5	15	26.7	99.0	15	13.3	108.2	15	13.3	110.8
Lange Brothers, Inc.	14	71.4	0	103.0	13	0	103.4	14	21.4	101.4	14	14.3	105.3
La Plata Chemical Co.	41	61.0	7.3	103.3	38	21.1	102.3	41	12.2	105.9	41	14.6	101.3
Missouri Farmers Ass'n.	343	67.1	6.1	101.5	320	15.6	99.3	342	16.4	102.0	335	4.2	105.2
Missouri Plant Food Co.	60	63.3	5.0	101.3	51	19.6	93.9	60	13.3	102.7	60	13.3	102.1
Olin Mathieson Chemical Corp.	149	96.0	0	103.7	149	2.0	101.6	149	.7	105.1	139	1.4	105.7
Ozark-Mahoning Co.	31	71.0	12.9	103.3	31	12.9	103.0	31	16.1	103.7	28	7.1	102.9
Riverside Fertilizer Co.	13	53.8	0	99.7	10	60.0	94.6	13	0	104.6	13	0	102.8
Swift and Co.	136	55.1	7.4	100.8	126	19.8	98.8	136	14.7	102.1	135	14.8	102.0
Tri-State Chemical Co., Webb City, Mo.	45	28.9	40.0	102.2	44	40.9	95.0	45	24.4	104.2	45	17.8	112.1
Tri-State Fertilizer Co., Burlington, Ia.	19	42.1	26.3	99.4	18	44.4	91.3	19	10.5	105.2	19	10.5	105.3
Virginia-Carolina Chemical Corp.	113	80.5	5.3	103.2	106	4.7	102.1	113	8.0	104.8	113	7.1	102.5
Totals 1957	1880	65.9	6.8	101.5	1761	18.7	99.0	1879	11.7	102.9	1843	7.7	103.8
1956	1962	62.7	9.0										
1955	1934	58.1	9.6										

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

\*Percent samples deficient in excess of sampling and analytical tolerance indicated on page 4.

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

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957

This table presents in detail the guarantee and actual analysis of all bagged or packaged fertilizer samples collected with the exception of bagged rock phosphate. Results of rock phosphate, anhydrous ammonia and other bulk fertilizers are given in following tables.

On this and following tables, analyses not meeting the guarantee within set tolerance are indicated with an asterisk (\*) and are considered deficient. Samples so deficient as to be considered misbranded are indicated with two asterisks (\*\*).

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

R. L. AGGELER COAL & FERTILIZER CO.,  
BOONVILLE, MO.

12-12-12				
128	12.0	.4	12.9	12.5

AMERICAN AGRICULTURAL CHEMICAL CO.,  
NATIONAL STOCK YARDS, ILL.

0-20-20				
1017	----	.9	19.8	19.2*
1493	----	.3	20.2	20.7
1791	----	.3	20.8	19.0*
1792	----	.2	20.2	20.6
3-9-27				
1474	3.6	.2	10.2	24.1**
3-12-12				
255	3.2	.3	12.1	10.9*
418	3.2	.4	12.1	12.5
629	4.4	.3	12.4	11.8
630	3.1	.4	12.2	12.4
930	3.0	.3	12.3	11.8
1470	3.1	.2	12.4	12.2
1472	3.3	.3	12.2	12.6
1623	2.6*	.4	12.7	12.1
1709	3.3	.3	12.7	11.9
1793	3.0	.3	12.2	12.4
1794	3.0	.3	13.0	13.7
1798	3.0	.3	12.1	12.2
1800	3.4	.3	12.3	12.5
1868	2.9	.3	12.5	12.5
1941	3.3	.3	12.0	11.8
2015	3.3	.4	12.1	11.8
2017	3.1	.3	12.3	11.5
2140	2.9	.5	12.5	12.0
2202	3.0	.3	12.3	12.0
4-12-4				
553	4.0	.4	12.2	4.5
644	4.0	.4	12.9	7.0
1505	3.9	.5	14.5	10.8
1506	3.6*	.3	12.9	5.3
1628	4.0	.4	13.3	7.6
1803	4.0	.3	12.2	4.2
1805	4.0	.3	12.4	5.5
1806	3.9	.3	12.3	4.2
2142	3.3*	.4	12.6	4.1
4-16-16				
431	4.1	.6	16.2	16.2
1511	3.8	.4	16.5	16.6
1807	4.2	.3	16.0	15.4
1808	3.8	.4	15.8	16.1
5-20-10				
438	4.9	.6	20.8	10.1
1513	4.5*	.5	21.0	11.4
5-20-20				
92	5.1	1.0	19.2*	20.3
1042	5.5	.5	20.3	20.3
1515	4.7	.4	20.4	21.0
1811	3.8**	.3	20.4	19.3*
5-30-0				
1441	4.6	1.1	28.5*	----

AMERICAN AGRICULTURAL CHEMICAL CO., (Cont'd)

8-8-8				
460	6.7**	.2	9.5	9.0
953	7.9	.2	8.5	8.4
1481	8.1	.2	8.4	8.5
1517	8.5	.2	10.0	9.0
2151	7.1*	.2	9.1	7.7
8-24-8				
1295	6.8*	.9	24.2	8.9
1524	8.5	.8	24.0	9.0
1642	7.4*	.8	23.6	9.1
2525	8.3	.6	21.1**	9.9
10-10-10				
120	10.2	.3	10.5	10.3
289	9.5	.3	10.8	10.7
353	9.7	.2	10.7	10.5
1060	9.0*	.2	11.4	10.1
1530	9.7	.3	11.0	11.1
1650	9.5	.2	10.3	10.8
1821	9.6	.3	10.7	10.3
1827	9.9	.2	10.1	10.4
2168	9.9	.2	10.7	10.3
2169	9.3*	.3	11.3	10.7
2230	9.6	.5	11.1	10.7
12-12-12				
126	12.1	.2	13.3	12.4
366	11.3*	.2	12.6	12.0
506	11.4*	.2	12.7	13.1
513	11.5	.2	13.6	12.7
1068	11.0*	.6	12.5	11.8
1316	12.0	.3	12.8	12.2
1536	10.6*	.2	14.8	12.0
1541	11.0*	.2	13.6	12.0
1542	11.6	.2	12.8	13.2
1664	10.8*	.3	12.8	13.0
1764	11.0*	.2	11.9	12.8
1830	11.6	.6	12.8	12.1
1836	11.7	.2	12.5	12.3
1899	10.4**	.2	13.6	12.5
2075	11.4*	.2	12.6	12.2
2245	12.2	.2	12.1	12.0
2250	11.6	.2	12.5	12.3
2442	11.2*	.2	12.4	12.4
0-18-0				
622	----	.3	18.1	----
1013	----	.4	18.2	----
2350	----	.4	18.7	----
0-20-0				
2131	----	.4	21.0	----
ARK-MO PLANT FOOD CO., WALNUT RIDGE, ARK.				
0-20-20				
327	----	.6	19.2*	21.4
328	----	.6	21.1	18.7*
330	----	.2	20.2	21.5
331	----	.4	20.6	21.4
544	----	.3	20.3	21.1
919	----	.3	21.1	21.1
1703	----	.6	19.9	20.3
1867	----	.7	20.2	20.5



TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

ARK-MO PLANT FOOD CO., (Cont'd)

3-9-18				
340	3.1	.8	9.1	19.5
1087	3.1	.4	9.3	18.2
1090	2.9	.4	9.0	20.2
3-9-27				
341	3.1	.8	8.9	27.4
342	3.4	.4	9.7	24.7**
1089	4.9	.2	9.3	28.9
1431	3.2	.5	9.4	26.8
3-12-12				
335	3.1	.2	12.2	11.2*
1093	3.2	.3	11.9	12.7
1564	3.2	.3	12.3	11.3*
1705	3.2	.5	12.0	10.0**
1707	3.2	.4	12.1	12.9
1876	3.4	.3	12.8	12.2
2453	3.1	.3	11.7	11.2*
4-12-4				
1094	4.1	.3	11.7	8.5
1566	3.9	.5	12.9	3.5*
1710	4.0	.4	12.1	4.0
1711	3.9	.6	12.6	3.2*
1945	3.8	.4	12.2	4.7
2144	3.8	.5	13.6	3.3*
2381	3.9	.6	12.6	3.2*
2382	4.0	.4	12.5	4.0
2383	4.6	.4	12.4	4.1
5-15-30				
343	4.5*	.3	13.5*	31.6
1097	4.6	.3	14.2*	29.7
1099	4.4*	.3	13.4**	31.1
6-24-24				
1103	5.4*	.4	23.9	24.0
1721	6.0	.7	24.0	25.4
1885	5.8	.7	24.0	24.4
8-8-8				
1050	7.6	.3	8.7	9.2
1575	8.1	.4	8.8	7.4*
1723	8.3	.4	8.8	7.1*
1726	8.1	.4	8.9	7.0*
1890	8.4	.4	8.8	7.3*
2300	8.3	.4	8.4	7.6
2463	8.1	.4	8.4	7.3*
8-24-8				
471	7.1*	1.1	23.9	7.4*
1522	8.0	1.9	23.9	8.0
1579	7.6	.9	24.3	8.2
1734	7.8	.9	23.8	8.4
1737	7.7	1.5	24.6	7.2*
1893	8.0	1.2	24.5	7.6
2164	7.7	.7	24.5	8.0
2306	8.2	.5	24.4	7.1*
2397	8.4	.5	24.6	7.5
10-10-20				
1111	9.6	.3	10.0	21.6
10-20-10				
1114	10.2	.4	20.2	9.6
1741	9.8	.9	19.7	10.0
1897	10.1	.5	20.6	9.8
10-20-20				
1116	9.8	.7	18.5*	19.2*
12-12-12				
32	11.9	.5	12.3	12.0
217	11.8	.4	12.6	12.4
359	12.0	.3	11.4*	13.0
362	11.7	.4	11.7	11.9
363	11.8	.4	11.6	11.7
596	12.1	.4	12.2	11.6

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

ARK-MO PLANT FOOD CO., (Cont'd)

12-12-12 (Cont'd)				
979	11.9	.4	12.7	12.9
1130	11.9	.3	12.9	12.5
1456	11.7	.3	12.7	12.0
1666	11.8	.3	13.2	11.3*
1752	11.6	.3	12.9	11.7
1915	12.6	.2	12.6	12.0
2183	12.2	.2	12.4	12.4
2327	12.2	.3	12.2	12.1
2405	12.6	.3	12.2	12.2
2410	12.5	.3	12.1	12.1
2411	11.9	.3	12.8	11.5
2537	12.1	.2	12.2	12.1
14-14-14				
517	13.2*	.3	14.7	15.4
15-15-15				
1140	15.3	.1	14.8	14.2*
16-20-0				
1147	14.2**	.4	19.3*	----
0-20-0				
1696	----	.4	20.3	----
1862	----	.3	20.6	----
2130	----	.5	20.8	----
0-46-0				
2489	----	.7	46.7	----
0-0-60				
390	----	----	----	60.9
1000	----	----	----	59.6
2568	----	----	----	60.2

ARMOUR FERTILIZER WORKS,  
EAST ST. LOUIS, ILL., NORTH KANSAS CITY, MO.,  
& MEMPHIS, TENN.

0-20-20				
332	----	.3	18.0**	22.4
542	----	.3	20.9	20.0
833	----	.4	17.7**	22.4
1622	----	.7	18.9*	19.6
1701	----	.3	20.3	19.5
1702	----	.5	19.4*	19.8
2570	----	.7	19.1*	20.2
0-23.75-23.75				
1021	----	.2	19.6**	28.1
0-25-25				
68	----	.2	24.5	24.2
922	----	.2	20.3**	29.0
3-9-27				
924	2.8	.3	8.8	27.9
3-12-12				
74	3.0	.4	12.6	11.8
75	3.2	.7	12.6	12.7
252	2.7*	.2	11.9	14.9
415	2.8	.3	12.5	13.1
551	2.9	.3	12.0	13.0
632	3.1	.5	13.0	12.3
641	3.1	.3	12.7	15.1
842	2.8	.5	11.4*	11.8
929	3.0	.2	12.2	13.2
931	3.0	.2	11.9	13.3
1024	2.8	.2	11.8	12.2
1028	2.9	.4	11.4*	11.7
1497	2.9	.2	12.0	11.6
1562	4.4	.4	12.1	10.9*
1708	3.0	.6	11.5	13.1
2498	3.0	.9	11.0*	12.9
2499	3.3	.4	11.3*	13.3
2502	3.1	.5	11.9	10.9*
2575	2.8	.5	11.9	13.8

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## ARMOUR FERTILIZER WORKS, (Cont'd)

4-12-4				
83	4.8	.8	12.3	6.1
84	4.8	.9	12.4	5.5
427	3.5*	.4	12.4	4.8
648	4.3	.6	12.2	4.9
845	4.2	1.5	12.2	4.9
846	3.5*	.5	12.1	5.4
933	3.5*	.4	11.6	4.4
1033	3.2**	.5	11.8	4.8
1477	2.8**	.4	11.4*	15.2
1509	3.7	.4	12.2	4.8
1877	3.6*	.5	12.3	4.6
2506	4.4	.3	11.9	5.3
4-15-15				
555	4.4	.3	15.7	13.7*
4-16-16				
267	3.7	.3	16.3	16.8
430	3.7	.3	15.8	16.0
652	3.8	.3	15.3*	16.1
739	4.1	.2	15.1*	17.6
848	3.9	.2	15.8	16.6
936	4.1	.2	14.9*	17.5
1039	3.8	.3	15.8	16.1
1631	3.9	.3	15.2*	16.4
4-24-12				
88	3.7	.3	25.1	9.0**
939	3.9	.3	23.0*	12.4
1040	3.9	.3	20.9**	13.6
1713	3.8	.4	21.8**	11.7
5-10-5				
89	4.5*	.2	10.0	5.8
436	4.9	.3	10.5	5.6
559	4.7	.2	10.3	5.5
1264	4.9	.2	12.0	5.6
1268	5.2	.4	11.2	5.5
2580	4.6	.2	10.4	5.2
2581	4.7	.3	10.5	5.7
2582	4.7	.3	10.1	5.1
2584	4.9	.2	11.0	5.7
5-10-10				
1222	4.7	.2	10.6	11.0
5-15-30				
437	4.1*	.2	15.2	26.0**
5-20-20				
91	5.3	.1	19.3*	20.3
192	4.8	.2	20.3	20.5
272	4.6	.2	19.2*	21.5
442	5.3	.2	18.2**	20.6
561	5.9	.2	19.3*	19.4
654	5.0	.3	19.2*	20.8
1225	4.4*	.2	18.9*	21.4
1636	5.0	.6	19.9	17.3**
1717	4.6	.3	20.3	21.3
2211	5.1	.5	19.8	20.7
2214	5.0	.5	20.4	19.3*
6-12-12				
277	5.7	.2	12.4	12.7
448	5.9	.3	12.4	12.5
563	5.7	.2	12.2	12.7
661	5.9	.3	11.1*	13.5
746	6.4	.3	12.2	12.0
862	5.9	.3	11.6	13.5
943	5.9	.3	11.4*	12.5
944	5.6	.7	12.5	11.4
1046	5.9	.7	11.9	11.9
2149	5.7	.8	11.8	11.8
2294	5.2*	.2	12.9	13.4
8-8-8				
458	7.0*	.4	8.7	7.9

## ARMOUR FERTILIZER WORKS, (Cont'd)

8-8-8 (Cont'd)				
867	7.6	.2	8.3	8.4
870	8.0	.2	8.7	7.8
952	7.2*	.2	9.7	9.1
1051	8.0	.3	8.3	7.8
1639	7.3*	.1	8.4	8.0
2047	7.8	.3	8.5	8.5
2392	7.8	.3	15.1	8.1
2514	7.7	.1	8.4	8.0
2515	7.6	.3	8.2	8.0
8-24-8				
22	9.0	.4	24.0	7.8
105	8.1	.1	23.4*	8.0
115	7.4*	.4	24.7	8.5
198	8.1	.4	24.1	9.4
284	7.6	.4	24.0	8.7
672	7.0*	.4	24.7	9.9
872	7.9	.7	23.7	8.2
873	7.6	.2	22.9*	9.4
959	8.0	.2	23.4*	8.1
1053	7.7	.2	23.4*	8.4
1054	8.0	.2	22.7*	8.5
1294	7.7	.6	23.8	8.6
1297	8.1	.5	24.7	8.3
1483	7.0*	.4	25.5	7.9
1528	8.0	.5	25.0	8.0
1529	7.4*	.3	24.7	8.5
1648	7.3*	.4	23.7	7.9
1736	7.5*	.8	25.0	8.6
1895	8.0	.3	25.5	8.2
2052	8.0	.4	23.6	8.0
2161	7.4*	.6	25.2	8.1
2163	7.8	.3	25.5	8.8
2227	7.6	.6	24.0	8.3
2303	7.9	.7	24.1	9.1
2601	8.0	.3	25.2	9.0
2524	6.9*	1.0	26.3	8.4
10-6-4				
1303	9.7	.2	6.4	4.5
1304	9.1*	.2	7.1	5.2
2606	9.5	.2	6.6	4.9
10-10-10				
117	9.8	.4	10.8	10.1
121	9.8	.5	11.0	10.9
479	9.7	.1	11.4	11.0
683	9.7	.2	10.4	11.0
764	9.6	.2	10.2	10.0
879	9.6	.5	10.2	10.4
960	10.0	.2	10.0	10.0
1059	9.9	.3	10.6	10.1
1651	9.7	.5	11.2	11.3
1652	9.7	.1	12.2	10.8
1961	9.5	.2	10.9	10.2
1962	9.6	.2	10.8	10.4
2231	9.9	.2	10.7	10.4
2232	9.9	.1	11.2	11.0
2471	9.9	.1	10.8	9.8
2527	9.8	.2	10.2	10.2
2607	9.6	.1	10.4	11.0
2608	10.0	.2	10.6	10.5
2609	10.0	.2	10.5	10.1
10-20-10				
770	9.5	.2	20.9	10.1
1739	9.5	.3	20.3	10.1
2356	8.6*	.6	23.4	9.2*
12-12-12				
40	11.5	.1	12.2	12.0
124	11.3*	.1	12.8	12.4
135	11.2*	.1	12.6	12.7
143	11.6	.2	13.5	12.9
204	11.6	.1	13.1	12.4
212	11.5	.1	12.1	12.0

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

ARMOUR FERTILIZER WORKS, (Cont'd)

12-12-12 (Cont'd)				
302	11.6	.1	12.3	12.5
372	11.3*	.1	12.9	12.6
499	11.6	.1	13.7	12.7
512	11.8	.1	12.8	12.7
581	11.4*	.1	12.4	12.7
595	11.7	.1	12.4	12.5
697	11.5	.1	12.0	12.0
700	11.2*	.1	13.9	13.6
712	11.1*	.1	12.4	13.0
794	11.7	.1	11.9	12.6
897	5.9**	.3	13.1	12.3
899	11.7	.2	12.4	12.3
967	11.6	.2	12.1	12.0
969	11.5	.1	12.6	12.3
1064	11.6	.1	11.9	12.0
1070	11.9	.2	11.2*	12.2
1234	11.6	.1	11.7	12.1
1488	11.3*	.1	13.0	11.9
1535	11.9	.1	12.2	13.0
1537	11.5	.1	12.9	11.8
1592	11.3*	.2	13.3	12.1
1673	11.7	.1	12.3	11.8
1745	11.7	.2	13.7	12.0
1756	11.7	.3	12.7	12.5
1759	11.8	.1	13.2	12.2
1834	11.4*	.1	13.5	12.2
1900	11.9	.1	13.0	12.4
1916	11.4*	.1	13.5	12.7
2079	12.0	.1	12.4	12.4
2089	11.6	.1	12.5	12.2
2184	11.6	.1	13.2	12.7
2242	11.8	.1	12.6	12.1
2247	12.0	.1	12.5	12.2
2248	11.7	.1	13.1	12.0
2251	11.8	.1	12.9	12.2
2253	11.9	.2	12.7	12.2
2255	10.7*	.4	13.8	13.0
2330	11.8	.1	12.9	12.1
2361	11.1*	.2	14.4	12.1
2362	11.4*	.2	12.5	12.7
2535	11.6	.2	12.1	12.2
2536	11.5	.1	11.6	12.1
2615	11.6	.1	12.6	12.7
2618	11.9	.1	12.5	12.8
2622	11.7	.3	12.1	13.4
2625	12.2	.1	13.2	11.4
2654	11.0*	.5	13.5	11.6

16-20-0				
1143	15.2*	.3	21.2	----

5-5T†-0				
1260	5.0	6.5T	----	----

0-20-0				
1014	----	.5	19.8	----

0-45-0				
165	----	.1	45.3	----
321	----	.5	41.4**	----
1345	----	.5	45.2	----
1698	----	.6	46.9	----
1863	----	.0	46.6	----
1932	----	.4	44.3	----
2368	----	.4	46.1	----

0-0-60				
1078	----	----	----	57.8**
1686	----	----	----	60.0
2122	----	----	----	60.3

ASSOCIATED COOPERATIVES, INC., SHEFFIELD, ALA.

14-14-14				
377	14.3	.4	15.3	14.1

ASSOCIATED COOPERATIVES INC., (Cont'd)

0-62-0				
324	----	1.8	61.6	----

ATLAS FISH FERTILIZER CO., SAN FRANCISCO, CALIF.

