

## Kentucky Agricultural Experiment Station

UNIVERSITY OF KENTUCKY

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COMMERCIAL FERTILIZERS IN KENTUCKY  
IN 1941

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This bulletin contains the results of inspection and analyses of commercial fertilizers sold in Kentucky during 1941 and other information of interest in connection therewith. Approximately 121,261 tons of fertilizer were sold, as estimated from the number of tax stamps issued, a slight increase over the tonnage of 1941. About 58½ percent of this was mixed fertilizer, the remainder being superphosphate and relatively small amounts of other fertilizer materials. In addition, 158,181 tons of 20-percent superphosphate and 12,367 tons of 48-percent superphosphate were distributed to Kentucky farmers by the Agricultural Adjustment Administration of the U. S. Department of Agriculture.

## 1941 SALES BY GRADES

A summary of fertilizer sales by grades, as reported by manufacturers for 1941, is given in *Table 1*. The tonnage in this summary is approximately 5,000 tons less than that estimated from stamp sales. The difference appears to be due to incomplete returns from some manufacturers.

TABLE 1.—SALES BY GRADES AS REPORTED BY MANUFACTURERS

Mixed Fertilizers		Tons	
	Tons		
3-8-6 .....	16 234	3-8-16 .....	302
2-8-4 .....	11 048	4-16-4 .....	253
3-10-3 .....	7 735	3-10-6 .....	217
0-10-4 .....	4 386	4-8-8 .....	212
4-12-8 .....	3 882	3-12-12 .....	136
4-8-4 .....	3 304	0-14-7 .....	105
6-8-6 .....	3 232	9-18-18 .....	99
2-10-4 .....	2 462	0-12-12 .....	95
4-10-6 .....	2 272	6-8-3 .....	92
2-12-6 .....	2 176	10-6-4 .....	88
3-8-5 .....	1 796	2-8-6 .....	85
5-10-5 .....	1 620	6-8-8 .....	81
4-12-0 .....	1 230	6-12-6 .....	79
4-10-4 .....	878	4-10-12 .....	78
3-8-10 .....	814	6-12-12 .....	48
4-8-6 .....	690	Miscellaneous mixtures..	790
0-10-6 .....	538		
3-12-4 .....	476		
4-12-4 .....	396		
0-10-10 .....	390		
Materials		Tons	
	Tons		
Superphosphate, 20%....	41 519	Superphosphate, 40 to 45% .....	386
Raw rock phosphate.....	2 180	Cyanamid .....	322
Nitrate of soda .....	1 187	Bone .....	206
Basic slag .....	1 000	Muriate of potash .....	174
Sulfate of ammonia .....	461	Sulfate of potash.....	147
Waste pond rock phosphate .....	440		

## LOW-GRADE FERTILIZERS

This Department considers that any mixed fertilizer which has a total plant-food content less than 20 percent (sum of nitrogen, phosphoric acid, and potash guaranteed) is a low-grade fertilizer. It is uneconomical to buy low-grade fertilizer because certain fixed charges incident to the production and distribution of mixed fertilizers are the same per ton irrespective of grade.

Some of these fixed charges are cost of handling, mixing, bags, plant overhead, freight and tax. To these the manufacturer must add his profit. The retail price of the low-grade fertilizer is considerably higher per unit of plant food than that in high-grade fertilizer. The saving in buying high-grade fertilizer may amount to \$3.00 to \$5.00 a ton. For example, it takes 3 tons of a 2-8-4 fertilizer to supply the same amount of nitrogen, phosphoric acid, and potash that are contained in 2 tons of 3-12-6 fertilizer. The cost of these at the prevailing retail price in Kentucky in 1941 was—

3 tons of 2-8-4 at \$25.00 a ton.....	\$75.00
2 tons of 3-12-6 at \$31.30 a ton.....	\$62.60

Thus the saving in buying the 3-12-6 fertilizer was \$12.40, or 16.5 percent, and the buyer handles only 2 tons instead of 3 tons.

Another example: 1600 pounds of 4-10-6 fertilizer costs approximately the same as a ton of 2-8-4 fertilizer. It contains, however, 24 pounds more nitrogen than a ton of 2-8-4 contains, the same amount of phosphoric acid as a ton of 2-8-4, and 16 pounds more potash than a ton of 2-8-4 contains.

#### ELIMINATION OF LOW-GRADE FERTILIZERS

Approximately 70 percent, or nearly 50,000 tons, of the mixed fertilizer sold in Kentucky during 1941, contained 17 percent or less of plant food. This tonnage of low-grade fertilizer may contain 13,000 tons or more of inert filler, for which the farmer is paying. In addition the manufacturers' costs are increased by the large number of grades which must be made to meet competition or demands for certain grades. If low-grade fertilizers were eliminated and the number of grades reduced, both the farmer and the manufacturer would benefit. Reduction of grades would lower manufacturing costs and the increased tonnage of high-grade fertilizer would further decrease the cost to the consumer.

Many manufacturers have expressed the opinion that the number of grades should be reduced and are willing to cooperate in such a program. Farmers can help by refusing to buy low-grade fertilizer. The agricultural workers of the state can aid by recommending the use of grades that are included in such a program.

About 15 grades of mixed fertilizer, in addition to super-phosphate, nitrogen and potash salts and a few other fertilizer materials, would serve the needs of all Kentucky farmers. This Department is interested in starting a cooperative program of this kind, and lists below the grades of mixed fertilizer which it considers would fully meet all requirements.

<i>Grade</i>	<i>Units of plant food</i>	<i>Grade</i>	<i>Units of plant food</i>
0-14-6 .....	20	5-10-5 .....	20
0-12-12 .....	24	6-8-6 .....	20
3-8-16 .....	27	6-10-10 .....	26
3-12-6 .....	21	6-12-6 .....	24
3-12-12 .....	27	6-14-0 .....	20
4-10-6 .....	20	10-6-4 .....	20
4-12-8 .....	24	10-6-10 .....	26

#### USE OF COMMERCIAL FERTILIZERS

Intelligent use of commercial fertilizer involves (1) knowledge of the principles of soil management and improvement, (2) knowledge of the condition of the land on which a crop is to be grown, (3) knowledge of the requirements of the crop for nutrients. The farmer should know the teachings of the Agronomy Department of this Station in regard to soil management and improvement. This information can be obtained from the following Kentucky publications: Extension Circulars No. 350, "Save the Soil and Improve It"; No. 54, "Soils, An Elementary Treatise"; and No. 272, "Soil Management for Kentucky"; and Station Bulletins No. 374, "Legumes in Cropping Systems"; No. 379, "Soil Management and Fertilization for Tobacco"; and No. 397, "Soil Management Experiments."

The advice of the Agronomy Department for improvement of the soil and maintenance of fertility includes the following: (1) the growth and proper use of legumes; (2) the proper saving and use of manure and crop residues; (3) prevention of erosion by keeping the land covered as much of the time as possible with a dense cover, and by contour cultivation and strip cropping on sloping land. As the soil is improved, crop yields are increased and therefore the amounts of nutrients taken from the soil are increased. Thus the amount of nutrients returned to the soil must be increased by returning more crop residues and manure, and often by the use also of mixed fertilizers or fertilizer materials.

For crops of high money value, such as tobacco or truck-garden crops, liberal use of commercial fertilizers may be more advantageous than in general farming. On land which has not attained high productivity but on which crops are to be grown immediately, irrespective of proper farm practices, fertilizers are essential.

#### NUTRIENTS NECESSARY FOR GROWTH OF PLANTS

Besides carbon, hydrogen, and oxygen, which are supplied mainly from air and water, plants require for normal growth and development a number of other elements which are obtained from the soil. Among the elements which have been found essential for plant nutrition are nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, boron, copper, and zinc. Nitrogen, phosphorus, and potassium are the ones usually guaranteed in commercial fertilizers. Others may be present in considerable amounts tho not guaranteed. For instance, ordinary superphosphate, in addition to supplying phosphorus, is a carrier of calcium and sulfur. Potash salts usually contain some magnesium. The other elements are required by plants in varying, but usually small amounts. Under our present knowledge, it is believed they are present in most Kentucky soils in sufficient amounts.

#### EXPLANATION OF PLANT NUTRIENTS

The percentages of guaranteed nutrients present in a commercial fertilizer are printed on the state tag as nitrogen, phosphoric acid, and potash. The results of many investigations indicate that certain nutrients perform definite functions in the growth and development of plants, but no plants will grow and properly develop if the soil is deficient in any essential nutrient or plant-food element. The nutrients must not only be *present* in the soil, but they must be in proper amounts and in available form.

Some of the functions performed by the nutrients are the following:

*Nitrogen* promotes leaf and stem development, produces rapid early growth and, in proper amount, aids in maturing the plant. It adds to the percentage of protein in the plant. In excess it may delay maturity. The principal sources of water-

soluble nitrogen in fertilizers are ammonium sulfate, ammonia liquors, sodium nitrate, calcium cyanamid, and urea. The sources of water-insoluble nitrogen are bone, tankage and similar materials. Most of the nitrogen in mixed fertilizers is water soluble.

*Phosphorus* promotes root formation, acts as a balancer of an excess of nitrogen, aids maturity of plants and fruiting, and increases the ratio of grain and fruit to the plant stalk. It is usually present in fertilizers in various forms of calcium and ammonium phosphates. It is guaranteed and reported as phosphoric acid ( $P_2O_5$ ) of which 43.7 percent is phosphorus. Available phosphoric acid is that part of this plant nutrient in a fertilizer which can be readily utilized by plants. The percentage of *available* phosphoric acid in mixed fertilizers and superphosphate is guaranteed and printed on the guaranty tag. The percentage of *total* phosphoric acid in bone, tankage, rock phosphate, basic slag, and similar materials is guaranteed and printed on the guaranty tag.

*Potassium* is usually present in fertilizers as potassium chloride or potassium sulfate and is guaranteed and reported as potash ( $K_2O$ ), of which 83 percent is potassium. It aids in the general growth of the plant, in resistance to disease, and the development of sugar and starch, and it improves the quality of the plant and fruit. Potash in fertilizers is soluble in water.

#### FARMERS' SAMPLES

The Kentucky fertilizer law provides that any person in the state not a dealer in or agent for the sale of any fertilizer, who may purchase fertilizer, for his own use, and not for sale, may have it analyzed free of charge by the Kentucky Agricultural Experiment Station. However, the law further provides that in order for such analysis to be made the sample must be taken in a prescribed way. If a farmer desires to have his fertilizer analyzed by the Experiment Station, he should write the Department of Feed and Fertilizer Control for instructions. This is important, for no analysis of fertilizer will be made unless proper procedure in taking the sample is followed.

#### INFORMATION AND GUARANTY TAG

A state guaranty tag issued by the Kentucky Agricultural Experiment Station, showing the manufacturer's guaranty,

must be attached to each bag of fertilizer before it can be lawfully offered for sale in Kentucky. It is a violation of the law to change the tag in any manner, either by addition or erasure. Purchasers of fertilizer should be guided by the information printed on the guaranty tag in selecting a fertilizer. If the fertilizer is not tagged with a state guaranty tag, or if the tag has been changed in any manner, it should be reported to the Department immediately. The following information is printed on the guaranty tag:

Brand name of fertilizer  
 Name and address of manufacturer  
 Guaranteed analysis showing:  
   Minimum nitrogen, percent  
   Minimum available phosphoric acid, percent  
   Minimum potash, from muriate or sulfate, percent  
   Estimated value per 100 pounds

Total phosphoric acid, in place of available phosphoric acid, is guaranteed in bone, tankage, basic slag, and rock phosphate. At the bottom of the tag must be a stamp on which is printed the net weight of the fertilizer in the package and authorization by the Director, of its sale. The estimated value is used for comparing values of fertilizers of different grades, and it should not be confused with the selling price. Selling price cannot be accurately estimated because of the many factors, some of them variable, which are included in it.

