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# TEXAS AGRICULTURAL EXPERIMENT STATION

A. B. CONNER, DIRECTOR

COLLEGE STATION, BRAZOS COUNTY, TEXAS

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BULLETIN NO. 553

AUGUST, 1937

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DIVISION OF CHEMISTRY

## COMMERCIAL FERTILIZERS IN 1936-37



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AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS

T. O. WALTON, President

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This is the annual Fertilizer Control Bulletin. It contains statistics regarding fertilizers sold in Texas, information regarding the fertilizer law, and analyses of samples of the fertilizer sold by different manufacturers. The extent to which the various manufacturers are coming up to their guarantees is shown.

The total sales of fertilizer in Texas for 1936-37 were 84,938 tons. In 1935-36 the sales were 60,016 tons. In 1934-35 they were 59,470 tons. Cottonseed meal sold as a feed but used as a fertilizer was not included in these totals. Sales of fertilizer were about 40 per cent higher than last year. Practically all the sales of mixed fertilizers were confined to about 20 analyses.

The Bulletin contains a brief discussion of the use of fertilizers and suggestions for their use on various crops and in various sections of the State.

Tables are given showing the extent to which the various fertilizer manufacturers met or exceeded their guarantees. The cost of fertilizer was slightly more in 1936-37 than in 1935-36.

# CONTENTS

	Page
Introduction .....	5
Explanation of Terms.....	5
Information on the Fertilizer Bag and Tag.....	6
How to Calculate the Valuation.....	6
Quantity Sold .....	7
Quantity of Sales by Grades.....	8
Quantity of Cottonseed Meal Used as a Fertilizer.....	8
Composition and Selling Prices of Different Grades of Fertilizer.....	9
Cost of Plant Food.....	10
Relation of Cost to Concentration.....	11
Comparing Costs of Fertilizer.....	12
Fertilizer Analyses to be Sold in 1937-38.....	12
Free Analysis .....	13
Analyses of Fertilizers, 1936-37.....	13
Relation of Valuation Guaranteed to Valuation Delivered.....	14
Averages Below Guarantee.....	15
Non Acid Forming Fertilizers.....	15
Investigations Under the Fertilizer Law.....	16
Relation to Experiment Station Work.....	16
Soft Phosphate with Colloidal Clay.....	16
Sulphur, Gypsum, and Manganese.....	16
Greensand .....	16
Polyhalite and Sewage Sludge.....	17
General Considerations on the Use of Fertilizers.....	17
How and When to Apply Fertilizer.....	18
How Much to Apply.....	19
Side Dressings .....	19
Fertilizers for East Texas.....	19
Fertilizers for the Black Lands.....	20
Fertilizers for West Texas.....	20
Fertilizers for the Rio Grande Valley.....	20
Fertilizers for the Gulf Coast Plains.....	21
Fertilizers Suggested for the Various Crops.....	21
Summary .....	28

**COMMERCIAL FERTILIZERS IN 1936-37**

**G. S. Fraps, State Chemist, S. E. Asbury, Assistant State Chemist,  
and T. L. Ogier, Assistant Chemist**

Fertilizer laws require fertilizer to be correctly labeled so that the purchaser can know what he is getting. The object of the fertilizer law is to protect the farmer or other users of fertilizer against misrepresentation of the composition or fertilizing value of the fertilizer as well as manufacturers and dealers against unfair competition due to such misrepresentation.

The first Texas fertilizer law was passed in 1899. It was revised and amended in 1911. The results of the fertilizer inspection have been published in bulletins of the Texas Agricultural Experiment Station regularly since 1906. This is the thirty-fifth Fertilizer Control Bulletin. It contains statistics, definitions of terms, a report on the analyses made in enforcing the provisions of the Fertilizer law, and information regarding the use of fertilizers.

**Explanation of Terms**

**Nitrogen** refers to the total nitrogen in the fertilizer. It is necessary in proper amounts for the development of all parts of the plant, but an excess of nitrogen delays maturity and is liable to promote growth of stalk and leaves at the expense of fruit. Nitrogen is needed by many Texas soils, especially the sandy soils in the eastern and northern parts of the State. Since nitrogen is used in comparatively large quantities by plants and is, to some extent, washed from the soil, it is usually the first element to become depleted from a fertile soil.

**Available phosphoric acid** is the phosphoric acid in fertilizers which can be taken up quickly by plants. Phosphoric acid promotes the fruiting of plants, though it is also necessary for the development of all parts of the plant.

**Total phosphoric acid** is the entire quantity of the phosphoric acid present, whether highly available or not. A guarantee of total phosphoric acid in place of available is made in bone, tankage, rock phosphate, and basic slag.

**Potash** guaranteed in a fertilizer is required by the law to be soluble in water. Potash, like nitrogen, is needed by all parts of the plant, but especially by stalk and leaves. An excess of potash delays maturity and is liable to promote growth of the stalk and leaves at the expense of the fruit. When potash is abundantly supplied, plants may take up more than they need. Potash is present in soils more abundantly than phosphoric acid.

**Valuation per ton** represents the approximate average cost of the plant food in the unmixed fertilizer, at retail. It is usually smaller than the

price at which the mixed fertilizer is sold, but since it is an average, it may be greater than the prices of some of the unmixed fertilizer materials. The selling price includes cost of mixing, bags, transportation, the profit of the manufacturer if any and that of the dealer. The valuations are decided on about September 1, and the prices often change before the chief active fertilizer season, which is February to April in Texas. The valuation sums the value of the three plant foods shown in the analysis into a single figure, and is convenient for this purpose. The fertilizer law permits a deficiency of less than ten per cent in one plant food to be compensated by an excess of another, but if the valuation is four per cent less than the guaranteed valuation, a rebate must be paid to the purchaser. The valuation found compared with the valuation guaranteed shows whether or not the fertilizer as a whole is better or poorer than the guarantee as a whole. The following valuations were used in 1936-37.

	Cents per pound
Nitrogen .....	12.0
Available phosphoric acid .....	6.0
Total phosphoric acid in Thomas phosphate, tankage, and bone meal .....	4.0
Total phosphoric acid in rock phosphate .....	1.5
Potash .....	5.5

### Information on the Fertilizer Bag and Tag

A fertilizer tax tag is required to be placed on every bag of fertilizer before it is offered for sale or sold. The guaranteed analysis of the fertilizer is required by law to be printed on the bag or on the tag attached to the bag, so that the purchaser can see what he is buying. Total phosphoric acid may be guaranteed for bone or tankage instead of available phosphoric acid. A guarantee of total phosphoric acid is required in Thomas phosphate or rock phosphate. The information required on the package is as follows:

Net weight  
 Name of fertilizer in full  
 Name and address of manufacturer  
 Guaranteed analysis:  
     Nitrogen, per cent  
     Available phosphoric acid, per cent  
     Potash, per cent

When a fertilizer is named by figures in this Bulletin, the first figure stands for the percentage of nitrogen, the second for the percentage of available phosphoric acid, and the third for the percentage of water-soluble potash. For example, a 4-8-4 fertilizer contains 4 per cent of nitrogen, 8 per cent of available phosphoric acid, and 4 per cent of potash.

### How to Calculate the Valuation

The valuation of a fertilizer is calculated by multiplying the composition by the valuation of each unit of plant food and adding the products. A unit is one per cent of a ton, or 20 pounds; so if the valuation of nitrogen



is 12 cents a pound, the valuation of a unit is  $12 \times 20 = \$2.40$ . The valuation of a unit of available phosphoric acid at 6.0 cents a pound would be  $6.0 \times 20 = \$1.20$ ; the valuation for a unit of potash at 5.5 cents a pound would be \$1.10. The following is an example of a calculation at the prices given above:

## Valuation of 4-8-4 fertilizer

Nitrogen .....	4 x \$2.40 =	\$9.60
Available phosphoric acid .....	8 x \$1.20 =	\$9.60
Potash .....	4 x \$1.10 =	\$4.40
Total valuation per ton.....		\$23.60

## Quantity Sold

The quantities of commercial fertilizers sold in Texas for several seasons, from September 1 to August 31, are given in Table 1. These are the actual sales as reported by the manufacturers, and not the tag sales. The tag sales are always a little larger than the actual sales. The sales in 1936-37 were about 40% higher than last season. The largest sales so far made in Texas were during the season 1928-29. Fertilizer statistics for a number of years to August 31, 1926, have been published in Bulletin 350.

Table 1. Fertilizers sold in Texas, (not including cottonseed meal sold as feed but used as fertilizer).

	Tons
1905-06.....	13,500
1910-11.....	52,985
1913-14.....	77,400
1914-15.....	17,500
1917-18.....	58,000
1918-19.....	46,000
1919-20.....	56,700
1920-21.....	14,850
1921-22.....	33,000
1922-23.....	73,300
1923-24.....	126,179
1924-25.....	97,719
1925-26.....	121,747
1926-27.....	79,863
1927-28.....	139,126
1928-29.....	187,215
1930-31.....	64,424
1932-33.....	30,843
1933-34.....	47,204
1934-35.....	59,480
1935-36.....	60,016
1936-37.....	84,938

Table 2. Fertilizer sales by grades in order of tonnage for 1936-37

	1936-37 In tons	1935-36 In tons	1934-35 In tons	1933-34 In tons
4-8-4 .....	23,702	12,118	10,682	7,866
4-12-4 .....	12,433	8,698	9,325	6,443
4-8-6 .....	8,758	6,995	8,384	5,803
6-10-7 .....	4,671	5,109	6,009	3,951
3-10-3 .....	4,150	3,500	3,450	3,579
6-12-6 .....	3,664	4,029	4,766	3,380
6-8-4 .....	2,920	0	0	0
Superphosphate, 18% .....	2,743	3,408	3,249	4,858
Superphosphate, 20% .....	2,642	2,517	1,416	2,022
4-10-0 .....	2,132	2,040	1,003	756
16-20-0 .....	1,637	692	570	220
Sulphate of ammonia .....	1,610	1,588	1,139	799
Cyanamid .....	1,475	569	507	550
11-48-0 .....	1,361	773	670	265
Nitrate of soda, 15% and 16% .....	1,314	1,080	1,146	1,116
3-10-0 .....	1,220	695	.....	.....
6-9-3 .....	1,221	751	598	258
5-15-5 .....	1,133	923	1,420	868
Bone meal .....	1,095	1,283	1,232	1,052
9-18-18 .....	952	41	76	197
4-10-7 .....	814	649	681	642
4-8-10 .....	589	297	301	186
Superphosphate, 32% .....	538	328	.....	.....
Tankage, bat guano, and activated sludge .....	295	305	679	695
10-20-10 .....	246	245	314	161
5-15-0 .....	236	67	300	.....
Kainit, 20% .....	195	222	196	180
Sulphate of potash, 48% .....	169	14	10	64
Lawn and garden fertilizer .....	157	131	183	105
Soft phosphate with colloidal clay .....	138	27	65	40
Muriate of potash .....	142	151	122	198
9-27-9 .....	118	49	43	22
10-0-10 .....	108	108	72	51
0-12-4 .....	94	115	29	4
10-10-0 .....	91	57	169	53
Superphosphate, 45% .....	65	93	35	56
0-15-6 .....	54	54	34	25
Cottonseed meal .....	25	100	73	191
Miscellaneous unmixed fertilizer .....	17	0	94	58
Manure salts, 30% .....	9	9	0	0
Muriate of potash, 60% .....	5	24	0	0
8-24-8 .....	0	77	134	65
6-18-6 .....	0	44	172	180
Calcium nitrate .....	0	30	20	80
Basic slag .....	0	10	22	0
Kainit, 14% .....	0	0	80	122
10-30-10 .....	0	0	0	25
3-10-8 .....	0	0	0	16
10-20-0 .....	0	0	0	2
Total .....	84,938	60,016	59,470	47,204

### Quantity of Sales by Grades

Table 2 contains the sales of fertilizer by grades for four seasons, arranged in order according to sales in the season 1936-37. Sales of 4-8-4 fertilizer are highest of all in 1936-37, as in 1935-36. The 4-12-4 comes second, the 4-8-6 comes third and the 6-10-7 comes fourth.

### Quantity of Cottonseed Meal Used as a Fertilizer

The tonnage of cottonseed meal reported in Table 2 includes only that tagged with fertilizer tax tags and sold as a fertilizer.

Table 3. Average composition, valuation and selling prices of grades of fertilizer, 1936-37

Grades	Number aver- aged	Nitro- gen per cent	Available Phos. Acid per cent	Potash per cent	Guaran- teed Valua- tion per ton	Valua- tion found per ton	Selling price per ton
0-12-4.....	1	.....	12.62	4.29	\$18.80	\$19.86	\$25.00
3-10-0.....	3	3.01	11.23	.....	19.20	20.70	25.95
3-10-3.....	88	3.10	9.90	3.35	22.50	23.02	29.07
4-8-4.....	232	4.07	8.12	4.21	23.60	24.17	30.09
4-8-6.....	165	4.01	8.06	6.19	25.80	26.11	32.06
4-8-10.....	12	4.03	7.92	10.23	30.20	30.43	35.82
4-10-0.....	15	4.15	10.14	.....	21.60	22.13	28.89
4-10-7.....	9	4.15	9.99	7.08	29.30	29.73	34.18
4-12-4.....	219	4.11	11.82	4.32	28.40	28.78	34.04
5-15-5.....	17	5.03	14.63	5.37	35.50	35.52	39.53
6-8-4.....	37	6.00	8.17	4.25	28.40	28.84	33.35
6-9-3.....	23	5.93	8.88	3.86	28.50	28.58	34.03
6-10-7.....	107	6.00	10.04	7.00	34.10	34.15	37.95
6-12-6.....	77	6.02	11.76	6.23	35.40	35.42	38.09
10-0-10.....	5	9.95	6.19	8.87	35.00	35.13	38.40
10-6-4.....	1	9.55	6.04	4.59	35.60	35.22	55.00
10-10-0.....	3	9.94	10.51	.....	36.00	36.48	40.00
10-20-20.....	1	9.88	18.83	9.54	59.00	56.80	59.80
11-48-0.....	3	10.58	48.37	.....	84.00	83.43	61.13
16-20-0.....	9	15.73	21.67	.....	62.40	63.76	49.42
Ammonium Sulphate.....	2	20.86	.....	.....	49.92	50.06	44.40
Activated Sludge.....	1	4.81	3.20	.....	15.60	15.38	20.00
20% Kainit.....	5	.....	.....	19.10	22.00	21.01	27.40
30% Manure Salts.....	1	.....	.....	30.12	33.00	33.13	34.00
Muriate of Potash—50%.....	4	.....	.....	47.79	55.00	52.57	46.45
16% Nitrate of Soda.....	11	16.35	.....	.....	38.40	39.25	40.83
Raw Bone Meal.....	7	4.17	22.61*	.....	26.48	28.09	37.80
Sulphate of Ammonia.....	19	20.48	.....	.....	48.00	49.23	41.30
18% Superphosphate.....	19	.....	18.34	.....	21.60	22.00	24.52
20% Superphosphate.....	25	.....	20.16	.....	24.00	24.19	26.28
32% Superphosphate.....	3	.....	32.39	.....	38.40	38.87	38.00
45% Superphosphate.....	1	.....	44.78	.....	54.00	53.74	56.80
Soft Phosphate with Colloidal Clay.....	1	.....	23.28*	.....	6.60	6.98	14.00
21% Cyanamid.....	5	21.09	.....	.....	50.40	50.62	38.50

\*Total Phosphoric Acid.

## Composition and Selling Prices of Different Grades of Fertilizer

Table 3 contains the average composition, the guaranteed valuation, the valuation found by analysis, and the average retail selling prices per ton, of various grades of fertilizers. The average retail selling price is the average of the cash retail prices furnished to the fertilizer inspector by the dealers. The prices of the same fertilizer may be different in different towns on account of differences in cost of transportation or for other causes. The retail price includes handling costs, carrying charges, and the dealer's profits, as well as the cost of the plant food used in the materials from which the fertilizer is made.

The average valuations found (Table 3) exceeds the valuations guaranteed in almost every case. The exceptions are 10-6-4, 10-20-20, 11-48-0, activated sludge, kainit, muriate of potash and 45% superphosphate. In all of these, however, the valuations found are only slightly below the valuations guaranteed.

### Cost of Plant Food

Table 4. Approximate average cost of plant food in cents per pound arranged in order of increasing cost, 1936-37

Grade	Nitrogen	Available Phosphoric Acid	Potash
11-48-0.....	8.74	4.37	.....
21% Cyanamid.....	9.17	.....	.....
16-20-0.....	9.50	4.75	.....
Muriate of Potash 50%.....	.....	.....	4.65
Sulphate of Ammonia.....	10.32	.....	.....
Ammonium Sulphate.....	10.67	.....	.....
32% Superphosphate.....	.....	5.94	5.58
10-20-20.....	12.17	6.08	5.67
30% Manure Salts.....	.....	.....	.....
16% Nitrate of Soda.....	12.76	.....	.....
45% Superphosphate.....	.....	6.30	.....
6-12-6.....	12.91	6.46	5.92
20% Superphosphate.....	.....	6.57	.....
10-0-10.....	13.16	.....	6.03
10-10-0.....	13.33	6.67	.....
6-10-7.....	13.36	6.68	6.12
5-15-5.....	13.37	6.68	6.13
18% Superphosphate.....	.....	6.81	.....
4-10-7.....	14.00	7.00	6.42
6-8-4.....	14.09	7.04	6.46
4-8-10.....	14.23	7.12	6.52
6-9-3.....	14.33	7.16	6.57
4-12-4.....	14.39	7.19	6.60
4-8-6.....	14.92	7.46	6.84
20% Kainit.....	.....	.....	6.85
4-8-4.....	15.30	7.65	7.01
Activated Sludge.....	15.38	7.69	.....
3-10-3.....	15.50	7.75	7.11
0-12-4.....	.....	7.98	7.32
4-10-0.....	16.06	8.03	.....
3-10-0.....	16.22	8.11	.....
Raw Bone Meal.....	17.12	5.71*	.....
10-6-4.....	18.54	9.27	8.50
Soft Phosphate with Colloidal Clay.....	.....	3.18*	.....

\*Total Phosphoric Acid

Table 4 contains the retail cost of a pound of nitrogen, of available phosphoric acid, and of potash, in cents per pound, as calculated from the cash selling prices per ton given in Table 3 and the guaranteed composition. For the purpose of this calculation it was assumed that the prices were in the same ratio as the valuations. As the prices of the same fertilizer in different places vary, those figures are not correct for any particular locality, but represent averages only, and are for purposes of comparison. The prices were collected by the inspectors from retail merchants handling fertilizer. Grades used extensively near the factories would average a lower price than those used at a distance, on account of lower transportation costs. The fertilizers with the lowest prices of plant food are given first in the table.

**Cost of nitrogen.** The 11-48-0 was the cheapest source of nitrogen, cyanamid was next, 16-20-0 third, and sulphate of ammonia came fourth. Excluding the fertilizer in small packages for home use, 10-6-4 was the most expensive source of nitrogen, raw bone meal next, followed by 3-10-0



and 4-10-0 fertilizer. Nitrogen in nitrate of soda 16% cost about 12.76 cents a pound compared with 10.67 cents a pound for that in sulphate of ammonia. Nitrogen cost more in most of the mixed fertilizers than in sulphate of ammonia or cyanamid because it costs to mix the fertilizers. The lowest-priced nitrogen in the mixed fertilizer was in the 11-48-0, followed in order by the 16-20-0, 10-20-20 and 6-12-6. Nitrogen was lower in price than last season in some fertilizers and higher in others. The difference averaged 0.64 cents a pound more for nitrogen in sulphate of ammonia, .32 cents more for nitrogen in 16% nitrate of soda, .30 cents less for that in 3-10-3, and 0.53 cents less for that in 4-12-4.

**Cost of phosphoric acid.** The cheapest source of phosphoric acid was 11-48-0, then 32% superphosphate, followed by 10-20-20, and 45% superphosphate. The cost of available phosphoric acid was about .24 cents less per pound in 20 per cent superphosphate than in 18 per cent. Omitting the household fertilizers, phosphoric acid was most expensive in 10-6-4, then in 3-10-3, then 4-10-0, and then 3-10-3. Available phosphoric acid was 0.25 cents a pound higher in 4-12-4 than it was last season, and 0.51 cents a pound higher in 3-10-3, than last year.