5-1-1				
1263	5.2	---	1.1	1.3

BERRY SEED CO., CLARINDA, IOWA

7-9-5				
1284	6.8	2.0	9.7	5.0

BLYTHEVILLE PLANT FOOD CO., INC., BLYTHEVILLE, ARK.

0-20-20				
6	----	.5	21.4	20.0
172	----	.6	21.3	19.0*
537	----	.5	21.4	20.3
541	----	.4	21.2	21.5
543	----	.5	20.9	20.9
916	----	.6	20.9	20.3
918	----	.7	20.6	16.7**
921	----	.6	20.5	20.8

3-9-27				
925	3.0	.3	9.3	27.2

6-9-27				
942	5.6	.2	8.9	26.3

12-12-12				
31	12.0	.4	12.4	11.7
590	11.8	.3	11.7	12.7
973	11.9	.4	12.3	12.1
975	11.6	.5	12.6	11.6
978	11.8	.5	12.5	12.0
981	12.0	.4	12.1	12.5
982	11.8	.4	12.5	12.3
1236	9.7**	.3	12.7	14.8

0-0-60				
999	----	----	----	59.1

BORDON CO., NEW YORK, N. Y.

38-0-0				
1341	37.1*	----	----	----

CALIFORNIA SPRAY- CHEMICAL CO., RICHMOND, CALIF.

7-11-5				
1285	7.0	.4	11.2	6.5
2595	6.7	.6	11.5	5.5

8-8-4				
1287	9.0	---	9.4	4.7

10-5-5				
1302	10.5	---	5.8	5.4
2605	10.1	---	5.3	5.2

CENTRAL FARMERS FERTILIZER CO., CHICAGO, ILL.

33.5-0-0				
313	33.6	---	----	----
385	33.2	---	----	----
388	32.6*	---	----	----
610	33.4	---	----	----
815	33.4	---	----	----
1419	33.6	---	----	----
1463	33.6	---	----	----
1489	33.5	---	----	----
1552	33.7	---	----	----

† Total Phosphoric Acid

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## CENTRAL FARMERS FERTILIZER CO., (Cont'd)

33.5-0-0 (Cont'd)				
1605	33.3	---	----	----
1606	33.5	---	----	----
1772	34.1	---	----	----
2000	33.6	---	----	----
2118	34.1	---	----	----
2266	33.8	---	----	----
2420	33.9	---	----	----
2422	33.9	---	----	----
2446	33.8	---	----	----
2481	34.0	---	----	----
2482	34.1	---	----	----
2484	34.1	---	----	----
2485	33.8	---	----	----
2642	33.6	---	----	----
2659	33.7	---	----	----

## 0-61-0

4	----	1.7	63.0	----
724	----	1.8	61.8	----
1425	----	1.2	63.1	----
1556	----	2.4	62.1	----
1864	----	2.3	61.9	----
1865	----	2.0	63.1	----
2193	----	2.8	61.2	----
2194	----	3.0	60.6	----
2195	----	3.0	62.2	----
2280	----	1.8	62.7	----
2650	----	2.4	61.5	----

## 0-62-0

65	----	1.6	61.7	----
325	----	1.1	62.7	----
535	----	1.1	63.3	----
624	----	1.4	62.4	----
726	----	1.6	62.0	----
828	----	1.5	61.9	----
1016	----	1.2	62.5	----
2370	----	1.9	62.9	----
2371	----	2.0	62.5	----
2431	----	2.3	62.1	----
2451	----	2.3	61.8	----
2452	----	2.9	61.3	----
2569	----	1.8	63.4	----

CENTRAL MISSOURI CHEMICAL & MINERALS, INC.,  
JEFFERSON CITY, MO.

4-12-4				
1161	4.4	.6	11.4*	5.0
8-8-8				
1165	7.2*	.7	10.6	9.0
12-12-12				
1183	10.7*	.3	14.4	11.8

COMMERCIAL SOLVENTS CORP.,  
NEW YORK, N. Y.

33.5-0-0				
153	33.2	---	----	----

CONSUMERS COOPERATIVE ASS'N.,  
KANSAS CITY, MO.

5-20-20				
1356	5.3	1.6	19.8	12.8**
5-20-20 With Aldrin				
1355	5.3	.7	18.7*	20.5
8-24-8				
17	8.6	1.2	24.2	8.8
467	8.1	.8	25.8	10.4
470	8.7	1.0	25.0	8.5
568	9.2	.7	25.6	8.2
1109	8.6	.7	25.0	9.2
1364	8.1	.8	26.3	9.0
1731	8.6	.9	25.7	8.3

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## CONSUMERS COOPERATIVE ASS'N., (Cont'd)

8-24-8 (Cont'd)				
2053	8.6	1.0	25.3	10.7
2059	9.1	.6	24.7	10.5
2304	8.7	.7	26.1	11.2
2305	8.5	.7	24.6	10.7
2521	9.0	.8	25.3	9.0

## 10-20-10

486	10.0	.6	20.2	11.3
575	10.2	1.3	20.4	10.1
1369	8.5*	1.3	22.5	10.2
2314	9.5	.9	20.2	10.6
2531	9.5	1.1	21.9	10.1

## 12-12-12

35	11.5	.7	12.5	12.5
218	11.4*	.4	13.4	12.0
501	11.7	.6	12.3	12.6
502	10.9*	.7	12.7	12.0
505	11.2*	.7	12.8	12.0
1131	10.4**	1.4	13.2	11.1*
1371	10.7*	.6	12.8	13.9
1744	10.9*	1.1	11.9	12.2
1746	11.2*	.7	12.1	12.1
2096	11.8	.2	13.3	11.9
2098	11.1*	.7	13.2	12.3
2320	11.8	.6	13.1	12.8
2322	11.3*	.7	15.4	11.7
2323	11.6	.6	12.8	14.3

## 15-15-0

1138	12.8**	1.9	17.2	----
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## 16-20-0

2342	14.1**	.5	20.0	----
2548	15.6	.0	20.5	----

## 33.5-0-0

55	33.4	---	----	----
56	33.3	---	----	----
156	33.4	---	----	----
238	33.4	---	----	----
526	33.4	---	----	----
810	33.3	---	----	----
813	33.4	---	----	----
1384	33.7	---	----	----
1770	34.1	---	----	----
1847	33.9	---	----	----
1924	33.9	---	----	----
2343	33.9	---	----	----

## 0-46-0

1699	----	2.1	45.8	----
1788	----	.5	47.2	----
2278	----	1.4	46.0	----

## 0-0-60

1386	----	---	----	60.1
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## CORNELI SEED CO., ST. LOUIS, MO.

9-6-5				
2604	9.4	.4	6.5	6.0

CRAWFORD CHEMICAL CO.,  
BARTLESVILLE, OKLA.

8-24-8				
955	9.1	1.9	23.1*	8.7
12-12-12				
964	11.2*	1.6	15.6	11.9
15-15-0				
990	14.0*	1.5	18.4	----

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

DARLING AND CO., EAST ST. LOUIS & CAIRO, ILL.

DARLING AND CO., (Cont'd)

0-18.8-18.8				
1790	----	.2	20.9	19.1
0-20-20				
247	----	.4	20.5	21.3
405	----	.8	20.5	21.5
1215	----	.8	20.4	20.9
1426	----	.5	20.6	19.4
1700	----	.3	18.4**	22.7
3-9-27				
250	4.9	.3	11.4	22.0**
1022	3.2	.3	9.6	26.2
1091	3.7	.3	9.4	27.1
1092	3.5	.3	10.2	25.7*
1218	3.6	.2	9.9	26.7
1352	3.8	.4	10.4	25.2*
1392	3.4	.3	10.3	26.6
1433	3.1	.2	9.2	27.1
2432	3.1	.3	9.4	27.0
3-12-12				
69	3.9	.4	13.0	12.0
177	3.7	.4	12.0	12.0
253	3.6	.4	12.7	12.3
338	3.8	.4	11.5	11.5
408	4.6	.4	13.2	11.5
627	4.6	.5	13.3	12.1
731	4.2	.5	12.6	12.4
1025	4.9	.5	13.0	12.1
1029	3.6	.6	12.2	12.6
1397	3.6	.5	12.2	12.5
1503	4.0	.6	12.7	11.7
1561	5.2	.3	12.7	12.5
1625	3.2	.3	12.5	13.5
1626	3.4	.3	12.5	13.2
1799	3.3	.4	12.6	13.8
2138	3.4	.5	12.2	13.0
2199	3.2	.4	12.3	12.9
2201	4.2	.5	11.8	12.6
2433	3.4	.4	12.6	13.1
2497	4.3	.5	11.9	12.7
2501	3.3	.4	12.1	13.5
4-12-4				
76	4.3	.8	12.9	5.9
78	4.1	.8	12.0	4.8
422	3.9	.7	12.3	4.8
552	4.1	.6	13.1	5.6
643	3.9	.5	13.1	5.7
932	4.2	.6	12.4	5.2
1946	4.1	.7	13.1	5.2
2206	4.2	.6	12.8	5.2
2207	4.0	.6	14.0	5.8
2507	4.2	.7	13.0	5.1
2508	4.2	.7	13.0	5.5
4-16-16				
264	4.2	.4	16.4	16.2
1400	4.9	.6	16.7	16.5
2030	4.3	.4	16.2	16.0
2434	4.3	.5	15.4*	16.5
2510	4.4	.5	16.8	16.5
5-15-30				
269	5.5	.3	15.2	29.3
941	4.8	.8	15.5	30.6
1098	5.2	.3	15.0	28.6*
1223	4.7	.8	15.3	30.6
2585	4.9	.7	15.7	29.8
5-20-10				
90	5.4	.6	18.2**	11.7
270	7.1	.4	17.7**	11.2
2210	5.7	.6	20.4	10.0
5-20-20				
95	5.3	.3	20.1	19.5
271	5.3	.3	19.6	20.6

5-20-20 (Cont'd)				
440	5.4	.3	19.5	20.1
741	5.1	.3	19.8	21.5
859	5.0	.5	19.4*	19.4
1101	5.1	.2	20.6	19.9
1102	5.0	.5	19.7	19.7
1224	5.2	.3	20.3	19.6
1357	5.3	.4	19.4*	18.8*
1360	5.3	.4	19.2*	20.2
1402	5.0	.2	20.3	20.5
1480	5.0	.5	19.8	20.7
2355	5.2	.4	19.1*	19.6
2385	4.7	.2	20.0	21.1
2435	4.7	.3	19.4*	21.4
5-20-20 With Aldrin				
1438	5.8	.2	19.0*	19.8
6-12-12				
96	6.8	.6	12.0	11.7
446	6.2	.5	12.4	12.2
1047	6.2	.7	12.1	12.3
2437	6.7	.5	11.7	12.5
6-24-0				
1048	6.7	1.2	23.0*	----
6-24-24				
1720	6.5	.3	21.9**	23.2
8-8-8				
101	7.6	.2	8.9	8.9
196	7.5*	.2	9.1	8.6
280	7.7	.2	9.0	8.6
349	8.2	.5	12.6	8.5
453	8.0	.4	9.1	8.8
750	7.8	.3	10.2	10.4
1052	8.0	.3	8.7	8.5
1442	7.3*	.3	9.6	9.1
1641	7.6	.4	9.6	10.6
1724	7.7	.2	9.1	8.6
2150	7.9	.5	8.5	8.1
2219	7.6	.5	8.7	8.6
2393	7.5*	.3	11.9	10.0
2517	8.0	.3	9.3	9.3
2518	7.1*	.4	12.4	13.0
2596	7.8	.6	8.7	9.2
8-24-8				
281	8.4	.5	21.8**	9.1
287	9.0	.6	21.0**	7.6
758	7.8	.8	24.5	8.1
1055	7.9	.4	23.7	8.4
1057	7.6	.9	24.2	7.3*
1365	7.9	.5	22.3**	9.7
1444	8.2	.4	20.6**	8.7
1523	7.4*	.6	23.9	9.4
1526	7.8	.5	24.3	8.5
1735	8.5	.7	22.4**	8.7
1820	8.5	.7	23.8	8.1
2156	7.8	.5	24.0	8.0
2307	8.1	.6	23.2*	8.8
2308	8.5	.8	23.5	8.3
2309	7.6	.9	24.0	9.1
2398	8.4	.5	23.2*	8.1
2439	8.5	.5	23.8	8.7
2440	8.5	.5	23.4*	8.9
2526	8.5	.6	23.1*	8.4
2603	8.0	.4	23.5	8.3
10-10-10				
28	10.4	.4	9.9	10.5
118	9.8	.4	11.0	10.7
290	9.3*	.7	10.5	10.3
1449	9.6	.3	10.6	11.5
1653	9.0*	.2	12.4	10.9
1825	9.1*	.9	10.4	10.6
2167	9.6	.5	10.9	10.2
2228	9.5	.3	10.8	10.2

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
<b>DARLING AND CO., (Cont'd)</b>				
10-10-10 (Cont'd)				
2403	10.1	.5	10.0	10.8
2528	9.6	.6	10.0	10.7
2529	10.2	.5	10.7	10.3
2530	9.7	.5	10.4	11.0
10-20-0				
292	9.6	.7	20.0	----
10-20-10				
296	9.3*	.4	18.0**	11.0
1062	10.1	.4	19.4*	9.8
1580	9.8	.3	18.7*	10.8
1740	9.8	.4	20.0	10.4
12-12-12				
37	11.5	.3	12.5	12.4
47	11.6	.3	12.5	11.8
133	11.5	.3	12.5	12.0
213	11.7	.3	11.9	11.7
298	11.1*	.5	12.2	11.8
306	11.2*	.2	12.9	12.5
370	12.0	.3	12.1	12.0
493	11.7	.2	12.3	12.2
582	11.4*	.3	12.7	12.4
784	11.3*	.4	12.6	12.2
904	11.3*	.3	12.9	12.4
971	11.5	.4	12.7	12.0
980	11.6	.4	12.7	12.1
1066	10.6*	.7	12.5	12.0
1128	11.0*	.4	12.8	12.5
1233	11.4*	.3	12.6	12.3
1373	10.7*	.4	12.5	13.3
1378	10.6*	.3	13.4	12.5
1415	11.4*	.3	12.6	12.2
1458	11.0*	.2	12.2	13.1
1543	10.7*	.4	12.8	12.7
1586	11.1*	.1	13.1	12.3
1591	11.2*	.0	13.1	12.5
1657	10.8*	.4	12.8	13.1
1659	10.1**	.3	13.6	13.1
1663	11.3*	.3	12.6	12.5
1747	11.4*	.3	12.8	12.0
1751	11.1*	.3	12.9	12.0
1754	11.1*	.3	12.9	12.8
1761	10.9*	.3	12.8	13.4
1835	10.9*	.3	12.7	12.3
1908	11.0*	.3	12.7	12.5
1983	11.5	.5	12.7	12.4
1985	11.7	.4	12.4	12.9
2090	10.6*	.3	12.5	13.1
2092	10.7*	.4	12.3	12.4
2182	11.0*	.3	13.0	12.5
2237	11.2*	.3	13.0	12.0
2239	11.6	.3	12.6	12.1
2329	11.7	.4	12.4	12.3
2407	11.2*	.3	12.3	12.5
2443	11.4*	.2	12.1	12.9
2444	11.3*	.3	12.1	12.3
2539	10.7*	.3	13.1	12.1
2616	11.6	.4	12.4	13.0
2655	11.6	.8	12.0	12.0
0-20-0				
1789	----	1.0	20.7	----
0-45-0				
1015	----	1.2	46.2	----
1081	----	2.6	44.8	----
1214	----	1.8	45.9	----
<b>DAVISON CHEMICAL CO., JOPLIN, MO.</b>				
0-19-19				
326	----	.6	17.4**	21.5
0-19-19 With Borax				
1492	----	.6	19.0	19.7
1866	----	.6	19.9	21.4

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
<b>DAVISON CHEMICAL CO., (Cont'd)</b>				
0-19-19 With Borax, (Cont'd)				
2196	----	.9	18.8	19.4
2490	----	.9	18.5	20.5
0-20-20				
169	----	.8	19.9	22.2
832	----	.7	20.0	20.0
1018	----	.7	20.0	20.5
1559	----	1.0	20.4	20.1
1704	----	.5	22.3	17.6**
1936	----	1.1	20.4	19.1*
2010	----	.6	21.7	19.5
3-12-12				
179	3.2	.5	11.8	12.2
260	3.1	.7	12.4	10.8*
336	3.2	.6	11.5	12.3
409	3.0	1.4	12.1	11.5
410	3.2	.6	12.0	12.1
413	3.1	.7	12.0	12.0
635	3.2	.7	11.9	12.3
836	3.2	.6	11.7	11.5
1030	3.0	.7	12.0	11.7
1247	3.1	.7	11.7	12.0
1499	2.8	.7	12.2	10.4**
1501	3.0	.6	11.4*	11.7
1560	3.3	.4	11.9	11.4
1624	3.1	.7	11.8	11.7
1872	3.1	.5	11.9	12.2
1874	3.2	.5	11.8	11.3**
1942	3.1	.8	11.6	12.1
2022	3.1	.8	11.7	11.8
2139	3.2	.9	12.1	11.8
2283	3.0	.7	11.7	12.3
2455	3.4	1.0	11.7	12.1
4-12-4				
8	4.0	.7	11.8	4.0
423	4.3	.6	11.7	4.0
645	3.8	.6	11.3*	4.0
647	4.0	.7	12.0	3.9
1038	4.2	.7	11.5	4.0
1254	4.1	.6	11.8	4.1
1257	4.3	.8	12.0	4.4
1565	4.8	.4	13.0	4.3
1629	4.0	.5	11.9	4.2
1712	4.5	.4	12.5	4.0
1944	3.8	.8	11.9	4.3
2143	4.1	.6	12.0	4.1
2384	4.0	1.1	11.2*	4.4
2457	4.3	1.0	11.5	4.0
5-10-5				
433	5.2	.5	9.3*	5.2
1041	5.1	.5	10.0	5.0
2291	5.0	.8	10.2	5.0
5-10-10				
1095	5.2	.3	10.7	10.1
5-20-20				
441	4.9	.5	20.2	18.9*
858	5.0	.6	20.4	19.4
1358	5.1	.7	19.9	20.9
1514	4.9	.7	20.7	19.4
1634	5.7	.6	19.8	20.2
1635	4.6	.6	19.8	20.0
1715	5.0	.7	20.6	18.9**
1880	4.6	.4	19.6	20.3
1949	4.8	.5	20.5	18.7**
2035	5.0	.7	20.0	20.0
2148	4.6	1.0	19.7	19.0*
2213	4.7	.7	19.5	20.6
2293	4.5*	.4	20.4	19.3**
2354	4.7	.6	19.4*	19.9
2388	4.6	.9	20.1	18.5**
6-12-12				
276	6.5	.7	11.7	12.1
445	6.4	.6	11.8	12.2



TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

DAVISON CHEMICAL CO., (Cont'd)

DAVISON CHEMICAL CO., (Cont'd)

6-12-12 (Cont'd)				
657	5.8	.6	11.7	10.9*
659	6.0	.5	11.5	11.2*
745	6.0	.5	11.8	12.2
1280	5.7	.5	11.4*	11.6
1570	6.4	.6	12.5	12.1
1883	6.0	1.2	12.5	12.0
2390	5.7	1.5	11.8	12.1
2460	5.6	1.5	11.9	12.3
8-8-8				
15	7.7	.4	8.4	8.6
668	8.1	.4	8.4	8.9
751	7.4*	.5	8.2	8.1
865	7.8	.6	8.0	8.8
1289	7.6	.4	8.1	8.7
1518	7.4*	.3	8.5	8.0
1573	7.4*	.3	8.7	7.6
1813	7.0*	.2	8.1	8.6
1887	7.3*	.2	8.3	8.0
1888	6.5**	.3	8.5	7.7
1889	8.0	.2	8.4	7.6
1954	7.6	.8	8.5	8.0
2310	7.7	.9	8.2	8.4
2465	7.8	.7	7.9	8.2
8-24-8				
283	8.6	1.3	23.3*	8.4
351	7.8	1.3	23.0*	8.3
352	7.9	1.4	23.2*	8.3
755	8.3	1.2	24.1	7.9
1105	7.9	1.0	24.4	7.7
1520	7.9	1.4	22.5*	8.2
1521	8.5	1.3	24.0	7.5
1647	8.9	.8	23.4*	8.1
1738	8.7	.7	23.7	8.0
1816	7.6	1.1	24.5	8.0
1960	7.8	1.0	24.8	8.3
2057	7.9	1.1	23.7	8.1
2162	8.0	1.9	23.8	7.9
2226	8.1	1.1	23.9	8.1
2302	7.9	1.1	25.2	7.6
2467	7.9	1.2	23.6	8.0
10-10-10				
679	9.6	.4	10.4	10.5
10-20-0				
354	9.9	.7	20.1	----
1112	10.6	1.0	19.6	----
10-20-10				
201	10.3	1.0	20.7	10.2
482	9.5	.7	20.6	10.3
484	9.4*	.6	21.1	10.0
1113	10.3	.9	20.8	10.2
1742	9.7	.5	20.4	10.2
2068	9.7	.7	20.8	10.9
2315	9.8	.7	20.9	10.1
12-12-12				
39	11.6	.6	13.4	12.3
42	11.6	.7	13.2	11.5
209	11.7	.2	12.2	12.5
303	12.7	.7	11.4*	12.0
365	11.9	.5	12.3	12.3
367	11.7	.4	12.5	12.1
498	11.8	.6	13.0	12.1
586	11.6	.7	12.6	11.9
701	11.4*	.7	13.6	11.3*
703	12.1	.6	12.7	12.1
780	11.8	.5	12.1	12.6
782	12.0	.5	12.3	12.1
785	11.8	.5	12.4	12.4
901	12.4	.7	12.0	11.9
1122	12.0	.4	12.2	12.3
1124	11.9	.5	12.1	12.5
1133	11.2*	.5	12.7	13.1
1313	12.0	.7	12.0	11.7
1317	11.6	.7	11.9	12.0