The estimated value, or index of relative value, is determined by giving a value to each component, which value represents the cost of that component to the manufacturer plus an equitable share of the total cost of placing the fertilizer on the market. The values of the components are:

	<i>Value per pound, cents</i>	<i>Value per unit, dollars</i>
Nitrogen .....	17.5	3.5
Available phosphoric acid in mixed fertilizers and superphosphates	6.0	1.2
Total phosphoric acid in bone .....	5.0	1.0
Potash in all fertilizers .....	6.0	1.2

A unit is 20 pounds, or 1 percent of a ton. If the unit value of each component is multiplied by the percent of the component in the fertilizer and all the results are added, the estimated value per ton, or index of relative value, is obtained. This valuation is used in comparing the value of samples

analyzed with the manufacturers' guaranties. The valuation depends upon the actual content of the fertilizer components and should not be confused with the crop-producing power of the fertilizer.

Calculation for a 4-12-4 fertilizer :

Nitrogen .....	4 x 3.5 equals	14.0
Available phosphoric acid .....	12 x 1.2 equals	14.4
Potash .....	4 x 1.2 equals	4.8
Index of relative value .....		<u>33.2</u>

#### ACID- AND BASE-FORMING QUALITY

A survey of the 1941 inspection samples was made to determine in general the potential acid-forming or base-forming quality of mixed fertilizers. Approximately 1 in 5 of the 1941 mixed-fertilizer inspection samples were analyzed by the A.O.A.C. method for acid- and base-forming quality. Results are stated in pounds of calcium carbonate per ton of fertilizer. For the potentially acid-forming fertilizers this means pounds of calcium carbonate needed to neutralize the acid produced in the soil by a ton of fertilizer; for the potentially base-forming fertilizers, it indicates that a ton of the fertilizer would neutralize as much soil acid as the stated amount of calcium carbonate. Of the 118 samples analyzed, 55 were more than 50 pounds acid-forming, 33 were from 50 pounds acid-forming to 50 pounds base-forming and 30 were more than 50 pounds base-forming.

In general, the use of non-acid-forming fertilizers is recommended to Kentucky farmers. Use of acid-forming fertilizer is not, however, so serious a matter as in some other Southern states, because of soil conditions and the widespread liming practices of Kentucky farmers.

#### ACTIVITY OF WATER-INSOLUBLE NITROGEN

Samples of mixed fertilizer having 0.5 percent or more of water-insoluble nitrogen were tested for activity of the insoluble nitrogen by application of the A.O.A.C. alkaline permanganate method. All samples tested passed the A.O.A.C. standard for this method and no indication of inferior carriers of nitrogen was found.



### **PENALTIES FOR VIOLATING THE FERTILIZER LAW**

Any manufacturer, firm, dealer or vendor who sells or exposes for sale in Kentucky commercial fertilizer without complying with the provisions of the fertilizer law is subject to a fine of from \$100.00 to \$500.00 for each offense. Furthermore, if a fertilizer is short in net weight or short in the essential plant-food nutrients, a manufacturer, firm, or dealer may not only be fined \$100.00 to \$500.00 for violating the fertilizer law, but "shall be liable for reasonable damages sustained by the purchaser of such fertilizer."

It is important therefore that the dealer should protect himself by purchasing from reliable firms and the firms who comply with the law. Otherwise, he will lay himself liable for selling fertilizers in violation of the law.

### **POINTS A FARMER SHOULD CONSIDER IN BUYING FERTILIZER**

1. Ascertain the needs of the soil and what will supply them. No fertilizer will give proper results if it does not contain the plant nutrients in which the soil is deficient. If in doubt as to the kind of fertilizer the soil needs, consult the county agent or the Experiment Station.

2. Be guided by the information given on the state guaranty tag.

3. Buy no fertilizer that is not registered and tagged with a state official tag. If it is not tagged with a state guaranty tag, it is being sold in violation of the law and it should be refused.

4. High-grade fertilizers are most economical. Too many farmers buy on price rather than on quality. This is false economy.

### **POINTS A DEALER SHOULD CONSIDER**

1. Handle no fertilizer that is not registered and tagged with a state guaranty tag at the time of purchase.

2. Handle only high-grade fertilizers—fertilizers that will most economically serve your customers.

3. Buy only from reputable manufacturers who have good records and are complying with the fertilizer law and will assist you in complying with the law.

4. Have definitely in mind the kinds of fertilizer your trade needs, and buy only fertilizers that will meet these needs.

5. Insist that the tags be attached to the bags by the manufacturer when shipment is made. Some manufacturers place tags in the truck or car with the shipment of fertilizer without attaching them to the bags. This often results in confusion and failure to tag at all, as the tags may be misplaced or lost.

#### **POINTS A MANUFACTURER SHOULD CONSIDER**

Before a manufacturer sells or offers fertilizer for sale to farmers or dealers in Kentucky, he should carefully consider and comply with the following:

1. Sell or offer no fertilizer for sale in Kentucky until it is registered and labeled according to the requirements of the law so that all concerned will be within the law and properly protected.

2. Every brand must be registered and bear a state official tag showing the manufacturer's guaranty.

3. The state official tag contains the only legal guaranty, and any statements on private tags or containers to the contrary are not within the requirements of the law.

4. No alteration, either by additions or erasures, of the official tag, is permissible under the law, and any alterations made are in violation of the law.

5. All fertilizers must equal or exceed the guaranties made by the manufacturers. An excess of one plant nutrient does not compensate for a deficiency of another.

6. A state official tag must be attached to each and every package of fertilizer. Do not make shipments to dealers or farmers in Kentucky without properly attaching tags, for you would thereby subject your customers to embarrassment in handling fertilizers not labeled according to law.

7. Check weights of ingredients in mixed fertilizers carefully, and mix thoroly. Prepare as nearly as possible mixtures that will not segregate. Many analyses made by this Department show one nutrient to be considerably above guaranty while another nutrient is far below guaranty. This may be caused by insufficient mixing or by segregation.

8. Consider the needs of the farmers; cooperate with and help them to get high-grade fertilizers suitable to the needs of their soils; unite with one another in reducing the multiplicity of brands and in eliminating low-grade fertilizers because of their high and uneconomical cost in productiveness; cooperate with the Experiment Station in teaching that the important constituents cost less in high-grade fertilizers than in the low grades, and that their intelligent use means better agriculture, larger use of fertilizers, and better and more successful living for the farmer. Could not and should not every progressive manufacturer who has at heart the interest of the fertilizer business as a whole, as well as his own, and of the farmers who support this business, and of the State, get behind a progressive program of this sort?

#### EXPLANATION OF THE TABLES

*Table 2* gives the standing of manufacturers as determined by the results of analysis of official samples. *Table 3* gives results of analysis of all inspection samples except bones, rock phosphate, and basic slag, which are given in *Table 4*.

If an analysis is 10 percent or more below the amount claimed for nitrogen, phosphoric acid, or potash, or if the relative value is 4 percent or more below the guaranty, the result is indicated by **bold-face type**. If chlorine is excessive, the result is also printed in bold-face type.

If potash is claimed from sulfate, the percent of chlorine is given in the column next to the potash analysis. The amount of chlorine allowed in sulfate of potash is 2.5 percent. The amount of chlorine allowed in a mixed fertilizer in which potash is claimed from sulfate is calculated by multiplying the percent of potash found by .05 and adding 0.5. *Example:* If 8 percent of potash is found, .05 times 8 plus 0.5 equals 0.9 percent chlorine allowed. If part of the potash in a mixed fertilizer is claimed from sulfate and part from muriate, the total percent of chlorine is stated and the permissible amount of chlorine is given in a footnote.

TABLE 2—STANDING OF MANUFACTURERS, BASED ON OFFICIAL SAMPLES ANALYZED IN 1941

	Number of inspection samples	Number equal to guaranty in value	Number 4 per cent or more low in value	Number 10 per cent or more low in one component*
American Agricultural Chemical Company .....	64	61	0	0
American Cyanamid Company ....	7	6	0	0
Armour Fertilizer Works .....	75	60	1	3
Buhner Fertilizer Company .....	11	11	0	0
Chilean Nitrate Sales Corporation .....	3	3	0	0
Colloidal Phosphate Sales Corporation .....	1	1	0	0
Consolidated Chemical Company..	13	13	0	0
Cumberland Chemical Company..	28	25	2	1
Darling and Company .....	6	5	0	0
Davison Chemical Corporation:				
Hopkins Fertilizer Division .....	40	40	0	1
Read Phosphate Division .....	48	32	10	7
Federal Chemical Company .....	128	87	17	6
Hutson Chemical Company .....	7	7	0	0
International Minerals and Chemical Corporation .....	56	51	0	1
Knoxville Fertilizer Company.....	56	49	1	0
Louisville Fertilizer Company.....	7	5	2	0
Morris Fertilizer Company .....	3	2	0	0
National Chemical Company .....	3	2	1	0
North American Fertilizer Company .....	55	45	2	1
Organo Corporation of Florida.....	1	1	0	0
M. R. Porter Company .....	1	1	0	0
Price Chemical Company .....	53	51	0	0
Ruhm Phosphate and Chemical Company .....	2	1	0	2
Sewerage Commission of Milwaukee .....	1	1	0	0
Swift and Company Fertilizer Works .....	21	20	0	0
Tennessee Chemical Company .....	16	7	2	1
Tennessee Coal, Iron and Railroad Company .....	5	5	0	0
Virginia-Carolina Chemical Corporation .....	69	62	2	1
Totals .....	780	654	40	24

\* Results are equal to guaranty in value or less than 4 percent low in value. Deficiency not considered unless result is as much as 0.5 low in guaranty.