**Cost of Potash.** Muriate of potash was the cheapest form of potash, followed by 10-20-20 and 10-6-4 the most expensive in mixed fertilizers, followed by 0-12-4. Potash cost .44 cents a pound more in muriate of potash, than it did last season, but 0.13 cents a pound less in 3-10-3, and 0.24 cents a pound less in 4-12-4.

### Relation of Cost to Concentration of Fertilizers

Certain fertilizers are sold which contain the plant food in the same ratio so that, so far as nitrogen, phosphoric acid and potash are concerned, they are the same fertilizer except in concentration, or strength.

Table 5. Relative cost of approximately the same amount of plant food in different grades of fertilizer

Grade	Available phosphoric acid pounds	Nitrogen pounds	Potash pounds	Cost
Group 1				
1.0 ton 5-15-5 \$39.53.....	100	300	100	\$39.53
1.25 tons 4-12-4 34.04.....	100	300	100	42.55
1.67 tons 3-10-3 29.07.....	100	333	100	48.46
Group 2				
1.0 ton 6-12-6 \$38.09.....	120	240	120	\$38.09
1.5 tons 4-8-4 30.09.....	120	240	120	45.14

The ratio of plant food in the 4-12-4 and 5-15-5 fertilizers is exactly the same, as the proportions are three parts phosphoric acid to one of nitrogen and one of potash. The 3-10-3 fertilizer has practically the ratio 1-3-1. Table 5 shows the approximate cost of nearly equal quantities of plant food in these fertilizers at the average prices given in Table 3. The plant food in 1.25 tons of 4-12-4 cost \$3.02 more than an equal quantity in 5-15-5. The 1.67 tons of 3-10-3 cost \$8.93 more than 1.0 tons of 5-15-5, but when allowance of 2.40 is made of the 40 pounds more phosphoric acid it contains, the plant food in 3-10-3 costs \$6.53 more. Similar differences are to be seen with the other grades. The most concentrated mixed fertilizer was the cheapest per pound of plant food, or to put it another way, the highest-priced fertilizr per ton may be the lowest-priced per pound of plant food. This difference is caused partly by freight charges, partly by the cost of bagging, etc. The higher cost of manufacture of the more concentrated fertilizers is frequently more than offset by the cost of freight, bags, etc. The cost of phosphoric acid averaged slightly less in 20 per cent superphosphate than in 18 per cent. (Table 4)

### Comparing Costs of Fertilizer

The relative money value of two or more kinds of fertilizer may be roughly compared by dividing the price at which the fertilizer is sold per ton by the valuation per ton of the fertilizer. Guaranteed valuations for many grades for the season of 1936-37 are given in Table 3, and while the valuations for 1937-38 may be somewhat different, these valuations may be used for comparative purposes. For example, if a 4-8-4 fertilizer sells for \$34.00 a ton and a 6-12-6 fertilizer for \$38.00, which is cheaper? Using the valuations from Table 3, for 4-8-4, the selling price \$34.00 divided by the valuation \$23.60 gives \$1.44; for 6-12-6, the selling price \$38.00 divided by the valuation \$35.40 gives \$1.07. Thus one dollar of valuation costs \$1.44 in 4-8-4, and \$1.07 in 6-12-6; therefore the 6-12-6 is cheaper. Similar calculations may be made for other grades and for other prices.

Of course the suitability of the fertilizer to the soil and crop must be considered in addition to the relative cost of the plant food.

### Fertilizer Analyses to be Sold in 1937-38

The grades of fertilizer sold in Texas are limited in number. This standardization aids the farmer to become familiar with the different kinds of fertilizer, enables him to decide more readily on the proper kind to be used, enables the agricultural worker to make definite recommendations, and reduces the cost of manufacture and handling, thereby also reducing the cost to the consumer. At a conference with fertilizer manufacturers doing business in Texas, Louisiana, and Arkansas in July 1937,

grades of mixed fertilizer were adopted for these states. This was the thirteenth such conference for Texas manufacturers, and the fifth joint conference.

The following grades were adopted for Texas for 1937-38:

0-12-4	4-12-4	10-0-10
3-10-0	5-15-0	10-10-0
3-10-3	5-15-5	10-20-0
4-8-4	6-8-4	10-20-10
4-8-6	6-9-3	11-48-0
4-8-10	6-10-7	16-20-0
4-10-0	6-12-6	14-28-0
4-10-7	6-30-0	15-30-15

#### MATERIALS

Superphosphate 18%	Kainit 20%
Superphosphate 20%	Cottonseed meal
Superphosphate 32%	Bone Meal
Superphosphate 45%	Cyanamid 21%
Sulphate of ammonia 20%	Cyanamid 22%
Nitrate of soda 15%	Basic slag
Nitrate of soda 16%	Sheep manure
Muriate of potash 50%	Tankage
Sulphate of potash 48%	Ground phosphate rock
Manure salts 30%	Nitrate of soda and potash 14-0-14
Calcium nitrate	Bat guano
Cal-nitro 16%	Activated sludge
Soft phosphate with colloidal clay	

#### Free Analysis

Purchasers of commercial fertilizers for their own use (but not for sale), can secure a free analysis of a sample. Those who desire the free analysis of a sample of commercial fertilizer should write for a blank, "Application for Free Fertilizer Analysis," to the State Chemist, College Station, Texas, before taking any sample. The proper sampling of a fertilizer requires care and the law requires it to be taken in a certain way so that a fair sample is taken. If the sample is not properly taken, it does not represent the fertilizer sampled, and the analysis may be better or poorer than the goods actually are. This privilege of a free analysis applies only to fertilizers tagged, and sold under the fertilizer law and to samples properly taken so that they represent the goods sampled.

#### Analysis of Fertilizers, 1936-37

Samples of fertilizer were collected from the grades being sold in many towns and cities. The chief places of sales were visited several times. The number of samples registered for analysis was 1130.

Table 7, near the end of this Bulletin, contains a list of the samples of fertilizer subjected to analysis in the season ending September 1, 1937. Analyses below guarantee are brought out in heavy type. Practically all

samples of fertilizer were collected by our inspectors. Analyses and inspection were made by S. E. Asbury, T. L. Ogier, Waldo Walker, C. D. Marrs, G. S. Shepard, P. Blickensdorfer, and Russell Smith.

Table 6. Average valuation of all fertilizers guaranteed and found in dollars per ton, 1936-37

Manufacturer	Number averaged	No. of samples more than 4% below guarantee	Valuation per ton	
			Guaranteed	Found
American Cyanamid Company.....	18	\$57.47	\$58.33	0
Arkansas Fertilizer Company.....	17	27.12	27.16	2
Armour Fertilizer Works.....	106	29.15	29.51	1
The Barrett Company.....	1	38.40	39.36	0
Bryan Cotton Oil & Fertilizer Co.....	14	27.01	28.93	0
Campbell Fertilizer Company.....	18	26.21	28.95	0
Chilean Nitrate Sales Corporation.....	5	38.40	39.18	0
Davison-Pick Fertilizer, Inc.....	4	26.75	26.95	0
East Texas Cotton Oil Company.....	36	29.96	30.65	0
Farmers Cotton Oil Company.....	9	27.37	27.37	0
Federal Chemical Company.....	83	26.15	25.88	6
Fidelity Chemical Corporation.....	70	30.78	31.19	1
Ford Motor Company.....	2	49.92	50.06	0
Gilmer Cotton Oil & Fertilizer Co.....	13	26.29	26.94	1
Houston, City of, Engineering Dept.....	1	15.60	15.38	0
International Agricultural Corp.....	39	27.18	27.41	0
Jacksonville Fertilizer Company.....	9	28.03	29.20	0
Kelly-Weber & Company.....	9	25.62	25.56	1
La-Tex Fertilizer Company.....	2	29.95	30.35	0
Longview Cotton Oil Company.....	12	28.59	28.99	1
Marshall Cotton Oil Company.....	17	27.73	27.88	1
The Merchants Fertilizer Co.....	1	28.40	27.60	0
Mixon Bros.....	13	29.15	30.12	0
Nicholson's Seed Store.....	2	32.00	32.27	0
Oil Mill & Fertilizer Works.....	13	25.83	25.90	1
Palestine Oil Mill & Fertilizer Works.....	42	26.14	26.27	2
Pate Bros. Fertilizer Works.....	22	26.80	27.90	1
Pittsburg Cotton Oil Company Fertilizer Works.....	29	25.19	25.74	2
M. R. Porter Company.....	1	6.60	6.98	0
Thos. Self.....	13	27.36	27.65	0
Shreveport Fertilizer Works.....	68	28.04	28.28	5
Swift & Company Fertilizer Works.....	132	29.50	29.70	8
Temple Cotton Oil Company.....	14	26.89	26.40	2
Texas Chemical Company.....	6	26.48	28.19	0
Texas Farm Products Company.....	64	28.38	28.59	0
Tri-State Fertilizer & Lumber Company.....	18	28.24	29.38	0
Tyler Fertilizer Company.....	26	28.58	28.97	0
United Chemical Company.....	95	26.65	27.15	2
Valley Fertilizer Company.....	1	30.20	27.79	1
Virginia-Carolina Chemical Corp.....	82	28.33	28.46	2

#### Relation of Valuation Guaranteed to Valuation Delivered

Table 6 contains the average guaranteed valuation, and the average valuation found by our analyses, for all manufacturers doing business in Texas. In the preparation of this table, all analyses made were averaged, even though several were made of each brand and fertilizer materials are included as well as mixed fertilizers.



### Averages Below Guarantee

Whenever any lot of fertilizer is 4 per cent or more below guarantee, the law requires all persons who have sold this lot of fertilizer to make good the deficiency to all purchasers. This rebate is paid by the manufacturer to the dealer and by the dealer to the customer. The number of lots on which rebates were paid by each manufacturer is shown in Table 6.

### Non-acid Forming Fertilizers

Ordinary fertilizers are acid forming, and when used for a number of years on soils with a low buffer capacity may make a soil acid, or more acid, if it was already acid to start with. Non-acid forming fertilizers are made by the use of proper amounts of ground dolomite, which is calcium and magnesium carbonates, or by the selection of suitable fertilizing ingredients. Limestone is not suitable because it reverts the available phosphoric acid and causes it to become insoluble. In the Eastern part of the United States, where fertilizers have been used for a long time and where the soils are already acid, ordinary fertilizers may not give as good results in crop yields as non-acid forming fertilizers. Non-acid forming fertilizers are recommended for use on acid soils which are likely to become still more acid with ordinary fertilizers. Since Texas soils are generally only slightly acid, or even alkaline, the use of non-acid forming fertilizers is not at present necessary, except under exceptional conditions. Where the soils are neutral or slightly alkaline, as is the case in large areas of limestone soils, ordinary fertilizers are preferable to non-acid forming fertilizers. An acid-forming fertilizer may be better on an alkaline soil than a non-acid forming fertilizer. Only two brands of fertilizer sold in Texas this season were claimed to be non-acid forming. Examination was made of 14 samples, with the results given in Table 6A. The results are given as the equivalent of the number of pounds of calcium carbonate basicity (B) or acidity (A). Four of the 14 samples were acid-forming, one of them being decidedly so.

Table 6A. Analyses of fertilizers claimed to be non-acid forming.

Laboratory Number	Name of Brand	Acid-Base Balance	Character
51290	Swift's PH7 6-8-4.....	126A	Acid-forming
51319	Swift's PH7 6-8-4.....	44A	Passed
51325	Swift's PH7 6-8-4.....	94A	Acid-forming
51378	Swift's PH7 6-8-4.....	5A	Passed
51445	Swift's PH7 6-8-4.....	55B	Passed
51577	Swift's PH7 6-8-4.....	18A	Passed
51579	Swift's PH7 6-8-4.....	15A	Passed
51805	Swift's PH7 6-8-4.....	15B	Passed
51832	Swift's PH7 6-8-4.....	122A	Acid-forming
51908	Swift's PH7 6-8-4.....	25A	Passed
51912	Swift's PH7 6-8-4.....	25B	Passed
52043	Pioneer 4-8-6 Non-Acid Forming Fertilizer...	17B	Passed
52245	Swift's PH7 6-8-4.....	486A	Acid-forming
52349	Swift's PH7 6-8-4.....	51A	Passed

## INVESTIGATIONS UNDER THE FERTILIZER LAW

The State Chemist is required by the fertilizer law to investigate the composition, properties, and agricultural values of fertilizers or fertilizer materials, or ingredients of fertilizer sold or offered for sale within the State of Texas, and to publish his results as he may find.

### Relation to Experiment Station Work

The work of the State Chemist is closely related to the chemical work of the Experiment Station. In his capacity as Chief of the Division of Chemistry of the Experiment Station, the State Chemist is carrying out extensive investigations into the fundamental properties of soils, especially with respect to their content of plant food. This work is related closely to the use of fertilizers and is connected with investigations as to the agricultural values of fertilizers required by the Fertilizer Control, for fertilizers vary in effect upon the different soils.

### Soft Phosphate With Colloidal Clay

Soft phosphate with colloidal clay is a natural phosphate of lime containing 20 per cent of total phosphoric acid or more. The phosphate of lime is so finely divided that some of it is termed colloidal. The availability to plants of the phosphoric acid of colloidal mineral phosphate is on an average about 40 per cent of that of the available phosphoric acid in 20 per cent superphosphate, See Bulletin No. 509.

### Sulphur, Gypsum, Manganese, and Other Secondary Fertilizing Elements

We are unable to recommend the use of sulphur or gypsum as a fertilizer in Texas or for application to Texas soils. The experiments which have been carried out do not give results which justify the use of such materials on soils (see Bulletins 408 and 414). This also applies to the natural mixture of sulphur, gypsum, sulphuric acid and other substances, which various parties and concerns have attempted to sell or exploit as a fertilizer or soil amendment. It is not recommended for use as a fertilizer and does not give results on soils which need fertilizer, as shown in Bulletins 408 and 414.

Investigations on the use of manganese sulphate for Texas soils are given in Bulletin 432. The results of the experimental work do not justify recommendation of the use of manganese sulphate on Texas soils.

The general use of copper, iodine, zinc, boron, magnesia, and other secondary fertilizing elements is not recommended for Texas. There are exceptional cases where iron may be needed.

### Greensand

A report of investigations regarding the value of greensand as fertilizer was published in Bulletin 428. The availability of the potash and phosphoric

acid in greensand was found to be low. Greensand has a little fertilizing value but can be used in quantities of 5 to 40 tons to an acre on land near to the deposits where it can be mined and applied at a cost closely related to its value. It does not contain sufficient fertilizer value to justify attempting to market it.

### Polyhalite and Sewage Sludge

Polyhalite, a mineral found in deep deposits in western Texas and in New Mexico, contains about 12 per cent potash, which is only partly soluble in water, but which is readily available to plants (see Bulletin 449).

Digested sewage sludge is low in plant food, and the nitrogen has a low availability. Dried activated sludge contains about 5 per cent nitrogen and 2 per cent available phosphoric acid and the nitrogen has a good availability to plants (see Bulletin 445).

## GENERAL CONSIDERATIONS ON THE USE OF FERTILIZERS

Fertilizers supply the three forms of plant food most necessary for growing crops, namely, nitrogen, phosphoric acid, and potash. For best results, other conditions should be favorable, such as a well-drained soil in good physical condition, a well prepared seed bed, good seed, good cultivation, sufficient rainfall or irrigation, and suitable rotation. Nitrogen is the most expensive plant food, and for this reason the amount of fertilizer used generally does not supply all the nitrogen required by the crop. A cropping system which includes the regular growing of suitable legumes, such as clover, cowpeas, soy beans, velvet beans, peanuts, or alfalfa, should be followed for the purpose of securing nitrogen from the air, provided the legume crops can be grown to advantage. A suitable rotation also adds organic matter to the soil, utilizes time and labor to better advantage, aids in controlling insect pests and plant diseases, and has other favorable effects.

The proper fertilizers to use depends upon the kind of soil, the climate, the crop, how long the soil has been in cultivation, whether or not legumes have been turned under or grazed off, what the soil will produce without fertilizer, and other conditions.

Soils which have been in cultivation a long time, or very sandy soils are usually more deficient in nitrogen than new soils or clay soils. Soils having a rotation which includes legumes need less nitrogen than those cropped constantly to non-legumes.

Clay soils and soils with clay or loam subsoils in cultivation less than 15 years need little potash in Texas for ordinary farm crops, but light sandy soils with sandy subsoils may need potash. Larger amounts of fertilizer may be profitably used on crops with a high acre value, such as fruit or truck crops, than on ordinary farm crops, such as corn or cotton. The fertilizer on cotton may profitably be twice as much as that used on corn.

Best results are secured by a well-balanced supply of plant food in the soil. An excess of nitrogen or an excess of potash is shown by the production of a heavy stalk or vine, with a deficiency of fruit or delayed maturity. If such land has not been fertilized, probably the best fertilizer to use is 200 to 300 pounds of superphosphate to the acre. This will frequently (but not always) promote fruiting. If a fertilizer has been used, the remedy is to decrease the percentage of nitrogen and to increase the percentage of phosphoric acid in subsequent applications. The percentage of potash may also be decreased.

Excess nitrogen in soil when truck crops are grown may produce rapid growth with soft tissues, which do not stand up well under shipment. Strawberries, for example, produce large fruits which are not firm enough to ship well. Lettuce, cabbage, and similar crops may not be firm enough to stand shipment. Increased quantities of potash will not prevent softness caused by excess of nitrogen.

Excess of nitrogen renders some plants more liable to attack by some diseases. Excess of nitrogen also delays maturity. Excess of potash, like excess of nitrogen, delays maturity of the crop. A well-balanced fertilizer should be selected, due consideration being given to the soil, the crop, the character of growth, and other conditions. A well-balanced fertilizer will produce a crop that is firm and ships well.

### How and When to Apply Fertilizer

Fertilizer is generally applied under the seed at the time of planting or previous to planting. It should not touch the seed, but is best placed in a narrow band one to three inches below the seed or preferably at the side 3 inches from the seed or plants and at the same level. A combined planter and fertilizer distributor may be used, but care should be taken to select a machine which applies the fertilizers properly, as some machines are not satisfactory.

Fertilizer may be placed in the ground at the time of planting or not more than three weeks before planting. If applied too early, there is danger of loss of plant food by fixation and leaching.

Applications of more than 800 pounds of fertilizer to the acre are best made partly in the furrows and partly broadcast. However, with some vegetables it is best to apply all the fertilizer in the furrows. If desired, high analysis fertilizer may be mixed with fine dry sand before it is applied.

In dry sections, where the soil above the seed is liable to dry out, the fertilizer may be applied on the firm soil at the same depth as the seed but by side of the seed. Sometimes it may be advisable to put it in when the land is bedded, especially on heavy soils where there is little danger of loss by leaching. When fertilizers of high analysis are used, especial care should be taken to mix them with the soil, and not to apply them close



to the seed or to the roots of growing plants. These fertilizers are quite strong, and burning or other injury may result if they are placed closely to roots of plants.

### How Much to Apply

Farmers not experienced in the use of fertilizer should begin with moderate amounts, such as 200 to 400 pounds to the acre for cotton or corn and 400 to 800 pounds for truck crops. Larger amounts may then be tried on a small scale and then these larger amounts used if these trials appear to justify it. The approximate amounts to use are indicated below.

### Side Dressings

More than one application of fertilizer is not usually recommended for cotton or corn. Under exceptional conditions, however, more than one application may be made for cotton or corn. These conditions would include: (1) when more than 500 pounds of fertilizer to the acre is to be used; (2) when the plants appear to be suffering from a deficiency of available plant food, particularly nitrogen; (3) if the weather in the spring has been excessively wet, so as to cause considerable leaching; (4) if the soil is a deep sandy soil, where the plant food is likely to leach out (See Bulletin No. 490).

Side dressings of cotton with nitrate of soda, sulphate of ammonia, or other sources of nitrogen are not generally to be recommended, but may be used when the fertilizer applied at planting does not contain enough nitrogen, or on deep sandy soil, where there may be considerable loss from leaching. Under such conditions, 100 pounds per acre of nitrate of soda or sulphate of ammonia may be applied to cotton just after chopping.

Corn which was not fertilized before planting may frequently use to advantage a side dressing of nitrate of soda or sulphate of ammonia, applied when the corn is knee-high.