12-12-12 (Cont'd)				
1372	11.0*	.5	12.9	12.2
1455	11.7	.6	11.9	12.1
1533	11.8	.7	12.0	11.8
1538	11.3*	.8	12.9	11.8
1589	11.8	.2	13.0	12.1
1669	11.5	.4	12.5	12.2
1671	11.5	.5	12.2	12.6
1750	11.4*	.5	12.6	11.9
1905	11.3*	.4	12.7	13.0
1909	12.0	.4	12.6	12.1
1913	11.8	.4	12.8	12.2
1982	11.8	.6	12.7	12.3
1986	11.2*	.4	12.8	12.6
2097	11.6	.5	12.5	12.1
2099	11.9	.4	12.6	12.3
2101	11.6	.6	12.4	12.0
2174	11.5	.7	12.7	12.9
2240	11.9	.4	12.1	12.1
2321	10.5*	.5	13.1	12.3
2360	11.4*	.4	11.9	12.4
2414	12.1	.4	12.0	12.2
2473	11.8	.7	12.4	12.2
2617	11.8	.7	12.3	12.4
12-12-12 With Aldrin				
1123	11.3*	.5	11.8	12.5
1460	10.3**	.6	14.2	11.9
12-24-12				
221	12.1	.9	23.9	12.5
515	12.2	.9	24.5	12.7
1379	11.5	.9	23.6	12.0
1546	11.7	.8	24.1	12.1
13-39-0				
1596	12.6	1.5	38.9	----
15-10-10				
1674	15.0	.4	10.4	10.0
2260	15.0	.4	10.3	10.0
15-15-0				
1137	13.9*	.6	16.1	----
15-15-15				
522	14.5	.2	15.7	15.1
1141	14.6	.2	16.0	15.1
1381	14.6	.4	15.4	14.8
1768	14.1*	.3	15.9	15.2
1769	14.5	.3	15.2	15.2
1919	14.3*	.3	16.0	14.7
2261	14.5	.2	16.2	14.5
16-20-0				
1145	16.2	1.2	19.9	----
0-20-0				
398	----	.7	21.3	----
399	----	.6	20.6	----
1697	----	.9	20.5	----
2277	----	1.4	20.8	----
2449	----	1.1	20.0	----
0-45-0				
163	----	1.4	46.0	----
319	----	1.9	45.1	----
721	----	1.2	47.3	----
DEEP ROOT FERTILIZERS, INC., OLATHE, KAN.				
4-12-4				
85	4.0	1.2	12.3	4.0
8-24-8				
116	7.9	.5	24.7	8.7
1228	7.8	.5	23.8	9.1

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## DEEP ROOT FERTILIZERS, INC., (Cont'd)

10-20-10				
1230 . . . . .	10.0	.6	20.1	12.5
12-12-12				
144 . . . . .	11.8	.2	12.2	12.2

E. I. DU PONT DE NEMOURS CO.,  
WILMINGTON, DEL.

19-22-16				
1329 . . . . .	20.0	.0	24.5	17.5
2633 . . . . .	19.6	.0	21.6	19.0

DUVAL SULPHUR AND POTASH CO.,  
HOUSTON, TEXAS

0-0-60				
392 . . . . .	----	---	----	61.2
720 . . . . .	----	---	----	62.9
998 . . . . .	----	---	----	61.0

EXCELL LABORATORIES, INC.,  
CHICAGO, ILL.

2-1-2				
2572 . . . . .	2.1	---	1.1	2.8

FAESY AND BESTHOFF, INC.,  
NEW YORK, N. Y.

6-10-4				
1276 . . . . .	6.7	.7	9.8	4.5
8-10-4				
1291 . . . . .	8.1	.2	9.5*	5.3
2.47-23T†-0				
1246 . . . . .	2.5	28.1T	----	----
2573 . . . . .	2.5	27.8T	----	----

FALLS CITY FERTILIZER, INC.,  
GRAND ISLAND, NEBR.

8-32-0				
573 . . . . .	9.1	2.5	31.0*	----
15-15-0				
227 . . . . .	14.9	1.2	16.8	----

FARM BELT FERTILIZER AND CHEMICAL CO.,  
KANSAS CITY, MO.

0-9-27				
1619 . . . . .	----	.4	9.9	27.3
0-9-27 With Borax				
401 . . . . .	----	.2	11.5	27.4
0-20-20				
1620 . . . . .	----	.7	19.5	22.0
4-12-4				
9 . . . . .	3.7	1.7	11.7	4.2
1802 . . . . .	4.6	1.7	11.1*	5.2
1947 . . . . .	5.2	1.2	13.4	5.4
5-20-20				
439 . . . . .	4.2*	.5	20.6	20.0
1437 . . . . .	4.5*	.6	19.8	20.4
1440 . . . . .	4.5*	.7	19.6	20.6
8-24-8				
18 . . . . .	7.5*	.7	23.7	8.7
25 . . . . .	7.4*	.6	24.6	9.0
465 . . . . .	7.2*	.6	25.4	9.0
466 . . . . .	7.5*	.7	25.0	9.0
469 . . . . .	7.7	.8	24.7	9.0
673 . . . . .	7.2*	1.9	23.7	8.9
753 . . . . .	7.4*	.6	23.9	8.0

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## FARM BELT FERTILIZER AND CHEMICAL CO., (Cont'd)

8-24-8 (Cont'd)				
1107 . . . . .	7.5*	.7	24.7	8.7
1108 . . . . .	8.4	1.3	23.4	8.7
1443 . . . . .	7.4*	.8	24.4	8.9
1448 . . . . .	7.0*	1.0	25.3	8.7
1732 . . . . .	8.0	1.1	23.5	8.4
1733 . . . . .	8.1	1.0	23.8	8.5
1818 . . . . .	8.0	1.3	24.4	8.3
1819 . . . . .	8.1	1.3	23.4*	8.4
2056 . . . . .	7.2*	1.3	23.0*	9.4
2224 . . . . .	8.7	1.3	24.0	8.6
2522 . . . . .	7.4*	1.0	24.2	8.7
10-10-10				
476 . . . . .	10.0	.3	11.8	11.0
477 . . . . .	9.8	.3	11.7	11.4
677 . . . . .	9.7	.4	12.3	10.5
680 . . . . .	9.9	.4	11.6	11.4
681 . . . . .	10.2	.4	12.3	10.7
1649 . . . . .	10.6	.4	10.5	10.6
1822 . . . . .	9.3*	.3	12.3	10.5
1824 . . . . .	10.5	.3	10.9	10.2
1964 . . . . .	9.8	.6	12.5	10.4
2064 . . . . .	10.8	.5	10.1	11.0
10-20-0				
1828 . . . . .	10.2	.2	21.1	----
10-20-10				
685 . . . . .	9.3*	.6	19.9	11.3
1115 . . . . .	7.5**	.4	20.2	11.0
2313 . . . . .	8.8*	.8	20.5	10.5
12-12-12				
36 . . . . .	10.9*	.3	14.1	12.6
38 . . . . .	10.9*	.3	13.7	13.1
48 . . . . .	11.2*	.3	13.5	13.7
356 . . . . .	10.3**	.6	14.2	13.0
492 . . . . .	11.2*	.6	13.8	12.4
704 . . . . .	11.9	.5	13.0	12.2
779 . . . . .	10.9*	.4	13.6	11.3*
1126 . . . . .	10.4**	.4	14.0	12.2
1132 . . . . .	11.2*	.4	13.5	12.5
1459 . . . . .	12.0	.5	12.4	12.1
1544 . . . . .	11.9	.4	12.3	12.6
1670 . . . . .	12.0	.5	12.1	12.2
1748 . . . . .	11.8	.3	12.5	12.4
2095 . . . . .	11.8	.6	13.3	12.3
2254 . . . . .	12.0	.5	12.9	12.7
2324 . . . . .	12.0	.5	13.0	12.7
2325 . . . . .	10.9*	.4	13.5	12.1
2534 . . . . .	12.3	.5	12.5	12.4
16-20-0				
1146 . . . . .	15.7	.1	20.7	----
FARM BUREAU SERVICE COMPANY OF MISSOURI, JEFFERSON CITY, MO.				
0-10-30 With Borax				
727 . . . . .	----	.2	10.3	31.8
0-20-20				
171 . . . . .	----	.7	20.2	21.1
536 . . . . .	----	.8	19.4*	19.4
834 . . . . .	----	.8	18.8*	17.4**
0-30-30				
406 . . . . .	----	1.0	31.0	28.2*
548 . . . . .	----	.9	31.3	30.0
3-9-27				
407 . . . . .	3.1	.2	10.5	24.5**
3-12-12				
71 . . . . .	4.0	1.1	13.3	11.1*
549 . . . . .	3.7	1.8	11.2*	12.9
734 . . . . .	3.7	1.7	11.1*	12.4
844 . . . . .	3.9	1.7	11.1*	12.8

† Total Phosphoric Acid

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

FARM BUREAU SERVICE COMPANY OF MISSOURI, (Cont'd)

3-12-12 (Cont'd)				
1796	4.0	1.7	11.7	12.7
2018	4.7	.4	13.3	12.4
3-12-12 With Aldrin				
1468	3.6	.4	13.7	12.4
4-12-4				
80	4.5	3.9	8.6**	4.6
137	4.4	3.9	8.5**	4.5
425	4.3	3.7	9.2**	4.2
554	3.9	.2	12.8	4.5
1478	4.1	.4	12.7	4.3
4-24-12				
557	3.9	.6	24.8	12.2
558	4.3	1.2	23.7	12.4
850	4.5	1.4	24.3	10.8*
1479	4.7	1.0	21.5**	11.9
5-20-20				
562	4.3*	.9	22.1	20.7
860	5.1	.6	19.0*	20.0
1718	4.5*	.7	19.5	21.2
1878	4.5*	.7	23.4	18.3**
1948	4.9	.6	21.4	18.9*
2212	5.1	.6	20.5	18.9*
2512	4.2*	.8	20.3	21.6
2586	4.6	.6	20.0	21.4
7-28-14				
452	6.2*	.6	28.1	15.6
564	6.3*	.6	27.9	15.6
664	6.1*	.6	27.9	15.1
1572	6.5*	.7	28.8	14.1
8-8-8				
102	8.7	1.3	7.8	9.1
456	8.4	1.3	8.5	8.7
1814	8.4	.4	8.5	7.7
8-24-8				
472	7.6	.9	24.7	8.2
571	8.6	.7	22.5*	8.0
572	7.6	.9	24.1	8.2
671	8.1	1.0	23.0*	8.6
760	6.5**	1.1	25.6	8.8
876	6.8*	1.3	24.8	9.0
1646	9.0	.5	22.5*	7.6
11-16-9				
1584	9.3**	.4	17.0	10.0
1654	10.0*	.4	16.9	9.0
1655	9.8*	.5	16.1	9.4
1972	9.9*	.7	17.2	9.4
2613	10.1*	.6	18.0	8.9
12-12-12				
138	11.5	.4	12.8	12.6
203	11.6	.2	12.6	12.4
510	11.7	.3	13.3	12.0
580	11.8	.3	12.2	12.6
584	11.8	.3	12.1	12.6
695	11.8	.4	12.6	12.5
790	11.7	.3	12.1	12.5
903	11.9	.4	12.0	12.8
1485	11.6	.2	12.1	10.9*
1587	11.2*	.4	12.4	13.0
1743	11.5	.4	12.8	14.1
1837	11.2*	.3	13.4	13.0
1974	12.0	.3	13.4	11.7
2077	12.0	.3	13.2	12.1
0-0-60				
616	----	---	----	60.6

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

FEDERAL CHEMICAL CO., LOUISVILLE, KY.

12-12-12				
33	9.2**	.8	13.2	13.7
FORT SMITH COTTON OIL CO., INC., FORT SMITH, ARK.				
3-12-12				
256	3.8	1.0	11.8	11.4
840	3.7	1.0	11.5	11.0*
5-10-5				
268	5.2	.4	12.8	8.6
653	5.4	.6	10.6	5.6
851	6.6	1.3	13.8	6.6
852	4.6	1.5	10.9	6.2
2031	4.4*	.6	12.6	8.9
10-20-10				
295	10.8	.8	20.7	10.9
883	9.1*	.9	19.3*	9.1*
884	9.5	.8	20.7	9.6
2066	9.8	.6	26.2	13.4
12-12-12				
300	12.4	1.0	11.7	11.4
708	9.9**	.4	11.6	12.8
896	9.4**	.4	12.0	14.0
2102	13.2	.0	12.3	12.3
0-20-0				
245	----	.4	16.5**	----
827	----	1.9	19.8	----
0-0-60				
314	----	---	----	54.8**
912	----	---	----	58.3*

FORWARD HOUSE, DIVISION OF OLIN MATHIESON  
CHEMICAL CORP., LITTLE ROCK, ARK.

12-24-12				
1320	12.2	.2	24.8	12.0
2626	11.9	.3	24.8	12.8

GARDEN RESEARCH LABORATORIES,  
NEW YORK, N. Y.

15-30-15				
1328	15.9	.0	30.2	15.1
2630	14.7	.0	32.3	16.0

GOULARD AND OLENA, INC.,  
SKILLMAN, N. J.

3-12-13				
1251	3.7	1.0	12.6	13.6
3-13-7				
1252	3.2	1.2	13.2	9.1
5-6-15				
1262	5.8	.3	7.1	11.8**
1402	5.5	.3	7.3	17.3
7-8-5				
1283	4.8**	.6	9.3	4.5
9-7-4				
1299	9.6	.5	7.8	4.2
2.4-20†-0				
1245	2.3	27.2†	----	----

GULF COAST ORGANIC AND MINERALS CO.,  
PHARR, TEXAS

4-2-0				
1399	5.5	.5	3.6	----

† Total Phosphoric Acid

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

HYDROPONIC CHEMICAL CO., INC.,  
COPLEY, OHIO

7-6-19				
1281	7.2	.2	7.5	21.2
1282	7.2	.1	7.4	20.5
2592	7.4	.2	7.3	22.3
2593	7.3	.1	7.0	21.3
2594	7.4	.1	7.3	21.6

INTERNATIONAL MINERALS AND CHEMICAL CORP.,  
CHICAGO, ILL.

0-0-21				
817	----	---	----	21.6
1153	----	---	----	22.6
1611	----	---	----	21.4
0-0-60				
617	----	---	----	60.3
913	----	---	----	60.7
1466	----	---	----	61.1
1614	----	---	----	60.5
2364	----	---	----	59.6

INTERNATIONAL MINERALS AND CHEMICAL CORP.,  
TEXARKANA, ARK.

3-12-12				
258	2.8	.4	10.4**	10.1**
6-12-12				
274	5.8	.6	12.1	12.0
7-14-7				
278	7.6	.7	13.6	7.2
10-10-10				
291	9.7	.6	10.5	10.6
10-20-10				
294	9.8	.7	20.6	10.3
12-12-12				
301	10.6*	.4	13.2	11.4
0-20-0				
246	----	.7	18.9*	----

JACKSONVILLE FERTILIZER CO.,  
JACKSONVILLE, TEXAS

0-46-0				
2351	----	1.7	45.7	----

## LANGE BROTHERS, INC., ST. LOUIS, MO.

0-20-20				
67	----	.5	18.7*	22.1
3-12-12				
70	3.4	.7	11.5	12.6
72	3.4	.6	12.0	12.2
636	2.8	.9	11.1*	11.0*
638	3.2	1.0	12.3	12.5
928	3.1	.9	12.3	11.0*
2377	3.1	.9	12.5	12.6
2504	3.2	.9	12.6	12.3
4-12-4				
82	4.5	.7	13.6	6.5
649	4.3	4.1	11.4*	4.5
8-8-8				
669	7.8	.8	8.5	9.1
8-24-8				
111	8.6	6.6	24.2	8.3
10-10-10				
1826	9.7	.2	11.0	10.9

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## LANGE BROTHERS, INC., (Cont'd)

12-12-12				
141	12.2	1.8	12.8	12.3
21-0-0				
149	20.4*	---	----	----
0-45-0				
533	----	1.9	44.6	----

## LA PLATA CHEMICAL CO., LA PLATA, MO.

0-20-20				
403	----	.6	21.6	20.1
728	----	.4	20.3	19.9
831	----	.6	19.7	21.3
3-12-12				
184	4.3	.3	12.2	14.1
732	4.0	.2	11.5	12.3
4-12-4				
421	5.1	.3	11.6	6.0
4-16-16				
736	4.7	.2	15.3*	15.4
5-20-20				
855	6.1	.4	19.2*	18.7*
2034	6.2	.8	19.1*	18.9*
8-8-8				
749	8.0	.2	8.7	9.4
8-24-8				
461	10.2	.4	22.1**	8.7
462	9.6	.3	24.3	8.2
464	9.9	.3	24.0	8.7
468	10.0	.3	23.8	8.6
10-10-10				
766	10.9	.3	10.7	10.4
767	10.8	.3	10.7	10.8
877	11.0	.5	11.2	10.6
10-20-0 With Aldrin				
1451	10.1	.4	18.9*	----
12-12-12				
41	11.5	.4	13.2	12.6
214	11.9	.8	12.4	12.4
489	10.3**	.4	16.9	10.0**
490	11.8	.3	12.8	11.5
491	11.7	.3	13.1	11.7
500	11.8	.3	16.4	12.0
504	13.2	.4	12.9	7.4**
699	11.6	.2	15.9	12.9
787	12.3	.3	12.4	12.5
890	12.2	.3	13.7	11.9
1660	12.7	.4	12.5	12.8
2094	12.2	.2	12.2	12.6
15-10-10				
52	13.7*	.2	11.8	10.2
518	14.3*	.2	11.2	10.1
519	14.9	.1	11.2	9.9
520	14.4*	.2	11.3	10.2
521	15.2	.1	11.3	9.3*
805	14.3*	.2	11.0	11.4
806	14.2*	.2	11.7	11.0
807	14.5	.2	11.1	10.3
910	13.9*	.3	11.4	10.9
1599	15.1	.1	11.3	9.0*
2111	14.1*	.2	10.3	9.5

## EARL MAY SEED CO., SHENANDOAH, IOWA

3-12-12				
2652	3.6	.5	12.0	14.0

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

EARL MAY SEED CO., (Cont'd)

6-10-4				
2653	6.1	.9	10.0	4.4
2-1-2				
2651	1.9	.4	1.7	2.2

MISSISSIPPI CHEMICAL CORP.,  
YAZOO CITY, MISS.

33.5-0-0				
54	33.5	---	----	----
384	33.6	---	----	----
613	33.4	---	----	----
1421	33.7	---	----	----

MISSISSIPPI RIVER CHEMICAL CO.,  
ST. LOUIS, MO.

33.5-0-0				
151	33.8	---	----	----
152	33.7	---	----	----
157	33.5	---	----	----
236	33.8	---	----	----
310	33.5	---	----	----
386	33.9	---	----	----
528	33.8	---	----	----
612	33.7	---	----	----
816	33.4	---	----	----
997	33.6	---	----	----
1241	33.7	---	----	----
1490	34.2	---	----	----
1603	33.6	---	----	----
1677	34.4	---	----	----
1775	34.4	---	----	----
1845	34.1	---	----	----
1849	34.1	---	----	----
1920	34.2	---	----	----
1921	34.0	---	----	----
2119	34.1	---	----	----
2263	34.0	---	----	----
2264	34.5	---	----	----
2265	34.0	---	----	----
2447	34.2	---	----	----
2566	34.0	---	----	----
2567	34.1	---	----	----
2657	33.9	---	----	----

MISSOURI FARMERS ASS'N., COLUMBIA, MO.