*Tables 3 and 4 follow on  
pages 14 to 63.*

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>The American Agricultural Chemical Co., Cincinnati, O.</b>		
4754	0-10-4 (Muriate)	Davidson and Crawford, Science Hill...
4755		Robert James, Franklin.....
4884		J. E. Bryant, Scottsville.....
4150	2-8-4 (Muriate)	Davidson and Crawford, Science Hill...
4279		John A. Sheehan, Falmouth.....
4280		C. B. Goering, Hawesville.....
4552		C. B. Carden, Hartford.....
4553		Raymond Martin, Utica.....
4070	2-10-4 (Muriate)	Middlesboro Grocery Co., Middlesboro..
4756	2-12-6 (Muriate)	Baughman Milling Co., Stanford.....
4757		Henderson & Hardy Co., Shepherdsville
4071	3-8-6 (Muriate)	Middlesboro Grocery Co., Middlesboro..
4281		E. O. Stuart, Gracey.....
4282		Woodson Lewis and Son, Greensburg....
4554		Raymond Martin, Utica.....
4555		Clarence Rowland, Owensboro.....
4556		J. R. Russell, Hartford.....
4283	3-8-6 (Sulfate)	Carroll County Farm Bureau, Carrollton .....
4557		W. M. Humphrey, Nuckols.....
4558		Bedford and Tuttle, Winchester.....
4151	3-8-10 (Sulfate)	J. W. Hicks, Upton.....
4152	3-8-16 (Muriate 8, Sulfate 8)	J. W. Hicks, Upton.....
4284		E. T. Flora, Carlisle.....
4285		Weisenberger Sanitary Flour Mills, Midway .....
4153	3-10-3 (Muriate)	Davidson and Crawford, Science Hill...
4286		Lebanon Carriage and Implement Co., Lebanon .....
4287		V. H. Towles, Pike View.....
4559		Norris Hardware Co., Henderson.....
4758		Lebanon Carriage and Implement Co., Lebanon .....
4759		Henderson & Hardy Co., Shepherdsville
4154	3-10-6 (Muriate)	Davidson and Crawford, Science Hill...
4288		Robert James, Franklin .....
4289		John A. Sheehan, Falmouth .....
4560		Yopp Seed Co., Paducah .....
4561		Feeders Supply Co., Catlettsburg.....
4155	4-8-4 (Muriate)	Whitesburg Wholesale Co., Whitesburg
4072	4-8-6 (Muriate)	Triplett Store, S. Corbin.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
-----	-----	10.00	4.47	-----	16.8	17.4	4754
-----	-----	10.15	4.15	-----	-----	17.2	4755
-----	-----	10.15	4.39	-----	-----	17.5	4884
2.01	1.88	8.20	4.24	-----	21.4	22.0	4150
1.80	1.69	8.85	5.22	-----	-----	23.2	4279
2.07	1.97	8.10	4.31	-----	-----	22.1	4280
1.89	1.79	8.65	4.14	-----	-----	22.0	4552
2.01	1.91	8.30	4.02	-----	-----	21.8	4553
2.03	1.91	10.35	4.29	-----	23.8	24.7	4070
1.96	1.79	12.15	6.15	-----	28.6	28.8	4756
1.98	1.77	12.25	6.45	-----	-----	29.4	4757
3.00	2.91	8.40	6.10	-----	27.3	27.9	4071
3.02	2.92	8.45	6.46	-----	-----	28.5	4281
2.99	2.88	8.20	6.22	-----	-----	27.8	4282
2.91	2.79	8.35	6.00	-----	-----	27.4	4554
3.21	3.09	8.25	6.38	-----	-----	28.8	4555
3.01	2.88	8.00	6.52	-----	-----	28.0	4556
3.22	2.94	8.10	6.45	-----	27.3	28.7	4283
3.07	2.87	8.40	6.50	-----	-----	28.6	4557
3.15	2.85	8.30	6.56	-----	-----	28.9	4558
3.13	3.03	8.95	10.07	7.44	32.1	33.8	4151
2.88	2.80	8.45	14.75	3.96 <sup>a</sup>	39.3	37.9	4152
2.89	2.79	8.50	15.11	6.08 <sup>a</sup>	-----	38.5	4284
2.87	2.77	8.40	15.26	6.06 <sup>a</sup>	-----	38.4	4285
3.11	2.92	10.40	3.27	-----	26.1	27.3	4153
3.20	3.04	10.35	3.23	-----	-----	27.5	4286
3.18	3.03	10.00	3.37	-----	-----	27.2	4287
3.16	3.00	10.15	3.78	-----	-----	27.8	4559
2.91	2.75	9.95	3.49	-----	-----	26.3	4758
2.90	2.73	10.45	3.33	-----	-----	26.7	4759
3.16	3.04	10.20	6.00	-----	29.7	30.5	4154
3.15	3.00	10.05	6.00	-----	-----	30.3	4288
3.07	2.90	10.10	6.07	-----	-----	30.2	4289
3.16	3.03	10.40	6.35	-----	-----	31.2	4560
3.16	3.01	10.25	6.79	-----	-----	31.5	4561
3.99	3.85	8.80	4.02	-----	28.4	29.4	4155
4.11	4.04	8.55	6.19	-----	30.8	32.1	4072

<sup>a</sup> 6.92 percent chlorine allowed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>The American Agricultural Chemical Co., Cincinnati, O.—Continued</b>		
4885	4-10-6 (Muriate)	Norris Hardware and Seed Co., Henderson
4156	4-10-6 (Sulfate)	J. W. Schoolcraft, W. Somerset
4290		C. V. King, Oakland
4291		E. T. Flora, Carlisle
4562		Clarence Rowland, Owensboro
4563		Raymond Martin, Utica
4564		O. L. Jacobs, Mt. Sterling
4073	4-12-0	Bedford and Tuttle, Winchester
4565		Clarence Rowland, Owensboro
4886		Clarence Rowland, Owensboro
4292	4-12-8 (Sulfate)	Thompson Hardware Co., Trenton
4566		Ross Feed Co., Murray
4157	5-10-5 (Muriate)	Kentucky Wholesale Co., Pikeville
4293		Middlesboro Grocery Co., Middlesboro
4294		W. E. Bibb, Sacramento
4158	6-8-6 (Sulfate)	Corbett Hardware Co., Elizabethtown
4295		E. T. Flora, Carlisle
4296		L. C. McLoney and Son, Cynthiana
4159	20% Superphosphate	E. T. Walker, Glendale
4160		J. E. Bryant, Scottsville
4172		J. W. Schoolcraft, W. Somerset
4297		J. B. Benjamin and Son, Providence
4567		Charles S. Thomas, Marion
4760		Lebanon Carriage and Implement Co., Lebanon
4761		Davidson and Crawford, Science Hill
4887		J. E. Bryant, Scottsville
<b>American Cyanamid Co., New York, N. Y.</b>		
4298	21% "Aero" Cyanamid Granular	Western State Hospital, Hopkinsville
4568		McClure and Son, Springfield
4888		Laswell Milling Co., Brodhead
4889		Economy Feed Store, Murray
4890		Wilson-Miles and Co., Russellville
4891		Hatter Hardware Co., Franklin
4892		The Planters Hardware Co., Hopkinsville
<b>Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
4074	"Big Crop Brand" 3-8-6 (Muriate)	Mountain Wholesale Co., Lothair
4161		Wilson, Miles and Co., Russellville
4299		Cogar-Rumley Co., Midway



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
4.14	4.00	10.10	6.15	.....	33.2	34.0	4885
3.98	3.64	10.95	6.39	.....	33.2	34.7	4156
4.11	3.86	10.75	6.31	.....	.....	34.9	4290
4.19	3.69	10.25	6.46	.....	.....	34.7	4291
4.25	3.92	10.30	6.78	.....	.....	35.4	4562
4.05	3.84	10.35	6.61	.....	.....	34.5	4563
3.98	3.77	11.00	6.25	.....	.....	34.6	4564
4.03	3.76	12.60	.....	.....	28.4	29.2	4073
4.17	3.79	12.30	.....	.....	.....	29.4	4565
4.12	3.71	12.75	.....	.....	.....	29.7	4886
4.21	3.91	12.45	8.30	.....	38.0	39.6	4292
4.18	3.91	12.85	8.07	.....	.....	39.7	4566
5.29	5.06	10.25	5.32	.....	35.5	37.2	4157
5.01	4.60	10.35	5.15	.....	.....	36.1	4293
5.07	4.71	10.45	5.45	.....	.....	36.8	4294
6.12	6.01	8.45	6.03	.....	37.8	38.8	4158
5.88	5.66	8.40	6.19	.....	.....	38.1	4295
6.27	6.14	7.90	6.33	.....	.....	39.0	4296
.....	.....	20.70	.....	.....	24.0	24.8	4159
.....	.....	20.40	.....	.....	.....	24.5	4160
.....	.....	20.20	.....	.....	.....	24.2	4172
.....	.....	20.40	.....	.....	.....	24.5	4297
.....	.....	20.55	.....	.....	.....	24.7	4567
.....	.....	20.60	.....	.....	.....	24.7	4760
.....	.....	20.45	.....	.....	.....	24.5	4761
.....	.....	20.80	.....	.....	.....	25.0	4887
20.70	.....	.....	.....	.....	44.1	43.5	4298
20.72	.....	.....	.....	.....	.....	43.5	4568
21.34	.....	.....	.....	.....	.....	44.8	4888
21.22	.....	.....	.....	.....	.....	44.6	4889
21.28	.....	.....	.....	.....	.....	44.7	4890
21.52	.....	.....	.....	.....	.....	45.2	4891
21.36	.....	.....	.....	.....	.....	44.9	4892
3.04	2.72	8.50	6.00	.....	27.3	28.0	4074
2.92	2.69	9.85	5.34	.....	.....	28.5	4161
3.11	2.71	8.25	6.01	.....	.....	28.0	4299

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>		
4569 4763 4893		White Front Store, Whitesville..... Henderson & Hardy Co., Shepherdsville The T. J. Turley Co., Owensboro.....
4075 4300	Armour's 4-8-4 (Muriate).....	Mountain Wholesale Co., Lothair..... Ravenna Grocery Co., Ravenna.....
4301 4302	Armour's 4-8-4 (Sulfate) .....	Hatter Hardware Co., Franklin..... Carlisle Mill and Supply Co., Carlisle....
4162	"Big Crop Brand" 0-10-4 (Muriate) .....	Sievers Produce Co., Somerset.....
4303 4570 4764	"Big Crop Brand" 2-8-4 (Muriate) .....	Clay County Grocery Co., Manchester.. J. F. Bertram, Vanceburg .....
4076 4163 4164 4304 4305 4765 4766 4767	Armour's "Old Black Joe" 2-10-4 (Muriate) .....	Jellico Grocery, Barbourville..... Burnside Milling Co., Burnside..... C. E. Martin and Co., Greenville..... Ed. Allen, Smiths Grove..... N. E. West, Gamaliel..... Wallace Hardware Co., Central City... Herman Singleton, Brodhead..... C. E. Martin and Co., Greenville.....
4165 4306 4307 4768	"Big Crop Brand" 2-12-6 (Muriate) .....	Jasper Produce Co., Science Hill..... Calvin Cress and Sons, Ryles..... Webb Suter, Campbellsburg..... L. D. Flanagan, Russell Springs.....
4769	"Big Crop Brand" 2-12-12 (Muriate) .....	L. D. Flanagan, Russell Springs.....
4166 4167 4308 4309 4310 4571	Armour's 3-8-6 (Sulfate).....	Durham Implement Co., Stanford..... T. E. Clausen, Bonnieville..... Giltner Seed and Feed Co., Eminence.. E. W. Simpson, Owenton..... C. P. Loving, Cave City..... Irvington Truck Line, Irvington.....
4168 4311 4770	"Big Crop Brand" 3-10-3 (Muriate) .....	McWhorter and Thrasher, Albany..... Clay County Grocery Co., Manchester.. M. G. Parman, London.....
4077	"Big Crop Brand" 3-12-12 (Muriate) .....	R. P. Clary, Fullerton.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.27	3.00	8.05	6.61	.....	.....	29.0	4569
2.96	2.66	8.15	6.38	.....	.....	27.8	4763
2.71	2.40	8.15	6.00	.....	.....	26.5	4893
4.00	3.67	8.35	4.11	.....	28.4	29.0	4075
3.90	3.52	8.05	4.09	.....	.....	28.2	4300
<b>3.26</b>	2.16	8.35	3.77	.....	28.4	<b>26.0</b>	4301
4.03	3.07	8.55	4.64	.....	.....	29.9	4302
.....	.....	10.40	4.46	.....	16.8	17.8	4162
2.07	1.69	8.30	4.14	.....	21.4	22.2	4303
2.14	1.85	8.85	4.78	.....	.....	23.9	4570
1.86	1.55	8.10	4.37	.....	.....	21.5	4764
2.10	1.80	10.05	4.15	.....	23.8	24.4	4076
2.12	1.83	10.30	4.09	.....	.....	24.7	4163
2.01	1.78	12.00	3.98	.....	.....	26.2	4164
2.00	1.76	9.85	4.01	.....	.....	23.6	4304
2.01	1.63	10.05	4.41	.....	.....	24.4	4305
2.00	1.65	10.10	4.16	.....	.....	24.1	4765
2.09	1.69	10.50	4.30	.....	.....	25.1	4766
2.09	1.69	11.10	4.23	.....	.....	25.7	4767
1.99	1.60	12.15	6.18	.....	28.6	29.0	4165
2.03	1.63	11.95	6.42	.....	.....	29.2	4306
1.99	1.53	11.90	6.39	.....	.....	28.9	4307
1.88	1.59	12.15	6.42	.....	.....	28.9	4768
1.95	1.70	12.00	12.10	.....	35.8	35.8	4769
2.92	2.21	8.50	6.26	.....	27.3	27.9	4166
2.81	2.09	8.45	6.27	<b>1.24</b>	.....	27.5	4167
2.85	2.14	8.20	6.20	<b>1.08</b>	.....	27.3	4308
3.00	2.26	7.95	6.34	.....	.....	27.7	4309
2.86	2.13	8.00	6.31	.....	.....	27.2	4310
2.86	2.14	7.85	6.02	.....	.....	26.7	4571
3.03	2.54	10.90	3.29	.....	26.1	27.6	4168
3.03	2.57	9.90	3.33	.....	.....	26.5	4311
3.01	2.43	10.75	3.46	.....	.....	27.6	4770
3.14	2.81	12.60	12.40	.....	39.3	41.0	4077