Side dressings are frequently applied to truck crops. In such case a complete fertilizer is applied before or at the time of planting, and one or more side dressings of sulphate of ammonia or nitrate of soda afterwards.

There is little danger of loss of phosphoric acid or potash by leaching, while soluble nitrogen may be lost by leaching.

### Fertilizers for East Texas

The soils of East Texas as a general rule respond well to fertilizers, and the recommendations made here apply chiefly to this section of the State. Many of the soils of East Texas are sandy and low in phosphoric acid and nitrogen; they are usually better supplied with potash but sometimes they are low in potash. The heavier soils and the bottom lands are much better supplied with plant food than the upland soils.

### Fertilizers for the Black Lands

The heavy black limestone soils of Central Texas, especially the Houston clay and the Houston black clay, do not give as much response to fertilizers as the sandy soils of eastern Texas. Sometimes they respond to applications of nitrogen and phosphoric acid, although in general the use of fertilizers on these soils has not been profitable. In some cases they give satisfactory results one year and unsatisfactory the next. These soils appear to need vegetable matter first, such as is supplied by well rotted manure, by legume crops turned under or grazed off, or by winter crops. A rotation is also of advantage (see Bulletin 365). Sandy lands in this section will probably respond to fertilizer, though little has been used on them.

### Fertilizers for West Texas

Some of the lighter soils of West Texas are low in phosphoric acid and potash, and fertilizers will probably be needed in this section of the State as time goes on, especially on irrigated soils. In fact, fertilizers have already been used with good results in some sections. Some of the soils of West Texas contain no more plant food than those of East Texas, but the roots of the plants penetrate deeper in dry sections and have more soil to feed upon than in humid sections so that the plant is able to secure more plant food than from the corresponding soil in the Eastern part of the State.

When fertilizers are used in Texas west of the Blackland section, it is suggested that somewhat smaller amounts be tried than is recommended for East Texas, unless the land is irrigated. Also, unless the land is irrigated, care should be taken that the fertilizer is in the firm soil in which the plants grow, not in the loose earth, which is likely to dry out.

### Fertilizers for the Rio Grande Valley

The soils of the lower Rio Grande Valley are generally well supplied with plant food, especially with potash. When the soils are new, they may contain an excess of nitrogen, and tend to produce a heavy growth of stalk and leaves, with deficiency of fruit. Superphosphate is perhaps the best fertilizer to use in such soils, where there is reason to believe an abundance of nitrogen is present.

After having been under cultivation several years, these soils are likely to need nitrogen first, as the nitrogen is most readily exhausted. As it is desirable to avoid an excess of nitrogen, moderate quantities of nitrogen should be used at first. These soils are high in potash, and are less likely to need potash than the East Texas soils, which are lower in potash. However, some potash may be used, especially as the cropping is heavy, but there is no need at present for the percentage of potash to exceed the percentage of nitrogen.

Our suggestion at present for these soils would be then to begin with superphosphate, if the vegetative growth is very heavy. In succeeding years 10-10-0, 16-20-0, or 11-48-0 may be used or one of these may be used to begin with if vegetative growth is not excessive. In the course of time, when potash has been depleted by cropping, one would use such truck fertilizers as 6-12-6, 10-20-10, or 6-10-7.

### **Fertilizers for the Gulf Coastal Plains**

There is considerable variation in the soils of the Gulf Coastal Plains. Some of the soils in the southern section are very sandy, and somewhat low in plant food. These should receive about the same fertilizer as the sandy lands of East Texas. Most of the soils are heavier and better supplied with plant food than the very sandy soils. The fertilizers suggested are the same as for the corresponding soils of the Rio Grande Valley. The heavy black soils (the Lake Charles soils) at the Experiment Station at Angleton respond well to superphosphate and to applications of nitrogen and phosphoric acid on cotton and corn.

Some of the soils of the Gulf Coastal Plains are poorly drained. They should be well drained and placed in good condition before any fertilizer is used, since applications of fertilizer will not remedy poor drainage.

### **FERTILIZERS SUGGESTED FOR THE VARIOUS CROPS**

The recommendations given below represent the best present information for the use of fertilizers in Texas, and will be modified from time to time, as more experimental data are accumulated and further practical experience is secured.

#### **Grades With the Same Ratios**

Where a fertilizer of a given ratio is suggested, a different grade with the same ratio may be used, in such a quantity as to supply an equivalent amount of plant food. Where 4-12-4 is suggested, equivalent amounts of 3-10-3, or 5-15-5, may be used, as these all have the same ratio of plant food, 1-3-1. Where 4-8-4 is suggested, equivalent amounts of 6-12-6, or 10-20-10, may be used, as they have the same ratio of plant food, 1-2-1.

#### **Alfalfa**

Soil recently put in alfalfa: Use 200 to 400 pounds per acre of superphosphate.

Soil in cultivation six years or longer (best to rotate): Use 200 to 400 pounds of superphosphate, or 200 to 600 pounds of 0-12-4.

Soils poor in lime should receive lime. (Bulletin 242).

#### **Asparagus**

Apply 10 to 20 tons of well-rotted manure and 500 to 800 pounds to the acre of a 4-12-4 or 6-12-6 fertilizer when setting out the plants. Manure

alone has given good results at both Balmorhea and Iowa Park. If the manure is not available, 600 to 900 pounds of the fertilizer could be used. Every spring apply 400 to 600 pounds of 6-12-6. Just before the cutting season is over, or soon after, apply 200 to 400 pounds of 4-8-4. Two top dressings of nitrate of soda, 100 pounds to the acre each, applied in the spring, would also be advisable in many cases.

#### **Beans (garden) and Peas (garden or English)**

An application of 300 to 500 pounds per acre of a 6-10-7 or 6-12-6 fertilizer is suggested, except in the lower Rio Grande Valley, where the use of 200 to 300 pounds of 11-48-0 is suggested.

#### **Beets, Carrots, Turnips and Radishes**

From 300 to 700 pounds per acre of 6-12-6 or 5-15-5 are suggested for East Texas and 16-20-0 or 11-48-0 for the clay loam of the Rio Grande Valley and Gulf Coast.

#### **Broccoli, Cabbage, Cauliflower, Mustard, and Spinach**

From 300 to 700 pounds per acre of 6-12-6 or 5-15-5 may be used, supplemented by three top dressings of 50 to 100 pounds of nitrate of soda or sulphate of ammonia or other fertilizer containing only nitrogen, ten days or two weeks apart, beginning when the plants have begun to make a good growth. Excessive application of nitrogen and too rapid growth will impair the shipping quality.

The nitrate of soda or sulphate of ammonia should be sprinkled along the row, three or four inches from the plants, or applied broadcast after the dew has dried off or applied just before cultivation.

#### **Corn**

Loam or clay soils with clay or sandy clay subsoils, such as Susquehanna, Kirvin, Orangeburg, or similar soils, with legume rotation: Use 200 to 300 pounds per acre of 4-8-4, 6-9-3, or 4-10-0.

Loam or clay soils with clay or sandy clay subsoils, without legume rotation in cultivation eleven years or more: Use 200 to 300 pounds of 4-8-4, 6-9-3, or 4-10-0.

Deep sandy soil: Use 200 to 300 pounds of 4-12-4. This is not a good corn soil.

Land which produces a heavy stalk, but does not fruit well: Use 200 pounds of 20 per cent superphosphate.

Black waxy land (Houston black clay), or heavy limestone land of Central Texas: A systematic rotation is needed first. Fertilizers are uncertain. A trial may be made of 200 to 400 pounds of 4-10-0 or 100 pounds of 16-20-0.

Side dressing: Corn may frequently use to advantage a side dressing of nitrate of soda, sulphate of ammonia, or other soluble nitrate, applied when the corn is knee high, especially when unfertilized corn follows crops that were previously well fertilized.

Land fertilized the previous season: Where corn follows cotton that has been well fertilized the previous season, for example with a 4-8-4, or 4-12-4 fertilizer at the rate of 300 to 400 pounds or more per acre, apply 100 pounds of nitrate of soda, sulphate of ammonia, or a synthetic nitrogen product before planting or as a side dressing when the corn is 12 to 24 inches high.

### Cotton

Loam soils with clay or sandy clay subsoils, such as Ruston, Kirvin, Susquehanna, Lufkin, or similar soils. Experiments of the Division of Agronomy (See Bulletin No. 469) indicate that these soils respond to applications of nitrogen, phosphoric acid, and to some extent, of potash. If 200 to 400 pounds per acre is used, use 4-8-4, 6-9-3, or 4-12-4; if over 400 pounds is to be used, use 4-12-4, 4-8-4, or 6-9-3, or other fertilizers with a similar ratio of plant food.

Deep sandy soil, such as Norfolk sand. If 200 to 300 pounds or more is to be used, use 4-12-4; if 300 to 400 pounds or more is to be used, use 4-8-4 or other fertilizer with a similar ratio of plant food. However, these are not good cotton or corn soils and are better adapted to vegetables.

Land which produces an excessive stalk, and does not fruit well, chiefly bottom land: Use 200 to 400 pounds of 18 per cent or 20 per cent superphosphate. Nitrate of soda, sulphate of ammonia, or other nitrogenous fertilizer applied early at the rate of 100 to 200 pounds per acre sometimes gives good results on bottom lands which produce a moderately sized stalk.

Dark prairie soils in the Gulf Coast Prairie, especially the Lake Charles soils, are deficient first in phosphoric acid, shown by results of trials with fertilizers at the Experiment Station at Angleton: Use 100 pounds of 18 or 20 per cent superphosphate or 200 to 600 pounds per acre of a 4-10-0 fertilizer, or 100 to 200 pounds of 16-20-0.

Black waxy land, such as Houston black clay or heavy limestone soils of Central Texas. A systematic rotation is needed first. These soils sometimes respond to applications of nitrogen and phosphoric acid, although fertilizers are uncertain. A trial may be made of 200 to 300 pounds of 4-10-0 or 6-9-3, or 100 or 200 pounds of 16-20-0.

### Cantaloupes, Cucumbers, Squash, or Watermelons

On sandy loam soils: If 200 to 300 pounds per acre is applied, use 4-12-4 or 6-12-6. Larger applications are recommended, such as 300 to 500



pounds of 4-8-4 or 4-8-6. In southwest Texas, 300 to 400 pounds of 10-20-10 is suggested. An excess of nitrogen will produce a heavy growth of vine, but a deficiency of fruit. The remedy is to use more phosphoric acid or less nitrogen. Well-rotted manure should always be used with melons, if possible.

### **Eggplant, Okra, and Peppers**

An application of 300 to 700 pounds of 6-12-6 or 4-8-6 is suggested for trial.

### **Figs**

Recommendations for fertilizers for figs depend upon the nature of the soil and the size of the trees. On the heavy black prairie soils at Angleton, phosphoric acid gave a slight increase in yield, while nitrogen and potash gave no appreciable increase in yield of figs. An application of 200 pounds per acre of superphosphate is suggested for such soils. Figs seem to do best on a soil containing lime.

For small trees on heavy black soil, 200 to 300 pounds to the acre of 4-10-0 is suggested. As the trees grow larger, the quantity of fertilizer may be increased to 600 to 1000 pounds to the acre, or a 16-20-0 fertilizer may be used in smaller amounts.

The fertilizer should be applied in the spring after danger of frost is past, and harrowed in. Weeds should be kept down, especially around young trees; otherwise, the fertilizer may help weeds to grow and thereby hold back the trees. Where a heavy crop of winter clover is turned under, the amount of nitrogen needed in commercial fertilizers is low.

### **Grapefruit or Orange Trees**

According to Bulletin 145 of the California Agricultural Experiment Station, nitrogen is the chief plant food needed in California, and is best supplied in well-rotted manure; excess of nitrogen may cause "Mottle leaf."

A 16-20-0, 10-10-0, or 11-48-0 fertilizer may be used on Lower Valley soils, which are high in potash. On soils low in potash, a 10-20-10 may be desirable. Bearing trees ten years old may each receive 10 to 20 pounds of fertilizer each year.

Over-fertilized trees become affected with "die-back," especially if an excess of nitrogen is applied. Die-back is also caused by hardpan, alkali, or poor drainage. "Mottle leaf" or "Frenching" affects poorly nourished trees.

The soils on which citrus fruits are grown in Texas are generally higher in potash than in either phosphoric acid or nitrogen, and there appears no good reason at present to recommend fertilizers high in potash.

### Onions

The use of 600 to 800 pounds per acre of 6-12-6, 6-9-3, or 6-10-7 is suggested. Under irrigation, the 6-12-6 fertilizer may be used at rates varying from 600 to 900 pounds per acre except on new land, when 1200 pounds per acre may be used. On some soils, especially in the Winter Garden District, potash is not needed and a 5-15-5 or 16-20-0 fertilizer may be used. (See Bulletin 524).

### Peach or Plum Trees

Loam soils with clay or sandy clay subsoils, such as Orangeburg, Susquehanna, or similar types: Use 200 to 600 pounds per acre of 4-10-0 or 4-12-4. It may also be applied to individual trees at the rate of 1 pound per inch of diameter of the tree at the beginning of the growing season. When the trees are bearing, use, in addition, 200 pounds or more of 10-10-0, increasing the quantity as the trees grow older. According to experiments made in other states and observations on commercial orchards in Texas, nitrogen is the only element needed for complete crops of peaches, which can be supplied by cyanamid or other nitrogenous fertilizers.

Deep sandy soil, such as Norfolk sand: Use 200 to 600 pounds of 4-12-4 or 4-8-4.

Clay soils and bottom lands: Use 200 to 600 pounds of 4-10-0.

### Potatoes, Sweet

Loam or sandy loam soils with clay or sandy loam subsoils: 300 to 600 pounds per acre of 4-12-4, or 6-12-6 may be used. Deep sandy soil: Use 200 to 500 pounds of 6-12-6 or 4-8-6. Excess of nitrogen will produce excessive growth of vine and deficiency of tubers. The use of manure is desirable in growing sweet potatoes, but heavy applications of barnyard manure produce conditions favorable for disease.

### Potatoes, Irish

On loam or sandy soils, 300 to 700 pounds per acre of 6-12-6 or 4-12-4 or 4-8-6 is suggested. In East Texas 500 to 800 pounds of 4-8-4 or 6-9-3 may be used. In the Rio Grande Valley, 16-20-0 or 11-48-0 gives good results.

### Rice

Experiments conducted in the Beaumont Substation from 1915 to 1928 show that 100 pounds to the acre of sulphate of ammonia made the largest increase in yield and has been the most profitable treatment used (See Bulletin 398, Fertilizers for Rice in Texas). The sulphate of ammonia should be applied at the time of planting, or not later than six weeks after planting the rice. Superphosphate, and phosphate and potash gave profitable returns also, though not so great as the sulphate of ammonia.

### Sorghum

An application of 200 to 300 pounds per acre of 4-8-4, 6-9-3, or 4-10-0 is suggested.

### Strawberries

An application of 400 to 600 pounds per acre of 4-8-4, 4-12-4, or 6-12-6 may be made at the time of setting out the plants. In the spring, just before blossoming, an early application of the same fertilizer should be used in about the same quantity, put as near the row as convenient, and worked into the soil lightly. Another application in the fall is also desirable, to stimulate the growth of the plants in the cold season. Side dressings have not been found effective in the Winter Garden District of Southwestern Texas.

### Tomatoes

Loam soils with clay or sandy clay subsoils of East Texas, such as the Ruston, Kirvin, or Nacogdoches: If 400 to 600 pounds per acre is used, use 4-8-6 or 6-12-6; if 500 to 1000 pounds, use 4-8-6, 4-8-4, 4-12-4, or 6-9-3. Less than 500 pounds of fertilizer may be supplemented by 100 to 200 pounds of nitrate of soda or sulphate of ammonia if there is no tendency to excessive growth of vine.

Deep sandy soil, such as Norfolk sand: If 200 to 500 pounds per acre is used, use 4-8-6, or 4-8-4; if 500 to 1000 pounds is used, use 4-9-3. Less than 500 pounds of fertilizer may be supplemented by 100 to 200 pounds of nitrate of soda or sulphate of ammonia if there is no tendency to excessive growth of vine.

Winter Garden and Rio Grande Valley: Superphosphate alone at the rate of 200 to 300 pounds per acre has been found to give good results. A 16-20-0 or 11-48-0 at the rate of 200 to 400 pounds per acre may be used.

Land which produces an excessive vine: Use 200 to 400 pounds of superphosphate, 18 per cent or 20 per cent. Vines which grow large and do not fruit may sometimes be caused to fruit well without fertilizer if the vines are properly pruned. One method is to remove suckers every week beginning a week after the plants are set out and continuing until a week after the top is pinched off. The top is pinched off as soon as the third cluster is formed. Another method of pruning used where the growth of vine is excessive is to allow the first sucker to come out to form a fork and prune off all others. The top of the main stalk is pinched off immediately after the third cluster of fruit is formed, and the sucker is pinched off immediately after the second cluster is formed on it. According to New Hampshire Bulletin 28, excess of potash delays maturity of tomatoes, and phosphoric acid hastens maturity.

### Home Gardens and Flowers

Home gardens frequently receive large quantities of manure, with little or no applications of phosphoric acid or potash. This results in unbalanced condition of the plant food in the soil, resulting in excessive growth of leaves and stems and insufficient fruit. The best fertilizer to apply when heavy applications of manure have been made would be 200 to 400 pounds per acre of superphosphate, or 0-12-4 fertilizer. If the rows are 2 feet apart, one pound to 50 feet of row is equal to about 400 pounds fertilizer per acre.

Where applications of manure have been made only in moderate amounts, 4-12-4 or 6-12-6 would probably be satisfactory at the rate of about 2 pounds to 50 feet of row. If light applications of manure are made, or none at all, 4-8-4, 6-12-6, or 4-8-6 at the rate of  $1\frac{1}{2}$  to 3 pounds to 50 feet of row would be suggested, and top dressings with nitrate of soda or sulphate of ammonia at the rate of  $\frac{1}{2}$  pound to 50 feet of row might also be tried. The fertilizer is best placed in furrow in a narrow band about two inches from the seed or plants and on the same level or a little below. If placed in direct contact with either seed or plants or too near to them, it may cause injury. One pound of the fertilizer may be broadcast on an area of 25 square feet, that is, 5 feet long and 5 feet wide, and washed into the soil, for flowers, or vegetable gardens. Two teaspoonfuls to the quart of soil may be used for potting soil. For potted plants, one teaspoonful for each quart of soil may be put around just inside the rim of the pot, and thoroughly watered, every month. Too much fertilizer will injure the plants.

### Shade Trees and Ornamental Shrubs

Shade trees and ornamental shrubs are probably benefited by fertilizer, but few fertilizer experiments have been made on such plants. The fertilizer should be added in such a way as to aid in developing the deep roots. Plants with surface roots extensively developed are likely to suffer from insufficient water in dry weather, or even to die. Where serious drouths occur, the development of deep-feeding roots by trees and shrubs is exceedingly important. If a complete fertilizer is used, it is well to put it down in holes 15 to 20 inches deep or deeper. The holes may be punched with a pointed iron bar  $\frac{1}{2}$  to  $\frac{3}{4}$  inches in diameter and 24 inches long, with a bar about 12 inches long welded across the top to serve as a handle. Four holes, about one foot from the plant are sufficient for rose bushes or similar plants. The fertilizer for trees should be distributed in 15 to 24 holes around in a circle a little larger than the spread of the branches. The holes should be completely filled with the fertilizer. For large trees, more holes should be punched and filled with the fertilizer. Manure may be put down in the same way, but the holes must be larger. Sulphate of ammonia, nitrate of soda, or some other nitrogenous fertilizer, or a complete mixed fertilizer such as a 4-12-4, 6-12-6, or 4-8-4, may be used

at the rate of about one-half pound for each inch in diameter of the tree or shrub. Sulphate of ammonia would probably be best on limestone soils or basic soils, such as those of the blackland prairie region, and west or south of it. East of the black lands, especially on the sandy soils, a complete mixed fertilizer would probably be best, though a nitrogenous fertilizer might be sufficient.

### Lawns

An application of either sulphate of ammonia, cottonseed meal, 4-12-4 or 4-8-4 fertilizer at the rate of one to 2 pounds per hundred square feet is suggested. The fertilizer should be applied in the spring evenly, when the grass is dry, and then wet down thoroughly with the hose. If the grass is wet when the fertilizer is applied, the fertilizer will stick to it and probably burn it. The fertilizer can be applied broadcast by hand but it is more readily applied by a special distributor, which runs as easily as a lawnmower. If the soil is sandy or deficient in humus, an application of dried sheep or goat manure or well-rotted barnyard manure is suggested at the rate of 10 pounds to 100 square feet. This manure should be applied in the late fall or early spring.