0-20-20				
66	----	1.1	21.4	18.6*
329	----	1.3	20.8	19.2*
333	----	.8	21.4	20.6
915	----	1.0	20.4	22.6
1242	----	.4	19.6	21.4
1243	----	.4	20.2	20.8
1427	----	1.2	21.1	21.2
1428	----	1.3	20.9	21.7
1494	----	.7	18.8*	20.0
1558	----	1.5	21.1	22.2
1621	----	1.5	20.3	21.8
2011	----	.8	21.1	20.1
2197	----	1.1	20.5	19.7
2281	----	.3	19.8	22.4
2352	----	1.4	19.9	21.1
2372	----	.6	18.7*	20.8
2571	----	1.5	20.7	22.2
0-20-20 With Borax				
249	----	.5	22.6	20.0
1557	----	.6	20.9	22.1
3-9-27				
1023	2.9	.6	9.1	28.9
1432	2.6*	.8	8.9	28.1
3-12-12				
182	3.1	1.5	11.2*	12.2
414	3.0	1.0	12.3	13.3
633	2.8	.8	12.7	13.1

MISSOURI FARMERS ASS'N., (Cont'd)

3-12-12 (Cont'd)				
634	3.0	1.2	12.4	12.0
637	3.1	1.4	12.2	12.3
841	3.0	1.3	12.2	11.8
927	2.9	1.9	10.7*	12.8
1026	3.0	1.6	11.4*	12.3
1248	2.8	.7	12.6	13.0
1249	3.1	.8	12.5	12.5
1498	3.7	1.3	12.5	12.0
1500	3.0	1.0	12.5	12.3
1504	3.0	1.6	12.5	12.5
1563	3.1	1.3	12.7	11.9
1706	3.3	1.0	12.6	11.5
1795	3.1	2.6	10.4**	12.5
1871	3.5	2.8	11.5	11.5
1875	4.1	1.0	12.9	12.5
1939	2.9	2.5	11.6	12.1
2205	2.9	3.3	11.1*	11.5
2282	3.2	1.2	11.8	12.1
2285	3.2	1.1	12.0	12.2
2286	3.0	3.2	10.9*	11.4
2373	3.1	1.3	11.9	12.5
2374	3.2	1.3	12.2	12.2
2454	3.1	1.9	11.7	11.4
2500	3.4	1.8	12.2	11.4
2503	3.1	1.8	12.8	11.7
4-12-4				
847	4.1	.8	12.4	4.8
1032	4.0	.6	12.6	5.0
1034	4.5	1.7	12.8	6.9
1036	4.0	2.8	10.4**	6.4
1037	3.9	.7	12.8	4.5
1255	4.0	.9	12.4	4.7
1435	4.4	3.8	8.9**	6.2
1508	4.0	1.7	12.5	4.8
1627	4.5	3.9	9.4**	6.7
1804	4.2	1.1	13.5	5.1
2287	3.8	.7	13.2	5.7
2288	4.1	1.4	12.2	4.8
2289	3.8	4.5	8.6**	5.4
2378	4.6	.6	13.9	5.6
2379	3.8	4.1	9.0**	5.5
2456	3.9	.8	13.1	5.4
2576	3.9	.7	13.6	5.5
4-16-16				
1568	3.5*	1.0	17.7	16.7
4-24-12				
1258	5.0	.7	23.1*	13.4
1259	4.1	1.0	24.6	11.4
1436	3.6*	1.4	22.9*	13.0
1512	4.1	1.5	24.1	12.4
2209	3.7	2.2	22.6*	12.4
2290	3.8	.9	27.1	11.9
2458	3.9	1.0	25.6	12.5
5-20-20				
11	5.5	.7	19.8	22.8
93	5.8	.7	19.3*	22.2
191	5.6	.8	20.5	21.1
344	5.2	.7	20.5	22.8
345	5.8	.7	19.9	19.5
443	5.2	.6	20.3	20.0
655	5.4	.9	19.4*	21.9
656	5.2	.8	20.4	23.0
740	5.4	.7	19.4*	21.7
742	5.5	.5	19.8	21.7
743	4.8	1.2	20.9	20.5
1359	5.3	.9	19.0*	21.3
1439	5.2	1.1	19.3*	20.2
1569	5.7	1.1	19.9	17.3**
1632	5.6	1.2	19.5	16.7**
1633	5.3	1.1	19.4*	18.4*
2436	5.5	.8	21.0	21.4
2459	6.1	1.1	20.5	19.0*
2511	5.6	1.1	19.8	20.4

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MISSOURI FARMERS ASS'N., (Cont'd)

MISSOURI FARMERS ASS'N., (Cont'd)

6-12-12				
447	5.7	.9	13.0	12.2
658	6.0	.9	12.4	12.6
660	5.8	.9	12.9	12.7
861	5.7	.9	12.7	11.3*
863	6.0	1.0	12.6	11.5
1044	5.7	.8	12.5	12.5
1045	5.8	.7	12.4	12.0

10-20-10				
122	9.4*	.9	20.7	12.0
200	9.9	2.0	21.4	10.1
769	9.8	1.7	21.5	11.0
771	9.8	1.5	20.6	10.1
961	9.3*	1.1	20.7	9.6
1308	9.6	.9	20.9	10.5
1368	9.3*	.9	19.7	11.2
1452	9.7	.7	21.7	10.7
1896	10.2	1.4	20.1	11.5
2234	10.4	1.7	19.4*	11.3
2317	10.3	1.1	20.0	11.2

8-8-8				
99	8.4	.6	8.8	8.9
103	8.0	.7	9.1	8.9
455	8.1	.9	8.2	8.9
565	6.8*	.6	8.0	8.5
566	7.9	.6	8.3	9.8
667	7.7	.4	9.4	7.5
752	8.1	.8	9.0	9.1
866	7.9	.6	8.8	8.0
868	7.9	.4	9.2	8.5
951	7.4*	.6	8.5	9.9
954	7.8	.6	8.2	9.0
1049	7.8	.6	8.3	8.3
1288	7.5*	.9	7.9	8.7
1290	7.6	.6	8.7	9.6
1519	8.2	.9	8.3	9.4
1574	8.8	1.1	9.4	9.1
1638	8.2	.8	7.8	9.5
1725	7.4*	2.2	7.1*	8.3
1729	8.2	.8	8.3	10.3
1886	8.4	.7	8.3	8.6
1891	8.1	.5	10.0	9.7
1953	8.2	.8	8.5	8.7
2218	8.2	1.0	8.0	8.7
2221	8.0	1.0	7.9	8.4
2299	8.0	.8	7.4*	8.6
2301	7.8	1.7	7.6	8.6
2394	7.8	.8	7.4*	8.9
2395	7.9	.6	8.6	9.0
2396	7.7	1.4	7.6	8.3
2438	8.8	.7	8.6	8.7
2464	7.7	.6	7.3*	8.5
2466	7.6	1.2	7.1*	8.2
2516	7.7	.6	7.3*	8.4
2598	7.9	1.0	7.2*	8.6
2599	8.3	1.0	7.7	8.4

10-20-20				
576	10.1	.1	20.6	21.2
689	10.2	.1	20.7	21.0
690	10.0	.1	20.3	21.3
772	10.1	.1	20.9	20.0
885	10.1	.1	20.7	20.9
1581	10.3	.0	22.2	20.0
1898	10.0	.0	21.2	20.6
2069	9.9	.0	21.2	20.7
2070	9.9	.0	21.3	20.8
2472	10.0	.0	20.4	20.0
2610	10.1	.1	20.7	20.9

8-24-8				
19	9.0	.4	25.0	8.2
24	9.0	.5	23.3*	8.8
108	9.2	.7	23.5	8.0
110	9.4	.7	24.1	8.3
113	7.9	.4	24.7	8.8
197	8.9	1.2	22.8*	9.3
286	10.2	.8	24.0	9.0
288	8.7	.6	24.0	9.1
463	8.2	.4	25.6	9.5
473	8.1	1.4	22.1**	9.1
569	8.2	.7	25.1	10.3
754	8.9	.5	24.3	8.3
759	8.6	.6	23.9	9.3
761	8.4	.6	24.6	8.6
874	8.2	.8	24.2	9.3
956	9.2	.9	23.5	8.2
958	8.2	.7	24.8	9.5
1058	8.4	.6	24.6	8.2
1293	8.3	.7	25.8	8.9
1296	8.4	.9	24.5	9.0
1576	8.8	1.2	22.0**	9.0
1645	7.9	.6	24.7	8.3
1817	8.1	1.0	23.8	9.1
1892	8.3	1.6	23.4*	8.6
1959	9.9	1.1	24.4	8.6
2058	9.0	1.1	22.9*	8.8
2222	8.5	1.7	22.5*	9.2
2223	8.7	1.3	23.8	8.0
2225	8.5	1.6	23.0*	8.7
2312	8.4	1.2	23.5	8.3
2399	9.1	1.0	21.6**	8.9
2602	8.9	1.1	23.4*	8.8

12-12-12				
131	11.5	.9	12.1	12.4
205	11.2*	.3	12.8	13.0
211	11.5	.8	11.8	12.7
307	12.0	.9	11.4*	12.0
361	10.4**	.8	13.1	12.5
364	11.2*	.9	11.7	12.9
368	11.6	.8	11.9	13.3
373	11.9	.7	11.7	12.0
508	10.5*	.8	13.5	13.1
577	11.4*	.9	11.8	12.4
585	11.7	.9	12.3	12.2
706	11.6	.0	13.1	11.7
781	12.0	.9	11.4*	12.9
786	11.7	.0	12.7	12.3
793	11.3*	.8	12.1	13.6
898	11.7	.1	13.2	13.1
968	11.7	.8	12.7	11.6
1063	11.3*	.3	12.8	12.1
1071	11.8	.1	12.9	12.1
1314	11.9	.1	12.6	12.5
1318	12.2	.1	12.4	12.0
1375	10.9*	1.0	11.5	14.0
1457	10.8*	.8	11.8	12.6
1534	10.1**	.9	11.8	14.6
1539	12.0	.0	12.6	12.1
1545	10.9*	.1	11.8	13.9
1585	11.1*	.7	12.3	12.0
1588	11.6	.1	12.8	11.7
1661	11.4*	1.2	11.6	12.0
1662	11.5	1.5	11.3*	12.2
1668	11.5	1.3	11.4*	12.3
1753	11.6	1.4	11.5	11.6
1760	11.1*	.9	12.0	12.0
1762	11.5	1.3	11.3*	12.1
1833	11.3*	.9	11.8	12.3
1901	11.7	1.0	12.4	11.8
1902	11.4*	.6	12.6	10.8**
1911	12.2	.1	12.9	12.0
2078	11.9	1.0	11.1*	12.0
2091	11.6	.9	12.0	12.1
2235	12.0	1.0	13.3	11.6
2243	12.6	.6	12.1	11.5
2244	12.8	.6	11.8	11.9
2252	12.2	.7	11.2*	11.4
2328	12.3	.7	12.0	11.6
2331	12.2	.8	11.9	11.9
2336	12.1	.9	11.1*	12.5
2338	12.1	.8	11.4*	11.9
2406	13.7	.1	13.8	9.2**
2409	14.6	.1	14.6	7.5**
2474	11.9	1.2	11.6	12.3
2538	12.2	1.0	12.2	11.7
2619	11.8	.5	11.6	13.1



TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MISSOURI FARMERS ASS'N., (Cont'd)

MISSOURI PLANT FOOD CO., (Cont'd)

12-12-12 (Cont'd)				
2621	12.4	.8	11.2*	12.5
2624	12.6	.6	11.1*	12.3
2656	12.4	.7	11.2*	11.9
12-36-12				
222	12.1	.0	36.5	13.3
375	11.8	.1	38.0	13.1
376	11.8	.1	38.3	13.0
599	11.8	.0	37.3	13.4
713	11.8	.1	36.5	12.7
796	11.8	.0	37.6	13.0
797	12.0	.1	36.5	12.6
906	11.8	.1	36.7	12.7
983	11.8	.1	36.3	12.6
1321	12.0	.0	36.8	13.2
1594	11.5	.1	36.4	13.6
1842	12.0	.1	37.7	12.7
1917	12.0	.0	37.6	12.7
1988	11.9	.0	37.1	12.1
2257	11.8	.1	37.3	12.2
2258	11.9	.1	35.7	12.3
2415	11.8	.0	36.0	12.7
2627	11.7	.0	36.3	13.5
14-14-14				
51	14.2	.1	14.5	14.0
147	14.0	.1	15.0	14.0
226	13.8	.1	17.1	13.3*
378	14.0	.0	14.9	14.0
601	13.8	.0	14.8	14.2
716	14.0	.1	15.0	14.2
717	13.9	.1	14.9	14.6
800	13.7	.1	15.0	15.0
801	13.9	.1	15.0	15.1
802	13.7	.1	15.0	15.5
803	13.9	.0	14.4	15.1
988	13.9	.1	14.8	14.1
1073	14.0	.1	14.1	14.3
1323	14.2	.0	15.1	13.8
1324	13.6	.0	14.7	14.5
1597	13.7	.1	15.4	14.0
1843	13.9	.1	14.5	13.6
1918	13.4*	.1	15.1	14.1
1991	13.8	.1	14.5	14.3
2341	13.7	.0	14.5	14.0
2416	13.7	.1	14.2	14.0
2480	13.6	.1	14.4	13.9
2628	13.9	.1	16.9	13.0*
14-28-14				
379	13.9	.3	28.3	14.8
804	13.6	.3	27.6	15.1
909	13.9	.2	28.8	15.1
1549	13.9	.1	29.3	14.0
1598	13.7	.1	29.0	14.3
1992	13.8	.1	28.6	14.2
2109	13.9	.2	28.8	14.5
2417	13.8	.2	27.8	14.6
16-20-0				
1601	16.5	.1	23.2	----
0-20-0				
1861	----	.8	20.4	----
MISSOURI PLANT FOOD CO., SIKESTON, MO.				
0-20-20				
173	----	.6	21.9	21.0
917	----	.6	20.8	20.0
920	----	.6	20.7	20.5
1083	----	.6	19.8	21.0
1084	----	.6	20.2	20.5
1086	----	.5	20.7	20.3
1346	----	.6	20.6	20.8
1347	----	.7	21.4	20.0
1389	----	.6	21.7	19.0*

3-9-18				
923	3.6	1.0	9.8	15.9**
1348	3.3	.7	9.6	17.9
1430	3.5	.5	9.8	18.2
3-9-27				
175	3.0	.3	9.1	28.8
176	3.3	.5	9.6	27.4
1088	3.1	.4	9.1	28.1
1219	2.8	.4	8.8	29.0
1349	3.1	.5	9.1	28.6
1350	2.9	.3	10.4	26.2
1351	2.9	.5	9.2	28.5
1391	3.1	.5	9.5	28.3
1475	2.9	.3	9.0	29.1
1476	3.3	.3	9.5	27.4
3-12-12				
416	3.5	.5	11.8	12.1
419	2.9	.4	11.9	12.4
1434	3.2	.5	12.2	11.9
2141	3.7	.3	13.6	13.6
4-12-4				
426	4.7	.6	12.2	5.6
4-16-16				
188	3.6*	.5	14.7*	18.0
429	3.9	.8	15.2*	16.1
1353	4.1	.7	16.6	16.1
5-15-30				
1100	4.8	.6	14.9	28.5*
1354	4.4*	.3	13.8*	30.3
6-24-24				
1404	5.7	1.0	24.8	23.0
1951	5.8	1.0	22.9*	24.0
8-8-8				
459	8.2	.6	9.4	9.2
1362	7.4*	.6	9.8	9.3
8-24-8				
1367	8.1	.7	22.0**	9.7
1408	7.9	.7	24.0	7.9
1446	8.0	.8	23.2*	8.1
2166	8.3	1.0	22.1**	10.6
10-10-20				
1410	9.2*	.2	10.1	21.5
1450	9.3*	.2	9.9	20.9
10-20-20				
1453	9.3*	.7	18.7*	20.9
12-12-12				
215	11.4*	.5	12.3	11.2*
507	11.9	.5	13.0	12.1
514	11.9	.5	12.7	12.1
593	12.0	.4	12.3	12.2
1127	12.0	.5	12.3	11.1*
1376	11.9	.5	12.7	11.2*
1377	12.0	.5	12.6	11.6
1411	11.5	.4	13.3	11.4
1454	12.0	.5	13.0	11.3*
1487	11.6	.3	13.0	11.7
2185	12.4	.2	12.7	12.0
15-15-15				
1139	14.4*	.1	14.9	15.1
1382	14.2*	.3	15.2	15.9
1417	14.3*	.1	14.6	15.3
1462	15.1	.1	16.2	14.1*
1993	14.8	.1	18.0	15.0
2445	14.7	.1	17.6	14.8
0-46-0				
1082	----	1.8	45.4	----
1388	----	1.1	47.1	----

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
<b>MISSOURI PLANT FOOD CO., (Cont'd)</b>				
0-46-0 (Cont'd)				
1933	----	.2	49.8	----
0-0-60				
1154	----	---	----	60.0
1387	----	---	----	60.8
<b>MONSANTO CHEMICAL CO., ST. LOUIS, MO.</b>				
20-20-20				
1335	19.6	.0	20.6	20.0
2636	19.4*	.0	20.5	21.0
33.5-0-0				
59	33.6	---	----	----
154	33.6	---	----	----
237	33.8	---	----	----
609	33.9	---	----	----
611	33.3	---	----	----
718	33.8	---	----	----
1420	33.6	---	----	----
1607	33.7	---	----	----
1680	34.1	---	----	----
2116	33.6	---	----	----
2267	34.2	---	----	----
2423	33.9	---	----	----
2483	33.9	---	----	----
2660	33.6	---	----	----
<b>NATIONAL POTASH CO., CARLSBAD, N. M.</b>				
0-0-60				
1685	----	---	----	60.9
2661	----	---	----	61.5
<b>NICHOLS FERTILIZER AND CHEMICAL CO., OKLAHOMA CITY, OKLA.</b>				
4-12-4				
424	5.6	.5	20.7	7.7
5-10-5				
435	4.4*	.5	13.8	5.2
<b>NITROGEN DIVISION, ALLIED CHEMICAL AND DYE CORP., HOPEWELL, VA.</b>				
12-12-12				
206	11.9	.2	12.8	12.2
219	11.7	.7	12.2	12.3
308	11.8	.3	12.6	12.4
357	11.8	.7	12.2	12.0
792	11.8	.4	12.6	12.5
33.5-0-0				
2565	34.3	---	----	----
<b>OLIN MATHIESON CHEMICAL CORP., LITTLE ROCK, ARK.</b>				
3-12-12				
1398	3.6	1.0	12.0	12.1
1797	3.4	1.0	13.3	12.4
1873	2.9	.9	11.9	11.1*
2204	3.5	.7	13.9	12.1
6-24-24				
12	6.3	1.3	25.9	24.7
98	6.4	1.2	25.3	24.5
194	6.3	.9	25.6	25.2
195	6.5	.9	25.6	24.8
346	6.3	1.5	25.5	24.0
450	6.4	1.0	26.2	24.4
663	6.4	.9	26.2	25.4
747	6.3	1.3	26.2	24.6
748	6.2	1.0	26.1	24.6
1226	6.8	1.2	25.4	25.0
1361	6.8	1.0	27.4	23.7
1571	6.4	1.1	26.4	24.1
1637	7.2	1.0	27.5	22.9*

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
<b>OLIN MATHIESON CHEMICAL CORP., (Cont'd)</b>				
6-24-24 (Cont'd)				
1719	7.0	.9	24.5	23.4
1884	6.5	1.0	27.0	23.6
1952	6.1	1.1	26.8	24.5
2216	5.9	.8	24.7	24.8
2296	7.1	.9	25.0	23.6
2297	7.0	.9	26.4	23.3
2298	6.4	1.2	26.7	23.5
2391	6.3	1.2	25.5	24.9
2513	6.2	1.7	25.3	24.5
8-8-8				
869	7.6	.3	10.4	11.4
1640	7.1*	.3	10.9	11.2
8-24-8				
20	8.5	6.5	24.8	8.6
106	8.6	6.3	24.4	8.9
112	8.7	5.4	24.9	8.3
570	8.7	5.7	24.9	8.7
674	8.3	6.9	24.3	9.2
676	8.4	6.6	25.5	8.6
756	8.5	6.7	24.7	8.3
757	8.5	5.8	25.1	8.6
1106	8.0	6.6	24.6	9.0
1366	8.6	7.2	23.1*	9.1
1445	8.3	6.0	25.9	9.2
1447	8.5	6.7	24.6	8.9
1525	8.6	6.6	24.8	9.2
1577	8.3	6.4	25.0	9.5
1578	8.5	6.9	24.8	8.8
1644	8.5	7.0	24.2	9.1
1730	8.7	3.9	24.9	8.4
1815	8.8	3.9	24.7	8.2
2055	8.8	3.8	24.8	8.3
2401	9.4	3.8	26.6	10.1
10-20-10				
1309	11.1	1.1	19.7	12.4
10-20-20				
480	9.5	.4	20.9	21.2
687	9.8	.6	21.0	20.2
688	9.4*	.6	19.8	22.0
10-30-10				
30	10.5	.4	31.4	11.2
202	11.2	.5	31.7	10.2
691	10.7	.8	30.4	11.6
773	9.9	1.8	31.3	11.0
1117	10.1	1.2	31.0	11.0
1370	10.0	1.4	31.3	11.2
1582	10.5	.8	31.7	11.2
1583	10.4	1.0	31.1	10.9
2319	10.4	1.0	32.4	9.9
12-12-12				
43	12.2	2.0	12.3	12.1
125	12.2	1.8	12.7	12.4
130	12.2	1.8	12.8	12.5
136	12.1	2.1	11.8	12.5
140	12.2	1.7	12.1	12.1
208	11.9	1.7	12.6	12.6
297	12.2	1.1	13.4	12.7
305	12.3	.9	13.5	13.5
360	12.2	1.4	12.9	12.7
579	12.0	.9	12.8	13.3
702	11.9	2.1	12.5	12.8
709	12.1	1.1	13.5	13.6
783	12.2	1.8	12.9	12.5
791	12.0	2.2	11.7	13.0
892	11.8	.7	12.9	13.2
900	12.0	1.9	12.4	12.6
970	12.0	1.9	12.6	12.2
972	11.8	.5	13.5	13.4
1125	12.2	1.7	12.2	12.4
1315	12.0	.6	12.9	12.9
1374	11.7	1.1	13.3	13.6

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

OLIN MATHIESON CHEMICAL CORP., (Cont'd)

12-12-12 (Cont'd)

1540	11.9	1.4	14.3	12.9
1590	11.7	2.1	12.5	12.0
1658	12.1	.5	12.4	13.0
1672	12.1	.6	12.5	13.0
1749	12.0	.4	12.6	12.4
1755	11.9	.5	12.5	12.6
1763	11.8	.7	13.3	12.6
1831	12.1	.6	12.3	12.6
1840	11.9	.6	12.9	12.6
1907	12.0	.5	12.4	12.9
1910	11.8	.8	13.4	12.9
1976	11.8	1.9	12.6	12.7
1980	12.2	1.9	12.4	12.4
1981	12.3	1.8	12.8	12.2
2076	12.0	1.4	15.4	12.4
2236	11.9	2.0	12.1	12.4
2326	11.9	.6	12.2	13.4
2332	12.0	1.0	12.6	12.4
2333	12.2	1.6	12.4	12.4
2408	11.9	.5	12.1	12.9
2412	11.9	1.7	12.5	12.6
2476	12.0	.7	11.6	13.5
2620	11.8	.2	12.1	14.2
2623	12.0	.2	12.1	14.0

12-24-12

146	11.8	.6	24.7	12.5
220	11.7	.4	25.0	12.5
598	11.9	.5	24.8	12.8
795	11.9	.6	24.9	12.7
1461	11.7	.1	25.3	12.8
1547	11.8	.5	24.5	12.7
1593	11.8	.3	24.7	12.4
1765	12.0	.7	24.2	12.4
1841	12.0	.7	24.4	12.5
2104	11.8	.7	24.8	12.6
2105	12.0	.3	25.2	12.3
2256	12.0	.7	24.3	12.3
2477	11.6	.6	24.6	12.8

13-13-13

49	13.1	.2	13.1	14.4
223	13.2	.2	13.4	13.3
224	13.3	.3	13.5	13.6
715	13.2	.2	13.4	14.8
799	13.1	.2	13.8	15.1
1237	13.0	.1	13.5	14.6
1322	13.0	.2	14.5	13.7
1548	13.3	.2	13.8	13.8
1595	13.0	.4	14.0	13.6
1766	13.1	.2	14.0	13.9
1767	12.9	.1	14.0	13.7
1989	13.1	.2	13.9	14.0
1990	12.9	.2	13.9	14.3
2107	13.1	.2	13.9	14.5
2186	12.7	.1	14.7	14.5
2259	13.1	.2	13.2	13.6
2339	13.1	.2	13.1	13.8
2340	13.2	.1	13.7	13.5
2478	13.1	.3	13.0	13.8
2479	13.1	.2	12.9	14.2

13-39-0

50	13.0	.9	38.7	----
225	13.2	.6	39.0	----

15-30-0

228	15.1	.6	30.4	----
-----	------	----	------	------

16-20-0

53	16.0	.4	20.6	----
229	15.9	.6	20.6	----
808	16.1	.5	19.9	----
1148	15.9	.4	21.0	----
1149	16.3	.3	19.9	----
1383	15.9	.3	21.3	----
1600	15.4*	.4	21.6	----

OLIN MATHIESON CHEMICAL CORP., (Cont'd)

33.5-0-0

387	33.8	---	----	----
0-45-0				
320	----	1.4	45.4	----
0-61-0				
725	----	1.1	63.5	----
1618	----	1.9	62.0	----
0-0-60				
615	----	---	----	60.9

OZARK-MAHONING CO., TULSA, OKLA.