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>		
4312	Armour's 3-12-12 (Sulfate)	Giltner Feed and Seed Co., Eminence..
4078	"Big Crop Brand" 4-10-4 (Muriate)	Keller Hay and Grain Co., Newport.....
4079	"Big Crop Brand" 4-12-4 (Muriate)	J. C. Everett and Co., Maysville.....
4169	Armour's 4-12-8 (Sulfate)	Walter McGlasson, Horse Cave.....
4170		Anderson and Spilman, Danville.....
4171		C. P. Loving, Cave City.....
4313		C. E. Dean, Augusta.....
4314		Carlisle Mill and Supply Co., Carlisle..
4080	"Big Crop Brand" 4-16-4 (Muriate)	Jellico Grocery, Barbourville.....
4315		Calvin Cress and Sons, Ryle.....
4894		The T. J. Turley Co., Owensboro.....
4081	"Big Crop Brand" 5-10-5 (Muriate)	Home Fruit Co., Harlan.....
4082		Geo. W. Hill, Covington.....
4317		J. W. Galloway, Sacramento.....
4318	"Big Crop Brand" 6-8-6 (Muriate)	Robinson and Turley, Richmond.....
4319		Flemingsburg Mills, Flemingsburg .....
4320		John B. Penn, Georgetown.....
4572	"Big Crop Brand" 6-8-6 (Sulfate)	S. V. Conrad, Cloverport.....
4573	Armour's 9-18-18 (Sulfate)	The T. J. Turley Co., Owensboro.....
4173	"Big Crop Brand" 20% Superphosphate	J. H. Peterson, Hiseville.....
4321		Barren County Hardware Co., Glasgow
4322		Taylor County Supply Co., Campbellsville .....
4323		G. C. Cornett, Cumberland .....
4574		Marion Coal Co., Marion.....
4575		Kidd and Co., Livermore.....
4576		Sphar and Co., Winchester.....
4771		Taylor County Supply Co., Campbellsville .....
4772		Mrs. C. P. Loving, Cave City.....
4773		Barren County Grocery and Hard- ware Co., Glasgow.....
4774		C. S. Brent Seed Co., Lexington.....
4775		Hatter Hardware Co., Franklin.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
2.94	2.26	11.75	11.70	.....	39.3	38.4	4312
3.82	3.47	10.50	4.91	.....	30.8	31.9	4078
3.99	3.67	12.75	4.02	.....	33.2	34.1	4079
3.87	2.99	12.45	7.95	.....	38.0	38.0	4169
4.05	3.04	12.45	8.05	.....	.....	38.8	4170
4.02	3.03	12.45	8.13	.....	.....	38.8	4171
4.23	3.40	11.90	9.26	.....	.....	40.2	4313
3.90	3.02	13.10	8.96	.....	.....	40.1	4314
3.87	3.51	15.60	4.53	.....	38.0	37.7	4080
3.95	3.50	16.00	4.58	.....	.....	38.5	4315
3.69	3.20	15.80	4.07	.....	.....	36.8	4894
4.99	4.65	10.25	5.31	.....	35.5	36.1	4081
4.97	4.55	10.15	5.40	.....	.....	36.1	4082
4.44	4.00	10.80	6.35	.....	.....	36.1	4317
5.80	5.44	8.75	6.58	.....	37.8	38.7	4318
5.90	5.53	8.45	6.44	.....	.....	38.5	4319
5.89	5.55	8.75	6.28	.....	.....	38.7	4320
5.69	4.53	8.20	6.20	.....	37.8	37.2	4572
7.47	7.23	20.25	17.89	13.44	74.7	71.9	4573
.....	.....	20.00	.....	.....	24.0	24.0	4173
.....	.....	20.45	.....	.....	.....	24.5	4321
.....	.....	20.80	.....	.....	.....	25.0	4322
.....	.....	19.40	.....	.....	.....	23.3	4323
.....	.....	20.35	.....	.....	.....	24.4	4574
.....	.....	20.30	.....	.....	.....	24.4	4575
.....	.....	20.35	.....	.....	.....	24.4	4576
.....	.....	20.15	.....	.....	.....	24.2	4771
.....	.....	22.10	.....	.....	.....	26.5	4772
.....	.....	20.20	.....	.....	.....	24.2	4773
.....	.....	20.25	.....	.....	.....	24.3	4774
.....	.....	20.20	.....	.....	.....	24.2	4775

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>		
4776		Durham Implement Co., Stanford.....
4895		Forbes Manufacturing Co., Hopkinsville
4777	Armour's Nitrate of Soda 16%.....	C. S. Brent Seed Co., Lexington.....
4324	Armour's Sulfate of Ammonia 20-0-0* .....	V. B. Nuckols, Elkton.....
4778	Armour's 3-18-9 (Muriate).....	L. D. Flanagan, Russell Springs.....
4316	Armour's 4-16-4 (Sulfate).....	T. E. Clausen, Bonnieville.....
<b>The Buhner Fertilizer Co., Seymour, Ind.</b>		
4174	Buhner's "Happy Farmer" 2-8-4 (Muriate) .....	Beck and Harris, Jamestown..... Shipp and Warner, Campbellsville.....
4325		E. C. Miller, Buechel .....
4779		Aaron L. Moore and Son, Leitchfield....
4780		Allison Shippe, Campbellsville.....
4781		
4175	Buhner's "Happy Farmer" 3-8-6 (Muriate) .....	Beck and Harris, Jamestown..... E. C. Miller, Buechel.....
4782		
4083	Buhner's 4-8-6 (Muriate).....	St. Matthews Produce Exchange, St. Matthews .....
4176	Buhner's "Happy Farmer" 4-10-6 (Muriate) .....	Beck and Harris, Jamestown.....
4177	Buhner's "Happy Farmer" 5-10-5 (Muriate) .....	E. C. Miller, Buechel .....
4783	Buhner's "Happy Farmer" 20% Superphosphate .....	E. C. Miller, Buechel .....
<b>Chilean Nitrate Sales Corporation, New York, N. Y.</b>		
4084	"Champion Brand" Chilean Nitrate of Soda 16%.....	Brent and Co., Lexington..... T. W. Hall, Elkton.....
4327		Yopp Seed Co., Paducah.....
4578		
<b>Consolidated Chemical Co., Louisville, Ky.</b>		
4579	"Camel Brand" 20% Superphosphate .....	Star Roller Mills, Cloverport.....
4329	"Camel Brand" 2-8-4 (Muriate).....	Farmers Supply Co., White Plains..... Star Roller Mills, Cloverport.....
4580		

\* Not registered.

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
.....	.....	20.50	.....	.....	.....	24.6	4776
.....	.....	20.00	.....	.....	.....	24.0	4895
16.12	.....	.....	.....	.....	44.9	45.1	4777
20.40	.....	.....	.....	.....	36.0	37.7	4324
2.95	2.66	18.00	9.02	.....	42.9	42.8	4778
3.88	3.30	15.55	4.49	<b>3.06</b>	38.0	37.6	4316
2.04	1.80	8.40	5.72	.....	21.4	24.1	4174
2.01	1.73	8.55	5.00	.....	.....	23.3	4325
2.08	1.61	10.80	6.31	.....	.....	27.8	4779
2.02	1.63	8.60	5.22	.....	.....	23.7	4780
1.96	1.70	8.55	4.75	.....	.....	22.8	4781
3.03	1.80	8.50	6.89	.....	27.3	29.1	4175
3.13	2.84	8.55	9.35	.....	.....	32.4	4782
4.13	3.86	8.75	6.21	.....	30.8	32.4	4083
4.52	4.20	10.15	6.92	.....	33.2	36.3	4176
5.07	4.76	10.30	6.63	.....	35.5	38.1	4177
.....	.....	20.22	.....	.....	24.0	24.3	4783
16.16	.....	.....	.....	.....	44.8	45.3	4084
16.08	.....	.....	.....	.....	.....	45.0	4327
16.20	.....	.....	.....	.....	.....	45.4	4578
.....	.....	21.00	.....	.....	24.0	25.2	4579
2.30	1.82	8.00	4.78	.....	21.4	23.4	4329
2.12	1.77	8.40	4.47	.....	.....	22.9	4580

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Consolidated Chemical Co., Louisville, Ky.—Continued</b>		
4581	"Camel Brand" 2-10-4 (Muriate)	Yopp Seed Co., Paducah.....
4330	"Camel Brand" 3-8-6 (Muriate)	Farmers Supply Co., White Plains.....
4582		Yopp Seed Co., Paducah.....
4583		Star Roller Mills, Cloverport.....
4584	"Camel Brand" 3-8-6 (Sulfate)	Star Roller Mills, Cloverport.....
4585	"Camel Brand" 4-12-8 (Sulfate)	Star Roller Mills, Cloverport.....
4586		Monarch Milling Co., Mt. Sterling.....
4587		Fox Brothers, Winchester.....
4178	"Camel Brand" 5-10-5 (Muriate)	W. S. Allen and Co., Liberty.....
4588	"Camel Brand" 6-8-6 (Sulfate)	Star Roller Mills, Cloverport.....
<b>Cumberland Chemical Co., Hopkinsville, Ky.</b>		
4331	Cumberland 0-10-6 (Muriate)	Clark and Vaughn, Clay.....
4332	Cumberland 2-8-4 (Muriate)	Green River Milling Co., S. Carrollton.....
4896		Cayce-Yost Co., Hopkinsville.....
4897		Economy Feed Store, Murray.....
4333	Cumberland 2-10-4 (Muriate)	T. W. Hall, Elkton.....
4589	Cumberland 2-12-6 (Muriate)	Economy Feed Store, Murray.....
4898		Cayce-Yost Co., Hopkinsville.....
4334	Cumberland 3-8-6 (Muriate)	W. G. Putman, Nortonville.....
4335		Trigg County Trading Co., Cadiz.....
4336		Mose Dunning, Crofton.....
4590		Forbes Manufacturing Co., Hopkinsville.....
4337	Cumberland 3-8-10 (Muriate)	Fox Hardware Store, Madisonville.....
4338	Cumberland 3-10-3 (Muriate)	T. W. Hall, Elkton.....
4591		Sturgis Implement & Hardware Co., Sturgis.....
4179	Cumberland 4-10-4 (Muriate)	W. S. Allen and Co., Liberty.....
4339		W. L. Kimbrough and Son, Guthrie.....
4180	Cumberland 9-18-18 (Muriate)	Young Hardware Co., Hopkinsville.....
4340		C. W. Buckner, Pembroke.....
4341	Cumberland 20% Superphosphate	Phoenix Milling Co., Providence.....
4342		McLean County Hardware Co., Calhoun.....
4343		Wilson Hardware Co., Auburn.....
4784		Jake Ruby, Central City.....
4899		Fox Hardware Co., Madisonville.....
4900		W. G. Putman, Nortonville.....