### SUMMARY

This Bulletin contains a report of the Texas Fertilizer Control for 1936-7 and information regarding the use of fertilizer.

An explanation of terms is given.

Sales of fertilizer in Texas were 84,938 tons in 1936-37. They were 60,016 tons in 1935-6. The tonnage for other years is given. The tons reported do not include cottonseed meal sold as a feed but used as a fertilizer.

The average selling prices and composition of the different kinds of fertilizer are given.

Available phosphoric acid costs slightly less in 20 per cent superphosphate than in 18 per cent. Kainit is an expensive source of potash, muriate of potash being much cheaper.

Nitrogen costs much less in sulphate of ammonia than in nitrate of soda. Plant food costs less per pound in the more concentrated fertilizers than in less concentrated fertilizer, though the former costs more per ton.

The grades of fertilizer to be sold next season are given.

Information is given regarding fertilizers, and suggestions are made for the fertilization of various crops in Texas.

A table is given showing the relation of the guaranteed valuation to the valuation delivered by the various manufacturers.

Analysis of 1130 samples collected by the inspector are given.



Table 7. Analysis of commercial fertilizer, season 1936-37.

Laboratory Number	Manufacturer, place of business and brand	Nitrogen per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>American Cyanamid Company, New York, New York</b>				
	21% 'Aero' Cyanamid Granular Guarantee.....	21.00	.....	.....	\$50.40
51306	Analysis.....	20.86	.....	.....	50.06
51309	Analysis.....	21.02	.....	.....	50.45
51333	Analysis.....	21.00	.....	.....	50.40
51355	Analysis.....	21.26	.....	.....	51.02
52013	Analysis.....	21.33	.....	.....	51.19
	'Ammo-Phos' 11-48-0 Guarantee.....	11.00	48.00	.....	84.00
51356	Analysis.....	10.80	47.65	.....	83.10
51358	Analysis.....	11.13	49.45	.....	86.05
	'Ammo-Phos' 16-20-0 Guarantee.....	16.00	20.00	.....	62.40
51302	Analysis.....	15.54	21.24	.....	62.79
51303	Analysis.....	15.85	22.06	.....	64.51
51305	Analysis.....	15.99	21.16	.....	63.77
51335	Analysis.....	15.96	22.40	.....	65.18
51337	Analysis.....	15.75	22.03	.....	64.24
51342	Analysis.....	15.66	21.85	.....	63.80
51354	Analysis.....	15.66	20.87	.....	62.62
51359	Analysis.....	15.94	21.55	.....	64.12
	Granular 'Aero' 32% Super Phosphate Guarantee.....	.....	32.00	.....	38.40
51334	Analysis.....	.....	32.65	.....	39.18
51353	Analysis.....	.....	32.63	.....	39.16
51357	Analysis.....	.....	31.89	.....	38.27
	<b>Arkansas Fertilizer Company, Little Rock, Arkansas</b>				
	White Diamond Brand Crop Getter Guarantee.....	4.00	12.00	4.00	28.40
51553	Analysis.....	4.08	11.09	4.25	27.78
51558	Analysis.....	4.35	12.00	4.41	29.69
51567	Analysis.....	4.23	11.63	4.27	28.81
52025	Analysis.....	3.87	10.83	4.02	26.71
52403	Analysis.....	4.03	11.39	3.79	27.51
52409	Analysis.....	4.00	10.72	4.02	26.88
	White Diamond Brand Early Boll Guarantee.....	3.00	10.00	3.00	22.50
51552	Analysis.....	2.96	9.65	3.07	22.06
52027	Analysis.....	3.28	10.97	3.17	24.52
	White Diamond Brand Early Potato & Truck Guarantee.....	4.00	8.00	10.00	30.20
51554	Analysis.....	3.96	8.07	10.49	30.72
	White Diamond Brand Economy Guarantee.....	6.00	12.00	6.00	35.40
52404	Analysis.....	5.67	12.11	6.07	34.82
	White Diamond Brand Jack Rabbit Guarantee.....	4.00	8.00	6.00	25.80
51551	Analysis.....	3.92	8.48	6.08	26.28
52016	Analysis.....	3.92	8.41	6.15	26.27
	White Diamond Brand Old Reliable Guarantee.....	4.00	8.00	4.00	23.60
51557	Analysis.....	3.93	8.49	4.18	24.22
52015	Analysis.....	3.93	8.58	3.96	24.09
52026	Analysis.....	3.94	8.36	4.14	24.04
52410	Analysis.....	3.87	7.90	4.07	23.25
	White Diamond Brand Pioneer Guarantee.....	6.00	10.00	7.00	34.10
51568	Analysis.....	5.82	10.00	7.29	33.99
	<b>Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La.</b>				
	Armour's Big Crop Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
51646	Analysis.....	3.12	10.06	3.15	23.03
51762	Analysis.....	3.18	10.14	3.01	23.11
51771	Analysis.....	3.06	9.83	3.35	22.83
51781	Analysis.....	3.23	10.53	3.32	24.04
51816	Analysis.....	3.17	10.23	3.14	23.34
51913	Analysis.....	3.33	10.36	3.38	24.14
	Armour's Big Crop Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51391	Analysis.....	4.02	8.11	4.04	23.82
51533	Analysis.....	4.04	8.50	4.01	24.31
51590	Analysis.....	4.06	8.16	4.22	24.17
51744	Analysis.....	3.92	8.32	4.11	23.91

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La.—Continued.</b>					
<b>Armour's Big Crop Fertilizer 4-8-4—Continued—</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51770	Analysis.....	4.00	8.31	4.26	24.26
51986	Analysis.....	4.06	8.04	4.30	24.12
52029	Analysis.....	4.04	8.38	4.19	24.37
52096	Analysis.....	4.33	8.12	4.46	25.04
52173	Analysis.....	4.23	8.06	4.02	24.24
52201	Analysis.....	3.72	7.68	4.17	22.74
52307	Analysis.....	4.04	7.78	4.15	23.61
	Armour's Big Crop Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51375	Analysis.....	4.04	8.05	5.88	25.83
51544	Analysis.....	4.08	8.00	6.24	26.25
51764	Analysis.....	4.14	8.00	6.07	26.22
51918	Analysis.....	3.74	8.61	5.55	25.42
51967	Analysis.....	4.29	8.37	6.59	27.59
52300	Analysis.....	3.95	8.08	6.18	25.98
52360	Analysis.....	3.84	8.23	6.28	26.01
52405	Analysis.....	4.08	8.22	6.52	26.82
	Armour's Big Crop Fertilizer 4-10-0 Guarantee.....	4.00	10.00	.....	21.60
51448	Analysis.....	4.02	10.04	.....	21.70
52100	Analysis.....	4.36	10.24	.....	22.75
52105	Analysis.....	4.08	9.55	.....	21.25
	Armour's Big Crop Fertilizer 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
51396	Analysis.....	4.09	10.22	6.56	29.30
51976	Analysis.....	4.03	10.65	6.35	29.44
52316	Analysis.....	3.90	10.41	6.45	28.95
	Armour's Big Crop Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.10
51384	Analysis.....	4.10	12.23	4.03	28.95
51465	Analysis.....	4.01	11.87	4.06	28.33
51489	Analysis.....	4.06	12.31	4.04	28.95
51620	Analysis.....	4.04	11.91	4.06	28.46
51725	Analysis.....	4.06	12.17	4.22	28.98
51728	Analysis.....	4.04	12.12	4.08	28.73
51733	Analysis.....	3.95	11.82	4.19	28.27
51743	Analysis.....	4.02	11.89	4.24	28.58
51745	Analysis.....	4.00	12.03	4.00	28.44
51758	Analysis.....	3.91	11.75	4.01	27.89
51761	Analysis.....	4.18	11.58	4.38	28.75
51779	Analysis.....	4.09	11.60	4.16	28.32
51782	Analysis.....	4.09	12.14	4.03	28.82
51801	Analysis.....	4.01	12.03	4.20	28.63
51916	Analysis.....	4.06	11.87	4.05	28.44
51968	Analysis.....	4.07	12.48	4.49	29.69
51984	Analysis.....	3.71	12.29	3.78	27.81
52140	Analysis.....	4.04	11.76	4.32	28.56
52218	Analysis.....	4.09	12.29	4.02	28.99
	Armour's Big Crop Fertilizer 5-15-5 Guarantee.....	5.00	15.00	5.00	35.50
51312	Analysis.....	5.03	15.07	4.90	35.54
51316	Analysis.....	5.03	14.87	4.83	35.22
51763	Analysis.....	5.14	13.98	5.34	34.99
51780	Analysis.....	5.13	15.68	5.34	37.00
51789	Analysis.....	5.21	14.52	5.38	35.84
	Armour's Big Crop Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.60	28.50
51917	Analysis.....	6.06	9.33	3.11	29.16
52070	Analysis.....	5.39	8.03	3.10	25.99
52361	Analysis.....	5.76	9.13	3.04	28.12
	Armour's Big Crop Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51315	Analysis.....	6.07	10.03	7.05	34.37
51412	Analysis.....	5.82	10.33	6.86	33.92
51834	Analysis.....	5.98	10.00	7.11	34.17
51862	Analysis.....	6.06	10.09	7.11	34.47
	Armour's Big Crop Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51294	Analysis.....	6.16	12.21	6.49	36.57

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Armour Fertilizer Works, Houston, Fort Worth, Texas, and New Orleans, La.—Continued.</b>					
<b>Armour's Big Crop Fertilizer 6-12-6—Continued—</b>					
	Guarantee.....	6.00	12.00	6.00	35.40
51299	Analysis.....	6.23	12.39	6.28	36.73
51310	Analysis.....	5.98	11.81	5.77	34.87
51332	Analysis.....	6.04	12.10	6.19	35.83
51392	Analysis.....	6.00	12.13	6.68	36.31
51682	Analysis.....	6.02	11.50	5.86	34.70
51788	Analysis.....	6.04	12.21	5.88	35.62
51861	Analysis.....	6.12	12.07	6.11	35.89
51946	Analysis.....	5.92	12.24	6.03	35.53
52085	Analysis.....	6.24	12.34	6.28	36.70
52114	Analysis.....	6.22	12.14	6.06	36.17
52277	Analysis.....	5.94	11.64	6.89	35.81
52345	Analysis.....	6.13	12.12	6.78	36.71
<b>Armour's Big Crop Fertilizer 16-20-0</b>					
	Guarantee.....	16.00	20.00	.....	62.40
51304	Analysis.....	15.23	21.87	.....	62.79
<b>Armour's Big Crop Fertilizer Old Black Joe</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51561	Analysis.....	4.15	8.12	4.35	24.49
51645	Analysis.....	4.11	8.05	4.08	24.01
51677	Analysis.....	4.14	7.89	4.22	24.05
51703	Analysis.....	4.10	7.88	4.30	24.03
51977	Analysis.....	4.04	7.75	4.21	23.63
51985	Analysis.....	4.02	7.77	4.48	23.90
52050	Analysis.....	4.16	7.62	4.28	23.83
52014	Analysis.....	4.24	7.66	4.26	24.06
52234	Analysis.....	4.26	8.29	4.19	24.78
52317	Analysis.....	4.04	8.16	4.02	23.91
52344	Analysis.....	4.05	7.61	4.49	23.79
<b>Armour's Big Crop 20% Kainit</b>					
	Guarantee.....	.....	.....	20.00	22.00
51804	Analysis.....	.....	.....	20.02	22.02
<b>Armour's Big Crop Raw Bone Meal</b>					
	Guarantee.....	3.70	*22.00	.....	26.48
51715	Analysis.....	3.95	*22.52	.....	27.50
<b>Armour's Big Crop Sulphate of Ammonia</b>					
	Guarantee.....	20.00	.....	.....	48.00
51296	Analysis.....	21.22	.....	.....	50.93
51341	Analysis.....	20.82	.....	.....	49.97
51345	Analysis.....	20.72	.....	.....	49.73
51367	Analysis.....	20.12	.....	.....	48.29
51716	Analysis.....	20.34	.....	.....	50.02
51987	Analysis.....	20.08	.....	.....	48.19
<b>Armour's Big Crop 18% Superphosphate</b>					
	Guarantee.....	.....	18.00	.....	21.60
51746	Analysis.....	.....	17.90	.....	21.48
51883	Analysis.....	.....	17.49	.....	20.99
<b>Armour's Big Crop Superphosphate 20%</b>					
	Guarantee.....	.....	20.00	.....	24.00
51619	Analysis.....	.....	19.34	.....	23.21
51734	Analysis.....	.....	19.31	.....	23.17
<b>Armour's Plow Brand Fertilizer 6-10-7</b>					
	Guarantee.....	6.00	10.00	7.00	34.10
51935	Analysis.....	5.98	9.30	7.26	33.50
<b>Armour's Plow Brand Fertilizer 6-12-6</b>					
	Guarantee.....	6.00	12.00	6.00	35.40
51936	Analysis.....	5.75	12.15	6.01	34.99
<b>Armour's Plow Brand Fertilizer Old Black Joe</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51376	Analysis.....	4.07	7.68	4.10	23.50
51495	Analysis.....	4.11	7.50	4.49	23.80
51510	Analysis.....	3.93	7.31	4.52	23.17
51570	Analysis.....	4.15	7.83	4.31	24.10
51933	Analysis.....	4.01	8.11	4.05	23.81
<b>The Barrett Company, New York, New York</b>					
<b>Arcadian, the American Nitrate of Soda</b>					
	Guarantee.....	16.00	.....	.....	38.49
51891	Analysis.....	16.40	.....	.....	39.36

\*Total phosphoric acid

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Bryan Cotton Oil &amp; Fertilizer Company, Bryan, Texas</b>					
	Star Brand Cotton & Corn Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
51516	Analysis.....	3.57	9.74	4.92	25.67
51772	Analysis.....	3.12	10.34	4.70	25.07
51873	Analysis.....	3.02	10.21	5.05	25.06
	Star Brand Special Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51517	Analysis.....	4.30	11.77	5.63	30.63
51775	Analysis.....	4.01	11.87	5.22	29.60
51869	Analysis.....	3.53	11.78	5.86	29.06
	Star Brand 20% Superphosphate Guarantee.....	.....	20.00	.....	24.00
51520	Analysis.....	.....	20.66	.....	24.79
51774	Analysis.....	.....	20.61	.....	24.73
51872	Analysis.....	.....	20.02	.....	24.02
	Star Brand Tomato Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
51519	Analysis.....	6.04	12.04	7.27	36.95
51773	Analysis.....	6.05	12.67	6.66	37.07
51871	Analysis.....	6.14	11.79	8.46	38.20
	Star Brand Truck Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51518	Analysis.....	4.58	8.53	5.87	27.69
51870	Analysis.....	4.25	8.70	5.36	26.54
<b>Campbell Fertilizer Company, Houston, Texas</b>					
	3-10-3 All-Weather Organic Base Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
51966	Analysis.....	3.03	11.20	4.75	25.94
51970	Analysis.....	3.01	11.25	3.96	25.08
51980	Analysis.....	2.90	10.90	4.69	25.20
	4-8-4 All-Weather Organic Base Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51965	Analysis.....	3.73	10.19	7.56	29.50
	4-8-6 All-Weather Organic Base Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51365	Analysis.....	4.08	7.78	9.39	29.46
51964	Analysis.....	3.92	8.84	9.28	30.23
51969	Analysis.....	4.05	8.20	9.27	29.76
51981	Analysis.....	4.46	8.51	7.42	29.07
51989	Analysis.....	3.83	8.92	10.08	30.98
	4-10-0 All-Weather Organic Base Fertilizer Guarantee.....	4.00	10.00	.....	21.60
52119	Analysis.....	4.04	11.69	.....	23.73
	4-12-4 All-Weather Organic Base Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51338	Analysis.....	3.26	12.98	6.09	30.10
51377	Analysis.....	4.10	11.94	4.76	29.41
51988	Analysis.....	3.95	13.58	6.73	33.18
	5-15-5 All-Weather Organic Base Fertilizer Guarantee.....	5.00	15.00	5.00	35.50
51331	Analysis.....	4.61	14.97	7.19	36.93
51339	Analysis.....	4.79	14.35	5.30	34.55
	6-12-6 All-Weather Organic Base Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
51366	Analysis.....	5.88	11.11	6.91	35.04
	3-10-0 All-Weather Rice Special Fertilizer Guarantee.....	3.00	10.00	.....	19.20
52101	Analysis.....	3.32	11.35	.....	21.59
52121	Analysis.....	2.58	12.70	.....	21.43
<b>Chilean Nitrate Sales Corporation, 120 Broadway, New York, New York</b>					
	Champion Brand Chilean 16% Nitrate of Soda Guarantee.....	16.00	.....	.....	38.40
51291	Analysis.....	16.20	.....	.....	38.88
51292	Analysis.....	16.26	.....	.....	39.02
51295	Analysis.....	16.74	.....	.....	40.18
51327	Analysis.....	16.24	.....	.....	38.98
51349	Analysis.....	16.18	.....	.....	38.83
<b>Davison-Pick Fertilizers, Inc., New Orleans, La.</b>					
	Bull Dog Special No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
51383	Analysis.....	3.66	11.72	4.11	27.36
	Bull Dog Special No. 6126 Guarantee.....	6.00	12.00	6.00	35.40
52112	Analysis.....	6.02	11.85	6.43	35.74

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Davison-Pick Fertilizers, Inc., New Orleans, La.—Continued.</b>					
52099	Bull Dog Superphosphate No. 18 Guarantee.....	.....	18.00	.....	21.60
52111	Analysis.....	.....	18.12	.....	21.74
	Analysis.....	.....	19.14	.....	22.97
<b>East Texas Cotton Oil Company, Tyler, Texas</b>					
	Ecto 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51473	Analysis.....	4.00	7.93	6.25	26.00
51681	Analysis.....	3.72	8.08	6.00	25.23
51704	Analysis.....	3.88	8.10	6.05	25.69
52187	Analysis.....	4.03	8.14	6.28	26.35
52372	Analysis.....	3.92	8.05	5.79	25.44
52377	Analysis.....	3.81	7.97	6.41	25.75
	Ecto 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51708	Analysis.....	4.02	11.52	5.09	29.07
51884	Analysis.....	4.06	12.19	4.33	29.13
51892	Analysis.....	3.78	11.02	8.92	32.10
52356	Analysis.....	4.04	12.36	4.49	29.47
52367	Analysis.....	4.25	12.28	4.11	29.46
52371	Analysis.....	4.27	12.09	4.25	29.44
52378	Analysis.....	4.26	12.47	4.36	29.98
52380	Analysis.....	4.24	12.57	4.33	30.02
	Ecto 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
51686	Analysis.....	5.89	10.75	6.56	34.26
52184	Analysis.....	5.89	10.39	7.10	34.42
52376	Analysis.....	6.04	9.80	7.79	34.83
	Ecto Meal Formula Guarantee.....	3.00	10.00	3.00	22.50
51709	Analysis.....	3.00	9.84	3.44	22.79
	Ecto Potato Producer Guarantee.....	4.00	8.00	4.00	23.60
51687	Analysis.....	4.00	7.96	4.10	23.66
52185	Analysis.....	4.04	7.95	4.42	24.10
	Ecto Sulphate of Ammonia Guarantee.....	20.00	.....	.....	48.00
51705	Analysis.....	20.04	.....	.....	48.10
51893	Analysis.....	20.51	.....	.....	49.22
	Ecto Verifine Guarantee.....	6.00	12.00	6.00	35.40
52189	Analysis.....	6.17	12.48	5.74	36.10
	Goldenrod 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51480	Analysis.....	4.02	8.31	6.17	26.41
51713	Analysis.....	4.23	8.16	6.22	26.78
52381	Analysis.....	3.93	8.93	5.68	26.40
	Goldenrod 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51472	Analysis.....	4.27	12.47	3.68	29.26
52186	Analysis.....	4.04	11.63	4.02	28.08
	Goldenrod 6-9-3 Fertilizer Guarantee.....	6.00	9.00	3.00	28.50
51471	Analysis.....	6.05	9.07	3.59	29.35
	Goldenrod 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51690	Analysis.....	5.52	10.12	8.54	34.78
51881	Analysis.....	5.95	10.56	7.16	34.83
51894	Analysis.....	6.00	10.09	7.52	34.78
52188	Analysis.....	6.06	10.59	7.00	34.95
	Goldenrod Meal Formula Guarantee.....	3.00	10.00	3.00	22.50
51712	Analysis.....	3.08	10.05	3.46	23.26
	Goldenrod Potato Producer Guarantee.....	4.00	8.00	4.00	23.60
51691	Analysis.....	3.89	8.46	4.52	24.46
	Goldenrod Sulphate of Ammonia Guarantee.....	20.00	.....	.....	48.00
52373	Analysis.....	20.63	.....	.....	49.51
<b>Farmers Cotton Oil Company, Winnsboro, Texas</b>					
	Farmers Fertilizer No. 3103 Guarantee.....	3.00	10.00	3.00	22.50
51962	Analysis.....	3.02	10.38	3.04	23.05
	Farmers Fertilizer No. 484 Guarantee.....	4.00	8.00	4.00	23.60
51694	Analysis.....	3.83	8.69	4.36	23.98
52392	Analysis.....	3.95	8.70	3.73	24.02
	Farmers Fertilizer No. 486 Guarantee.....	4.00	8.00	6.00	25.80
51697	Analysis.....	3.96	8.09	5.89	25.69



Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Farmers Cotton Oil Company, Winnsboro, Texas—Continued.</b>					
52391	Farmers Fertilizer No. 486—Continued—Guarantee.....	4.00	8.00	6.00	25.80
	Analysis.....	3.96	8.69	6.27	26.83
51695	Farmers Fertilizer No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	3.86	11.76	3.83	27.58
52390	Farmers Fertilizer No. 6107 Guarantee.....	3.77	12.43	4.38	28.79
	Analysis.....	6.00	10.00	7.00	34.10
51696	Analysis.....	5.71	10.03	6.93	33.36
51963	Analysis.....	5.52	10.08	7.02	33.07
<b>Federal Chemical Company, Inc., Shreveport, La.</b>					
51487	Daybreak Dixie Special Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	4.04	8.42	4.25	24.48
51897	Analysis.....	4.09	7.38	4.04	23.12
51904	Analysis.....	4.08	7.80	4.02	23.57
51938	Analysis.....	4.03	7.36	4.12	23.03
52267	Analysis.....	3.75	8.63	4.01	23.77
52352	Analysis.....	3.89	7.71	4.36	23.39
	Daybreak Perfection Formula Guarantee.....	6.00	9.00	3.00	28.30
51896	Analysis.....	6.22	8.62	3.48	29.10
	Daybreak Southern Mixture Guarantee.....	4.00	10.00	.....	21.60
51477	Analysis.....	3.91	9.17	.....	20.38
	Daybreak 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
51672	Analysis.....	.....	16.96	.....	20.35
	Daybreak Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
51505	Analysis.....	4.14	7.46	6.10	25.69
51539	Analysis.....	4.12	8.10	5.86	26.06
51671	Analysis.....	4.06	7.42	6.03	25.27
51937	Analysis.....	3.86	7.43	6.05	24.84
51955	Analysis.....	3.95	7.65	5.84	25.08
52370	Analysis.....	4.04	7.73	5.55	25.09
52400	Analysis.....	3.77	7.62	5.69	24.45
	Fox 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
51840	Analysis.....	5.95	7.69	4.63	28.60
	Fox Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
51542	Analysis.....	3.89	7.75	5.56	24.77
	30% Manure Salts Guarantee.....	.....	.....	30.00	33.00
51975	Analysis.....	.....	.....	30.12	33.13
	Meridian 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
51971	Analysis.....	4.19	7.85	9.72	30.17
	Meridian 6-8-4 Fertilizer Guarantee.....	6.00	8.00	4.00	28.40
52261	Analysis.....	5.94	8.16	4.31	28.79
	Meridian 10-0-10 Fertilizer Guarantee.....	10.00	.....	10.00	35.00
52357	Analysis.....	10.04	.....	8.64	33.60
	Meridian Home Mixture Guarantee.....	3.00	10.00	3.00	22.50
51417	Analysis.....	3.02	10.14	2.99	22.71
	Analysis.....	3.23	9.75	3.70	23.52
51578	Analysis.....	2.97	9.41	3.06	21.79
51821	Analysis.....	3.12	9.42	3.44	22.57
51842	Analysis.....	3.08	9.32	3.21	22.10
52020	Analysis.....	3.29	9.32	3.12	22.51
52089	Analysis.....	3.19	9.69	3.27	22.89
52127	Analysis.....	3.15	9.47	3.31	22.56
52136	Analysis.....	3.03	9.12	3.21	21.74
52308	Analysis.....	3.12	9.02	3.03	21.64
52320	Meridian Magnolia State Formula Guarantee.....	4.00	8.00	4.00	23.60
	Analysis.....	3.96	8.01	4.06	23.58
51490	Analysis.....	3.98	8.06	4.22	23.86
51823	Analysis.....	3.89	7.77	4.19	23.27
51845	Analysis.....	3.95	8.42	4.02	24.00
51919	Analysis.....	4.06	8.45	4.14	24.45
51932	Analysis.....	4.13	7.84	4.01	23.73
52005	Analysis.....	4.02	7.59	3.84	22.98
52019	Analysis.....	4.06	8.09	4.06	23.92
52066	Analysis.....	4.14	7.62	4.20	23.70
52074	Analysis.....	.....	.....	.....	.....

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Federal Chemical Company, Inc., Shreveport, La.—Continued.</b>					
<b>Meridian Magnolia State Formula—Continued—</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
52088	Analysis.....	4.06	8.01	4.02	23.77
52262	Analysis.....	4.08	7.67	4.34	23.76
52275	Analysis.....	3.97	8.14	4.16	23.88
52286	Analysis.....	3.86	7.66	3.88	22.72
52303	Analysis.....	4.06	8.08	4.04	23.88
52309	Analysis.....	4.02	8.35	4.11	24.19
52407	Analysis.....	4.02	8.60	3.81	24.16
	Meridian Majestic Mixture Guarantee.....	5.00	15.00	5.00	35.50
51807	Analysis.....	4.93	14.22	5.38	34.81
	Meridian Perfect Guano Guarantee.....	6.00	12.00	6.00	35.40
51858	Analysis.....	6.10	11.68	6.57	35.89
52198	Analysis.....	6.34	11.29	6.38	35.79
	Meridian Perfection Compound Guarantee.....	4.00	12.00	4.00	28.40
51418	Analysis.....	3.76	12.41	3.55	27.82
51661	Analysis.....	3.76	11.86	3.80	27.43
51765	Analysis.....	3.96	11.11	4.07	27.31
51822	Analysis.....	3.97	11.37	4.06	27.64
51841	Analysis.....	4.00	11.05	4.44	27.74
52107	Analysis.....	4.04	11.43	4.34	28.19
52115	Analysis.....	4.05	11.72	4.29	28.50
52137	Analysis.....	3.92	11.00	4.33	27.37
52170	Analysis.....	4.17	11.04	4.14	27.81
52263	Analysis.....	3.84	11.04	4.43	27.34
52388	Analysis.....	3.97	11.13	4.34	27.66
	Meridian Perfection Formula Guarantee.....	6.00	9.00	3.00	28.50
51885	Analysis.....	6.02	8.57	3.71	28.81
52079	Analysis.....	6.14	8.57	3.49	28.86
52138	Analysis.....	6.09	8.86	3.53	29.13
	Meridian Special Mixture Guarantee.....	6.00	10.00	7.00	34.10
51674	Analysis.....	5.68	10.18	6.53	33.03
51857	Analysis.....	5.79	10.35	6.07	32.78
52215	Analysis.....	5.90	10.57	6.83	34.35
	Meridian Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
51491	Analysis.....	4.19	7.78	6.05	26.06
51509	Analysis.....	3.94	7.56	6.01	25.14
51540	Analysis.....	4.00	7.68	6.06	25.49
51576	Analysis.....	3.79	7.74	6.01	25.00
51597	Analysis.....	3.77	8.10	5.75	25.10
51665	Analysis.....	3.86	7.45	6.34	25.17
51673	Analysis.....	4.24	7.81	6.13	26.29
51683	Analysis.....	3.87	7.36	5.65	24.34
51959	Analysis.....	3.97	7.03	6.01	24.58
51974	Analysis.....	3.89	7.27	5.92	24.57
52006	Analysis.....	3.92	7.06	6.29	24.80
52030	Analysis.....	3.95	7.41	7.33	26.43
52169	Analysis.....	3.84	7.67	6.02	25.04
52199	Analysis.....	4.13	7.39	6.05	25.44
52274	Analysis.....	4.17	7.68	6.06	25.90
<b>Fidelity Chemical Corporation, Houston, Texas</b>					
	Fidelity 3-10-0 Fertilizer Guarantee.....	3.00	10.00	.....	19.20
51311	Analysis.....	3.13	9.63	.....	19.07
	Fidelity 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
51767	Analysis.....	3.33	9.73	3.20	23.19
51795	Analysis.....	3.35	9.82	3.22	23.36
51997	Analysis.....	3.50	10.05	3.31	24.10
52336	Analysis.....	2.88	10.06	3.96	23.34
	Fidelity 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51373	Analysis.....	4.14	8.34	3.94	24.28
51623	Analysis.....	4.08	8.22	3.69	23.71
51998	Analysis.....	3.89	8.96	4.45	24.99
52206	Analysis.....	3.88	8.08	4.61	24.08

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Fidelity Chemical Corporation, Houston, Texas—Continued.</b>					
	<b>Fidelity 4-8-4 Fertilizer—Continued—Guarantee.....</b>	4.00	8.00	4.00	23.60
52244	Analysis.....	3.73	8.14	4.24	23.38
52326	Analysis.....	3.80	8.15	4.46	23.81
52337	Analysis.....	4.03	8.23	4.61	24.62
	<b>Fidelity 4-8-6 Fertilizer Guarantee.....</b>	4.00	8.00	6.00	25.80
51360	Analysis.....	4.33	8.68	5.66	27.04
51369	Analysis.....	4.27	7.60	6.25	26.25
51648	Analysis.....	4.00	8.61	5.47	25.95
51776	Analysis.....	4.14	8.41	5.82	26.43
52207	Analysis.....	3.50	8.76	7.08	26.70
	<b>Fidelity 4-10-0 Fertilizer Guarantee.....</b>	4.00	10.00	.....	21.60
51628	Analysis.....	4.08	10.22	.....	22.05
51995	Analysis.....	4.59	10.78	.....	23.96
	<b>Fidelity 4-12-4 Fertilizer Guarantee.....</b>	4.00	12.00	4.00	28.40
51308	Analysis.....	4.34	10.26	4.18	27.33
51322	Analysis.....	4.24	10.70	4.21	27.65
51372	Analysis.....	4.40	11.43	4.09	28.78
51414	Analysis.....	4.11	11.47	4.03	28.05
51461	Analysis.....	4.19	11.72	3.91	28.42
51629	Analysis.....	4.06	11.58	4.01	28.05
51647	Analysis.....	4.13	12.05	4.26	29.06
51657	Analysis.....	4.37	12.11	2.95	28.27
51729	Analysis.....	4.23	12.32	4.18	29.53
51753	Analysis.....	4.22	11.32	4.25	28.39
51757	Analysis.....	4.35	12.51	4.37	30.26
51768	Analysis.....	4.10	12.01	4.41	29.10
51784	Analysis.....	4.22	12.02	4.45	29.45
51794	Analysis.....	4.04	12.34	4.60	29.57
51994	Analysis.....	4.33	11.83	4.48	29.52
51999	Analysis.....	4.25	12.54	4.41	30.10
52223	Analysis.....	4.26	12.39	4.51	30.05
52243	Analysis.....	4.14	11.79	4.48	29.02
52250	Analysis.....	4.25	11.89	5.10	30.08
	<b>Fidelity 5-15-5 Fertilizer Guarantee.....</b>	5.00	15.00	5.00	35.50
51317	Analysis.....	5.27	14.63	5.60	36.37
51328	Analysis.....	5.06	14.67	5.14	35.39
51351	Analysis.....	5.11	14.07	4.61	34.21
52106	Analysis.....	5.27	15.22	5.06	36.48
	<b>Fidelity 6-10-7 Fertilizer Guarantee.....</b>	6.00	10.00	7.00	34.10
51326	Analysis.....	6.19	10.00	7.73	35.36
51371	Analysis.....	6.11	10.07	7.46	34.95
51436	Analysis.....	6.44	9.54	8.22	35.95
51656	Analysis.....	6.26	10.35	6.40	34.48
51996	Analysis.....	6.24	10.49	6.54	34.76
52208	Analysis.....	6.24	10.05	7.14	34.89
52325	Analysis.....	6.04	10.27	7.17	34.71
	<b>Fidelity 6-12-6 Fertilizer Guarantee.....</b>	6.00	12.00	6.00	35.40
51298	Analysis.....	6.29	11.59	6.08	35.70
51307	Analysis.....	5.83	12.16	5.50	34.63
51313	Analysis.....	6.19	12.10	5.62	35.56
51318	Analysis.....	6.00	11.69	6.09	35.13
51323	Analysis.....	6.17	11.78	5.99	35.44
51370	Analysis.....	6.02	11.52	5.67	34.51
51442	Analysis.....	6.18	11.76	5.73	35.24
51791	Analysis.....	6.33	12.04	5.69	35.90
	<b>Fidelity 10-20-10 Fertilizer Guarantee.....</b>	10.00	20.00	10.00	59.00
51374	Analysis.....	9.88	18.83	9.54	56.80
	<b>Fidelity 11-48-0 Fertilizer Guarantee.....</b>	11.00	48.00	.....	84.00
51350	Analysis.....	9.81	48.00	.....	81.14
	<b>Fidelity Sulphate of Ammonia Guarantee.....</b>	20.00	.....	.....	48.00
51340	Analysis.....	20.68	.....	.....	49.63
51343	Analysis.....	20.66	.....	.....	49.58
51361	Analysis.....	20.08	.....	.....	48.19

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	valuation found, per ton
	<b>Fidelity Chemical Corporation, Houston, Texas—Continued.</b>				
	Fidelity 18% Superphosphate Guarantee.....		18.00		21.60
51635	Analysis.....		17.47		20.96
51783	Analysis.....		18.03		21.64
	Fidelity 20% Superphosphate Guarantee.....		20.00		24.00
51324	Analysis.....		19.82		23.78
51352	Analysis.....		19.54		23.45
51362	Analysis.....		19.99		23.88
51792	Analysis.....		21.12		25.34
51796	Analysis.....		20.58		24.70
	Fidelity 45% Superphosphate Guarantee.....		45.00		54.00
51348	Analysis.....		44.78		53.74
	<b>Ford Motor Company, Dearborn, Michigan</b>				
	Ammonium Sulphate Guarantee.....	20.80			49.92
51714	Analysis.....	20.87			50.09
51982	Analysis.....	20.84			50.02
	<b>Gilmer Cotton Oil &amp; Fertilizer Company, Gilmer, Texas</b>				
	G. C. O. & F. Co's 4-8-4 Cotton Grower Guarantee.....	4.00	8.00	4.00	23.60
51501	Analysis.....	3.84	7.90	4.19	23.31
51944	Analysis.....	4.14	7.60	3.61	23.03
52288	Analysis.....	3.90	7.71	3.35	22.30
52292	Analysis.....	4.73	8.17	4.02	25.57
	G. C. O. & F. Co's 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51949	Analysis.....	4.04	12.03	4.48	29.07
52293	Analysis.....	3.93	12.06	4.03	28.33
	G. C. O. & F. Co's 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51502	Analysis.....	6.29	9.76	7.02	34.53
51947	Analysis.....	6.15	10.28	6.62	34.38
	G. C. O. & F. Co's Superior Meal Compound Guarantee.....	3.00	10.00	3.00	22.50
51948	Analysis.....	2.83	10.02	3.25	22.39
52289	Analysis.....	2.85	9.53	3.13	21.72
	G. C. O. & F. Co's 4-8-6 Tomato Special Guarantee.....	4.00	8.00	6.00	25.80
51499	Analysis.....	3.79	9.00	10.17	31.09
52291	Analysis.....	4.06	8.06	7.78	27.97
52294	Analysis.....	3.69	7.25	8.12	26.49
	<b>Houston City of Engineering Department, Houston, Texas</b>				
	Hu-Actinite 5.5-2.0-0 Guarantee.....	5.50	2.00		15.60
51990	Analysis.....	4.81	3.20		15.38
	<b>International Agricultural Corporation, Texarkana, Arkansas-Texas</b>				
	International 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
52028	Analysis.....	3.07	10.18	3.23	23.14
52064	Analysis.....	3.08	9.95	3.24	22.89
	International 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51684	Analysis.....	3.86	7.78	3.95	22.95
51928	Analysis.....	3.87	7.85	4.38	23.53
52042	Analysis.....	4.04	8.48	4.21	24.51
52063	Analysis.....	3.90	7.77	4.04	23.12
52154	Analysis.....	4.04	7.78	4.22	23.68
52220	Analysis.....	4.08	8.13	4.21	24.18
52273	Analysis.....	4.09	8.23	4.12	24.23
52282	Analysis.....	4.06	8.43	4.13	24.40
52312	Analysis.....	4.05	8.16	4.23	24.16
52347	Analysis.....	4.01	8.32	4.32	24.35
52350	Analysis.....	4.02	8.53	4.32	24.64
	International 4-8-6 Truck Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51531	Analysis.....	3.93	8.06	5.92	25.61
51538	Analysis.....	4.06	8.13	6.06	26.17
51543	Analysis.....	4.02	8.10	5.95	25.92

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>International Agricultural Corporation, Texarkana, Arkansas-Texas—Continued.</b>					
<b>International 4-8-6 Truck Fertilizer—Continued—</b>					
	Guarantee.....	4.00	8.00	6.00	25.80
51549	Analysis.....	4.02	8.09	6.18	26.16
51588	Analysis.....	3.85	8.14	6.47	26.13
51851	Analysis.....	4.01	8.07	6.05	25.96
52155	Analysis.....	4.15	7.77	6.27	26.18
52221	Analysis.....	4.13	8.11	6.21	26.47
<b>International 4-10-0 Ammoniated Compound Guarantee</b>					
	Guarantee.....	4.00	10.00	.....	21.60
51437	Analysis.....	4.04	9.73	.....	21.38
<b>International 4-10-7 Tomato Fertilizer Guarantee</b>					
	Guarantee.....	4.00	10.00	7.00	23.30
52212	Analysis.....	4.01	10.70	7.07	30.24
<b>International 4-12-4 Fertilizer Guarantee</b>					
	Guarantee.....	4.00	12.00	4.00	24.40
51586	Analysis.....	4.02	11.58	4.13	28.09
51909	Analysis.....	3.83	12.01	4.26	23.29
52031	Analysis.....	3.89	12.10	4.05	23.32
52353	Analysis.....	3.93	12.28	4.13	28.71
52389	Analysis.....	4.06	11.85	4.21	28.59
<b>International 6-8-4 Fertilizer Guarantee</b>					
	Guarantee.....	6.00	8.00	4.00	28.40
52058	Analysis.....	5.92	7.81	4.26	28.27
<b>International 6-10-7 Fertilizer Guarantee</b>					
	Guarantee.....	6.00	10.00	7.00	34.10
51428	Analysis.....	5.66	10.02	7.09	33.40
51550	Analysis.....	5.78	10.03	6.93	33.53
52211	Analysis.....	6.16	10.10	7.31	34.94
<b>International 6-12-6 Fertilizer Guarantee</b>					
	Guarantee.....	6.00	12.00	6.00	35.40
51438	Analysis.....	6.06	11.82	6.41	35.77
51880	Analysis.....	5.88	11.63	6.45	35.17
<b>International Rainbow Cotton Fertilizer Guarantee</b>					
	Guarantee.....	4.00	12.00	4.00	28.40
51530	Analysis.....	3.89	11.83	3.83	27.75
52012	Analysis.....	4.03	11.60	4.03	28.02
52230	Analysis.....	4.08	12.02	4.04	28.65
<b>International 18% Superphosphate Guarantee</b>					
	Guarantee.....	.....	18.00	.....	21.60
51486	Analysis.....	.....	18.67	.....	22.40
<b>Sulphate of Ammonia Guarantee</b>					
	Guarantee.....	20.00	.....	.....	48.00
52222	Analysis.....	20.44	.....	.....	49.06
<b>Jacksonville Fertilizer Company, Jacksonville, Texas</b>					
<b>Red Tomato 4-8-4 Guarantee</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51435	Analysis.....	4.32	8.70	4.68	25.96
51866	Analysis.....	4.29	8.55	4.15	25.13
51878	Analysis.....	4.04	8.94	4.23	25.08
52196	Analysis.....	2.74	10.26	4.07	23.37
<b>Red Tomato 4-8-6 Guarantee</b>					
	Guarantee.....	4.00	8.00	6.00	25.80
52194	Analysis.....	4.75	8.76	5.87	28.37
<b>Red Tomato 6-9-3 Guarantee</b>					
	Guarantee.....	6.00	9.00	3.00	28.50
51865	Analysis.....	6.69	7.70	4.64	30.40
<b>Red Tomato 6-10-7 Guarantee</b>					
	Guarantee.....	6.00	10.00	7.00	34.10
51877	Analysis.....	6.05	10.05	6.40	33.62
52195	Analysis.....	5.84	11.67	6.39	35.05
<b>Red Tomato 6-12-6 Guarantee</b>					
	Guarantee.....	6.00	12.00	6.00	35.40
52225	Analysis.....	5.81	12.71	6.02	35.81
<b>Kelley-Weber &amp; Company, Inc., Lake Charles, La.</b>					
<b>Weber-King 18% Superphosphate Guarantee</b>					
	Guarantee.....	.....	18.00	.....	21.60
52120	Analysis.....	.....	18.87	.....	22.64
52124	Analysis.....	.....	18.15	.....	21.78
52126	Analysis.....	.....	17.75	.....	21.30
<b>Weber-King Brand Fertilizer Special No. 484 Guarantee</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51382	Analysis.....	4.04	7.48	4.36	23.48
<b>Weber-King Brand Fertilizer Special No. 4100 Guarantee</b>					
	Guarantee.....	4.00	10.00	.....	21.60
52102	Analysis.....	4.55	10.39	.....	23.39
<b>Weber-King Brand Fertilizer Special No. 4124 Guarantee</b>					
	Guarantee.....	4.00	12.00	4.00	28.40
51381	Analysis.....	4.25	11.01	4.59	28.46
51389	Analysis.....	4.32	10.14	4.86	27.89
52125	Analysis.....	4.17	11.83	4.57	29.24



Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Kelley-Weber &amp; Company, Inc., Lake Charles, La.</b>				
	—Continued.				
51888	Weber-King Brand Fertilizer Special No. 6126 Guarantee	6.00	12.00	6.00	35.40
	Analysis.....	6.02	9.00	6.01	31.86
	<b>La-Tex Fertilizer Company, Shreveport, La.</b>				
	La-Tex 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52364	Analysis.....	4.18	7.49	5.34	24.89
	La-Tex 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
51824	Analysis.....	6.12	10.02	8.27	35.81
	<b>Longview Cotton Oil Company, Longview, Texas</b>				
	Longview Cotton and Corn Special Guarantee.....	4.00	12.00	4.00	28.40
51915	Analysis.....	4.15	13.22	4.47	30.74
51931	Analysis.....	4.18	12.32	4.25	29.49
	Longview Gregg County Special Guarantee.....	4.00	8.00	4.00	23.60
51496	Analysis.....	4.07	8.32	4.03	24.18
51914	Analysis.....	4.03	8.41	4.06	24.23
52305	Analysis.....	4.03	8.60	3.91	24.29
52313	Analysis.....	4.06	8.49	3.94	24.26
	Longview Prize Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
51497	Analysis.....	6.00	12.00	5.59	34.95
51934	Analysis.....	5.81	11.32	5.38	33.41
52285	Analysis.....	6.36	11.25	5.44	34.74
	Longview Truck Special Guarantee.....	4.00	8.00	6.00	25.80
51930	Analysis.....	3.87	8.73	6.38	26.79
52283	Analysis.....	4.29	8.74	5.60	26.95
	Longview Vegetable Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52284	Analysis.....	6.43	9.19	6.64	33.76
	<b>Marshall Cotton Oil Company, Marshall, Texas</b>				
	Marshall Eclipse 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52045	Analysis.....	3.09	9.63	3.18	22.48
	Marshall Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
51592	Analysis.....	5.73	7.58	4.40	27.69
52280	Analysis.....	6.13	8.59	3.76	29.16
	Marshall Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51494	Analysis.....	5.91	9.43	6.44	32.58
51926	Analysis.....	5.98	10.70	7.06	34.96
	Marshall Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51593	Analysis.....	6.06	11.08	6.08	34.53
52281	Analysis.....	6.02	12.14	5.48	35.05
	Marshall Garden Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51493	Analysis.....	4.17	8.52	5.42	26.19
	Marshall Nut Producer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52081	Analysis.....	6.19	9.23	3.14	29.39
	Marshall Wonder Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51927	Analysis.....	4.23	11.48	4.32	28.68
52062	Analysis.....	4.14	11.67	4.37	28.75
	20 Per Cent Supreme Superphosphate Guarantee.....	20.00	.....	.....	24.00
51925	Analysis.....	20.31	.....	.....	24.37
	Truckers Delight 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
52044	Analysis.....	3.99	8.03	4.10	23.73
52061	Analysis.....	4.08	8.01	4.04	23.84
52080	Analysis.....	4.29	7.57	4.45	24.28
52279	Analysis.....	4.19	8.55	3.75	24.45
52306	Analysis.....	4.13	8.03	3.95	23.90
	<b>The Merchants Fertilizer Company, Charleston, South Carolina</b>				
	Merco Special Mixture 4-12-4 Guarantee.....	4.00	12.00	4.00	28.10
51618	Analysis.....	4.00	11.33	4.00	27.60

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Mixson Brothers, Kirbyville, Texas</b>				
51399	Jasco Brand Special No. 484 Guarantee.....	4.00	8.00	4.00	23.60
51818	Analysis.....	4.35	7.36	4.31	24.01
52093	Analysis.....	4.32	7.86	4.41	24.65
	Analysis.....	4.42	8.28	4.58	25.59
51400	Jasco Brand Special No. 4107 Guarantee.....	4.00	10.00	7.00	29.30
52092	Analysis.....	5.17	8.73	7.09	30.69
	Analysis.....	4.29	10.59	8.24	32.07
51395	Jasco Brand Special No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
51817	Analysis.....	4.15	11.52	4.28	28.49
	Analysis.....	4.34	11.50	4.18	28.82
52094	Jasco Brand Special No. 684 Guarantee.....	6.00	8.00	4.00	28.40
	Analysis.....	6.42	8.44	5.07	31.12
51398	Jasco Brand Special No. 6107 Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	5.86	10.02	7.02	33.80
51397	Jasco Brand Special No. 6126 Guarantee.....	6.00	12.00	6.00	35.40
51819	Analysis.....	5.79	11.04	7.83	35.76
52095	Analysis.....	5.78	11.70	7.10	35.72
	Analysis.....	6.04	12.04	6.91	36.55
51820	20 Percent Superphosphate Guarantee.....	.....	20.00	.....	24.00
	Analysis.....	.....	20.19	.....	24.23
	<b>Nicholson's Seed Store, Dallas, Texas</b>				
51718	Nicholson's All-Round Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
	Analysis.....	4.43	11.39	4.55	29.31
51717	Nicholson's Evergreen Lawn Dressing Guarantee.....	10.00	6.00	4.00	35.60
	Analysis.....	9.55	6.04	4.59	35.22
	<b>Oil Mill &amp; Fertilizer Works, Henderson, Texas</b>				
51482	Wolf Brand 3103 Guarantee.....	3.00	10.00	3.00	22.50
52270	Analysis.....	3.24	9.41	3.65	23.09
52342	Analysis.....	3.17	9.79	3.42	23.12
	Analysis.....	2.59	8.79	4.03	21.20
51484	Wolf Brand 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51906	Analysis.....	4.15	8.13	3.45	23.52
52067	Analysis.....	3.96	7.75	4.01	23.21
52266	Analysis.....	4.02	8.34	4.18	24.26
52271	Analysis.....	3.87	8.08	4.04	23.43
	Analysis.....	4.05	8.43	4.20	24.46
51905	Wolf Brand Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
52268	Analysis.....	4.01	11.90	4.59	28.95
	Analysis.....	5.17	11.32	4.41	30.84
51483	Wolf Brand 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
	Analysis.....	6.06	10.33	5.31	32.78
51907	Wolf Brand 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
	Analysis.....	5.48	11.56	6.47	34.14
52269	Wolf Brand Superphosphate—20 Per Ct. Guarantee.....	.....	20.00	.....	24.00
	Analysis.....	.....	19.74	.....	23.69
	<b>Palestine Oil Mill &amp; Fertilizer Works, Palestine, Texas</b>				
51410	Palestine Blue Star 4124 Guarantee.....	4.00	12.00	4.00	28.40
51419	Analysis.....	4.10	12.41	4.02	29.15
51421	Analysis.....	4.09	12.25	4.56	29.54
51737	Analysis.....	4.21	12.33	4.34	29.67
51755	Analysis.....	4.20	12.24	4.36	29.57
51825	Analysis.....	4.02	12.34	4.37	29.27
52160	Analysis.....	4.08	12.14	4.18	28.96
	Analysis.....	4.38	11.24	4.10	28.51
51411	Palestine Blue Star 6107 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
51420	Analysis.....	5.81	10.17	5.75	32.47
51443	Analysis.....	6.14	10.24	6.26	33.92
52159	Analysis.....	6.20	10.10	6.71	34.38
	Analysis.....	6.15	10.10	6.79	34.35
51867	Palestine Blue Star 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52242	Analysis.....	6.00	12.20	5.72	35.33
	Analysis.....	6.12	12.09	6.34	36.17
51458	Palestine Cotton Producer Guarantee.....	3.00	10.00	3.00	22.50
51738	Analysis.....	3.03	9.51	3.10	22.09
51754	Analysis.....	3.56	9.63	3.47	23.92
	Analysis.....	3.02	10.07	3.39	23.06

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Palestine Oil Mill &amp; Fertilizer Works, Palestine, Texas</b>				
	<b>—Continued.</b>				
	Palestine Cotton Producer—Continued—Guarantee.....	3.00	10.00	3.00	22.50
51777	Analysis.....	3.02	9.36	3.30	22.11
51826	Analysis.....	3.15	9.82	3.46	23.15
51856	Analysis.....	3.13	9.65	3.97	23.46
	Palestine Twenty Per Cent Kainit Guarantee.....			20.00	22.00
52229	Analysis.....			16.52	18.17
	Palestine Eighteen Per Cent Superphosphate Guarantee.....		18.00		21.60
51662	Analysis.....		18.32		21.98
51736	Analysis.....		18.81		22.57
	Palestine Tomato Special Guarantee.....	4.00	8.00	6.00	25.80
51444	Analysis.....	3.96	8.09	5.77	25.56
51663	Analysis.....	4.03	7.80	5.54	25.12
51702	Analysis.....	4.04	7.68	5.38	24.84
51855	Analysis.....	3.90	8.19	5.45	25.19
51879	Analysis.....	4.06	7.66	5.45	24.93
51957	Analysis.....	4.06	7.82	5.37	25.03
52146	Analysis.....	4.29	7.85	5.50	25.77
52161	Analysis.....	4.28	8.15	5.67	26.29
52168	Analysis.....	4.14	8.16	5.77	26.08
	Palestine Upland Cotton Guarantee.....	4.00	8.00	4.00	23.60
51422	Analysis.....	3.71	9.34	3.15	23.58
51427	Analysis.....	3.79	8.09	4.21	23.44
51457	Analysis.....	4.02	8.26	3.75	23.69
51756	Analysis.....	4.08	7.88	4.29	23.97
51778	Analysis.....	4.22	7.81	4.02	23.92
51854	Analysis.....	4.15	7.84	4.11	23.89
51868	Analysis.....	4.20	7.98	3.86	23.91
52145	Analysis.....	4.07	8.18	3.77	23.74
52228	Analysis.....	4.26	8.07	4.26	24.59
52241	Analysis.....	4.39	7.59	4.29	24.15
52393	Analysis.....	4.02	8.43	3.82	23.97
	<b>Pate Bros. Fertilizer Works, Sulphur Springs, Texas</b>				
	Pate's 20% Superphosphate Guarantee.....		20.00		24.00
51529	Analysis.....		19.84		23.81
52003	Analysis.....		20.03		24.04
	Pate's 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52002	Analysis.....	3.30	10.69	3.47	24.57
	Pate's 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51500	Analysis.....	3.97	8.68	4.17	24.54
51943	Analysis.....	4.18	8.47	4.32	24.94
52010	Analysis.....	4.23	8.55	4.18	25.01
52053	Analysis.....	4.24	8.70	4.64	25.72
52290	Analysis.....	4.26	8.82	5.27	26.60
52408	Analysis.....	4.34	8.73	5.01	26.41
52413	Analysis.....	4.43	8.52	4.45	25.75
	Pate's 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51532	Analysis.....	4.03	8.39	5.70	26.01
52011	Analysis.....	4.23	7.86	5.80	25.96
52412	Analysis.....	4.23	8.69	6.17	27.37
52416	Analysis.....	4.28	8.28	6.14	26.96
	Pate's 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
51528	Analysis.....	3.97	7.94	11.05	31.22
52414	Analysis.....	4.04	8.56	10.10	31.08
	Pate's 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51526	Analysis.....	4.36	11.45	4.52	29.17
51719	Analysis.....	4.35	11.19	4.68	29.02
	Pate's 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52415	Analysis.....	6.08	9.26	3.06	29.07
	Pate's 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
52001	Analysis.....	6.49	10.23	7.45	36.06
	Pate's 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51527	Analysis.....	6.02	10.82	5.60	33.59
52000	Analysis.....	6.20	12.22	6.62	36.82

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Pittsburg Cotton Oil Company Fertilizer Works, Pittsburg, Texas</b>				
	Double Circle Fertilizer No. 3103 Guarantee.....	3.00	10.00	3.00	22.50
52007	Analysis.....	3.16	10.66	3.29	23.99
52051	Analysis.....	3.43	10.18	3.43	24.22
52399	Analysis.....	3.08	10.75	3.26	23.88
	Double Circle Fertilizer No. 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51515	Analysis.....	3.94	8.30	4.37	24.23
51693	Analysis.....	3.72	8.80	4.41	24.34
51954	Analysis.....	4.14	8.80	4.00	24.90
52008	Analysis.....	4.03	7.79	4.05	23.48
52021	Analysis.....	3.84	7.65	3.69	22.46
52052	Analysis.....	4.19	8.36	4.23	24.74
52059	Analysis.....	4.58	8.02	3.82	24.81
52394	Analysis.....	3.92	8.40	3.73	23.59
52397	Analysis.....	3.84	8.67	3.88	23.89
52406	Analysis.....	4.01	8.02	4.09	23.74
	Double Circle Fertilizer No. 486 Guarantee.....	4.00	8.00	6.00	25.80
51506	Analysis.....	4.02	8.80	6.20	27.03
51513	Analysis.....	4.10	8.76	6.06	27.02
51589	Analysis.....	4.10	8.86	6.32	27.42
51692	Analysis.....	3.95	7.84	5.62	25.07
51698	Analysis.....	4.19	8.36	6.92	26.71
51950	Analysis.....	4.08	8.44	6.36	26.92
51958	Analysis.....	4.04	8.48	5.78	26.24
52022	Analysis.....	4.01	8.09	6.02	25.95
52057	Analysis.....	4.30	8.25	5.75	26.55
52368	Analysis.....	4.01	9.18	5.96	27.20
52396	Analysis.....	3.75	8.43	5.83	25.53
	Double Circle Fertilizer No. 4124 Guarantee.....	4.00	12.00	4.00	28.40
51508	Analysis.....	4.01	11.89	4.47	28.81
51951	Analysis.....	4.15	11.74	4.32	28.80
52369	Analysis.....	4.02	12.48	4.04	29.07
	Double Circle Fertilizer No. 6107 Guarantee.....	6.00	10.00	7.00	34.10
51952	Analysis.....	4.59	9.51	8.30	31.56
	Superphosphate 20% Guarantee.....	.....	20.00	.....	24.00
51507	Analysis.....	.....	20.17	.....	24.20
	<b>M. R. Porter Company, Hernando, Florida</b>				
	Calphos Brand Soft Phosphate with Colloidal Clay Guarantee.....	.....	*22.00	.....	6.60
52104	Analysis.....	.....	*23.28	.....	6.98
	<b>Thos. Self, Crockett, Texas</b>				
	Crockett 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
51650	Analysis.....	2.53	10.76	2.56	21.80
	Crockett 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51651	Analysis.....	4.00	8.48	4.12	24.31
51849	Analysis.....	4.04	8.02	4.27	24.02
	Crockett 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51652	Analysis.....	4.38	8.29	5.69	26.72
51848	Analysis.....	4.08	8.04	6.38	26.46
	Crockett 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51649	Analysis.....	4.88	11.25	4.01	29.62
51847	Analysis.....	4.19	11.82	3.62	28.22
52143	Analysis.....	4.18	11.59	4.57	28.97
	Crockett 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
52142	Analysis.....	6.11	10.03	7.70	35.17
52144	Analysis.....	6.27	9.80	7.02	34.53
	Crockett 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52141	Analysis.....	6.07	12.24	4.37	34.07
	Crockett 18% Super Phosphate Guarantee.....	.....	18.00	.....	21.60
51850	Analysis.....	.....	17.94	.....	21.53
	Crockett 20% Super Phosphate Guarantee.....	.....	20.00	.....	24.00
51653	Analysis.....	.....	20.00	.....	24.00

\*Total phosphoric acid

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Shreveport Fertilizer Works, Shreveport, Louisiana</b>				
	Lion 3-10-3 Meal Formula Guarantee.....	3.00	10.00	3.00	22.50
51379	Analysis.....	3.23	9.87	3.20	23.11
52036	Analysis.....	3.11	9.89	3.46	23.14
52324	Analysis.....	3.38	10.55	3.10	24.18
	Lion 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51393	Analysis.....	3.69	8.70	4.62	24.38
51522	Analysis.....	4.10	10.18	4.42	26.92
51815	Analysis.....	4.08	7.70	4.25	23.71
52047	Analysis.....	4.14	7.26	4.14	23.20
52132	Analysis.....	4.06	8.47	4.43	24.77
52311	Analysis.....	4.04	8.26	3.53	23.49
52332	Analysis.....	4.06	7.92	4.14	23.79
	Lion 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51394	Analysis.....	2.69	8.32	6.04	23.08
51537	Analysis.....	4.10	8.16	4.79	24.90
51571	Analysis.....	3.32	8.64	6.24	25.20
51642	Analysis.....	4.00	7.60	6.12	25.45
51670	Analysis.....	4.07	7.72	6.00	25.63
51875	Analysis.....	4.12	8.04	5.77	25.89
51890	Analysis.....	3.90	8.17	6.28	26.07
52037	Analysis.....	3.99	8.33	4.93	25.00
52109	Analysis.....	4.06	8.09	5.29	25.27
52133	Analysis.....	3.44	8.42	6.02	24.98
	Lion 4-10-0 Non Potassic Guarantee.....	4.00	10.00	.....	21.60
51453	Analysis.....	3.65	10.26	.....	21.07
51476	Analysis.....	4.08	10.07	.....	21.87
	Lion 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51401	Analysis.....	4.38	12.50	3.94	29.84
51610	Analysis.....	4.21	11.17	4.25	28.18
51641	Analysis.....	4.40	11.34	4.24	28.83
51707	Analysis.....	4.02	12.08	4.83	29.46
52131	Analysis.....	4.33	11.85	4.08	29.10
52322	Analysis.....	4.23	12.53	4.19	29.80
52333	Analysis.....	4.26	11.63	4.36	28.98
	Lion 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
51314	Analysis.....	6.03	10.02	6.83	34.00
51330	Analysis.....	6.17	10.37	6.54	34.44
51402	Analysis.....	6.56	9.59	7.20	35.17
51439	Analysis.....	6.08	10.62	5.74	33.64
51511	Analysis.....	6.23	10.04	7.49	35.24
51569	Analysis.....	5.64	10.10	7.53	33.94
51911	Analysis.....	5.75	9.31	5.86	31.42
51876	Analysis.....	6.43	10.04	6.19	34.29
52108	Analysis.....	6.03	10.66	6.03	33.89
52147	Analysis.....	6.55	9.32	6.57	34.13
52191	Analysis.....	6.32	10.02	7.43	35.36
	Lion 10-0-10 Fertilizer Guarantee.....	10.00	.....	10.00	35.00
52148	Analysis.....	11.22	.....	8.28	36.04
	Lion 50% Muriate of Potash Guarantee.....	.....	.....	50.00	55.00
51584	Analysis.....	.....	.....	45.97	50.57
	Lion 18% Superphosphate Guarantee.....	.....	18.00	.....	21.60
51585	Analysis.....	.....	19.36	.....	23.23
	Lion 20% Superphosphate Guarantee.....	.....	20.00	.....	24.00
51601	Analysis.....	.....	20.20	.....	24.24
	Longhorn 3-10-3 Meal Formula Guarantee.....	3.00	10.00	3.00	22.50
51836	Analysis.....	2.87	10.04	3.11	22.36
51889	Analysis.....	3.06	10.31	3.25	23.29
52323	Analysis.....	2.24	9.48	4.58	21.80
	Longhorn 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51633	Analysis.....	4.46	10.03	3.74	26.85
51636	Analysis.....	4.14	9.61	4.68	26.62
52329	Analysis.....	4.01	8.98	4.01	24.81
	Longhorn 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51462	Analysis.....	4.04	8.07	6.30	26.31



Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Shreveport Fertilizer Works, Shreveport, La.—Continued.</b>					
	Longhorn 4-8-6 Fertilizer—Continued—Guarantee.....	4.00	8.00	6.00	25.80
51607	Analysis.....	3.90	8.12	5.61	25.27
51835	Analysis.....	4.05	7.84	6.26	26.02
51898	Analysis.....	3.65	8.40	6.14	25.59
	Longhorn 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51405	Analysis.....	3.86	12.15	4.42	28.70
51621	Analysis.....	4.31	11.74	3.97	28.80
51632	Analysis.....	4.41	12.23	3.51	29.12
51664	Analysis.....	3.80	11.77	4.13	27.78
51689	Analysis.....	3.52	11.75	3.73	26.65
52078	Analysis.....	3.99	12.45	3.59	28.47
52086	Analysis.....	4.24	12.04	4.30	29.36
52235	Analysis.....	4.32	12.09	3.97	29.25
52253	Analysis.....	3.80	12.18	4.63	28.83
52330	Analysis.....	3.95	12.47	4.75	29.67
	Longhorn 6-10-7 Fertilizer Guarantee.....	6.00	10.00	7.00	34.10
51404	Analysis.....	6.24	9.92	7.23	34.83
51600	Analysis.....	6.00	9.63	5.50	32.01
52236	Analysis.....	6.26	10.44	6.41	34.60
	Longhorn 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
52087	Analysis.....	6.57	12.28	6.01	37.12
<b>Swift &amp; Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas</b>					
	Muriate of Potash Guarantee.....	.....	.....	50.00	55.00
52255	Analysis.....	.....	.....	49.33	54.26
	16% Nitrate of Soda Guarantee.....	16.00	.....	.....	38.40
52122	Analysis.....	16.14	.....	.....	38.74
	Pioneer 4-8-6 Non-Acid Forming Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
52043	Analysis.....	4.09	8.23	6.38	26.72
	Pioneer 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
52172	Analysis.....	3.86	8.11	10.54	30.58
	Pioneer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51742	Analysis.....	3.86	12.15	4.29	28.56
	Pioneer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52204	Analysis.....	6.16	11.06	6.12	34.78
	Sulphate of Ammonia Guarantee.....	20.00	.....	.....	48.00
51617	Analysis.....	20.01	.....	.....	48.02
52174	Analysis.....	20.00	.....	.....	48.00
52272	Analysis.....	20.38	.....	.....	48.91
52359	Analysis.....	20.74	.....	.....	49.78
	Swift's PH7 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
51290	Analysis.....	5.90	7.96	4.66	28.84
51319	Analysis.....	5.82	8.16	4.45	28.66
51325	Analysis.....	6.31	8.13	4.09	29.40
51363	Analysis.....	6.00	7.73	4.04	28.12
51378	Analysis.....	5.93	8.09	4.04	28.38
51386	Analysis.....	6.35	8.11	4.06	29.44
51390	Analysis.....	6.08	7.74	4.10	28.39
51445	Analysis.....	5.92	7.42	4.02	27.53
51498	Analysis.....	6.02	8.22	4.17	28.90
51556	Analysis.....	6.08	8.13	4.11	28.87
51577	Analysis.....	6.00	7.86	4.20	28.45
51579	Analysis.....	6.08	7.77	4.32	28.66
51591	Analysis.....	5.94	8.33	4.19	28.87
51643	Analysis.....	6.08	8.13	4.35	29.14
51676	Analysis.....	6.00	8.23	4.01	28.69
51711	Analysis.....	6.00	7.82	4.19	28.39
51720	Analysis.....	5.83	8.13	4.30	28.48
51787	Analysis.....	5.42	9.72	4.13	29.21
51805	Analysis.....	5.62	8.25	4.30	28.12
51832	Analysis.....	5.56	9.62	4.01	29.29
51852	Analysis.....	5.63	8.04	4.15	27.73

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	Swift & Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas—Continued.				
	Swift's PH7 6-8-4—Continued—Guarantee.....	6.00	8.00	4.00	28.40
51908	Analysis.....	6.09	7.36	4.63	28.54
51912	Analysis.....	6.03	8.08	4.27	28.87
51953	Analysis.....	6.08	8.06	4.36	29.06
51992	Analysis.....	5.66	8.60	3.75	28.03
52004	Analysis.....	6.14	7.73	4.32	28.77
52018	Analysis.....	6.04	7.92	4.09	28.50
52245	Analysis.....	6.86	9.47	4.72	33.01
52349	Analysis.....	6.34	8.12	4.20	29.58
	Swift's Red Steer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
51710	Analysis.....	3.04	9.78	3.24	22.60
51769	Analysis.....	2.78	9.39	2.76	20.98
51812	Analysis.....	2.86	9.97	2.66	21.75
52039	Analysis.....	3.29	10.49	3.73	24.59
52202	Analysis.....	2.92	9.99	3.30	22.63
	Swift's Red Steer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51637	Analysis.....	4.02	8.09	4.28	24.07
51654	Analysis.....	3.54	7.78	3.91	22.14
51747	Analysis.....	4.03	7.68	4.11	23.41
51846	Analysis.....	4.02	8.38	3.80	23.89
51941	Analysis.....	4.10	8.18	4.44	24.54
51991	Analysis.....	4.27	8.16	4.17	24.63
52056	Analysis.....	4.11	8.12	4.02	24.02
52065	Analysis.....	4.28	8.29	4.31	24.96
52157	Analysis.....	4.03	8.09	4.08	23.87
52209	Analysis.....	3.95	7.66	4.36	23.47
52246	Analysis.....	3.78	8.16	3.78	23.02
52297	Analysis.....	4.06	8.44	3.88	24.14
	Swift's Red Steer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51320	Analysis.....	3.93	11.53	3.35	26.96
51330	Analysis.....	3.98	11.72	3.57	27.54
51387	Analysis.....	3.70	11.29	4.56	27.45
51580	Analysis.....	4.02	11.45	4.21	28.02
51638	Analysis.....	4.20	11.67	4.51	29.04
51644	Analysis.....	3.92	11.48	3.48	27.02
51655	Analysis.....	3.79	11.55	4.08	27.45
51726	Analysis.....	4.05	11.68	4.35	28.53
51732	Analysis.....	4.05	12.01	4.36	28.93
51760	Analysis.....	3.65	12.02	4.08	27.67
51786	Analysis.....	3.88	11.55	4.47	28.09
51800	Analysis.....	3.65	12.21	3.32	27.06
52038	Analysis.....	4.10	11.85	4.62	29.14
52097	Analysis.....	4.07	11.74	4.19	28.47
52123	Analysis.....	3.77	12.33	3.64	27.85
52153	Analysis.....	4.40	11.92	4.23	29.51
52158	Analysis.....	3.65	11.12	5.44	28.08
52171	Analysis.....	4.05	12.19	4.03	28.78
52210	Analysis.....	3.97	12.13	3.34	27.76
52254	Analysis.....	4.25	11.75	4.26	28.99
52366	Analysis.....	4.21	12.06	4.11	29.09
52374	Analysis.....	3.88	12.56	4.32	29.13
	Swift's Red Steer 5-15-5 Guarantee.....	5.00	15.00	5.00	35.50
51329	Analysis.....	4.87	14.12	5.40	34.57
51344	Analysis.....	5.01	13.82	5.03	34.13
51785	Analysis.....	5.39	14.73	5.70	36.89
	Swift's Red Steer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
51474	Analysis.....	6.10	8.47	3.22	28.34
51833	Analysis.....	4.93	10.14	3.42	27.76
51853	Analysis.....	5.12	8.53	4.46	27.44
52175	Analysis.....	6.12	9.26	3.26	29.39
	Swift's Red Steer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51364	Analysis.....	5.88	9.88	6.73	33.37
52139	Analysis.....	5.13	10.72	5.43	31.14

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Swift &amp; Company Fertilizer Works, Harvey and Shreveport, La., and Houston, Texas—Continued.</b>					
	Swift's Red Steer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51289	Analysis.....	6.08	11.62	6.08	35.22
51293	Analysis.....	6.34	12.14	6.13	36.53
51297	Analysis.....	5.94	11.75	6.86	35.91
51300	Analysis.....	6.04	11.80	5.78	35.04
51301	Analysis.....	6.14	11.95	6.38	36.10
51321	Analysis.....	6.25	11.66	6.44	36.07
51749	Analysis.....	6.01	12.04	6.22	35.71
51790	Analysis.....	6.24	12.04	6.45	36.53
51859	Analysis.....	6.11	11.63	6.17	35.40
52055	Analysis.....	5.92	11.68	6.02	34.85
52116	Analysis.....	6.09	12.50	7.04	37.36
52203	Analysis.....	5.33	11.48	6.08	33.26
52231	Analysis.....	5.93	10.99	5.83	33.83
	Swift's Red Steer 18% Superphosphate Guarantee.....	18.00	.....	.....	21.60
51730	Analysis.....	18.55	.....	.....	22.26
51759	Analysis.....	12.93	.....	.....	22.72
	Swift's Red Steer 20% Superphosphate Guarantee.....	20.00	.....	.....	24.00
51885	Analysis.....	19.45	.....	.....	23.34
51731	Analysis.....	20.40	.....	.....	24.48
51748	Analysis.....	20.62	.....	.....	24.74
	Swift's Red Steer Tomato Grower 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51503	Analysis.....	4.11	8.12	6.06	26.27
51541	Analysis.....	4.01	8.07	6.12	26.03
51555	Analysis.....	4.06	8.33	6.01	26.35
51799	Analysis.....	4.12	8.04	6.12	26.27
51888	Analysis.....	4.02	7.38	6.02	25.13
51942	Analysis.....	4.08	7.88	6.09	25.95
52046	Analysis.....	4.38	8.07	6.29	27.11
52075	Analysis.....	4.31	8.01	6.13	26.69
52082	Analysis.....	4.30	8.02	6.47	27.06
52090	Analysis.....	4.11	7.92	6.26	26.25
52156	Analysis.....	4.55	8.11	4.70	25.82
52298	Analysis.....	4.20	8.63	5.85	26.88
	Swift's Red Steer Tomato Grower 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51446	Analysis.....	6.06	9.53	6.74	33.39
51594	Analysis.....	6.11	9.45	7.46	34.21
51685	Analysis.....	6.13	9.77	7.25	34.41
51911	Analysis.....	6.11	9.73	7.28	34.35
51993	Analysis.....	6.00	10.15	7.24	34.54
52152	Analysis.....	6.09	10.06	7.05	34.45
52200	Analysis.....	5.64	10.11	6.56	32.89
52219	Analysis.....	5.94	9.45	7.31	33.64
	Vigoro Guarantee.....	4.00	12.00	4.00	28.40
51336	Analysis.....	4.61	12.00	4.61	30.53
51429	Analysis.....	4.48	11.33	4.65	29.47
51447	Analysis.....	4.36	11.70	4.11	29.02
51566	Analysis.....	4.37	11.56	4.97	29.83
51721	Analysis.....	4.33	11.48	4.88	29.54
51895	Analysis.....	4.21	11.01	5.06	28.88
51929	Analysis.....	4.16	11.81	4.69	29.31
<b>Temple Cotton Oil Company, North Little Rock, Ark.</b>					
	Quapaw 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52024	Analysis.....	3.17	9.18	3.06	22.00
52035	Analysis.....	3.22	9.48	3.24	22.67
	Quapaw 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51525	Analysis.....	3.89	7.84	4.40	23.59
51565	Analysis.....	3.79	7.70	4.28	23.05
	Quapaw 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51523	Analysis.....	3.93	7.56	5.71	24.78
51545	Analysis.....	3.79	7.81	6.24	25.33

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
	<b>Temple Cotton Oil Company, North Little Rock, Ark., Continued.</b>				
	Quapaw 4-8-6—Continued—Guarantee.....	4.00	8.00	6.00	25.80
51563	Analysis.....	3.92	7.43	5.62	24.51
51564	Analysis.....	3.91	7.52	6.21	25.23
51575	Analysis.....	4.10	7.97	6.27	26.30
52023	Analysis.....	4.25	8.29	6.02	26.77
52034	Analysis.....	4.17	8.10	6.06	26.40
	Quapaw 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51562	Analysis.....	5.95	9.51	6.94	33.32
51574	Analysis.....	6.74	9.12	7.41	35.27
	Quapaw 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51524	Analysis.....	5.33	7.97	7.33	30.41
	<b>Texas Chemical Company, 811 Petroleum Building, Houston, Texas</b>				
	"T. C. C." Brand Raw Bone Meal Guarantee.....	3.70	*22.00	.....	26.48
51347	Analysis.....	4.19	*22.27	.....	27.88
51368	Analysis.....	4.64	*23.09	.....	29.61
		*Total phosphoric acid			
51983	Analysis.....	4.09	22.20	.....	27.58
52098	Analysis.....	4.20	22.30	.....	27.92
52103	Analysis.....	4.05	23.03	.....	28.14
52110	Analysis.....	4.04	22.88	.....	28.00
	<b>Texas Farm Products Company, Nacogdoches, Texas</b>				
	Lone Star Brand 3-10-3 Fertilizer Guarantee.....	3.00	10.00	3.00	22.50
51468	Analysis.....	3.06	9.77	3.13	22.50
51602	Analysis.....	3.01	9.69	3.06	22.22
51614	Analysis.....	3.10	9.78	3.12	22.61
51814	Analysis.....	3.13	9.94	3.23	22.99
51864	Analysis.....	3.08	9.40	3.25	22.25
52069	Analysis.....	3.08	9.67	3.10	22.40
52334	Analysis.....	3.31	10.22	3.20	23.72
52341	Analysis.....	3.06	10.20	3.12	23.01
52346	Analysis.....	3.02	9.87	3.28	22.70
	Lone Star Brand 4-8-4 Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51430	Analysis.....	4.02	8.04	4.19	23.91
51488	Analysis.....	4.01	7.54	4.06	23.14
51605	Analysis.....	3.84	7.63	3.95	22.73
51808	Analysis.....	4.07	7.91	4.24	23.92
51844	Analysis.....	3.95	7.44	4.02	22.83
51887	Analysis.....	4.15	8.38	4.28	24.73
52192	Analysis.....	3.94	8.00	3.62	23.04
52214	Analysis.....	4.03	8.70	4.24	24.77
52232	Analysis.....	4.09	8.02	4.04	23.88
52264	Analysis.....	4.02	8.22	4.04	23.95
52299	Analysis.....	4.48	7.99	3.49	24.18
52310	Analysis.....	4.04	7.92	3.63	23.19
52328	Analysis.....	4.10	8.18	4.00	24.06
52335	Analysis.....	4.06	8.03	3.60	23.34
	Lone Star Brand 4-8-6 Fertilizer Guarantee.....	4.00	8.00	6.00	25.80
51413	Analysis.....	3.89	8.11	6.18	25.87
51803	Analysis.....	3.93	7.66	6.44	25.70
52340	Analysis.....	4.02	9.79	6.66	28.73
	Lone Star Brand 4-10-0 Fertilizer Guarantee.....	4.00	10.00	.....	21.60
51450	Analysis.....	4.14	10.15	.....	22.12
	Lone Star Brand 4-12-4 Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51403	Analysis.....	4.01	11.83	4.53	28.80
51596	Analysis.....	4.00	11.84	4.36	28.61
51616	Analysis.....	4.01	12.07	4.05	28.56
51624	Analysis.....	3.97	12.16	4.32	28.87
51639	Analysis.....	3.91	11.76	4.30	28.22
51660	Analysis.....	3.96	11.84	4.36	28.51

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Texas Farm Products Company, Nacogdoches, Texas</b>					
<b>—Continued.</b>					
<b>Lone Star Brand 4-12-4 Fertilizer—Continued—</b>					
	Guarantee.....	4.00	12.00	4.00	28.40
51802	Analysis.....	4.00	11.77	4.44	28.60
51813	Analysis.....	4.14	11.74	4.06	28.50
51827	Analysis.....	4.06	12.57	4.02	29.24
51845	Analysis.....	4.26	12.06	4.83	30.00
51863	Analysis.....	4.10	11.77	4.06	28.43
52130	Analysis.....	4.12	12.15	4.06	28.94
52205	Analysis.....	4.08	12.44	4.56	29.74
52240	Analysis.....	4.13	12.39	3.68	28.83
<b>Lone Star Brand 6-9-3 Fertilizer Guarantee.....</b>					
	Guarantee.....	6.00	9.00	3.00	28.50
51449	Analysis.....	5.86	9.10	3.02	28.30
52265	Analysis.....	5.52	9.61	3.44	28.56
<b>Lone Star Brand 6-10-7 Fertilizer Guarantee.....</b>					
	Guarantee.....	6.00	10.00	7.00	34.10
51409	Analysis.....	6.02	10.08	7.06	34.32
51441	Analysis.....	6.04	9.91	7.00	34.09
51625	Analysis.....	5.95	9.89	7.00	33.85
51640	Analysis.....	5.85	9.81	7.16	33.69
51680	Analysis.....	5.85	9.72	6.93	33.32
51809	Analysis.....	5.66	10.13	7.04	33.48
51886	Analysis.....	5.92	10.15	7.46	34.60
52129	Analysis.....	6.05	10.22	6.87	34.34
52213	Analysis.....	5.86	10.20	7.30	34.33
52315	Analysis.....	6.02	10.33	7.06	34.62
<b>Lone Star Brand 6-12-6 Fertilizer Guarantee.....</b>					
	Guarantee.....	6.00	12.00	6.00	35.40
51459	Analysis.....	6.14	12.02	5.61	35.33
51479	Analysis.....	5.93	11.82	5.58	34.55
51839	Analysis.....	5.81	12.05	6.09	35.10
52314	Analysis.....	5.92	10.94	6.05	34.00
<b>Lone Star Brand 10-10-0 Fertilizer Guarantee.....</b>					
	Guarantee.....	10.00	10.00	.....	36.00
52151	Analysis.....	9.69	10.89	.....	36.33
52251	Analysis.....	10.02	10.24	.....	36.34
52351	Analysis.....	10.12	10.40	.....	36.77
<b>Lone Star Brand 16% Nitrate of Soda Guarantee.....</b>					
	Guarantee.....	16.00	.....	.....	38.40
52193	Analysis.....	16.28	.....	.....	39.07
52252	Analysis.....	16.12	.....	.....	38.69
52331	Analysis.....	16.52	.....	.....	39.65
<b>Lone Star Brand 20% Superphosphate Guarantee.....</b>					
	Guarantee.....	.....	20.00	.....	24.00
51606	Analysis.....	.....	20.27	.....	24.32
<b>Tri-State Fertilizer &amp; Lumber Company, Shreveport, La.</b>					
<b>Red Diamond 3-10-3 Guarantee.....</b>					
	Guarantee.....	3.00	10.00	3.00	22.50
52338	Analysis.....	3.31	10.23	3.37	23.93
<b>Red Diamond 4-8-4 Guarantee.....</b>					
	Guarantee.....	4.00	8.00	4.00	23.60
51612	Analysis.....	4.53	8.66	4.91	26.66
51675	Analysis.....	4.54	8.90	4.73	26.78
51910	Analysis.....	4.74	8.68	5.27	27.60
52238	Analysis.....	4.01	9.42	4.02	25.34
52304	Analysis.....	3.75	8.59	4.25	23.99
<b>Red Diamond 4-8-6 Guarantee.....</b>					
	Guarantee.....	4.00	8.00	6.00	25.80
52054	Analysis.....	4.38	8.06	7.06	27.95
<b>Red Diamond 4-10-0 Guarantee.....</b>					
	Guarantee.....	4.00	10.00	.....	21.60
51481	Analysis.....	4.64	10.30	.....	23.50
<b>Red Diamond 4-12-4 Guarantee.....</b>					
	Guarantee.....	4.00	12.00	4.00	28.40
51460	Analysis.....	3.93	10.88	4.40	27.33
51478	Analysis.....	4.51	9.42	5.07	27.70
51598	Analysis.....	4.24	11.59	5.52	30.16
52239	Analysis.....	4.16	12.37	4.02	29.24
<b>Red Diamond 6-10-7 Fertilizer Guarantee.....</b>					
	Guarantee.....	6.00	10.00	7.00	34.10
51451	Analysis.....	6.64	10.02	7.58	36.30
51613	Analysis.....	6.26	8.33	7.10	32.83
52224	Analysis.....	5.42	11.78	5.69	33.41
52339	Analysis.....	5.67	11.39	6.64	34.58



Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>Tri-State Fertilizer &amp; Lumber Company, Shreveport, La.</b> —Continued.					
51452	Red Diamond 6-12-6 Fertilizer Guarantee.....	6.00	12.00	6.00	35.40
	Analysis.....	6.01	10.91	6.05	34.17
52197	Red Diamond 10-0-10 Guarantee.....	10.00	.....	10.00	35.00
	Analysis.....	8.66	6.19	8.31	37.35
<b>Tyler Fertilizer Company, Tyler, Texas</b>					
	Heart Brand Fertilizer No. 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51425	Analysis.....	4.05	8.02	4.38	24.16
51903	Analysis.....	4.32	7.73	4.55	24.66
52017	Analysis.....	4.35	8.22	4.04	24.74
52164	Analysis.....	4.05	8.14	4.31	24.23
52233	Analysis.....	4.20	8.06	4.54	24.74
52386	Analysis.....	4.59	7.82	4.13	24.94
	Heart Brand Fertilizer No. 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51669	Analysis.....	4.02	8.22	6.04	26.15
51700	Analysis.....	4.02	8.29	5.44	25.58
52382	Analysis.....	3.77	8.54	6.32	26.25
	Heart Brand Fertilizer No. 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
51470	Analysis.....	3.93	8.35	9.06	29.42
51902	Analysis.....	4.00	8.45	10.01	30.75
	Heart Brand Fertilizer No. 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51466	Analysis.....	4.00	11.74	3.89	27.97
51668	Analysis.....	4.03	12.10	4.04	28.63
52163	Analysis.....	4.53	11.95	4.14	29.76
52180	Analysis.....	4.11	11.84	4.96	29.53
52383	Analysis.....	4.15	12.60	4.06	29.55
52398	Analysis.....	4.11	12.10	4.26	29.07
	Heart Brand Fertilizer No. 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
51469	Analysis.....	6.01	8.81	2.36	27.59
51901	Analysis.....	5.90	9.46	3.16	28.99
52181	Analysis.....	6.20	8.80	3.24	29.00
	Heart Brand Fertilizer No. 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51426	Analysis.....	5.90	10.50	6.41	33.81
51467	Analysis.....	6.00	10.02	7.11	34.24
51860	Analysis.....	6.08	11.06	5.80	34.24
	Heart Brand Fertilizer No. 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52183	Analysis.....	5.93	12.93	6.22	36.59
	Heart Brand Fertilizer No. 10-0-10 Guarantee.....	10.00	.....	10.00	35.00
52182	Analysis.....	10.36	.....	9.23	35.01
52358	Analysis.....	9.48	.....	9.90	33.64
<b>United Chemical Company, Dallas, Texas</b>					
	King Cotton Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51722	Analysis.....	4.09	7.95	4.55	24.37
51810	Analysis.....	4.39	8.05	4.62	25.28
51837	Analysis.....	4.02	7.85	5.35	24.96
51940	Analysis.....	4.37	8.24	4.16	24.96
52073	Analysis.....	4.63	8.51	4.37	26.13
52179	Analysis.....	4.08	7.81	4.14	23.71
52260	Analysis.....	3.94	8.43	4.34	24.35
52295	Analysis.....	4.27	8.28	4.18	24.79
52319	Analysis.....	4.24	8.14	4.70	25.12
52384	Analysis.....	4.09	7.97	5.02	24.90
52402	Analysis.....	4.23	8.34	4.02	24.58
52411	Analysis.....	4.04	7.75	4.20	23.62
	Sunset Brand Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
51960	Analysis.....	3.06	9.30	2.30	21.03
52128	Analysis.....	3.21	10.14	3.11	23.29
52301	Analysis.....	3.00	9.31	2.63	21.26
	Sunset Brand Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51423	Analysis.....	4.06	7.39	4.08	23.10
51587	Analysis.....	4.22	8.47	3.87	24.55

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>United Chemical Company, Dallas, Texas—Continued.</b>					
	Sunset Brand Fertilizer 4-8-4—Continued—Guarantee.....	4.00	8.00	4.00	23.60
51627	Analysis.....	4.04	7.79	4.00	23.45
51739	Analysis.....	4.02	7.50	4.49	23.59
51751	Analysis.....	4.13	7.67	4.24	23.77
51945	Analysis.....	4.06	7.45	4.38	23.50
52091	Analysis.....	4.11	8.15	4.03	24.07
52287	Analysis.....	4.18	8.31	4.09	24.50
52302	Analysis.....	4.08	7.78	4.04	23.57
	Sunset Brand 4-8-6 Truck & Fruit Special Fertilizer				
	Guarantee.....	4.00	8.00	6.00	25.80
51416	Analysis.....	4.04	7.50	6.28	25.61
51504	Analysis.....	3.89	7.83	6.65	26.06
51609	Analysis.....	3.88	8.03	6.28	25.86
51634	Analysis.....	4.00	8.25	5.83	25.91
51667	Analysis.....	4.02	8.43	6.22	26.61
51688	Analysis.....	4.17	8.16	5.88	26.27
51740	Analysis.....	4.00	8.03	6.15	26.01
51750	Analysis.....	3.94	8.00	6.17	25.85
51830	Analysis.....	4.03	7.19	6.42	25.36
52296	Analysis.....	4.28	8.04	6.23	26.77
	Sunset Brand Fertilizer 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
51512	Analysis.....	4.13	6.86	13.09	32.54
	Sunset Brand Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51406	Analysis.....	4.00	11.11	4.29	27.65
51415	Analysis.....	4.10	11.67	4.38	28.66
51424	Analysis.....	4.02	11.46	4.22	28.04
51599	Analysis.....	4.07	11.84	4.10	28.49
51630	Analysis.....	4.14	12.12	4.12	29.01
51659	Analysis.....	4.17	11.85	4.45	29.13
51666	Analysis.....	4.06	12.66	4.35	29.72
51699	Analysis.....	4.06	11.49	4.47	28.45
51723	Analysis.....	4.20	11.79	4.35	29.02
51741	Analysis.....	4.05	11.33	4.65	28.44
51752	Analysis.....	4.15	11.58	4.37	28.67
51811	Analysis.....	4.23	11.72	4.04	28.65
52247	Analysis.....	4.27	12.38	4.37	29.92
52365	Analysis.....	4.28	11.67	4.37	29.08
52375	Analysis.....	4.35	11.58	4.53	29.32
52395	Analysis.....	4.29	11.66	4.04	28.73
	Sunset Brand Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
52071	Analysis.....	6.10	8.41	3.04	28.07
	Sunset Brand Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51408	Analysis.....	5.84	9.66	7.01	33.32
51454	Analysis.....	6.11	9.70	7.54	34.59
51608	Analysis.....	5.90	10.01	6.80	33.65
52248	Analysis.....	6.15	10.51	6.87	34.93
	Sunset Brand Fertilizer Nitrate of Soda 16% Guarantee	16.00	.....	.....	38.40
51407	Analysis.....	16.79	.....	.....	40.30
	Sunset Brand Fertilizer 18% Superphosphate Guarantee	.....	18.00	.....	21.60
51939	Analysis.....	.....	18.57	.....	22.28
	Sunset Brand Fertilizer 20% Superphosphate Guarantee	.....	20.00	.....	24.00
51631	Analysis.....	.....	20.71	.....	24.85
51706	Analysis.....	.....	20.87	.....	25.04
	United Plantfood 0-12-4 Rice Special Guarantee.....	.....	12.00	4.00	18.80
52118	Analysis.....	.....	12.62	4.29	19.86
	United Plantfood 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
52083	Analysis.....	3.01	9.94	3.15	22.62
	United Plantfood 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51440	Analysis.....	4.02	8.23	4.02	23.95
51492	Analysis.....	3.94	8.07	3.85	23.38
51658	Analysis.....	3.83	7.88	3.79	22.82
51900	Analysis.....	4.04	7.73	4.19	23.59
51923	Analysis.....	4.10	7.93	4.14	23.91

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
<b>United Chemical Company, Dallas, Texas—Continued.</b>					
	United Plantfood 4-8-4—Continued—Guarantee.....	4.00	8.00	4.00	23.60
52068	Analysis.....	4.02	7.14	4.25	22.90
52113	Analysis.....	4.07	7.60	4.46	23.80
52176	Analysis.....	4.08	8.11	4.37	24.33
52226	Analysis.....	4.00	7.67	4.08	23.29
52259	Analysis.....	4.30	8.56	4.30	25.32
52363	Analysis.....	4.13	8.65	4.04	24.73
	United Plantfood 4-8-10 Guarantee.....	4.00	8.00	10.00	30.20
52318	Analysis.....	3.93	7.64	9.80	29.38
	United Plantfood 4-10-0 Rice Special Guarantee.....	4.00	10.00	.....	21.60
52117	Analysis.....	4.09	10.18	.....	22.04
	United Plantfood 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51595	Analysis.....	3.95	11.05	4.46	27.65
51727	Analysis.....	4.04	11.95	4.16	28.62
52084	Analysis.....	4.30	12.17	4.46	29.83
52237	Analysis.....	4.62	11.54	4.20	29.57
52379	Analysis.....	4.18	12.08	4.35	29.32
52385	Analysis.....	4.22	12.14	4.31	29.44
	United Plantfood 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51724	Analysis.....	5.56	9.27	9.38	34.78
51838	Analysis.....	6.34	10.17	7.37	35.53
51924	Analysis.....	6.22	10.21	7.26	35.17
52177	Analysis.....	5.91	9.78	7.37	34.03
	United Plantfood 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
52278	Analysis.....	6.21	12.27	6.36	36.62
52362	Analysis.....	6.02	12.14	6.26	35.91
	United Plantfood Fertilizer Truck & Fruit Special 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51475	Analysis.....	3.93	8.14	6.55	26.41
51626	Analysis.....	3.88	8.26	6.02	25.84
52162	Analysis.....	4.02	7.55	7.23	26.66
52178	Analysis.....	4.14	7.58	6.78	26.50
52227	Analysis.....	4.14	8.22	6.49	26.94
	United Plantfood Kainit 20% Guarantee.....	.....	.....	20.00	22.00
52072	Analysis.....	.....	.....	20.61	22.67
	United Plantfood Sulphate of Ammonia 20% Guarantee.....	20.00	.....	.....	48.00
51922	Analysis.....	20.86	.....	.....	50.06
	United Plantfood 20% Superphosphate Guarantee.....	.....	20.00	.....	24.00
51735	Analysis.....	.....	20.24	.....	24.29
<b>Valley Fertilizer Company, San Benito, Texas</b>					
	Keystone Brand 4-8-10 Fertilizer Guarantee.....	4.00	8.00	10.00	30.20
51346	Analysis.....	4.06	6.97	8.81	27.79
<b>Virginia-Carolina Chemical Corporation, Shreveport, La.</b>					
	Kainit 20% Guarantee.....	.....	.....	20.00	22.00
51979	Analysis.....	.....	.....	19.23	21.15
	Muriate of Potash 50% Guarantee.....	.....	.....	50.00	55.00
51582	Analysis.....	.....	.....	48.57	53.43
52032	Analysis.....	.....	.....	47.29	52.02
	Sulphate of Ammonia 20% Guarantee.....	20.00	.....	.....	48.00
52041	Analysis.....	20.87	.....	.....	50.09
	V-C Blood, Bone and Potash Guarantee.....	3.00	10.00	3.00	22.50
51806	Analysis.....	3.12	9.47	3.46	22.66
	V-C Fertilizer 3-10-3 Guarantee.....	3.00	10.00	3.00	22.50
51583	Analysis.....	2.98	10.01	3.18	22.66
51829	Analysis.....	3.04	9.46	3.34	22.32
51831	Analysis.....	3.02	9.34	3.38	22.18
52033	Analysis.....	3.36	9.78	3.18	23.30
52076	Analysis.....	3.51	10.32	2.95	24.05
52167	Analysis.....	3.25	9.56	3.19	22.78
52258	Analysis.....	3.28	10.47	3.03	23.76

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Potash, per cent	Valuation found, per ton
Virginia-Carolina Chemical Corporation, Shreveport, La.,—Continued.					
52348	V-C Fertilizer 3-10-3—Continued—Guarantee.....	3.00	10.00	3.00	22.50
	Analysis.....	3.08	9.59	3.07	22.28
	V-C Fertilizer 4-8-4 Guarantee.....	4.00	8.00	4.00	23.60
51431	Analysis.....	4.13	7.68	4.24	23.79
51560	Analysis.....	3.87	7.52	4.19	22.92
51604	Analysis.....	3.83	8.07	4.16	23.45
51978	Analysis.....	4.15	8.15	4.41	24.59
52040	Analysis.....	4.28	7.64	4.04	23.88
52049	Analysis.....	4.23	8.12	4.10	24.40
52060	Analysis.....	4.29	7.39	4.14	23.72
52077	Analysis.....	4.24	8.40	4.63	25.35
52134	Analysis.....	3.92	7.74	4.44	23.58
52216	Analysis.....	4.42	7.51	4.20	24.24
52257	Analysis.....	4.19	8.03	4.59	24.75
52321	Analysis.....	4.19	8.11	4.31	24.53
52343	Analysis.....	4.00	7.86	4.14	23.58
52354	Analysis.....	4.18	7.83	4.42	24.29
	V-C Fertilizer 4-8-6 Guarantee.....	4.00	8.00	6.00	25.80
51432	Analysis.....	4.02	7.86	6.19	25.89
51485	Analysis.....	3.69	7.34	6.17	24.46
51559	Analysis.....	3.79	7.69	6.33	25.29
51572	Analysis.....	3.68	7.79	6.26	25.07
51874	Analysis.....	4.00	7.82	6.37	25.99
51921	Analysis.....	3.71	8.01	6.44	25.59
52009	Analysis.....	4.06	8.27	6.21	26.49
52135	Analysis.....	3.91	7.98	6.45	26.06
52166	Analysis.....	3.93	7.37	6.20	25.09
52249	Analysis.....	3.89	7.82	6.51	25.88
52355	Analysis.....	4.09	7.39	6.12	25.42
	V-C Special 4-10-0 Fertilizer Guarantee.....	4.00	10.00	.....	21.60
51455	Analysis.....	3.98	9.37	.....	20.79
	V-C Fertilizer 4-10-7 Guarantee.....	4.00	10.00	7.00	29.30
51701	Analysis.....	3.96	9.52	7.09	28.72
51956	Analysis.....	3.93	9.68	7.34	29.12
	V-C Fertilizer 4-12-4 Guarantee.....	4.00	12.00	4.00	28.40
51456	Analysis.....	4.12	12.07	4.04	28.81
51581	Analysis.....	4.04	11.49	4.20	28.11
51603	Analysis.....	4.06	12.05	4.22	28.84
51766	Analysis.....	4.00	11.68	4.36	28.42
51920	Analysis.....	4.04	11.79	4.54	28.84
51972	Analysis.....	4.02	11.40	4.18	27.95
52165	Analysis.....	4.12	11.14	4.65	28.38
52217	Analysis.....	4.27	11.28	4.66	28.92
52256	Analysis.....	4.12	11.58	4.73	28.99
52276	Analysis.....	4.30	12.03	4.54	29.75
52327	Analysis.....	4.07	11.66	4.43	28.63
52387	Analysis.....	4.05	11.88	4.49	28.92
	V-C Fertilizer 6-8-4 Guarantee.....	6.00	8.00	4.00	28.40
51615	Analysis.....	6.01	8.04	4.19	28.68
52150	Analysis.....	5.93	8.19	4.44	28.94
	V-C Fertilizer 6-9-3 Guarantee.....	6.00	9.00	3.00	28.50
51899	Analysis.....	6.08	8.49	3.44	28.56
	V-C Fertilizer 6-10-7 Guarantee.....	6.00	10.00	7.00	34.10
51433	Analysis.....	6.05	10.03	7.20	34.48
51521	Analysis.....	6.16	9.77	7.24	34.46
51573	Analysis.....	5.89	10.10	7.03	33.99
51678	Analysis.....	5.83	9.56	7.33	33.52
51797	Analysis.....	6.04	8.95	7.42	33.40
51828	Analysis.....	6.09	9.96	7.33	34.63
52149	Analysis.....	6.04	10.07	7.71	35.06
	V-C Fertilizer 6-12-6 Guarantee.....	6.00	12.00	6.00	35.40
51434	Analysis.....	5.69	11.64	6.53	34.81
51464	Analysis.....	5.85	11.32	6.04	34.74

Table 7. Analysis of commercial fertilizer, season 1936-37—Continued

Laboratory Number	Manufacturer, place of business and brand	Nitrogen, per cent	Available phosphoric acid, per cent	Nitrogen, per cent	Valuation found, per ton
	<b>Virginia-Carolina Chemical Corporation, Shreveport, La., —Continued.</b>				
	V-C Fertilizer 6-12-6—Continued—Guarantee.....	6.00	12.00	6.00	35.40
51798	Analysis.....	6.06	11.65	6.71	35.90
51961	Analysis.....	6.01	11.54	7.24	36.23
	V-C Champion Crop Grower Guarantee.....	4.00	10.00	7.00	29.30
51514	Analysis.....	3.95	9.40	7.49	29.00
	V-C Fruit & Truck Special Guarantee.....	6.00	10.00	7.00	34.10
51622	Analysis.....	5.95	10.30	7.21	34.57
51679	Analysis.....	5.84	9.68	7.07	33.42
52190	Analysis.....	5.86	10.11	7.60	34.55
	V-C Good Luck Fertilizer Guarantee.....	4.00	8.00	4.00	23.60
51535	Analysis.....	4.04	7.75	4.31	23.74
	V-C Indian Brand Fertilizer Guarantee.....	4.00	12.00	4.00	28.40
51548	Analysis.....	4.02	11.68	4.40	28.51
	V-C Potato Special Guarantee.....	4.00	8.00	10.00	30.20
51546	Analysis.....	4.06	8.04	10.55	31.00
52401	Analysis.....	4.23	8.21	9.52	30.47
	V-C Prolific Cotton Grower Guarantee.....	3.00	10.00	3.00	22.50
51973	Analysis.....	3.09	8.88	3.46	21.89
52048	Analysis.....	3.15	10.35	3.11	23.40
	V-C Super 25 Fertilizer Guarantee.....	5.00	15.00	5.00	35.50
51463	Analysis.....	4.89	14.80	5.43	35.47
51882	Analysis.....	4.80	14.92	5.61	35.49
	V-C Tomato Special Guarantee.....	4.00	8.00	6.00	25.80
51536	Analysis.....	4.04	8.05	6.06	26.03
	V-C Truckers Special Guarantee.....	4.00	8.00	6.00	25.80
51534	Analysis.....	4.01	8.46	6.02	26.39
	V-C Victor High Grade Fertilizer Guarantee.....	6.00	9.00	3.00	23.50
51547	Analysis.....	5.69	8.87	3.31	27.94