5-10-5				
2292	5.0	.6	10.5	5.7
5-20-20				
1881	7.2	1.0	18.9*	18.0**
6-24-24				
864	6.4	.1	24.3	25.0
1722	6.5	.1	25.1	23.8
8-24-8				
1894	7.5*	1.2	23.5	7.4*
1956	9.3	.1	22.1**	8.1
2311	9.7	.1	21.6**	8.3
2402	9.1	.1	23.1*	8.1
2523	8.6	.7	22.8*	8.3

10-20-10

1968	10.3	.1	22.7	10.9
2316	10.3	.1	21.4	10.6

10-20-20

886	10.2	.1	20.0	19.9
-----	------	----	------	------

10-30-10

887	10.2	.1	39.1	10.7
962	10.4	.1	29.5	10.0

12-12-12

145	9.6**	1.1	13.4	12.0
895	12.9	.7	12.6	12.9
905	11.9	.5	13.5	13.7
1414	12.1	.7	14.3	11.8
1667	12.2	.7	12.6	12.7
1912	13.0	.0	12.1	12.1
1975	12.1	.1	12.5	12.5
2103	12.9	.0	12.6	12.5
2337	12.4	.0	12.6	12.9
2533	12.7	.0	12.1	12.3

12-24-12

597	12.4	.0	24.3	12.9
1134	12.4	.0	24.4	12.9

13-39-0

1135	13.1	.1	40.3	----
------	------	----	------	------

14-14-14

987	13.3*	.1	15.0	14.3
1136	13.1*	.0	15.6	14.6

16-20-0

603	16.2	.0	20.9	----
1142	15.8	.0	21.8	----

33.5-0-0

1998	33.8	---	----	----
1999	34.1	---	----	----
2344	34.1	---	----	----
2347	34.4	---	----	----

0-46-0

1555	----	1.1	47.1	----
2279	----	1.3	46.5	----

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## OZARK- MAHONING CO., (Cont'd)

0-46-0 (Cont'd)				
2369	----	2.0	45.5	----
2450	----	1.5	45.7	----

PEARSON-FERGUSON CHEMICAL CO.,  
KANSAS CITY, MO.

0-45-0				
1423	----	2.6	46.0	----

## PHILLIPS CHEMICAL CO., BARTLESVILLE, OKLA.

33.5-0-0				
312	33.3	---	----	----
2641	34.2	---	----	----

## PLANTABBS CORP., BALTIMORE, MD.

11-15-20				
1312	11.3	.0	18.9	26.9
2612	11.5	.1	18.8	27.4

POTASH COMPANY OF AMERICA,  
CARLSBAD, N. M.

0-0-60				
3	----	---	----	61.6
159	----	---	----	60.5
239	----	---	----	61.7
240	----	---	----	61.4
389	----	---	----	60.9
529	----	---	----	62.7
530	----	---	----	61.6
818	----	---	----	60.0
821	----	---	----	60.7
1079	----	---	----	60.0
1342	----	---	----	61.2
1491	----	---	----	61.3
1553	----	---	----	62.2
1612	----	---	----	60.0
1684	----	---	----	61.1
1776	----	---	----	60.9
1777	----	---	----	60.9
1778	----	---	----	61.2
1850	----	---	----	61.0
1851	----	---	----	60.8
1925	----	---	----	61.6
1926	----	---	----	61.1
1927	----	---	----	61.3
2002	----	---	----	60.1
2123	----	---	----	61.8
2270	----	---	----	61.4
2348	----	---	----	61.2
2365	----	---	----	60.0
2424	----	---	----	60.6
2425	----	---	----	60.3
2426	----	---	----	59.9
2487	----	---	----	60.5
2646	----	---	----	61.9

## PROEN PRODUCTS CO., BERKELEY, CALIF.

15-5-5				
2629	15.6	.0	5.9	5.5
15-40-10				
1326	15.6	.0	40.9	11.9
2632	15.6	.0	41.7	12.4
30-10-10				
1338	31.3	.0	11.1	11.4
2640	30.3	.0	11.7	12.0

## RA-PID-GRO CORP., DANSVILLE, N. Y.

23-21-17				
1336	23.6	.0	20.1*	16.6
1337	23.6	.0	22.1	17.0
2637	23.7	.0	20.2*	17.0
2638	22.9	.0	19.5*	17.3
2639	22.2*	.0	21.6	20.8

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## RIVERSIDE FERTILIZER CO., MARKS, MISS.

0-20-20				
538	----	.3	20.3	20.5
539	----	.4	20.3	19.7
545	----	.6	21.3	22.2
12-12-12				
34	10.7*	.2	12.5	11.8
216	10.8*	.2	12.7	11.4
358	11.3*	.2	13.0	12.0
588	11.4*	.2	13.2	12.6
589	11.6	.2	12.5	12.9
592	11.1*	.2	11.9	12.2
594	11.7	.2	12.4	13.1
974	11.2*	.3	12.3	12.0
976	11.8	.2	12.7	12.2
977	11.9	.2	13.1	12.4

## ROSE MANUFACTURING CO., BEACON, N. Y.

5-10-5				
2583	5.0	1.0	11.2	4.9
15-30-15				
2631	15.6	.0	30.4	17.7

## ROSS DANIELS, INC., DES MOINES, IOWA

5-35-10				
1269	9.3	.0	39.0	12.7
8-16-8				
1292	8.7	.1	17.9	8.7
2600	9.1	.0	18.4	9.9
9-46-15				
1301	10.0	.0	52.4	17.0
10-20-20				
1310	11.6	.1	23.3	22.0
15-25-10				
1325	15.8	.0	28.1	12.0

## O. M. SCOTT AND SONS CO., MARYSVILLE, OHIO

7-11-5				
1286	6.8	.5	12.4	6.7
9-7-4				
1300	9.3	.3	7.5	5.2
20-10-5				
1332	17.6**	.6	13.0	5.8
1550	18.8*	.6	12.9	4.5
1551	18.3**	.6	12.2	4.9
25-0-0				
1339	24.4*	---	----	----
1340	24.2*	---	----	----

## SEARS, ROEBUCK AND CO., CHICAGO, ILL.

1.5-.75T†-2				
1244	2.2	1.4T	----	2.6
4-12-4				
1256	3.9	.5	11.0*	6.0
5-5-0				
1261	4.5*	.8	4.0**	----
5-10-5				
1267	5.3	1.7	11.6	5.6
10-6-4				
1305	10.3	.2	7.0	5.0
15-30-15				
1327	15.6	.0	31.3	16.4

† Total Phosphoric Acid

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
SEARS, ROEBUCK AND CO., (Cont'd)				
20-20-20 1334	20.3	.0	21.8	20.0
SEWERAGE COMMISSION OF THE CITY OF MILWAUKEE, MILWAUKEE, WIS.				
5.5-4-0 1270	5.5	.7	4.5	----
1271	5.8	.7	4.2	----
2587	5.7	.7	3.5*	----
SOIL BUILDERS INTERNATIONAL CORP., NEW YORK, N. Y.				
4-8-8 1253	4.3	1.0	8.8	8.0
SOUTHERN NITROGEN SUPPLY CO., YAZOO CITY, MISS.				
33.5-0-0 1997	34.2	---	----	----
SOUTHWEST POTASH CORP., CARLSBAD, N. M.				
0-0-60 391	----	---	----	60.9
819	----	---	----	60.7
820	----	---	----	60.7
SPENCER CHEMICAL CO., KANSAS CITY, MO.				
33.5-0-0 57	33.6	---	----	----
58	33.5	---	----	----
150	33.4	---	----	----
155	33.4	---	----	----
158	33.4	---	----	----
234	33.4	---	----	----
235	33.5	---	----	----
311	33.5	---	----	----
527	33.4	---	----	----
614	33.5	---	----	----
719	33.4	---	----	----
811	33.3	---	----	----
812	33.4	---	----	----
814	33.4	---	----	----
911	33.5	---	----	----
996	33.5	---	----	----
1077	33.6	---	----	----
1344	33.7	---	----	----
1385	33.6	---	----	----
1604	33.8	---	----	----
1608	33.9	---	----	----
1678	34.1	---	----	----
1679	34.2	---	----	----
1681	34.0	---	----	----
1771	34.1	---	----	----
1773	34.2	---	----	----
1774	34.2	---	----	----
1846	34.0	---	----	----
1848	34.0	---	----	----
1922	34.1	---	----	----
1923	34.0	---	----	----
2001	34.0	---	----	----
2117	34.0	---	----	----
2120	34.2	---	----	----
2190	33.9	---	----	----
2345	34.2	---	----	----
2346	34.2	---	----	----
2363	34.1	---	----	----
2419	34.0	---	----	----
2421	34.1	---	----	----
2486	34.0	---	----	----
2564	34.1	---	----	----
2643	34.1	---	----	----
2644	34.1	---	----	----
2658	34.1	---	----	----

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
STIM-U-PLANT LABORATORIES, INC., COLUMBUS, OHIO				
5-8-7 2579	6.4	.2	11.2	9.8
11-12-15 2611	11.1	.0	21.2	22.2
SUPER CROP PLANT FOODS, INC., OTTUMWA, IOWA				
0-20-20 830	----	.5	18.6*	21.3
3-12-12 1031	3.1	.2	12.4	10.0**
5-20-20 854	6.2	.8	18.7*	17.8**
856	5.7	.8	19.0	20.0
10-10-10 880	10.0	.4	12.3	8.9*
12-12-12 888	11.5	.6	14.1	11.6
893	11.6	.6	14.4	12.0
SUP-RO MANUFACTURING AND SALES KANSAS CITY, MO.				
6-6-6 1272	5.3*	.4	7.0	6.2
1273	5.5*	.4	7.4	6.9
1274	5.1*	.6	7.4	6.1
SWIFT AND CO., NATIONAL STOCK YARDS, ILL., AND SOUTH ST. JOSEPH, MO.				
0-19-19 168	----	.3	18.9	21.1
0-19-19 With Borax 402	----	.4	18.5	19.1
829	----	.5	19.2	20.6
0-20-20 5	----	.6	20.1	20.2
248	----	.6	19.6	19.0*
404	----	.4	20.7	20.2
540	----	.5	21.0	20.0
0-25-25 546	----	1.0	24.3*	25.5
1216	----	1.1	25.4	25.2
1429	----	.1	24.1*	24.7
3-9-18 1217	2.7*	.3	9.6	18.2
3-9-27 174	2.8	.5	9.7	28.2
730	2.4**	.1	9.0	26.7
1220	3.1	.3	9.4	24.9**
1396	3.0	.3	9.9	25.5*
3-12-12 178	3.8	.5	12.3	9.8**
183	3.6	.5	12.1	12.0
254	3.5	.4	11.1*	12.1
339	3.7	1.5	14.3	13.3
550	3.2	.2	11.7	11.0*
628	3.5	.5	12.0	12.3
640	3.9	.6	12.6	12.6
733	3.9	.4	12.3	10.7*
843	3.8	.5	11.8	12.2
926	3.4	.7	11.9	11.4
1469	3.6	.3	12.8	13.1
1471	3.7	.5	12.2	12.5
1495	3.3	.5	12.1	12.2
1496	3.4	.5	12.2	12.6
1869	2.8	.6	11.8	12.8

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
SWIFT AND CO., (Cont'd)				
3-12-12 (Cont'd)				
1870	3.1	.5	12.7	12.8
1938	3.3	.5	12.5	12.4
1943	2.9	.6	11.6	12.7
2200	3.2	.9	12.0	12.3
2353	4.2	.6	12.5	12.3
4-12-4				
77	3.9	.5	11.4*	4.5
79	4.3	.6	12.1	4.0
81	3.5*	.6	13.9	4.3
185	4.0	.5	11.4*	4.0
261	4.3	.6	12.1	4.5
934	4.1	.6	11.4*	4.0
2146	4.1	.9	12.7	5.6
2509	4.0	.9	11.8	4.5
4-16-16				
86	3.8	.6	14.6*	17.4
87	4.3	.6	15.3*	14.5*
186	3.7	1.7	16.0	14.3**
187	4.3	1.4	15.4*	16.0
265	3.7	.3	16.2	18.3
266	4.3	.7	15.5	15.3*
556	4.0	.5	15.7	17.2
651	4.0	.7	15.4*	16.0
737	4.2	.7	15.6	16.6
849	4.3	.8	15.8	16.0
1011	4.1	.6	15.6	16.3
1809	4.2	.5	15.6	16.2
2208	4.3	.6	15.7	15.3*
2578	3.9	.5	16.3	15.8
4-24-12				
189	4.1	.8	21.4**	14.4
5-10-10				
1096	4.9	.6	10.5	9.2*
5-20-20				
94	4.9	.5	19.3*	21.2
193	4.8	1.1	20.7	19.8
444	5.0	.4	18.8*	20.8
1879	4.8	.3	19.9	19.1*
2033	5.3	.5	19.6	20.0
6-10-4				
1275	5.9	.6	10.5	4.8
1277	6.3	.5	10.2	4.2
1278	5.8	.7	11.0	4.5
2588	6.1	.5	10.3	4.6
2589	6.1	.5	10.4	4.8
2590	6.4	.9	10.2	4.4
2591	6.2	.6	10.5	3.4*
6-12-18				
449	5.7	.5	12.5	16.3**
662	5.9	.5	12.5	17.5
1009	6.4	.5	11.4*	18.9
8-8-8				
100	8.0	.4	8.4	7.9
279	8.3	.4	9.0	7.1*
348	7.5*	.3	8.5	8.0
567	7.9	.5	9.2	8.1
666	7.6	.4	9.0	8.5
1482	7.2*	.4	10.6	10.3
2046	7.4*	.1	9.3	9.3
2220	6.7**	.1	9.3	10.0
2519	7.9	.5	8.6	8.7
8-24-8				
23	8.3	.7	23.9	8.2
107	8.5	.7	24.0	7.7
114	7.7	.8	25.1	7.8
199	8.0	.6	22.8*	9.8
474	8.1	.7	25.3	8.0
875	8.0	1.1	23.2*	9.2
1056	8.2	.9	24.8	7.7

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	
SWIFT AND CO., (Cont'd)				
8-24-8 (Cont'd)				
1955	7.9	.6	24.6	8.5
2400	7.5*	1.1	22.7*	8.2
10-10-10				
27	9.5	.4	10.6	10.0
119	9.6	.5	11.2	10.6
684	9.2*	.6	10.7	12.4
765	9.5	.5	10.5	11.3
1963	9.9	.6	11.5	10.4
12-12-12				
46	11.7	.4	12.7	11.5
127	11.9	.4	12.6	11.6
129	12.1	.3	12.9	11.8
132	11.3*	.4	13.4	11.0*
134	11.2*	.4	13.3	12.7
304	12.1	.4	11.9	10.1**
371	10.4**	.5	13.3	12.7
509	11.8	.7	13.0	12.1
583	11.8	.6	12.3	13.0
587	12.6	.4	13.3	10.3**
591	11.2*	.6	12.2	11.7
694	11.5	.4	12.1	12.9
711	10.8*	.4	13.0	13.0
788	10.7*	.6	12.1	11.3*
789	11.5	.4	13.0	11.2*
902	12.1	.3	12.1	12.5
965	11.9	.4	11.3*	11.8
1007	11.7	.3	12.5	13.3
1065	11.8	.3	11.4*	12.3
1129	11.6	.5	12.0	12.3
1235	11.1*	.2	11.9	12.6
1416	11.2*	.5	12.4	12.6
1486	11.0*	.1	12.3	12.1
1532	11.8	.3	12.1	11.8
1757	10.8*	.1	12.9	12.8
1838	11.0*	.1	12.2	14.2
1903	11.3*	.1	12.4	12.9
1904	11.1*	.2	12.5	13.0
1973	11.7	.2	12.4	12.4
2080	12.2	.2	11.3*	11.4
2238	11.5	.1	11.9	12.1
2249	11.4*	.2	12.3	12.1
2614	11.3*	.2	12.8	12.3
16-20-0				
1144	15.9	.1	21.5	----
19-28-14				
1330	18.0*	.0	28.8	15.1
1331	19.5	.0	31.6	13.4
2634	19.4	.0	28.2	15.4
2635	18.9	.0	28.9	14.8
20-10-15				
1333	20.5	.0	12.4	14.5
0-46-0				
1424	----	1.0	46.8	----
TENNESSEE CORP., LOCKLAND, CINCINNATI, OHIO				
5-10-5				
1265	4.9	.3	10.5	5.0
1266	4.8	.5	10.7	5.4
TOBIN SEED CO., KANSAS CITY, MO.				
6-12-6				
1279	5.8	12.3	1.0**	6.3
TRI-STATE CHEMICAL CO., WEBB CITY, MO.				
0-20-20				
626	----	.4	17.7**	25.2
3-12-12				
257	3.3	.5	12.1	13.4
411	3.4	.5	12.4	12.8



TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

TRI-STATE CHEMICAL CO., (Cont'd)

3-12-12 (Cont'd)				
412	3.7	.6	12.0	15.1
639	3.8	.5	12.1	13.9
839	3.4	.6	12.8	12.7
2016	5.4	.8	14.0	11.6
2019	4.1	.6	11.9	10.1**
2021	3.3	.5	13.0	10.8*
2023	4.4	.6	12.6	14.5
2024	5.1	.8	14.5	11.2*
2284	4.4	.6	12.4	9.7**

4-12-4				
262	4.3	.5	11.3*	6.7
650	3.4*	.5	11.9	6.5
2025	5.1	.6	12.9	7.2
2026	4.8	.6	12.2	7.1
2027	4.6	.5	12.8	6.7
2028	5.3	.6	12.1	7.8

5-20-20				
857	5.3	.4	18.6*	20.3
2036	4.4*	.4	17.7**	22.5

6-12-12				
273	6.7	.4	12.2	13.7
2041	6.8	.9	12.0	11.3*
2042	6.7	.8	12.5	12.0
2295	7.6	.8	12.7	10.4*

8-8-8				
670	6.3**	.5	10.8	12.6

8-24-8				
282	8.1	.7	20.8**	9.8
871	8.5	.6	21.3**	10.4
2060	8.1	.7	21.8**	11.5

10-20-10				
293	9.7	.6	19.1*	12.4
481	9.0*	.6	19.7	11.7
483	8.8*	.5	19.1*	12.6
686	10.1	.5	17.9**	11.1
2065	8.0**	.8	19.0*	9.8
2067	8.7*	.9	21.0	9.8
2318	7.8**	.6	24.8	9.2*
2404	8.4**	.7	22.9	9.9

12-12-12				
299	10.5*	.5	14.2	13.0
496	9.0**	.4	14.3	16.4
710	10.1**	.3	13.1	14.5
1914	8.5**	.4	14.0	12.1
1977	8.2**	.6	16.4	12.4
2081	10.6*	.5	12.6	14.1
2100	8.4**	.6	17.1	11.8
2334	8.4**	.7	18.5	10.6*
2335	11.0*	.4	12.9	13.6

0-20-0				
400	----	.6	20.5	----
623	----	.6	20.4	----

0-45-0				
2007	----	1.3	46.2	----

TRI-STATE FERTILIZER CO., BURLINGTON, IOWA

0-20-20				
1020	----	.4	20.0	19.2*

3-12-12				
180	2.9	.3	12.9	12.5
835	3.1	.4	14.0	12.9
838	2.9	.2	11.9	13.5

5-20-20				
190	4.4*	.2	18.8*	19.4
853	4.7	.3	22.2	16.3**
1043	4.6	.4	19.2*	20.7
1950	4.7	.3	20.7	20.4

TRI-STATE FERTILIZER CO., (Cont'd)

10-10-10				
878	8.4**	.3	11.7	13.8
12-12-12				
207	10.8*	.2	12.8	13.0
889	9.5**	.4	13.3	12.8
891	10.3**	.3	12.7	14.4
894	9.9**	.3	13.0	14.9
1119	11.6	.3	13.2	13.4
1120	11.6	.3	12.8	13.5
1121	12.2	.3	12.6	13.5
1987	10.8*	.2	13.3	12.1
2358	11.5	.1	12.3	12.0
2359	11.2*	.1	12.4	11.9

TRI-STATE FERTILIZER CO., CANTON, MO.