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
2.00	1.65	11.00	4.48	.....	23.8	25.6	4581
3.22	2.79	7.95	6.65	.....	27.3	28.8	4330
3.46	3.03	8.55	6.20	.....	.....	29.8	4582
3.04	2.66	7.80	6.34	.....	.....	27.6	4583
3.01	2.59	8.00	6.21	.....	27.3	27.6	4584
4.39	3.89	12.05	8.79	.....	38.0	40.4	4585
4.16	3.74	12.15	9.06	2.28	.....	40.0	4586
4.41	3.98	12.00	8.05	1.64	.....	39.5	4587
5.29	4.78	10.30	5.37	.....	35.5	37.3	4178
5.84	5.32	8.00	7.02	.....	37.8	38.5	4588
.....	.....	10.10	6.33	.....	19.2	19.7	4331
2.12	1.92	8.20	4.30	.....	21.4	22.4	4332
2.39	2.21	8.00	4.75	.....	.....	23.7	4896
2.08	1.91	8.40	4.50	.....	.....	22.8	4897
2.09	1.90	9.70	4.30	.....	23.8	24.1	4333
2.18	2.01	12.00	6.00	.....	28.6	29.2	4589
2.21	2.01	16.35	5.98	.....	.....	34.5	4898
3.16	2.97	8.60	6.47	.....	27.3	29.1	4334
3.23	3.02	8.35	6.63	.....	.....	29.3	4335
3.22	3.03	8.30	6.75	.....	.....	29.3	4336
3.98	3.84	12.75	8.63	.....	.....	39.6	4590
3.01	2.88	8.90	10.51	.....	32.1	33.8	4337
3.17	3.01	10.45	3.67	.....	26.1	28.0	4338
3.19	2.98	10.80	3.66	.....	.....	28.5	4591
4.20	4.07	10.70	4.61	.....	30.8	33.1	4179
4.21	4.01	10.35	4.64	.....	.....	32.7	4339
9.04	8.91	16.80	19.38	.....	74.7	75.1	4180
7.80	7.63	14.60	18.54	.....	.....	67.1	4340
.....	.....	20.25	.....	.....	24.0	24.3	4341
.....	.....	20.40	.....	.....	.....	24.5	4342
.....	.....	20.90	.....	.....	.....	25.1	4343
.....	.....	20.25	.....	.....	.....	24.3	4784
.....	.....	20.15	.....	.....	.....	24.2	4899
.....	.....	20.00	.....	.....	.....	24.0	4900

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Cumberland Chemical Co., Hopkinsville, Ky.—Continued</b>		
4785	Cumberland 40% Superphosphate .....	Ratliff Hardware Co., Princeton.....
4344	Cumberland 0-10-4 (Muriate).....	T. W. Hall, Elkton.....
4901		Mose Dunning, Crofton.....
4902		T. W. Hall, Elkton.....
<b>Darling and Co., Chicago, and E. St. Louis, Ill.</b>		
4345	Darling's 2-8-4 (Muriate).....	A. W. Jolly, Cloverport.....
4181	Darling's 3-8-6 (Muriate).....	E. S. Ferrill and Sons, Buffalo.....
4592		A. W. Jolly, Cloverport.....
4346	Darling's 3-10-3 (Muriate) .....	E. S. Ferrill & Sons, Buffalo.....
4182	Darling's 20% Superphosphate....	V. B. Nuckols, Elkton.....
4786		E. S. Ferrill and Sons, Buffalo.....
<b>The Davison Chemical Corporation, Hopkins Fertilizer Division, New Albany, Ind.</b>		
4183	Hopkins "Old Time" 2-8-4 (Muriate) .....	W. S. Allen and Co., Liberty.....
4184		R. D. Reynolds, Cave City.....
4347		J. S. Squires, Cane Valley.....
4593		Craig's Feed Store, Owensboro.....
4787		G. C. McPhetridge, London.....
4788		P. S. Young, Caneyville.....
4789		Buechel Produce Exchange, Buechel.....
4790		Hardin County Milling Co., Elizabethtown .....
4903	Hopkins "Old Time" 2-10-4 (Muriate) .....	Henderson Feed and Commission Co., Henderson .....
4348	Hopkins "Old Time" 2-12-6 (Muriate) .....	Duncan and Theiss, LaGrange .....
4594		Henderson Feed and Commission Co., Henderson .....
4904		Henderson Feed and Commission Co., Henderson .....
4085	Hopkins' "Old Time" 3-8-6 (Muriate) .....	Buechel Produce Exchange, Buechel.....
4349		R. D. Reynolds, Cave City.....
4350		Conner-Hayden Co., Bardstown.....
4351		D. S. Richardson, Midway.....
4352		William P. Miller & Son, Shively.....
4595		Craig's Feed Store, Owensboro.....
4791		Buechel Produce Exchange, Buechel.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
.....	.....	<b>38.15</b>	.....	.....	48.0	<b>45.8</b>	4785
.....	.....	9.70	4.50	.....	16.8	17.0	4344
.....	.....	10.05	4.68	.....	.....	17.7	4901
.....	.....	9.70	4.21	.....	.....	16.7	4902
2.01	1.64	7.90	4.41	.....	21.4	21.8	4345
3.04	2.69	8.25	6.28	.....	27.3	28.1	4181
3.09	2.70	8.95	6.11	.....	.....	28.9	4592
3.03	2.61	9.80	3.05	.....	26.1	26.1	4346
.....	.....	19.65	.....	.....	24.0	23.6	4182
.....	.....	20.20	.....	.....	.....	24.2	4786
2.11	1.92	8.30	4.74	.....	21.4	23.0	4183
2.05	1.88	9.15	4.33	.....	.....	23.4	4184
2.09	1.87	7.95	4.94	.....	.....	22.8	4347
1.99	1.74	8.25	4.80	.....	.....	22.6	4593
2.05	1.73	9.25	4.38	.....	.....	23.5	4787
2.04	1.80	8.50	4.76	.....	.....	23.1	4788
2.21	2.09	8.00	5.30	.....	.....	23.7	4789
2.06	1.82	8.15	4.63	.....	.....	22.6	4790
2.71	2.43	10.45	5.88	.....	23.8	29.1	4903
2.17	1.91	11.95	6.39	.....	28.6	29.6	4348
2.13	1.87	12.00	6.89	.....	.....	30.1	4594
1.95	1.75	12.60	6.26	.....	.....	29.5	4904
3.14	2.87	8.25	6.50	.....	27.3	28.7	4085
3.05	2.83	8.40	6.15	.....	.....	28.1	4349
3.20	2.98	8.60	6.54	.....	.....	29.4	4350
2.99	2.70	8.20	6.93	.....	.....	28.6	4351
3.02	2.74	8.40	7.14	.....	.....	29.2	4352
3.13	2.89	8.25	6.82	.....	.....	29.0	4595
3.24	2.99	8.25	6.62	.....	.....	29.2	4791

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>The Davison Chemical Corporation, Hopkins Fertilizer Division, New Albany, Ind.—Continued</b>		
4596	Hopkins' "Old Time" 3-8-6 (Sulfate)	Garfield Mercantile Co., Garfield
4353	Hopkins' "Old Time" 3-10-3 (Muriate)	Conner-Hayden Co., Bardstown
4354		G. C. McPhetridge, London
4792		G. C. McPhetridge, London
4793		Hardin County Milling Co., Elizabethtown
4086	Hopkins' "Old Time" 4-8-4 (Muriate)	Climax Roller Mills, Shelbyville
4355		G. C. McPhetridge, London
4087	Hopkins' "Old Time" 4-8-6 (Muriate)	Buechel Produce Exchange, Buechel
4794		Buechel Produce Exchange, Buechel
4088	Hopkins' "Old Time" 4-10-4 (Muriate)	Frank J. Murphy, Valley Station
4356	Hopkins' "Old Time" 4-10-6 (Muriate)	Barney Rasner, Columbia
4597		Craig's Feed Store, Owensboro
4089	Hopkins' "Old Time" 6-8-6 (Muriate)	Buechel Produce Exchange, Buechel
4357		D. S. Richardson, Midway
4358		McFarland Implement and Seed Co., Bowling Green
4359		Lenn Webb, Hawesville
4795		Buechel Produce Exchange, Buechel
4360	Hopkins' "Old Time" 20% Superphosphate	J. S. Squires, Cane Valley
4598		Calvin Richards, Fordsville
4796		G. C. McPhetridge, London
4797		Conner-Haydon, Bardstown
<b>The Davison Chemical Corporation, Read Phosphate Division, Nashville, Tenn.</b>		
4361	Read 2-8-4 (Muriate)	Garfield Mercantile Co., Garfield
4362		Barney Rasner, Columbia
4599		Buen Shocklee, Livermore
4798		E. S. Ferrill and Son, Buffalo
4799		Sam Terry, Big Clifty
4800	Read 2-10-4 (Muriate)	Noah Spears, Franklin

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.20	2.97	8.65	7.51	.....	27.3	30.6	4596
3.48	3.26	10.35	5.49	.....	26.1	31.2	4353
2.84	2.60	10.35	4.17	.....	.....	27.4	4354
3.07	2.74	10.12	3.58	.....	.....	27.2	4792
3.00	2.61	9.35	3.59	.....	.....	26.0	4793
4.61	4.03	7.65	4.93	.....	28.4	31.2	4086
4.38	4.15	8.05	4.66	.....	.....	30.6	4355
4.11	3.73	8.00	6.58	.....	30.8	31.9	4087
4.19	3.95	8.30	6.20	.....	.....	32.1	4794
4.14	3.89	10.75	4.71	.....	30.8	33.0	4088
3.35	3.14	11.00	7.53	.....	33.2	34.0	4356
4.38	4.15	10.40	6.79	.....	.....	36.0	4597
6.40	6.21	8.75	6.32	.....	37.8	40.5	4089
6.30	5.91	8.85	6.29	.....	.....	40.2	5357
6.11	5.80	8.65	6.38	.....	.....	39.4	4358
6.64	6.44	8.75	6.75	.....	.....	41.8	4359
6.14	5.90	8.75	6.40	.....	.....	39.7	4795
.....	.....	20.10	.....	.....	24.0	24.1	4360
.....	.....	20.15	.....	.....	.....	24.2	4598
.....	.....	20.05	.....	.....	.....	24.1	4796
.....	.....	20.00	.....	.....	.....	24.0	4797
2.15	1.92	8.40	4.60	.....	21.4	23.1	4361
2.22	1.89	7.85	4.77	.....	.....	22.9	4362
2.53	2.23	9.50	3.94	.....	.....	25.0	4599
2.84	2.59	9.50	3.36	.....	.....	25.4	4798
2.12	1.78	7.70	4.52	.....	.....	22.1	4799
3.39	3.10	9.30	5.14	.....	23.8	29.2	4800

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>The Davison Chemical Corporation, Read Phosphate Division, Nashville, Tenn.—Continued</b>		
4090 4185 4186 4363	Read 3-8-6 (Muriate)	Bell County Supply Co., Middlesboro... W. M. Jasper, W. Somerset... E. T. Meador, Scottsville... Hatter Hardware Co., Franklin...
4364 4600	Read "Old Kentucky Grower" 3-8-6 (Sulfate)	J. B. Hatcher and Co., Park City... O. M. Holloway, Mayfield...
4365	Read 3-10-3 (Muriate)	Barney Rasner, Columbia
4091 4187 4905	Read 4-8-4 (Muriate)	Brent and Co., Lexington... Fulkerson Bros., Sonora... Guenther Hardware Co., Owensboro...
4366 4601 4602	Read 4-12-8 (Muriate)	Barney Rasner, Columbia... Swann and Miller, Lynn Grove... Mayfield Milling Co., Mayfield...
4092 4906	Read 5-10-5 (Muriate)	Bell County Supply Co., Middlesboro... Guenther Hardware Co., Owensboro...
4367	Read 6-8-6 (Muriate)	Cadiz Hardware Co., Cadiz
4188 4368	Read 0-10-4 (Muriate)	Geo. P. Taylor Co., Somerset... Bell County Supply Co., Middlesboro...
4189 4369 4801 4802 4803	Read 20% Superphosphate	W. D. Dickinson, Glasgow... Thompson Hardware Co., Trenton... Huff Brothers, Caneyville... E. A. Cohen, Greenville... Barney Rasner, Columbia...
4370 4371 4603 4604 4804 4907	"Davco Granulated" 20% Superphosphate	H. A. Snider, Franklin... Barney Rasner, Columbia... Guenther Hardware Co., Owensboro... Mayfield Milling Co., Mayfield... J. B. Hatcher & Co., Park City... Eldred Hardware Co., Princeton...
4372 4373 4605	"Davco Granulated" 3-8-6 (Muriate)	C. S. Brent and Co., Lexington... Ross McKinley, Cynthiana... Mayfield Milling Co., Mayfield...
4374 4375 4376	"Davco Granulated" 3-8-6 (Sulfate)	Gentry McCauley, Versailles... Hollingsworth-Young Hardware Co., Bowling Green... C. S. Brent and Co., Lexington...