3-12-12				
837	2.9	.6	13.3	11.0*

4-16-16				
1162	4.0	.9	16.1	18.0

8-8-24				
1166	6.6**	.4	11.9	24.5

10-10-10				
1169	9.5	.4	11.8	9.2*

10-10-15				
1170	9.8	.7	10.8	16.9

12-12-12				
1178	10.5*	.5	13.8	13.8

No Guarantee				
2357	----	1.8	44.7	1.6

U. S. PHOSPHORIC PRODUCTS, DIVISION OF TENNESSEE CORP., TAMPA, FLA.

0-46-0				
166	----	.4	47.0	----
167	----	.5	47.8	----
322	----	.3	46.5	----
323	----	.7	46.6	----
534	----	.2	48.5	----
722	----	.6	47.6	----
914	----	.6	47.8	----
1616	----	.7	47.9	----
1617	----	.7	47.7	----

UNITED STATES POTASH CO., CARLSBAD, N. M.

0-0-60				
60	----	----	----	59.8
1155	----	----	----	61.6
1613	----	----	----	60.0
1683	----	----	----	60.9
2645	----	----	----	61.6
2662	----	----	----	59.7
2268	----	----	----	60.2
2269	----	----	----	59.7

VIRGINIA-CAROLINA CHEMICAL CORP., EAST ST. LOUIS, ILL.

0-20-20				
170	----	.4	20.1	19.3*
625	----	.3	20.5	19.5
729	----	.5	19.7	17.7**
1085	----	.4	20.9	20.0
2133	----	.5	20.0	19.6

0-25-25				
2495	----	.2	23.4**	25.0
2649	----	.2	26.0	26.3

TABLE 4 -- ANALYSIS AND GUARANTEE OF FERTILIZERS SAMPLED, 1957 (Continued)

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## VIRGINIA-CAROLINA CHEMICAL CORP., (Cont'd)

3-9-27				
1473	3.9	.7	10.2	24.2**
3-12-12				
7	3.4	.8	11.8	12.6
73	3.3	.7	12.6	11.6
181	3.3	.9	12.4	13.4
251	11.0	.3	13.3	12.6
259	3.2	.6	12.7	13.6
337	4.1	1.4	12.4	11.7
417	3.3	1.4	13.2	11.5
631	3.5	.6	12.9	12.0
642	3.2	.9	12.3	12.2
1027	3.5	.8	12.7	11.9
1250	3.5	.8	12.9	12.3
1502	3.7	1.3	12.3	11.8
1940	3.4	1.5	11.6	13.0
2014	3.4	.7	14.3	14.1
2203	3.5	1.8	12.6	10.2**
2375	3.1	1.1	12.2	12.0
2574	3.8	1.4	13.0	12.0
4-12-4				
10	3.8	1.0	13.0	5.2
263	5.6	1.2	17.1	5.9
428	4.1	1.2	13.3	6.8
646	4.1	1.4	13.1	5.7
935	4.6	1.1	14.2	9.3
1035	4.1	1.0	13.4	4.1
1507	4.1	1.6	13.2	5.9
1630	4.2	1.0	13.6	6.2
2145	4.2	1.6	12.9	4.4
2577	4.0	1.4	12.9	4.8
4-16-16				
738	4.2	1.7	17.6	14.9*
1510	4.2	.9	17.6	16.0
1810	3.9	.9	16.4	16.7
2029	4.3	.7	16.8	16.0
4-24-12				
938	4.0	1.0	22.8*	11.8
5-10-5				
434	5.0	.8	9.9	5.6
5-20-20				
744	5.1	.9	20.5	19.4
1516	5.6	.7	20.3	21.5
1716	6.2	.6	18.2**	21.5
2032	5.1	1.0	20.2	20.0
2387	4.6	.9	20.6	20.7
6-12-12				
97	6.0	1.0	12.3	11.4
275	5.9	.9	12.3	11.5
2215	6.6	1.0	12.1	12.6
8-8-8				
14	7.6	.8	10.0	8.5
16	8.2	.3	8.2	8.8
104	7.8	.8	9.6	7.9
457	7.8	.9	9.9	7.0*
665	7.9	.8	10.4	8.2
948	8.4	1.0	8.8	8.1
1728	8.4	.9	9.4	9.3
2048	8.6	.7	8.5	8.0
2217	8.3	.7	8.0	7.1*
2597	7.8	.7	9.6	8.8
8-24-8				
21	8.4	1.1	23.4*	8.4
109	8.2	.9	25.3	7.5
285	8.5	.9	24.5	8.1
675	8.1	1.3	25.4	7.7
957	7.9	1.1	23.2*	7.9
1298	8.6	1.4	22.6*	8.5
1527	8.3	1.2	23.3*	8.9
1643	7.8	1.3	23.5	8.2

MANUFACTURER, GRADE, AND LABORATORY NUMBER	NITROGEN %	PHOSPHORIC ACID		POTASH %
		Insoluble %	Available %	

## VIRGINIA-CAROLINA CHEMICAL CORP., (Cont'd)

8-24-8 (Cont'd)				
2054	8.1	.7	25.0	7.9
2165	8.0	1.4	23.3*	8.0
2468	7.8	.9	24.3	8.4
10-10-10				
26	10.3	.4	10.4	9.8
29	9.8	.3	10.7	10.0
478	8.8*	.4	10.7	12.8
678	9.7	.5	11.0	10.4
682	9.5	.4	11.5	11.4
768	9.7	.6	11.5	10.4
1061	9.8	.4	11.2	10.1
1307	9.8	.5	11.1	10.3
1484	9.8	.4	10.8	11.1
1823	10.5	.2	11.0	10.1
2062	11.0	.3	10.5	9.7
2229	10.9	.2	10.6	9.1*
2469	10.2	.4	10.5	10.2
2470	9.6	.5	10.5	10.6
10-20-10				
123	9.7	.5	20.2	10.5
485	9.5	.3	21.1	10.1
1531	9.7	.6	20.3	10.3
2233	10.3	.4	16.3**	10.0
12-12-12				
44	11.6	.3	13.4	11.7
45	11.5	.5	13.0	12.3
139	12.0	.4	12.9	12.4
142	11.3*	.4	13.9	11.7
210	11.8	.4	12.8	12.0
497	11.3*	.3	12.7	12.1
511	12.1	.4	12.9	11.7
696	11.6	.6	12.7	12.0
705	11.7	.6	12.6	12.2
707	12.0	.4	12.8	12.1
966	11.6	.6	12.8	12.0
1087	12.0	.6	12.0	11.8
1069	11.8	.5	12.5	12.4
1319	12.0	.7	12.3	12.0
1758	11.6	.4	12.3	12.0
1832	11.8	.2	13.2	12.1
1839	11.6	.3	12.4	12.7
1906	12.2	.4	13.7	12.4
2093	12.2	.3	12.6	11.7
2241	12.1	.4	13.9	12.3
2246	12.5	.3	12.5	12.3
2413	12.4	.3	12.1	11.8
2441	11.9	.9	12.0	11.9
2540	11.2*	.6	12.7	11.6
16-8-8				
2262	14.9*	.2	9.3	8.5
0-47-0				
1467	----	.9	44.1**	----

WESTERN AGRICULTURAL CHEMICALS CO.,  
COLORADO SPRINGS, COLO.

10-10-5				
1306	10.0	.3	10.2	6.6
10-52-17				
1311	9.6	.0	54.3	18.1

TABLE 5 -- ANALYSIS AND GUARANTEE OF FERTILIZER DISTRIBUTED IN BULK, 1957

When fertilizers are sold to dealers in bulk, they are subject to contamination with materials previously occupying the dealers storage tank or 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."

If the sample was taken from a railroad car or from storage belonging to the manufacturer, the manufacturer is held responsible for guaranteeing the material and the dealer will not be listed.

MANUFACTURER		% GUARANTEE			% FOUND			
SAMPLE #	GUARANTOR IF OTHER THAN MFG.	NITROGEN	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH	NITROGEN	INSOL. P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH
American Agricultural Chemical Co., National Stockyards, Ill.								
1978		12.0	12.0	12.0	11.3*	.3	12.5	12.1
Consumers Cooperative Association, Kansas City, Mo.								
503	Consumers Cooperative Services Inc., Lathrop	12.0	12.0	12.0	10.9*	.9	13.2	12.4
2121	Consumers Oil and Supply Co., Braymer	33.5	----	----	34.0	----	----	----
2006	Consumers Oil and Supply Co., Braymer	----	45.0	----	----	1.1	47.1	----
Danco Fertilizer, Inc., Maryville, Mo.								
602		15.4	7.7	----	13.4**	.7	9.0	----
Darling and Co., East St. Louis, Ill.								
1164	Central Missouri Chemical and Minerals, Inc., Jefferson City	5.0	20.0	20.0	5.1	.3	19.5	19.7
A. T. Earls Fertilizer Co., Deering, Mo.								
735		4.0	10.0	10.0	4.1	----	10.4	10.6
763		9.0	9.0	9.0	8.7	----	10.2	9.3
775		12.0	6.0	6.0	11.6	----	6.2	6.0
776		12.0	6.0	6.0	11.5	----	6.4	6.0
777		12.0	6.0	9.0	11.6	----	6.4	9.3
778		12.0	8.0	8.0	11.1*	----	8.5	8.3
Fertiline Corporation of America, New York, N.Y.								
994	Maryville L. P. Gas and Equipment Co., Maryville	32.0	----	----	30.1**	----	----	----
D. B. Gray Farmers Elevator Co., Hull, Ill.								
1965		10.5	12.5	12.5	10.9	.2	12.4	14.1
1969		11.5	11.5	11.5	11.1	.3	12.9	12.1
1173		11.6	11.6	11.6	11.7	.3	10.8*	14.3
1174		11.6	11.6	11.6	11.7	.3	10.3*	13.2
1175		11.6	11.6	11.6	12.1	.4	9.5**	13.4
1191		13.0	10.0	10.0	12.5	.2	9.8	12.2
1193		14.8	6.2	9.7	14.8	.3	5.0**	11.4
1194		15.0	8.0	5.0	15.8	.1	6.1**	7.5
Holland Liquid Fertilizer Co., Holland, Mo.								
765		9.0	3.0	9.0	8.8	----	3.3	9.4
574		9.0	9.0	9.0	10.1	----	7.3**	8.6
774		12.0	6.0	6.0	10.7*	----	5.8	8.8
1229	Portageville Seed and Supply Co., Portageville	9.0	9.0	9.0	8.7	----	8.8	9.7
1239	Portageville Seed and Supply Co., Portageville	15.0	5.0	5.0	13.5*	----	5.1	7.2
International Minerals and Chemical Corp., Chicago, Ill.								
64	R.L. Aggeler Coal and Fertilizer Co., Boonville	----	45.0	----	----	.9	47.2	----
1934	R.L. Aggeler Coal and Fertilizer Co., Boonville	----	46.0	----	----	1.1	47.6	----
Lafayette Farm Supply, Inc., Lexington, Mo.								
334		3.0	11.0	11.0	3.4	----	11.2	11.3
432		5.0	5.0	12.0	5.4	----	5.2	13.8
347		8.0	8.0	8.0	7.9	----	8.2	8.2
355		12.0	8.0	4.0	11.3*	----	8.5	4.1
487		12.0	8.0	4.0	11.9	----	8.3	4.1
523		18.0	6.0	----	11.8**	----	6.3	----
2050	Arnold Brothers, Orrick	8.0	8.0	8.0	7.0*	----	8.7	8.1
1812	Weinrich Feed and Farm Supply, Warrensburg	8.0	8.0	8.0	7.6	----	8.1	7.9
2114	Arnold Brothers, Orrick	32.0	----	----	31.8	----	----	----
La Plata Chemical Co., La Plata, Mo.								
1163	Smith Brothers Soil Service, Kirksville	4.0	16.0	16.0	4.8	.3	14.4**	15.2*
Missouri Farmers Association, Columbia, Mo.								
963	M.F.A. Bulk Plant #5, Slater	12.0	12.0	12.0	10.0**	.1	12.3	13.2
989	M.F.A. Bulk Plant #5, Slater	15.0	10.0	10.0	14.7	.1	10.7	11.5
991	M.F.A. Bulk Plant #5, Slater	19.0	19.0	----	18.8	.2	19.0	----
1150	M.F.A. Bulk Plant #5, Slater	19.0	19.0	----	19.0	.1	19.6	----
230	M.F.A. Bulk Plant #5, Slater	20.0	10.0	10.0	18.6*	.0	15.0	9.6
993	M.F.A. Bulk Plant #5, Slater	25.0	12.0	----	23.6*	.0	14.8	----
1167	M.F.A. Bulk Plant #7, Rolla	8.0	16.0	22.0	7.1*	.0	14.5*	23.9
1172	M.F.A. Bulk Plant #7, Rolla	10.0	20.0	20.0	9.3*	.1	19.8	22.5
1188	M.F.A. Bulk Plant #7, Rolla	12.0	12.0	12.0	11.4*	.0	11.8	13.1
1189	M.F.A. Bulk Plant #7, Rolla	12.0	12.0	12.0	11.8	.1	12.0	12.1
1190	M.F.A. Bulk Plant #7, Rolla	12.0	16.0	16.0	11.2*	.0	16.0	17.8
1074	M.F.A. Bulk Plant #7, Rolla	15.0	15.0	15.0	14.0*	.1	15.1	15.3
1202	M.F.A. Bulk Plant #7, Rolla	20.0	10.0	10.0	19.5	.0	10.5	10.8
1204	M.F.A. Bulk Plant #7, Rolla	20.0	20.0	----	18.3**	.0	20.3	----

TABLE 5 -- ANALYSIS AND GUARANTEE OF FERTILIZER DISTRIBUTED IN BULK, 1957 (Continued)

MANUFACTURER		% GUARANTEE			% FOUND			
SAMPLE #	GUARANTOR IF OTHER THAN MFG.	NITROGEN	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH	NITROGEN	INSOL. P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH
Missouri Farmers Association, (Cont'd)								
2008	M.F.A. Bulk Plant #8, Lockwood	----	62.0	----	----	1.9	62.2	----
1157	M.F.A. Bulk Plant #9, Union	----	20.0	20.0	----	.3	19.6	20.0
1390	M.F.A. Bulk Plant #9, Union	----	30.0	20.0	----	.3	31.1	21.0
1159	M.F.A. Bulk Plant #9, Union	3.0	12.0	12.0	2.8	.2	12.4	12.1
1171	M.F.A. Bulk Plant #9, Union	10.0	20.0	10.0	9.8	.1	20.6	10.2
1656	M.F.A. Bulk Plant #9, Union	11.0	48.0	----	11.3	.2	51.3	----
1176	M.F.A. Bulk Plant #9, Union	12.0	8.0	12.0	11.3*	.1	8.3	12.9
1182	M.F.A. Bulk Plant #9, Union	12.0	12.0	12.0	11.9	.1	12.8	12.9
1186	M.F.A. Bulk Plant #9, Union	12.0	12.0	12.0	11.7	.1	12.4	12.7
1187	M.F.A. Bulk Plant #9, Union	12.0	12.0	12.0	11.6	.1	12.3	13.2
1412	M.F.A. Bulk Plant #9, Union	12.0	12.0	12.0	12.2	.1	12.2	12.1
1160	M.F.A. Bulk Plant #9, Union	13.0	6.0	17.0	12.1*	.1	5.8	18.1
1675	M.F.A. Bulk Plant #9, Union	16.0	48.0	----	15.6	.1	50.2	----
1676	M.F.A. Bulk Plant #9, Union	19.0	19.0	----	18.9	.1	20.3	----
1198	M.F.A. Bulk Plant #9, Union	20.0	3.0	6.0	18.1**	.0	4.7	6.7
1199	M.F.A. Bulk Plant #9, Union	20.0	8.0	5.0	19.5	.1	8.7	6.0
1200	M.F.A. Bulk Plant #9, Union	20.0	8.0	10.0	18.6*	.0	8.6	11.5
1210	M.F.A. Bulk Plant #9, Union	23.0	10.0	11.0	20.9**	.0	10.9	14.5
1211	M.F.A. Bulk Plant #9, Union	27.0	----	8.0	25.2**	----	----	9.4
1682	M.F.A. Bulk Plant #9, Union	----	----	60.0	----	----	----	61.1
1158	M.F.A. Bulk Plant #11, California	----	25.0	25.0	----	.2	25.3	26.8
1184	M.F.A. Bulk Plant #11, California	12.0	12.0	12.0	10.7*	.1	11.1*	16.8
1185	M.F.A. Bulk Plant #11, California	12.0	12.0	12.0	10.9*	.1	11.5	15.5
1192	M.F.A. Bulk Plant #11, California	14.0	14.0	14.0	14.1	.1	13.9	14.4
1197	M.F.A. Bulk Plant #11, California	17.0	14.0	12.0	16.2*	.1	14.5	13.7
1203	M.F.A. Bulk Plant #11, California	20.0	16.0	10.0	19.2*	.0	16.6	11.2
1205	M.F.A. Bulk Plant #11, California	21.0	5.0	12.0	20.0*	.0	4.5*	14.0
1208	M.F.A. Bulk Plant #11, California	22.0	5.0	10.0	21.2*	.0	5.5	11.0
369	M.F.A. Bulk Plant #12, Centralia	12.0	12.0	12.0	12.1	.1	13.4	12.2
1181	M.F.A. Bulk Plant #12, Centralia	12.0	12.0	12.0	12.4	.1	13.2	11.3*
1196	M.F.A. Bulk Plant #12, Centralia	16.0	12.0	16.0	15.7	.1	12.7	11.5**
1209	M.F.A. Bulk Plant #12, Centralia	22.0	12.0	12.0	22.2	.0	11.3*	12.4
992	M.F.A. Bulk Plant #13, Gallatin	23.0	15.0	5.0	22.8	.1	15.9	5.2
547	M.F.A. Bulk Plant #14, Columbia	----	30.0	20.0	----	.4	29.8	21.8
1180	M.F.A. Bulk Plant #14, Columbia	12.0	12.0	12.0	11.2*	.1	12.3	14.2
374	M.F.A. Bulk Plant #14, Columbia	12.0	18.0	12.0	11.3*	.1	18.4	12.7
Monsanto Chemical Co., St. Louis, Mo.								
1935	Tri-State Fertilizer Co., Canton	----	17.0	14.0	----	4.1	17.1	13.5
148	R. L. Aggeler Coal and Fertilizer Co., Boonville	21.0	----	----	20.8	----	----	----
2112	M.F.A. Bulk Plant #8, Lockwood	21.0	----	----	20.4*	----	----	----
723	Holland Liquid Fertilizer Co., Holland	----	54.4	----	----	----	54.6	----
Na-Churs Plant Food Co., Marion, Ohio								
881		10.0	20.0	10.0	11.0	---	20.0	10.0
882		10.0	20.0	10.0	10.9	---	19.9	10.0
Nitrogen Division, Allied Chemical and Dye Corp., New York, N.Y.								
309		28.0	----	----	27.9	----	----	----
525		28.0	----	----	28.0	----	----	----
383		32.0	----	----	31.7	----	----	----
809		32.0	----	----	31.9	----	----	----
1610		41.0	----	----	39.9*	----	----	----
1240	Portageville Seed and Supply, Portageville	19.0	----	----	18.3*	----	----	----
605	Abell Produce, Tarkio	28.0	----	----	28.5	----	----	----
606	Rolf Feed and Supply, Rockport	28.0	----	----	28.6	----	----	----
608	Afco Fertilizer Co., Fairfax	32.0	----	----	32.1	----	----	----
607	Atchison County Cooperative Ass'n., Rockport	32.0	----	----	32.7	----	----	----
2418	Norris Grain Co., Lamar	32.0	----	----	32.2	----	----	----
1418	Semo Liquid Fertilizers, Inc., Charleston	32.0	----	----	32.9	----	----	----
2189	Semo Liquid Fertilizers, Inc., Charleston	32.0	----	----	31.7	----	----	----
Phillips Chemical Co., Bartlesville, Okla.								
231	Home Gas Service, Kahoka	21.0	----	----	20.8	----	----	----
164	Home Gas Service, Kahoka	----	45.0	----	----	1.3	46.1	----
Potash Company of America, Carlsbad, N.M.								
2124	Consumers Oil and Supply Co., Braymer	----	----	60.0	----	----	----	61.6
Rickman Phosphate Co., Savannah, Mo.								
451	Malta Bend Farm Service, Malta Bend	7.0	21.0	----	7.3	---	20.8	----
Rolf Feed & Supply, Rockport, Mo.								
946		7.0	21.0	----	7.0	---	21.5	----
947		8.0	8.0	8.0	7.7	---	8.4	8.1
Semo Liquid Fertilizers, Inc., Charleston, Mo.								
2137		3.0	11.0	11.0	3.7	---	11.1	10.9
1403		6.0	18.0	6.0	6.5	---	18.3	6.3
1405		7.0	14.0	7.0	6.5*	---	13.7	6.9
13		8.0	8.0	8.0	8.1	---	9.0	7.7
1406		8.0	8.0	8.0	7.8	---	8.0	8.0