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.11	2.80	8.35	6.19	-----	27.3	28.3	4090
3.33	3.11	8.60	6.14	-----	-----	29.3	4185
3.62	3.37	9.20	4.82	-----	-----	29.5	4186
2.86	2.56	8.90	4.84	-----	-----	26.5	4363
2.29	2.00	10.80	4.93	1.10	27.3	26.9	4364
2.84	2.53	9.70	5.55	.88	-----	28.2	4600
3.36	3.13	10.45	3.86	-----	26.1	28.9	4365
4.13	3.91	7.60	4.38	-----	28.4	28.8	4091
4.36	3.86	8.50	4.56	-----	-----	30.9	4187
2.49	2.29	9.85	4.20	-----	-----	25.6	4905
4.22	4.01	12.65	9.09	-----	38.0	40.9	4366
3.99	3.70	12.15	7.98	-----	-----	38.1	4601
4.23	3.89	12.00	6.25	-----	-----	36.7	4602
3.48	3.24	10.30	6.19	-----	35.5	32.0	4092
3.03	2.79	9.80	6.42	-----	-----	30.1	4906
6.30	6.01	7.80	6.01	-----	37.8	38.6	4367
-----	-----	10.80	4.87	-----	16.8	18.8	4188
-----	-----	9.65	4.51	-----	-----	17.0	4368
-----	-----	16.05	-----	-----	24.0	19.3	4189
-----	-----	16.95	-----	-----	-----	20.3	4369
-----	-----	20.20	-----	-----	-----	24.2	4801
-----	-----	20.75	-----	-----	-----	24.9	4802
-----	-----	19.40	-----	-----	-----	23.3	4803
-----	-----	18.65	-----	-----	24.0	22.4	4370
-----	-----	19.10	-----	-----	-----	22.9	4371
-----	-----	20.20	-----	-----	-----	24.2	4603
-----	-----	16.65	-----	-----	-----	20.0	4604
-----	-----	19.02	-----	-----	-----	22.8	4804
-----	-----	19.05	-----	-----	-----	22.9	4907
5.25	5.13	8.10	8.04	-----	27.3	37.7	4372
3.71	3.51	8.05	6.05	-----	-----	29.9	4373
2.52	2.38	9.20	5.08	-----	-----	26.0	4605
3.21	2.93	8.45	5.85	1.60	27.3	28.4	4374
3.93	3.82	8.20	5.41	2.62	-----	30.1	4375
2.91	2.78	9.05	5.65	-----	-----	27.8	4376

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>The Davison Chemical Corporation, Read Phosphate Division, Nashville, Tenn.—Continued</b>		
4606	"Davco Granulated" 4-8-4 (Muriate)	O. M. Holloway, Mayfield.....
4377	"Davco Granulated" 6-8-6 (Muriate)	C. S. Brent and Co., Lexington.....
4378		J. A. Bennett, Taylorsville.....
4093	"Davco Granulated" 6-8-6 (Sulfate)	C. S. Brent and Co., Lexington.....
4379		C. S. Brent and Co., Lexington.....
4190	Read 4-12-8 (Sulfate)	Farmers Supply Co., Danville.....
4607	Nitrate of Soda 16%	Guenther Hardware Co., Owensboro....
<b>Federal Chemical Co., Inc., Louisville, Ky.</b>		
4094	Federal 2-8-4 (Muriate)	Hazard Grocery and Feed Co., Hazard..
4191		Hobert Warner, Nancy.....
4380		J. L. Taggart, Depoy.....
4381		W. A. Robinson, Bremen.....
4382		O. L. Bristow, Philpot.....
4608		J. S. Whittinghill, Fordsville.....
4805		I. K. Miller and Son, Campbellsville....
4806		Corbett Hardware Co., Elizabethtown..
4807		S. & H. Hardware Co., Crab Orchard...
4808		I. K. Miller and Son, Campbellsville....
4809		Edwards Feed Store, Campbellsville....
4908		L. F. Thurmond, Murray.....
4909		Grayson County Supply Co., Leitchfield
4383	Federal 2-8-6 (Muriate)*	H. T. Hackney, Harlan.....
4095	Federal 2-10-4 (Muriate)	Bell Grocery, Baxter.....
4192		Hobert Warner, Nancy.....
4384	Federal 2-12-6 (Muriate)	J. S. Squires, Cane Valley.....
4609		William L. Howard, Whitesville.....
4910		Paramount Hatchery, Sturgis.....
4096	Federal 3-10-3 (Muriate)	Martins Cash Store, Vicco.....
4193		Hobert Warner, Nancy.....
4386		W. E. Hearon, Clay.....
4387		R. S. Toles, Clintonville.....
4810		Grigsby and Co., Bardstown.....
4811		Edwards Feed Store, Campbellsville....
4812		Hobert Warner, Nancy.....
4813		T. L. Rexroat, Russell Springs.....
4911		A. Bresler, Son and Co., Owensboro....

\* Not registered.



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
4.67	4.54	8.10	5.14	.....	28.4	32.2	4606
<b>5.31</b>	5.19	9.35	5.66	.....	37.8	36.6	4377
6.12	5.99	8.80	6.03	.....	.....	39.2	4378
<b>5.43</b>	5.31	9.20	5.51	<b>.98</b>	37.8	36.7	4093
5.92	5.79	9.05	5.88	<b>.98</b>	.....	38.6	4379
4.45	4.29	11.65	8.44	<b>3.46</b>	37.9	39.7	4190
16.12	.....	.....	.....	.....	44.8	45.2	4607
2.20	2.00	8.00	3.98	.....	21.4	22.1	4094
2.14	1.94	8.15	4.04	.....	.....	22.1	4191
2.40	2.17	8.50	4.53	.....	.....	24.0	4380
2.50	2.09	8.40	5.40	.....	.....	25.3	4381
2.33	2.09	7.75	4.54	.....	.....	22.9	4382
2.30	2.15	8.10	4.31	.....	.....	22.9	4608
2.14	1.95	8.20	4.18	.....	.....	22.4	4805
2.06	1.97	8.95	4.52	.....	.....	23.4	4806
2.32	2.23	9.70	4.48	.....	.....	25.1	4807
2.15	2.08	8.50	4.27	.....	.....	22.9	4808
2.02	1.90	9.30	4.31	.....	.....	23.4	4809
2.04	1.91	8.25	4.50	.....	.....	22.4	4908
2.36	2.15	8.95	4.87	.....	.....	24.8	4909
2.31	2.08	9.10	6.42	.....	23.8	26.7	4383
2.42	2.18	<b>8.20</b>	4.42	.....	23.8	23.6	4095
2.00	1.67	10.55	3.66	.....	.....	24.1	4192
2.54	2.29	<b>10.55</b>	<b>5.12</b>	.....	28.6	27.7	4384
1.59	1.39	<b>9.35</b>	<b>4.91</b>	.....	.....	<b>22.7</b>	4609
2.11	1.94	12.20	6.04	.....	.....	29.3	4910
3.09	2.80	10.30	3.09	.....	26.1	26.9	4096
3.34	3.01	10.05	3.01	.....	.....	27.4	4193
3.24	3.01	10.70	5.60	.....	.....	30.9	4386
3.27	2.98	9.90	3.36	.....	.....	27.4	4387
3.12	2.79	10.30	3.11	.....	.....	27.0	4810
3.12	2.73	10.95	3.07	.....	.....	27.7	4811
2.95	2.66	9.45	3.47	.....	.....	25.8	4812
3.35	3.03	11.55	3.40	.....	.....	29.7	4813
3.16	2.94	9.95	4.02	.....	.....	27.8	4911

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Federal Chemical Co., Inc., Louisville, Ky.—Continued</b>		
4097	Federal 3-8-6 (Muriate)	Sandy Valley Grocery Co., Paintsville.
4388		T. E. Furrie, West Point.
4389		R. T. Horton, Utica.
4390		Carson Bailey, Flippin.
4391		Florence Feed Store, Florence.
4392		Vine Street Feed Store, Lexington.
4393		O. L. Bristow, Philpot.
4394		J. L. Taggart, Depoy.
4395		W. E. Hearon, Clay.
4396		Stanley Brothers, Nebo.
4610		Craig's Feed Store, Owensboro.
4611		Campbell's Mill, Kevil.
4612		A. B. Beale and Son, Murray.
4613		W. L. Ferris, Farmington.
4614		J. S. Whittinghill, Fordsville.
4615		M. T. Riley, Paducah.
4616		H. C. Lawrence, Lynn Grove.
4617		Crawford-Ferguson Co., Benton.
4912		Crawford-Ferguson Co., Benton.
4397	Federal 3-8-6 (Sulfate)	I. K. Miller and Son, Campbellsville.
4098	Federal 3-8-10 (Muriate)	Gray Tucker, Cynthiana.
4398		M. J. Wright, Flemingsburg.
4399		R. A. Mayhew, Franklin.
4618		Crawford-Ferguson Co., Benton.
4099	Federal 4-8-4 (Muriate)	Merchants Grocery, Pikeville.
4619		J. P. Page & Son, Barlow.
4100	Federal 3-12-4 (Muriate)	William Stanley, S. Corbin.
4101	Federal 4-10-4 (Muriate)	William Stanley, S. Corbin.
4400		Herbert Law, Adolphus.
4194	Federal 4-10-6 (Muriate)	G. M. Estes, Science Hill.
4401		R. T. Horton, Utica.
4402		R. S. Toles, Clintonville.
4620		A. Bresler, Son and Co., Owensboro.
4621		Wilson Hardware Co., Henderson.
4622		Earl Ward and Son, Paducah.
4913		A. Bresler, Son and Co., Owensboro.
4403	Federal 4-12-8 (Muriate)	Grigsby and Co., Bardstown.
4404		Lewisport Mill Co., Lewisport.
4405		Nay Chesnut, London.
4623		Dairyman's Feed and Supply Co., Mayfield
4624		A. Bresler and Son, Murray.