TABLE 5 -- ANALYSIS AND GUARANTEE OF FERTILIZER DISTRIBUTED IN BULK, 1957 (Continued)

MANUFACTURER		% GUARANTEE			% FOUND			
SAMPLE #	GUARANTOR IF OTHER THAN MFG.	NITROGEN	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH	NITROGEN	INSOL. P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	POTASH
Semo Liquid Fertilizers, Inc., (Cont'd)								
2154	.....	8.0	8.0	8.0	7.1*	---	8.4	7.5
1407	.....	8.0	24.0	----	6.7**	---	22.3**	----
2155	.....	8.0	24.0	----	7.3*	---	21.1**	----
1409	.....	10.0	5.0	10.0	9.9	---	4.9	9.3*
232	.....	28.0	----	----	27.8	---	----	----
420	L. and H. Liquid Fertilizer, Jackson	4.0	10.0	10.0	4.7	---	11.3	10.3
1221	Crouthers Farms, Lilbourn	8.0	8.0	8.0	7.5*	---	8.0	8.0
1227	Nesselrodt and Campbell, Lilbourn	8.0	8.0	8.0	7.8	---	7.9	7.7
1363	Story Farm, Inc., Wolf Island	8.0	8.0	8.0	8.3	---	7.7	8.1
475	L. and H. Liquid Fertilizer, Jackson	9.0	9.0	9.0	9.5	---	7.6*	7.2**
1110	Campbell-Kirksey Gin, Risco	10.0	5.0	10.0	9.8	---	5.0	9.7
1238	Nesselrodt and Campbell, Lilbourn	15.0	5.0	5.0	13.9*	---	5.0	5.1
1380	Story Farm, Inc., Wolf Island	15.0	5.0	5.0	13.9*	---	5.2	5.7
1151	Campbell-Kirksey Gin, Risco	32.0	----	----	30.8*	---	----	----
Sohio Chemical Co., Lima, Ohio								
380	.....	28.0	----	----	27.5	---	----	----
St. Louis Smelter & Refining Div., National Lead Co., St. Louis, Mo.								
524	Paul Skaggs, Fredericktown	No Guarantee	----	----	18.7	---	----	----
604	Danco Fertilizer, Inc., Maryville	19.0	----	----	18.0*	---	----	----
Sur-Gro Plant Foods Co., Plattsburg, Mo.								
454	.....	8.0	8.0	8.0	7.9	---	8.2	7.7
488	.....	12.0	12.0	6.0	11.5	---	11.9	6.4
2071	.....	12.0	12.0	6.0	11.3*	---	12.1	5.8
2115	.....	32.0	----	----	30.3*	---	----	----
1567	Farm Service Corp., Boonville	4.0	12.0	10.0	4.2	---	11.9	9.8
940	Lewis DeHart, Mexico	5.0	10.0	10.0	5.5	---	10.2	9.4
1714	Lewis DeHart, Mexico	5.0	10.0	10.0	4.7	---	10.4	10.1
949	Lewis DeHart, Mexico	8.0	8.0	8.0	8.0	---	8.4	8.0
950	Lewis DeHart, Mexico	8.0	8.0	8.0	7.8	---	8.1	8.0
1727	Lewis DeHart, Mexico	8.0	8.0	8.0	8.0	---	7.8	8.5
2049	Gowing Elevator Co., Orrick	8.0	8.0	8.0	6.9*	---	8.0	7.6
1118	Prairie Center Store, Rea	12.0	8.0	4.0	8.4**	---	14.6	7.9
995	Lewis DeHart, Mexico	32.0	----	----	31.1*	---	----	----
2113	Gowing Elevator Co., Orrick	32.0	----	----	30.6*	---	----	----
1152	Halferty Brothers, Inc., Dearborn	32.0	----	----	31.2*	---	----	----
Tri-State Fertilizer Co., Canton, Mo.								
1168	.....	10.0	10.0	10.0	12.2	.3	11.4	11.6
1179	.....	12.0	12.0	12.0	12.5	.2	11.0*	12.4
1195	.....	15.0	10.0	10.0	14.5	.1	7.8**	14.7
1996	.....	18.0	12.0	12.0	16.0**	.7	11.7	15.1
U. S. Potash Co., Carlsbad, N.M.								
822	Holland Liquid Fertilizer Co., Holland	----	----	62.0	----	---	----	61.9
2125	M.F.A. Bulk Plant #8, Lockwood	----	----	62.0	----	---	----	63.2
Woodbury Chemical Co., St. Joseph, Mo.								
1104	Heck Fertilizer Co., Mound City	8.0	12.0	----	11.6	---	11.3*	----

TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1957

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 no dealer guarantor is listed, the reader may assume the sample was drawn from a railroad car or from bags bearing the label of the manufacturer.

MANUFACTURER, JOBBER OR DEALER INDICATED SOURCE		% GUARANTEE			% FOUND		
SAMPLE #	GUARANTOR IF OTHER THAN MFG.	TOTAL P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	FINENESS	TOTAL P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	FINENESS
American Agricultural Chemical Co., National Stock Yards, Ill.							
1852		30.0	3.0	50/200	31.0	3.1	51/200
825		30.0	3.0	70/200	31.7	3.4	69/200
1858		30.0	3.0	70/200	31.4	4.1	69/200
1929		30.0	3.0	70/200	32.1	3.7	71/200
1931		30.0	3.0	70/200	31.4	3.5	70/200
2127		30.0	3.0	70/200	30.6	3.3	70/200
2648		30.0	3.0	70/200	32.0	3.4	75/200
2448	Chalmer Brickhaus, McBride	30.0	3.0	50/200	30.8	3.3	55/200
62	Macon County Soil Service, Macon	30.0	3.0	70/200	31.3	3.1	69/200
63	Buerge Brothers Fertilizer Service, Harrisonville	30.0	3.0	70/200	31.2	3.4	71/200
161	Farmers Cooperative Elevator Ass'n., O'Fallon	30.0	3.0	70/200	31.0	3.5	68/200
315	Valle Feed & Farm Service, DeSoto	30.0	3.0	70/200	31.5	3.7	69/200
1001	Henry Schulze, Pendleton	30.0	3.0	70/200	31.4	3.2	66/200
1464	Naylor Fertilizer Service, Salisbury	30.0	3.0	70/200	31.4	3.5	65/200
1853	Turner Feed Store, Knobnoster	30.0	3.0	70/200	30.5	3.2	73/200
1854	Williams Rock Company, Postoak	30.0	3.0	70/200	31.5	4.1	68/200
1855	Williams Rock Company, Postoak	30.0	3.0	70/200	31.9	4.3	92/200
1930	Jamieson Phosphate Co., Bowling Green	30.0	3.0	70/200	32.0	3.9	71/200
2271	F. J. Strothkamp, Cuba	30.0	3.0	70/200	30.9	2.9	66/200
2273	Rolla Feed Mill, Rolla	30.0	3.0	70/200	31.9	3.6	72/200
Armour Fertilizer Works, North Kansas City, Mo.							
2191		31.0	3.0	70/200	31.2	2.8	73/200
2665		31.0	3.0	70/200	33.1	3.5	72/200
397	Aggeler Coal & Fertilizer Co., Boonville	31.0	3.0	70/200	32.5	4.1	69/200
2005	Aggeler Coal & Fertilizer Co., Boonville	31.0	3.0	70/200	33.5	3.9	77/200
M. C. Boyle Phosphate Co., Chicago, Ill.							
2664		30.0	3.0	90/200	30.7	2.7	90/200
823	Cupp & Brown, Madison	30.0	3.0	90/200	30.7	2.9	96/200
2274	Hoover & Latta, Brookfield	30.0	3.0	90/200	30.7	2.9	87/200
532	Millard Schlimme, Cape Girardeau	31.0	3.0	90/200	30.2*	3.4	92/200
International Minerals & Chemical Corp., Chicago, Ill.							
316		30.0	3.0	70/200	30.2	3.8	70/200
317		30.0	3.0	70/200	30.8	3.8	68/200
393		30.0	3.0	70/200	31.2	3.9	69/200
394		30.0	3.0	70/200	30.4	3.9	74/200
619		30.0	3.0	70/200	29.7	3.4	71/200
1780		30.0	3.0	70/200	30.7	4.2	69/200
1856		30.0	3.0	70/200	30.2	3.5	67/200
2126		30.0	3.0	70/200	31.5	3.6	72/200
2272		30.0	3.0	70/200	31.0	3.5	72/200
241		30.0	3.0	90/200	30.1	3.1	92/200
162		31.0	3.0	70/200	31.2	3.3	71/200
396		31.0	3.0	70/200	31.2	3.7	69/200
1465		31.0	3.0	70/200	31.6	3.4	70/200
1692		31.0	3.0	70/200	31.5	3.8	72/200
1694		31.0	3.0	70/200	31.6	3.8	67/200
2427		31.0	3.0	70/200	30.6	3.7	72/200
2488		31.0	3.0	70/200	30.9	3.4	70/200
2647		31.0	3.0	70/200	31.6	3.2	71/200
Columbia Phosphate Co., St. Louis, Mo.							
620	Auxvasse Stone & Gravel Co., Auxvasse	30.0	3.0	70/200	30.1	3.5	65/200
1781	Kersting & Fennwald, Martinsburg	30.0	3.0	70/200	30.5	3.5	72/200
1783	Dye Phosphate & Grain Co., Hale	31.0	3.0	70/200	31.7	4.2	77/200
2128	Farmers Rock & Lime Co., Nettleton	33.0	3.0	70/200	32.7	3.6	67/200
Farm Bureau Service Company of Missouri, Jefferson City, Mo.							
1779	Carroll County Farm Bureau Service Co., Carrollton	30.0	3.0	70/200	30.2	4.0	73/200
2275	Linn County Farm Bureau Service Co., Linneus	30.0	3.0	70/200	30.5	3.3	72/200
531	Cape Girardeau County Farm Bureau Service Co., Cape Girardeau	31.0	3.0	70/200	30.6	4.0	64/200*
McKesson & Robbins, Inc., Burlington, Iowa							
242	Danco Fertilizer, Inc., Maryville	31.0	3.0	70/200	30.7	4.3	72/200
621	Danco Fertilizer, Inc., Maryville	31.0	3.0	70/200	30.4	3.4	71/200
Missouri Farmers Association, Inc., Columbia							
1615	Glasgow Cooperative Ass'n., Glasgow	30.0	3.0	70/200	31.3	3.2	69/200
1689	M.F.A. Central Cooperative, Sedalia	30.0	3.0	70/200	30.8	3.4	76/200
1857	M.F.A. Central Cooperative, Centerview	30.0	3.0	70/200	30.4	3.9	68/200
2349	M.F.A. Bulk Plant #7, Rolla	30.0	3.0	70/200	31.0	4.1	71/200
395	M.F.A. Bulk Plant #14, Columbia	31.0	3.0	70/200	30.8	3.9	71/200
1002	M.F.A. Central Cooperative, Truesdale	31.0	3.0	70/200	30.9	3.4	70/200
1003	M.F.A. Cooperative Association #204, Owensville	31.0	3.0	70/200	32.1	3.3	74/200
1213	M.F.A. Bulk Plant #14, Columbia	31.0	3.0	70/200	30.3	3.5	72/200



TABLE 6 -- ANALYSIS AND GUARANTEE OF ROCK PHOSPHATE SAMPLES, 1957 (Continued)

MANUFACTURER, JOBBER OR DEALER INDICATED SOURCE		% GUARANTEE			% FOUND		
SAMPLE #	GUARANTOR IF OTHER THAN MFG.	TOTAL P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	FINENESS	TOTAL P <sub>2</sub> O <sub>5</sub>	AVAIL. P <sub>2</sub> O <sub>5</sub>	FINENESS
International Minerals & Chemical Corp., (Cont'd)							
Missouri Farmers Association, Inc., Columbia, (Cont'd)							
1343	Bolivar Farmers Exchange, Bolivar . . . . .	31.0	3.0	70/200	31.6	4.9	71/200
1693	M.F.A. Central Cooperative, Union . . . . .	31.0	3.0	70/200	31.7	4.5	71/200
2003	La Grange Elevator Co., La Grange . . . . .	31.0	3.0	70/200	31.4	3.5	72/200
2192	Producers Grain Co., El Dorado Springs . . . . .	31.0	2.0	70/200	31.4	4.0	68/200
Schrock Fertilizer Service, Congerville, Ill.							
1156	Rickman Phosphate Company, Savannah . . . . .	31.0	3.0	70/200	30.9	4.1	71/200
Thomson Phosphate Department, Chicago, Ill.							
618	Tarkio Lime & Phosphate Co., Tarkio . . . . .	30.0	3.0	70/200	30.5	3.9	75/200
1690	Fowler Service Store, Hughesville . . . . .	30.0	3.0	70/200	30.8	2.9	69/200
2663	Central Farm Products Co., Trenton . . . . .	30.0	3.0	70/200	30.6	3.5	70/200
2366	James O. Cone, Memphis . . . . .	33.0	3.0	70/200	32.7	4.2	70/200
244	Home Gas Service, Kahoka . . . . .	33.0	3.0	85/200	32.9	4.2	86/200
1554	Robinson Rock & Lime Co., Clinton . . . . .	33.0	3.0	85/200	33.6	4.0	86/200
1928	George Bailey, Curryville . . . . .	30.0	3.0	90/200	30.5	2.4	90/200
Lange Brothers, Inc., St. Louis, Mo.							
160	. . . . .	30.0	2.0	70/200	30.7	3.8	71/200
Robin Jones Phosphate Co., Nashville, Tenn.							
824	. . . . .	30.0	3.0	70/200	31.4	3.2	69/200
1688	T. & O. Phosphate Co., Sedalia . . . . .	30.0	3.0	70/200	33.6	3.6	81/200
1691	N. J. Cooksey Co., Moberly . . . . .	30.0	3.0	70/200	32.5	3.3	75/200
1782	Soil Service, Laddonia . . . . .	31.0	3.0	70/200	31.9	3.8	76/200
2129	Consumers Oil & Supply Co., Braymer . . . . .	33.0	3.0	70/200	32.3	3.5	74/200
2428	M.F.A. Cooperative Ass'n., Mansfield . . . . .	33.0	3.0	70/200	33.1	3.5	71/200
San Francisco Chemical Co., Montpelier, Idaho							
243	Consumers Oil Company, Maryville . . . . .	31.0	2.0	70/200	30.8	2.1	80/200
Schrock Fertilizer Service, Congerville, Ill.							
2004	Davis Phosphate Co., Butler . . . . .	31.0	3.0	70/200	31.4	3.6	70/200
Swift & Co., National Stock Yards, Ill.							
826	. . . . .	33.0	3.0	70/200	33.5	3.6	69/200
1695	Randolph County Phosphate Co., Cairo . . . . .	33.0	3.0	70/200	35.0	4.8	56/200**
Thompson Sales Co., Montgomery, Ala.							
61	. . . . .	18.0	2.0	85/200	20.2	1.3	97/200
Mixed Material (From different sources)							
1212	Tri-State Fertilizer Co., Canton . . . . .	30.0	3.0	70/200	31.1	3.9	64/200*

TABLE 7 -- ANHYDROUS AMMONIA SAMPLES, 1957

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 at atmospheric pressure. This leaves any water or other probable contaminant in the tube to be measured. Pure ammonia contains approximately 82.25% nitrogen.

All anhydrous ammonia 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.

Grace Chemical Co.  
Hercules Powder Co.  
Mississippi River Chemical Co.  
Monsanto Chemical Co.  
Olin Mathieson Chemical Corp.  
Phillips Chemical Co.  
Spencer Chemical Co.

Sample #	Dealer	Location	Date
1	M.F.A. Plant Foods Division	Columbia	7- 1-57
2	M.F.A. Plant Foods Division	Centralia	7- 9-57
3	M.F.A. Plant Foods Division	Moberly	7- 9-57
4	Robert M. Eisberg	Clifton Hill	7- 9-57
5	Naylor Fertilizer Service	Salisbury	7- 9-57
6	Cole County Anhydrous Ammonia Ass'n.	Jefferson City	7-10-57
7	Tipton Farm Service	Tipton	7-10-57
8	Farm Service Corp.	Boonville	7-10-57
9	M.F.A. Plant Foods Division	Glasgow	8-27-57
10	Phillips Chemical Co.	Estill	8-29-57
11	Mid-South Chemical Corp.	McMullin	11- 5-57
12	Mid-South Chemical Corp	Charleston	11- 5-57
13	Monsanto Chemical Co.	Essex	11- 6-57
14	M.F.A. Plant Foods	Bernie	11- 6-57
15	Mid-South Chemical Corp.	Parma	11- 6-57
16	David M. Barton	Catron	11- 6-57
17	M.F.A. Plant Foods Division	Springfield	8-28-57