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.04	2.79	8.15	6.08	-----	27.3	27.7	4097
3.00	2.65	7.40	5.92	-----	-----	26.5	4388
2.86	2.61	8.95	6.43	-----	-----	28.5	4389
3.21	2.95	8.90	6.32	-----	-----	29.5	4390
3.15	2.87	8.00	6.26	-----	-----	28.1	4391
3.64	3.36	7.50	6.21	-----	-----	29.2	4392
2.99	2.74	8.00	6.23	-----	-----	27.5	4393
3.10	2.75	7.80	5.87	-----	-----	27.3	4394
3.33	3.10	8.05	5.80	-----	-----	28.3	4395
3.54	3.23	8.30	6.25	-----	-----	29.9	4396
2.90	2.68	8.00	6.27	-----	-----	27.3	4610
3.01	2.82	8.55	6.01	-----	-----	28.0	4611
3.05	2.74	8.05	6.63	-----	-----	28.3	4612
2.94	2.78	8.55	6.00	-----	-----	27.8	4613
2.88	2.71	5.75	4.07	-----	-----	21.9	4614
3.09	2.83	7.95	6.17	-----	-----	27.8	4615
2.84	2.69	9.30	6.81	-----	-----	29.3	4616
2.68	2.53	8.90	6.38	-----	-----	27.7	4617
3.00	2.75	7.72	6.25	-----	-----	27.3	4912
4.23	3.78	10.60	6.73	-----	27.3	35.6	4397
3.03	2.76	8.25	10.35	-----	32.1	32.9	4098
3.11	2.83	8.60	9.51	-----	-----	32.6	4398
3.05	2.88	8.20	8.75	-----	-----	31.0	4399
2.22	2.10	8.30	9.79	-----	-----	29.5	4618
3.86	2.58	8.25	4.34	-----	28.4	28.6	4099
3.78	3.56	7.85	4.03	-----	-----	27.5	4619
2.66	2.43	10.30	4.06	-----	29.7	26.5	4100
3.75	3.43	9.85	5.00	-----	30.8	31.0	4101
2.95	2.69	10.75	3.78	-----	-----	27.8	4400
3.43	3.19	9.25	6.06	-----	33.2	30.4	4194
4.01	3.76	9.90	6.50	-----	-----	33.7	4401
4.30	4.00	9.80	6.16	-----	-----	34.2	4402
3.84	3.64	10.55	6.16	-----	-----	33.5	4620
3.59	3.32	10.65	5.07	-----	-----	31.4	4621
4.20	3.94	10.40	6.22	-----	-----	34.6	4622
3.71	3.50	10.85	5.80	-----	-----	33.0	4913
3.68	3.41	12.10	7.78	-----	38.0	36.7	4403
3.83	3.54	11.25	7.35	-----	-----	35.7	4404
3.89	3.59	11.80	8.21	-----	-----	37.6	4405
3.83	3.56	11.85	9.50	-----	-----	39.0	4623
4.07	3.72	10.15	7.25	-----	-----	35.1	4624

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Federal Chemical Co., Inc., Louisville, Ky.—Continued</b>		
4406 4625	Federal 4-16-4 (Muriate)	Nay Chesnut, London..... M. T. Riley, Paducah.....
4102 4407	Federal 4-12-0	McCauley Brothers Seed Co., Versailles Gentry McCauley, Versailles
4103 4104 4195 4408	Federal 5-10-5 (Muriate)	Merchants Grocery, Pikeville ..... H. T. Hackney Grocery, Harlan..... Fountain Run Feed Co., Fountain Run.. W. A. Robinson, Bremen.....
4105 4409 4410 4626	Federal 6-8-6 (Muriate)	Gray Tucker, Cynthiana..... Berea Bargain Store, Berea..... Williamsburg Hardware Co., Williamsburg ..... O. L. Bristow, Philpot.....
4411 4627	Federal 6-8-6 (Sulfate)	Gray Tucker, Cynthiana ..... A. C. Bogie, Winchester.....
4412 4413	Federal 6-10-10 (Muriate)	R. S. Toles, Clintonville..... Clarence LeBus Estate, Lexington.....
4414	Federal 6-12-12 (Muriate)	Clarence LeBus Estate, Lexington.....
4415 4628 4629 4814 4815 4816	Federal 0-10-4 (Muriate)	J. S. Squires, Cane Valley..... Crawford-Ferguson Co., Benton..... W. L. Ferris, Farmington..... I. K. Miller and Son, Campbellsville..... Edwards Feed Store, Campbellsville..... H. D. Jones, Glasgow.....
4416	Federal 45% Superphosphate	R. S. Toles, Clintonville.....
4196 4197 4417 4418 4419 4630 4631 4632 4633 4634 4817 4818 4819 4820 4914 4915	Federal 20% Superphosphate	H. D. Jones, Glasgow..... Hobart Warner, Nancy ..... I. K. Miller and Sons, Campbellsville... Horace Emmick, Lewisport..... Mrs. Hayden Miles, Ekron..... A. B. Beale and Son, Murray..... Youngblood Bros., Mayfield..... Holmes and Ivy, Mayfield..... J. S. Whittinghill, Fordsville..... Crawford-Ferguson Co., Benton..... E. T. Meador, Scottsville..... T. L. Rexroat, Russell Springs..... Hobart Warner, Nancy ..... I. K. Miller and Son, Campbellsville... Grayson County Supply Co., Leitchfield Otis Stevens, Beaver Dam.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.90	3.61	14.10	5.88	.....	38.0	37.6	4406
4.18	3.92	16.55	4.40	.....	.....	39.8	4625
4.17	3.59	12.30	.....	.....	28.4	29.4	4102
4.13	3.67	13.50	.....	.....	.....	30.7	4407
4.77	4.45	10.10	4.99	.....	35.5	34.8	4103
4.83	4.43	10.80	5.22	.....	.....	36.1	4104
4.40	4.04	11.95	6.76	.....	.....	37.9	4195
4.35	4.12	9.90	5.38	.....	.....	33.6	4408
5.83	5.38	8.00	6.91	.....	37.8	38.3	4105
5.94	5.49	7.85	6.50	.....	.....	38.0	4409
5.79	5.41	8.40	6.58	.....	.....	38.2	4410
5.44	5.01	8.35	6.37	.....	.....	36.7	4626
5.23	4.73	8.20	7.08	1.38	37.8	36.6	4411
5.42	5.01	8.60	6.69	1.36	.....	37.3	4627
5.86	5.42	10.75	9.34	.....	45.0	44.6	4412
5.78	5.31	11.25	10.00	.....	.....	45.7	4413
6.28	5.78	12.20	9.37	.....	49.8	47.9	4414
.....	.....	10.10	6.08	.....	16.8	19.4	4415
.....	.....	9.20	4.85	.....	.....	16.9	4628
.....	.....	10.15	4.30	.....	.....	17.3	4629
.....	.....	10.75	4.45	.....	.....	18.2	4814
.....	.....	12.15	4.60	.....	.....	20.1	4815
.....	.....	10.60	3.89	.....	.....	17.4	4816
.....	.....	43.50	.....	.....	54.0	52.2	4416
.....	.....	20.70	.....	.....	24.0	24.8	4196
.....	.....	19.05	.....	.....	.....	22.9	4197
.....	.....	19.25	.....	.....	.....	23.1	4417
.....	.....	19.55	.....	.....	.....	23.5	4418
.....	.....	19.75	.....	.....	.....	23.7	4419
.....	.....	18.70	.....	.....	.....	22.4	4630
.....	.....	18.85	.....	.....	.....	22.6	4631
.....	.....	19.10	.....	.....	.....	22.9	4632
.....	.....	20.35	.....	.....	.....	24.4	4633
.....	.....	20.55	.....	.....	.....	24.7	4634
.....	.....	20.40	.....	.....	.....	24.5	4817
.....	.....	19.95	.....	.....	.....	23.9	4818
.....	.....	19.95	.....	.....	.....	23.9	4819
.....	.....	19.85	.....	.....	.....	23.8	4820
.....	.....	19.80	.....	.....	.....	23.8	4914
.....	.....	19.60	.....	.....	.....	23.5	4915

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Federal Chemical Co., Inc., Louisville, Ky.—Continued</b>		
4198	Federal Limed Superphosphate 20%	J. F. Stamper, Waynesburg.....
4420	Federal Kalko-Phos 20%	Nay Chesnut, London.....
4635		A. Bresler, Son and Co., Owensboro.....
4821		J. F. Stamper, Waynesburg.....
4421	Federal Nitrate of Soda 16%	Williamsburg Hardware Co., Williamsburg.....
4636		E. C. Foltz, Louisville.....
4916		L. F. Thurmond, Murray.....
4106	Federal Sulfate of Ammonia 20.50%	John P. Fister, Lexington.....
4917		Miss Agnes Davis, Russellville.....
4822	Money-Maker 2-8-4 (Muriate)	E. C. Foltz, Louisville.....
4385	Money-Maker 3-10-3 (Muriate)	E. C. Foltz, Louisville.....
4823		E. C. Foltz, Louisville.....
4824		Hall Seed Co., Louisville.....
4422	Money-Maker 3-8-6 (Muriate)	E. C. Foltz, Louisville.....
4423	3-12-4 (Muriate)	W. E. Hearon, Clay.....
4825	"Money-Maker" 20% Superphosphate	E. C. Foltz, Louisville.....
4424	Federal 4-12-4 (Muriate)	Bi-County Farm Bureau Cooperative, Florence.....
4107	Federal 4-12-12 (Muriate)	John P. Fister, Lexington.....
4108		R. P. Clary, Fullerton.....
<b>Hutson Chemical Co., Murray, Ky.</b>		
4637	Hutson's 3-8-6 (Muriate)	N. P. Hutson, Murray.....
4638	Hutson's 4-10-12 (Muriate)	N. P. Hutson, Murray.....
4639	Hutson's 4-12-8 (Muriate)	N. P. Hutson, Murray.....
4640	Hutson's Limed Super-phosphate 20%	Whittemore Bros., Hickory.....
4918		Dairyman's Feed and Supply Co., Mayfield.....
4919		N. P. Hutson, Murray.....
<b>International Agricultural Corporation, Cincinnati, O., Wales, Tenn.</b>		
4199	0-10-4 (Muriate)	C. M. Brown, W. Somerset.....
4642		C. L. Jewell and Son, Louisville.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
.....	.....	19.20 <sup>c</sup>	.....	.....	24.0	23.0	4198
.....	.....	19.00	.....	.....	24.0	22.8	4420
.....	.....	19.15	.....	.....	.....	23.0	4635
.....	.....	20.00	.....	.....	.....	24.0	4821
16.08	.....	.....	.....	.....	44.8	45.0	4421
16.24	.....	.....	.....	.....	.....	45.5	4636
16.16	.....	.....	.....	.....	.....	45.3	4916
20.68	.....	.....	.....	.....	36.9	37.2	4106
20.96	.....	.....	.....	.....	.....	37.7	4917
2.14	1.93	8.45	4.07	.....	21.4	22.5	4822
3.07	2.73	9.95	3.34	.....	26.1	26.7	4385
2.99	2.65	10.45	3.05	.....	.....	26.7	4823
2.70	2.44	11.35	3.51	.....	.....	27.3	4824
2.89	2.63	7.70	6.14	.....	27.3	26.7	4422
3.35	3.10	11.40	5.28	.....	29.7	31.7	4423
.....	.....	20.00	.....	.....	24.0	24.0	4825
4.24	3.92	11.55	5.05	.....	33.2	34.8	4424
3.95	3.67	12.10	12.22	.....	42.8	43.0	4107
4.08	3.80	11.40	13.19	.....	.....	43.8	4108
3.08	2.69	8.00	6.44	.....	27.3	28.1	4637
4.00	3.55	9.90	12.40	.....	40.4	40.8	4638
3.96	3.52	12.05	8.56	.....	38.0	38.6	4639
.....	.....	21.05 <sup>c</sup>	.....	.....	24.0	25.3	4640
.....	.....	20.45 <sup>c</sup>	.....	.....	.....	24.5	4918
.....	.....	20.15 <sup>c</sup>	.....	.....	.....	24.2	4919
.....	.....	9.65	4.18	.....	16.8	16.6	4199
.....	.....	10.20	4.15	.....	.....	17.2	4642