AACO Fertilizer Co., P. O. Box 101, Atchison, Kan.  
 R. L. Aggeler Coal & Fertilizer Co., West Water St.,  
 Boonville, Mo.  
 Agricultural Products Corp., P. O. Box 183, Webster City,  
 Iowa  
 American Agricultural Chemical Co., P. O. Box "E", Nat'l.  
 Stock Yards, Ill.  
 American Bulb Co., Marysville, Ohio  
 American Chemical Paint Co., Ambler, Penn.  
 American Cyanamid Co., 30 Rockefeller Plaza, New York 20,  
 N.Y.  
 American Liquid Fertilizer Co., Inc., 2nd St. at St. Clair,  
 Marietta, Ohio  
 Ark-Mo Plant Food Co., Inc., P. O. Box 447, Walnut Ridge,  
 Ark.  
 Armour Fertilizer Works, 2043 Singleton Blvd., Dallas, Tex.  
 Armour Fertilizer Works, P. O. Box 312, East St. Louis, Ill.  
 Armour Fertilizer Works, P. O. Box 2357 Desoto Sta., 3967  
 Weaver Rd., Memphis, Tenn.  
 Armour Fertilizer Works, P.O. Box 7431, 110 West 19th,  
 North Kansas City, Mo.  
 Armour Fertilizer Works, P. O. Box 750, Waterloo, Iowa  
 Associated Cooperatives, Inc., 750 West 20th Ave., Sheffield,  
 Ala.  
 Atkins & Durbrow, Inc., P. O. Box 55, Port Colborne,  
 Ontario  
 Atlas Fish Fertilizer Co., 1 Drumm St., San Francisco 11,  
 Calif.  
 Best Fertilizers Co., 8420 Manchester St., Houston, Tex.  
 Better Homes Bureau, 165 E. Union St., Newark, N. Y.  
 Blytheville Plant Food Co., Inc., P. O. Box 619, Blytheville,  
 Ark.  
 Borden Co., 350 Madison Ave., New York 17, N.Y.  
 M. C. Boyle Phosphate Co., 407 South Dearborn St., Chicago  
 5, Ill.  
 Bradley & Baker, 1401 Peachtree St., N. E., Atlanta, Ga.  
 Bradley & Baker, 10 South Brentwood Blvd., St. Louis, Mo.  
 California Spray-Chemical Corp., Lucas and Ortho Way,  
 Richmond 4, Calif.  
 H. D. Campbell Co., 402-410 Dewey Ave., Rochelle, Ill.  
 Carbola Chemical Co., Inc., Natural Bridge, N.Y.  
 Central Missouri Chemical & Minerals, Inc., 1300 Industrial,  
 Jefferson City, Mo.  
 Chicago Stock Yards Compost Co., 503 Exchange Bldg.,  
 Chicago 9, Ill.  
 Cloro-Spray Corp., 129 State St., Dover, Del.  
 Columbia Phosphate Co., 1007 Washington Ave., St. Louis 1,  
 Mo.  
 Commercial Solvents Corp., 260 Madison Ave., New York 16,  
 N.Y.  
 Consumers Cooperative Ass'n., P. O. Box 7305, Kansas City  
 16, Mo.  
 William G. Cox Co., R. R. #5, Jacksonville, Ill.  
 Crawford Chemical Co., Inc., P. O. Drawer 309, Bartlesville,  
 Okla.  
 Danco Fertilizer, Inc., Maryville, Mo.  
 Darling and Co., 4201 South Ashland Ave., Chicago 9, Ill.  
 Davis Phosphate Co., Butler, Mo.  
 Davison Chemical Co., Division of W. R. Grace & Co.,  
 P. O. Box 987, Joplin, Mo.  
 Deep Root Fertilizers, Inc., P. O. Box 14, Olathe, Kan.  
 Charles Denny & Co., 1505 Big Bend Blvd., St. Louis 17,  
 Mo.  
 Duesterhaus Farm Supply, Front & Oak St., Quincy, Ill.  
 E. I. du Pont de Nemours & Co., Wilmington, Del.  
 A. T. Earls Fertilizer Co., P. O. Box 543, Deering, Mo.  
 Eaton-Mann Phosphate Co., 301 Barber Bldg., 68 N. Chicago  
 St., Joliet, Ill.  
 Econogas Div., Atchison, Kan.  
 Excell Laboratories, Inc., 2732 Indiana Ave., Chicago, Ill.  
 Faesy & Besthoff, Inc., 25 East 26th St., New York 10, N.Y.  
 Farm Belt Fertilizer & Chemical Co., 23rd & State Line,  
 Kansas City, Kan.  
 Farm Bureau Service Company of Missouri, Inc., 1447 West  
 Dunklin, Jefferson City, Mo.  
 Farmcraft Feeds, Inc., 2340 Maury St., Des Moines, Iowa  
 Farmers Co-op. Grain & Seed Co., Lamoni, Iowa  
 Federal Chemical Co., 646 Starks Bldg., Louisville, Ky.  
 Ferro Crop., 4150 East 56th St., Cleveland 5, Ohio  
 Ford Motor Co., 3001 Miller Rd., Dearborn, Mich.  
 Foreign Products Corp., 21 Washington St., West Orange,  
 N. J.  
 Ft. Smith Cotton Oil Co., Inc., 723 North First St., Ft. Smith,  
 Ark.  
 Forward House, Div. of Olin Mathieson Chemical Corp.,  
 745 Fifth Ave., New York 22, N.Y.  
 Garden Products Co., 3246 S. Grand Blvd., St. Louis 18, Mo.  
 Geigy Agricultural Chemicals, Div. of Geigy Chemical Corp.,  
 P. O. Box 430, Yonkers, N.Y.  
 General Fertilizer Co., 301 East Washington St., Fremont,  
 Nebr.  
 Glorion Div. Aluminum & Chemical Corp., 22 West Putnam  
 Ave., Greenwich, Conn.  
 Goulard & Olena, Inc., Skillman, N. J.  
 Grace Chemical Co., Div. of W. R. Grace & Co., Fifth Floor  
 Edway Bldg., Memphis 3, Tenn.  
 Grant Co., 2735 N. Ashland Ave., Chicago, Ill.  
 D. B. Gray Farmers Elevator Co., Hull, Ill.  
 Gulf Coast Organic & Minerals Co., 325 S. Cage Blvd.,  
 Pharr, Texas  
 J. Harris Manure Co., 121 Baugh Ave., East St. Louis, Ill.  
 Heller Greenhouse Laboratories, 218 E. Pikes Peak Ave.,  
 Colorado Springs, Colo.  
 Hercules Powder Co., Louisiana, Mo.  
 A. H. Hoffman, Inc., Landisville, Penn.  
 Holland Liquid Fertilizer Co., Holland, Mo.  
 Home Gas Service, Inc., 200 N. Washington St., Kahoka, Mo.  
 Hoover Soil Service, Gilman, Ill.  
 House of Wesley, R. R. #1, Bloomington, Ill.  
 Hulls' Tobacco Farms, Washington St., Weston, Mo.  
 Hydroponic Chemical Co., Inc., Copley, Ohio  
 Hy-Gro Corp., 1101 Maryland Ave., Baltimore 1, Md.

Independence Hall Seed Co., 2700 Wilmarco Ave., Baltimore 23, Md.	Nitrogen Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N.Y.
International Minerals & Chemical Corp., 20 North Wacker Drive, Chicago 6, Ill.	Northern Field Seed Co., 115 East 2nd St., Winona, Minn.
International Minerals & Chemical Corp., P. O. Box 928, Texarkana, Ark.	North Platte Fertilizer, Inc., 2400 East 8th St., North Platte, Nebr.
Jacksonville Fertilizer Co., P. O. Box 1225, Jacksonville, Tex.	Olin Mathieson Chemical Corp., P. O. Box 991, Little Rock, Ark.
Kahn Brothers Co., 4425 South Halsted St., Chicago 9, Ill.	Ozark-Mahoning Co., 310 West 6th St., Tulsa, Okla.
Kansas Agricultural Chemical Co., Inc., 403 East 8th St., Junction City, Kan.	Pearson-Ferguson Chemical Co., 1400 Union Ave., Kansas City, Mo.
Kansas City Stockyards Co., Room 730 Livestock Exchange Bldg., 1600 Genesee St., Kansas City, Mo.	Phillips Petroleum Co., Adams Bldg., Bartlesville, Okla.
Kaw Fertilizer Service, Inc., P. O. Box 36, Lawrence, Kan.	Plantabbs Corp., 1105 Maryland Ave., Baltimore 1, Md.
Kelly-Western Seed Div., 580 West 13th South, Salt Lake City, Utah	Proen Products Co., 9th & Grayson, Berkeley, Calif.
Kelmin Corporation of America, 301 Admiral Blvd., Kansas City 6, Mo.	Ra-Pid-Gro Crop., 88 Ossian St., Dansville, N.Y.
Kenco Chemical Co., Inc., P. O. Box 153, Summerdale, Ala.	Red Star Fertilizer Div., P. O. Box 486, Sulphur Springs, Tex.
Kirlen Products, 2201 Grand Ave., Kansas City, Mo.	Renard Co., 223 Riverdale Ave., Yonkers, N.Y.
Lafayette Farm Supply, Inc., 24th and Monroe, Lexington, Mo.	Rickman Phosphate Co., 408 Court St., Savannah, Mo.
La Plata Chemical Co., La Plata, Mo.	Riley Feed Co., 839 Board of Trade Bldg., Kansas City, Mo.
Lawn Seed Corp., 222 S. 3rd St., Milwaukee, Wis.	Riverside Fertilizer Co., Marks, Miss.
Leeds Chemical Products, Inc., 112 East Walton, Chicago, Ill.	Robin Jones Phosphate Co., 2001 Broadway, Nashville 4, Tenn.
Lenox Fertilizer Corp., Lenox, Iowa	G. S. Robins & Co., 126 Chouteau Ave., St. Louis 2, Mo.
Liquid Fertility & Chemical Co., National Station - P. O. Box 2303, Springfield, Mo.	Roigina Products, P. O. Box 345, Lincoln 1, Nebr.
Loncala Phosphate Co., P. O. Box 338, High Springs, Fla.	Rolf Feed & Supply, Rock Port, Mo.
McKesson & Robbins, Inc., 100 North 4th St., Burlington, Iowa	Rose City Cotton Oil Mill Co., P. O. Box 950, Little Rock, Ark.
Maczuk, Inc., New Haven, Mo.	Rose Manufacturing Co., 160 Main St., Beacon, N.Y.
Marblehead Lime Co., 300 W. Washington St., Chicago 6, Ill.	Ross Daniels, Inc., 207 Court Ave., Des Moines, Iowa
Earl May Seed Co., Shenandoah, Iowa	Ruhm Phosphate & Chemical Co., P. O. Box 361, Columbia, Tenn.
Mid-South Chemical Corp., 1222 Riverside Blvd., Memphis, Tenn.	St. Louis National Stockyards Co., Exchange Bldg., National Stock Yards, Ill.
Mid-South Supply Ass'n., Inc., 44 South Front St., Memphis, Tenn.	San Francisco Chemical Co., Drawer F, Montpelier, Idaho
Mississippi Chemical Corp., P. O. Box 563, Yazoo City, Miss.	Schrock Fertilizer Service, Congerville, Ill.
Missouri Farmers Ass'n., Inc., 201 South 7th St., Columbia, Mo.	O. M. Scott & Sons Co., Marysville, Ohio
Missouri Plant Food Co., Inc., P. O. Box 594, Sikeston, Mo.	Seaboard Seed Co., 701 S. Front St., Philadelphia 47, Penn.
Monsanto Chemical Co., 1700 South 2nd St., St. Louis 4, Mo.	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago 7, Ill.
Na-Churs Plant Food Co., 421 Monroe St., Marion, Ohio	Semo Liquid Fertilizers, Inc., Route #2, Charleston, Mo.
National Fertilizer Co., 800 Arcade, Fairbury, Nebr.	Sewerage Commission of the City of Milwaukee, P. O. Box 2079, Milwaukee 1, Wis.
Natural Plant Food Co., 210 W. Cal., Oklahoma City 2, Okla.	J. R. Simplot Co., P. O. Box 912, Pocatello, Idaho
Naylor Fertilizer Service, Salisbury, Mo.	Smith Agricultural Chemical Co., 1850 Kentucky Ave., Indianapolis, Ind.
Neosho Fertilizer, Inc., P. O. Box 259, Chanute, Kan.	Snyder Chemical Co., Inc., 1008 Oakley Ave., Topeka, Kan.
Nichols Seed & Fertilizer Co., P. O. Box 1296, Oklahoma City, Okla.	Sohio Chemical Co., P. O. Box 628, Ft. Amanda Rd., Lima, Ohio
Nitro-Form Agricultural Chemicals, Inc., 92 Sunnyside Ave., Woonsocket, R.I.	Soil Booster Corp., 2501 East 4th St., Oklahoma City, Okla.
	Southern Cotton Oil Co., 1351 Williams St., Memphis, Tenn.
	Soylaid, Inc., P. O. Box 8155, San Antonio 12, Tex.
	Spencer Chemical Co., 610 Dwight Bldg., Kansas City, Mo.
	Standard Oil Co., 910 South Michigan Ave., Chicago 80, Ill.
	Stark Brothers Nurseries & Orchards Co., Louisiana, Mo.
	Stern's Garden Products, Inc., 404 William St., Geneva, N.Y.

Stim-U-Plant Laboratories, Inc., 2077 Parkwood Ave., Columbus, Ohio	<u>Companies Issued a Permit to Sell Fertilizers in Missouri Subsequent to August 12, 1957</u>
Stockdale Fertilizer Co., Morris, Ill.	Cloverset Farm, 105th Wornall Rd., Kansas City, Mo.
Super-Crop Plant Foods, Inc., P. O. Box 324, Ottumwa, Iowa	Falls City Fertilizer, Inc., Lincoln Service and Supply, Inc., P. O. Box 1206, Grand Island, Nebr.
Sup-Ro Manufacturing & Sales Co., 1700 Liberty, Kansas City 2, Mo.	Farmers and Consumers Seed Dist., 226 19th S. W., Mason City, Iowa
Sur-Gro Plant Food Co., Inc., P. O. Box 353, Plattsburg, Mo.	Farm Fertilizers, Inc., 7500 South 13th St., South Omaha, Nebr.
Swift & Co., National Stock Yards, Ill.	Indian Point Farm Supply, R. F. D. #2, Athens, Ill.
Tennessee Corp., 617-29 Grant Bldg., Atlanta, Ga.	Norris Grain Co., Lamar, Mo.
Tennessee Corp., P. O. Box 7, Lockland, Cincinnati 15, Ohio	Southern Nitrogen Supply Co., P. O. Box 14, Yazoo City, Miss.
Thompson Sales Co., 17 Molton St., Montgomery, Ala.	Swift and Co., Plant Food Div., P. O. Box 185, South St. Joseph, Mo.
Thomson Phosphate Dept., International Minerals & Chemical Corp., 20 North Wacker Dr., Chicago 6, Ill.	<u>Companies Issued a Permit to Sell Fertilizers in Missouri Subsequent to October 30, 1957.</u>
Topeka Mill & Elevator Co., Inc., East 10th and Santa Fe Tracks, Topeka, Kan.	Alaska Fertilizer Co., 84 Seneca, Seattle, Wash.
Tri-State Chemical Co., Inc., P. O. Box 591, Webb City, Mo.	Arkansas Plant Food Co., P. O. Box 112, North Little Rock, Ark.
Tri-State Fertilizer Co., P. O. Box 476, Burlington, Iowa	Balfour, Guthrie & Co., 930 Midland Bank Bldg., Minneapolis, Minn.
Tri-State Fertilizer Co., Canton, Mo.	Boss Fertilizer Co., P. O. Box 161, Moberly, Mo.
Umbaugh Agricultural Chemical Co., 851 East Silver Springs Blvd., Ocala, Fla.	Consumers Oil & Supply Co., Braymer, Mo.
United Seeds, Inc., Ralston, Nebr.	A. B. Chrisman Grain Co., Meredosia, Ill.
United States Steel Corp., Room 3004 - 525 William Penn Place, Pittsburgh 30, Penn.	Davis Fertilizer Co., P. O. Box 57, Maitland, Mo.
U. S. Phosphoric Products, Division Tennessee Corp., P. O. Box 3269, Tampa, Fla.	Eclipse Peat Co., Ltd., American Div., Empire State Bldg., New York 1, N.Y.
Victor Chemical Works, 155 North Wacker Drive, Chicago 6, Ill.	Farm Bureau Services, Inc., 206 East Morrison, Fayette, Mo.
Virginia-Carolina Chemical Corp., P. O. Box 191, East St. Louis, Ill.	Farmers Rock & Lime Co., Nettleton, Mo.
Walters Phosphate & Lime Co., 405 South Alma, Nevada, Mo.	Glasgow Cooperative Ass'n., Glasgow, Mo.
Western Agricultural Chemicals Co., P. O. Box 1074, Colorado Springs, Colo.	Hoosier Soil Service, Route #1, Terre Haute, Ind.
Western Phosphates, Inc., P. O. Box 308, Garfield, Utah	J. & M. Enterprises, Inc., P. O. Box 415, Lakeland, Fla.
Wichita Fertilizers, Inc., P. O. Box 2337, 2728 Ohio, Wichita, Kan.	Johnson Fertilizer Service, Mt. Vernon, Mo.
Wichita Union Stock Yards Co., Room 20 Livestock Exchange Bldg., 702 East 21st. St., Wichita 2, Kan.	O. E. Linck Co., Inc., Route 46 and Valley Road, Clifton, N.J.
Woodbury Chemical Co., P. O. Box 788, 702 S. 4th, St. Joseph, Mo.	M.F.A. Central Cooperative, Boonville, Mo.
Worm Profit Farms, 2233 Laura, Wichita 9, Kan.	Rose City Nursery, P. O. Box 3218, Tyler, Tex.
	St. Charles County Farm Bureau Service Co., 825 Harvester Rd., St. Charles, Mo.
	Summers Elevator Co., Inc., P. O. Box 229, Fayette, Mo.

Beginning July 1, 1958 the annual Fertilizer Inspection and Analysis Bulletins will be changed to cover the fiscal year July 1 through June 30 rather than the calendar year as in the past. The first such bulletin, to be published in the Fall of 1958, will report inspection and analysis results for the first six months of 1958 only, but in other respects will be a report to cover the fiscal year 1957-58. Preparatory to this change-over the following financial statement is for the period January 1 through June 30, 1957 only.

UNIVERSITY OF MISSOURI  
Columbia

FERTILIZER CONTROL FUND  
Financial Report

For the Period January 1, 1957 to June 30, 1957

Balance - January 1, 1957		\$147,912.39
Receipts:		
Receipts from Fertilizer Fees	\$100,390.33	
Disbursements:		
Personal Service	\$87,074.22	
Travel	15,589.01	
Transportation of Things	677.35	
Communication Service	2,310.56	
Rents & Utility Service	9,572.80	
Publications & Printing	16,999.45	
Repairs & Replacements	28,968.06	
Supplies & Materials	46,649.40	
Equipment	32,573.36	
Other Expense	320.42	
		<u>240,734.63</u>
Excess Disbursements		<u>140,344.30-</u>
Balance - June 30, 1957		\$ 7,568.09



# MISSOURI FERTILIZER LAW

1953

Section 1. That Section 266.290 to 266.370 inclusive, RSMo 1949, relating to commercial fertilizers, be and the same is hereby repealed and seven new sections to be known as Sections 266.290 to 266.350 be and the same are hereby enacted to read in words and figures as follows:

## Definitions

266.290. The following words, terms, and phrases, when used in sections 266.290 to 266.350 have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

- (1) "Person" includes individuals, partnerships, associations, firms, corporations, estates, trusts, receivers, or trustees appointed by any State or Federal Court.
- (2) "Distributor" means any person who imports, consigns, manufactures, produces or compounds fertilizer, or offers for sale, sells, barterers, or otherwise supplies fertilizers for consumption or use in this State; provided that this term shall not apply to any person who purchases fertilizer from a distributor registered under this act and which fertilizer has been once sold in compliance with this act.
- (3) "Fertilizer" means any substance containing nitrogen, phosphorus, potassium, or any other element or compound recognized as essential or used for promoting plant growth, or altering plant composition, which is sold or used primarily for its plant nutrient content, the consumer's purchase price of which exceeds ten dollars (\$10) per ton, and which is to be sold or offered for sale for consumption or use in this State.
- (4) "Director" means the Director of the Missouri Agricultural Experiment Station at Columbia, Missouri.
- (5) "Sale," "Sold," and "Sells" include exchanges and consignments for sale and means any transfer or barter.

## Permit

266.300. It shall be unlawful for any distributor to sell, offer for sale or expose for sale for consumption or use in this State any fertilizer without first securing a permit from the Director. Such permit shall expire on the 30th day of June of each year. Application for such permit shall be on forms furnished by the Director.

## Labeling Statement

266.310. Each container of fertilizer sold, offered for sale or exposed for sale for consumption or use within this State shall bear thereon or have attached thereto in a conspicuous place a plainly written statement in the English language giving the following information:

- (1) The name, brand or trade mark under which the fertilizer is sold;
- (2) The name and address of the person guaranteeing the fertilizer;

- (3) The guaranteed chemical composition of the fertilizer, expressed in the following terms:

- (a) Per centum of total nitrogen,
- (b) Per centum of available phosphoric acid,
- (c) Per centum of soluble potash.

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, offered for sale, or exposed for sale in bulk, such plainly printed statement herein required shall accompany each lot and parcel of such fertilizer.

## Semiannual Report and Fees to be Paid

266.320. Every distributor shall, within 30 days after each six-months' period ending June 30 and December 31, file with the Director on forms supplied by him, a sworn certificate setting forth the amount of fertilizer sold by such distributor for consumption or use in the State of Missouri during each such respective period. At the time of filing said certificate, each distributor shall pay to the Director a fee of one and one-half cents (\$.015) for each one hundred (100) pounds of fertilizer sold by him during the period covered by such certificate; provided, however, that sales to fertilizer manufacturers or exchanges between them are hereby exempted. The fees so paid to the Director shall be used for defraying the expenses in administering this act, and for practical and scientific experiments by the Missouri Agricultural Experiment Station in the value and proper use of fertilizers, and for publishing the results of the same, and for other work, projects, research, investigations and publications as may be of practical use to the farmers of this State.

## Misbranded Fertilizer

266.330. It shall be unlawful for any person to sell, offer for sale or expose for sale any fertilizer for use or consumption in this State which is misbranded. Any fertilizer shall be deemed to be misbranded if it fails to carry the printed statement required under Section 266.310, or if the chemical composition of such fertilizer does not meet the guarantees expressed on said statement within allowable tolerances fixed by the Director, or if the container for such fertilizer or any statement accompanying the same carries any false or misleading statement, or if false or misleading statements concerning its agricultural value are made on any advertising matter accompanying or associated with such fertilizer.

## Powers and Duties of Director

266.340. The duty of enforcing and administering this act shall be vested in the Director. The Director or his authorized agents and deputies are hereby authorized and empowered:

(1) To collect samples, inspect, and make analysis of fertilizer sold, offered or exposed for sale within the State;

(2) To adopt, after public hearing, such reasonable rules and regulations necessary to secure the efficient enforcement of this act;

(3) To inspect and audit the books of every distributor who sells, offers for sale, or exposes for sale fertilizer for consumption or use in this State, to determine whether or not the provisions of this act are being fully complied with;

(4) To require every distributor to file with the Director a copy of each invoice covering every sale of fertilizer for use or consumption within this State, which invoice shall show the name and address of the purchaser thereof, the analysis of such fertilizer expressed in terms of guaranteed chemical composition, and the weight thereof. Said invoices shall not be required more often than two-week intervals, and all such invoices shall be returned to the distributor upon his request;

(5) To enter upon any public or private premises during the regular business hours in order to have access to fertilizer subject to this act and the rules and regulations thereunder, and to take samples and inspect such fertilizer;

(6) To issue and enforce a written or printed "Stop sale, use, or removal" order to the owner or custodian of any fertilizer which is found to be in violation of any of the provi-

sions of this act, which order shall prohibit the further sale of such fertilizer until this act has been complied with or said violation has been otherwise legally disposed of by written authority of the Director;

(7) To maintain a laboratory with necessary equipment, and to employ such employees as may be necessary to aid in the administration of this act;

(8) To publish each year the full and detailed report giving the names and addresses of all distributors registered under this act, the analytical results of all samples collected, and a statement of all fees received and expenditures made under this act;

(9) To revoke or suspend the permit, or refuse to issue a permit to any distributor who has willfully violated any of the provisions of this act, or failed or neglected to pay the fees provided for in this act;

(10) To institute and prosecute through the Attorney General of this State suits to collect any fees due under the provisions of this act which are not promptly paid.

#### **Penalty for Violation**

266.350. Every violation of any provision of this act shall be deemed a misdemeanor.