<sup>c</sup> Not limed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>International Agricultural Corporation, Cincinnati, O., Wales, Tenn.—</b>		
<b>Continued</b>		
4425	0-12-12 (Muriate)	John Beard, Crofton
4826		C. M. Brown, W. Somerset
4200	2-8-4 (Muriate)	C. M. Brown, W. Somerset
4201		Cecilian Milling Co., Elizabethtown
4326		J. H. Fedders and Son, Covington
4426		Columbia Building Supply Co., Columbia
4827		C. M. Brown, W. Somerset
4920		C. L. Jewell and Son, Louisville
4427	2-12-6 (Muriate)	J. S. Squires, Cane Valley
4428		Gulley and Pettit, Burlington
4643		C. L. Jewell and Son, Louisville
4828		C. M. Brown, W. Somerset
4109	3-8-6 (Muriate)	Knuckles and Liford, Pineville
4202		C. M. Brown, W. Somerset
4429		W. E. Whittle, Rocky Hill
4430		Harlan Fruit Co., Harlan
4431		J. L. Wilson, Canmer
4644		Lawson Hardware Co., Greenup
4645		Richardson Grocery, Mt. Sterling
4921		C. L. Jewell and Son, Louisville
4432	3-8-6 (Sulfate)	Farmers Mill, Clay
4433		J. H. Fedders and Son, Covington
4434		Woodson Lewis and Son, Greensburg
4646	3-10-3 (Muriate)	C. L. Jewell and Son, Louisville
4203	3-12-12 (Muriate)	C. M. Brown, W. Somerset
4829		C. M. Brown, W. Somerset
4204	3-12-12 (Muriate 6, Sulfate 6)	C. M. Brown, W. Somerset
4435		Building Supply Co., Columbia
4647		C. L. Jewell and Son, Louisville
4436	4-8-4 (Muriate)	E. F. Pearson, Franklin
4922	4-8-4 (Sulfate)	C. L. Jewell and Son, Louisville
4437	4-12-4 (Muriate)	Gulley and Pettit, Burlington
4438		Minges Hardware Co., Newport
4439	4-10-6 (Sulfate)	Job Cash, Brodhead
4440		J. S. Squires, Cane Valley
4923		C. L. Jewell and Son, Louisville
4441	4-12-8 (Sulfate)	Gulley and Pettit, Burlington



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total <sup>1</sup>	Water soluble	Available			Guaranty	Found	
-----	-----	15.35	11.80	-----	28.8	32.6	4425
-----	-----	12.65	12.05	-----	-----	29.6	4826
1.94	1.64	7.80	3.90	-----	21.4	20.8	4200
1.95	1.65	7.90	3.99	-----	-----	21.1	4201
1.96	1.49	9.00	4.15	-----	-----	22.6	4326
2.08	1.67	8.40	4.07	-----	-----	22.2	4426
2.04	1.73	8.05	4.52	-----	-----	22.2	4827
1.91	1.63	8.35	4.17	-----	-----	21.7	4920
2.19	1.88	12.75	6.46	-----	28.6	30.7	4427
2.10	1.70	12.25	6.27	-----	-----	29.6	4428
2.17	1.75	12.00	6.70	-----	-----	30.0	4643
2.02	1.66	12.45	6.42	-----	-----	29.7	4828
2.86	2.70	8.10	5.72	-----	27.3	26.6	4109
2.95	2.52	8.60	6.50	-----	-----	28.5	4202
3.00	2.59	8.65	6.41	-----	-----	28.6	4429
3.06	2.84	8.60	6.02	-----	-----	28.3	4430
3.05	2.64	7.95	6.98	-----	-----	28.6	4431
3.02	2.58	8.35	6.58	-----	-----	28.5	4644
3.01	2.54	8.35	6.49	-----	-----	28.3	4645
3.04	2.62	8.35	6.00	-----	-----	27.9	4921
2.69	2.29	9.40	6.77	2.74	27.3	28.8	4432
3.15	2.52	8.45	6.61	-----	-----	29.1	4433
3.06	2.61	8.55	6.41	-----	-----	28.7	4434
3.19	2.64	10.30	3.33	-----	26.1	27.5	4646
3.07	2.65	12.45	13.46	-----	39.3	41.8	4203
3.07	2.74	12.15	13.15	-----	-----	41.1	4829
3.03	2.69	12.25	12.42	5.06 <sup>a</sup>	39.3	40.2	4204
2.97	2.63	12.15	12.52	5.10 <sup>a</sup>	-----	40.0	4435
2.99	2.62	12.00	12.55	4.48 <sup>a</sup>	-----	39.9	4647
3.48	3.28	9.70	4.03	-----	28.4	28.7	4436
3.94	3.39	8.20	4.12	-----	28.4	28.6	4922
4.14	3.53	12.20	4.62	-----	33.2	34.7	4437
4.14	3.53	12.35	4.42	-----	-----	34.6	4438
4.04	2.96	10.45	6.16	-----	33.2	34.1	4439
4.08	2.94	10.25	6.12	-----	-----	33.9	4440
4.24	3.59	10.60	6.22	-----	-----	35.0	4923
4.01	3.57	12.20	9.30	-----	38.0	39.8	4441

<sup>a</sup> 5.32 percent chlorine allowed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>International Agricultural Corporation, Cincinnati, O., Wales, Tenn.—</b>		
<b>Continued</b>		
4648		Richardson Grocery, Mt. Sterling.....
4649		C. L. Jewell and Son, Louisville.....
4442	6-8-6 (Muriate) .....	Denton Mercantile Co., Hillsboro.....
4650		C. L. Jewell and Son, Louisville.....
4924		C. L. Jewell and Son, Louisville.....
4651	6-8-6 (Sulfate) .....	C. L. Jewell and Son, Louisville.....
4205	20% Superphosphate .....	C. M. Brown, W. Somerset.....
4443		R. R. Cox, Oakland.....
4444		Woodson Lewis and Son, Greensburg...
4830		C. M. Brown, W. Somerset.....
4831		Cecilian Milling Co., Elizabethtown.....
4832		M. C. Raymer, Bowling Green.....
4833		Denton Mercantile Co., Hillsboro.....
4925		Irvington Truck Line, Irvington.....
4110	International 4-10-4 (Muriate)....	Youtsey Brothers, Alexandria.....
4111	5-10-5 (Muriate) .....	Harlan Fruit Co., Harlan .....
4652	0-14-7 (Muriate) .....	C. L. Jewell and Son, Louisville.....
<b>Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.</b>		
4206	Basic 0-10-4 (Muriate).....	G. H. Bowles and Son, Glasgow.....
4207		C. M. Langdon, Science Hill.....
4208		J. C. Burleson, Waynesburg.....
4445		H. B. McClary, Auburn.....
4834		Allison Shippe, Campbellsville.....
4835		G. H. Bowles and Son, Glasgow.....
4836		Parker Cooper, Monticello .....
4446	Basic 0-10-6 (Muriate) .....	W. Bryant Robertson, Adairville.....
4837		Robert Rouse, Lexington.....
4838		G. H. Bowles and Son, Glasgow.....
4839		Vick Smith, Bowling Green.....
4112	Pulverized 2-8-4 (Muriate).....	W. H. Brock and Co., Maysville.....
4209		C. M. Langdon, Science Hill.....
4113	2-10-4 (Muriate) .....	Jellico Grocery, Harlan .....
4447		Hood and Berry, Greensburg.....
4840		A. T. Sanders, Lancaster .....
4926		H. B. McClary, Auburn .....
4927	Knox 2-12-6 (Muriate) .....	Harris Feed Co., Franklin.....
4114	3-8-5 (Muriate 3, Sulfate 2).....	Blair Grocery, West Liberty .....
4210		Graves Ice and Coal Co., Scottsville.....
4448		Croft Grocery Co., Manchester.....
4653		W. H. Brock & Co., Winchester.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.94	3.49	12.45	7.75	.....	.....	38.0	4648
4.29	3.84	12.20	8.09	.....	.....	39.4	4649
5.95	5.35	9.05	7.29	.....	37.8	40.4	4442
5.78	5.21	9.10	6.81	.....	.....	39.3	4650
6.08	5.29	8.30	6.22	.....	.....	38.7	4924
6.24	5.96	8.20	6.46	2.44	37.8	39.4	4651
.....	.....	20.90	.....	.....	24.0	25.1	4205
.....	.....	20.20	.....	.....	.....	24.2	4443
.....	.....	21.35	.....	.....	.....	25.6	4444
.....	.....	20.80	.....	.....	.....	25.0	4830
.....	.....	21.10	.....	.....	.....	25.3	4831
.....	.....	19.80	.....	.....	.....	23.8	4832
.....	.....	20.55	.....	.....	.....	24.7	4833
.....	.....	21.00	.....	.....	.....	25.2	4925
4.11	3.45	9.95	4.01	.....	30.8	31.1	4110
4.86	4.33	10.05	5.43	.....	35.5	35.6	4111
.....	.....	14.90	7.25	.....	25.2	26.6	4652
.....	.....	9.95	4.61	.....	16.8	17.5	4206
.....	.....	10.30	4.17	.....	.....	16.4	4207
.....	.....	10.30	4.48	.....	.....	17.7	4208
.....	.....	10.05	4.75	.....	.....	17.8	4445
.....	.....	10.15	4.48	.....	.....	17.6	4834
.....	.....	10.15	4.63	.....	.....	17.7	4835
.....	.....	10.75	4.38	.....	.....	18.2	4836
.....	.....	10.35	7.02	.....	19.2	20.8	4446
.....	.....	10.70	5.72	.....	.....	19.7	4837
.....	.....	10.30	7.24	.....	.....	21.1	4838
.....	.....	11.00	6.08	.....	.....	20.5	4839
2.00	1.92	8.85	4.22	.....	21.4	22.7	4112
2.05	2.02	8.40	4.16	.....	.....	22.3	4209
1.98	1.90	10.50	4.42	.....	23.8	24.8	4113
1.98	1.82	10.00	4.43	.....	.....	24.3	4447
2.01	1.89	10.65	4.09	.....	.....	24.7	4840
2.16	1.94	10.70	4.25	.....	.....	25.5	4926
2.03	1.83	12.15	6.58	.....	28.6	29.6	4927
3.14	2.64	9.75	5.29	2.02 <sup>a</sup>	26.1	29.0	4114
3.14	2.67	8.50	5.59	2.58 <sup>a</sup>	.....	27.9	4210
2.96	2.55	8.10	5.50	1.94 <sup>a</sup>	.....	26.7	4448
3.11	2.57	8.45	5.30	1.98 <sup>a</sup>	.....	27.4	4653

<sup>a</sup> 2.86 percent chlorine allowed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.—Continued</b>		
4115	Knox 3-8-6 (Muriate).....	Chappell Grocery, Pineville.....
4116		Salysersville Wholesale Co., Salysersville
4841		Parker Cooper, Monticello.....
4117	“Pulverized” 3-10-3 (Muriate)....	W. H. Brock & Co., Maysville.....
4211		Parker S. Cooper, Monticello.....
4842		Parker S. Cooper, Monticello.....
4118	“Pulverized” 4-8-4 (Muriate) .....	W. H. Brock and Co., Maysville.....
4212	4-10-4 (Muriate) .....	C. M. Langdon, Science Hill .....
4654	4-10-8 (Muriate 5, Sulfate 3).....	Farmers Grain and Produce Co., Springfield .....
4119	Knox 4-12-0 .....	W. H. Brock and Co., Maysville.....
4843	4-12-4 (Muriate) .....	Parker Cooper, Monticello.....
4449	“Pulverized” 4-12-8 (Muriate).....	H. B. McClary, Auburn.....
4655		Farmers Grain and Produce Co., Springfield .....
4120	“Pulverized” 5-10-5 (Muriate) ....	Jellico Grocery, Harlan .....
4213		J. C. Burlison, Waynesburg.....
4214		Whitesburg Wholesale Co., Whitesburg
4450		Ross-Hollingsworth and Co., Tompkinsville .....
4121	“Pulverized” 6-8-6 (Muriate).....	Richmond Hatchery, Richmond.....
4656		Farmers Grain and Produce Co., Springfield .....
4451	“Pulverized” 6-8-6 (Sulfate).....	Fayette Seed Co., Lexington.....
4215	Knox “Pulverized” Super- phosphate 20% .....	C. M. Langdon, Science Hill .....
4452		Harris Feed Co., Franklin.....
4453		Giltner Seed and Feed Co., Eminence...
4844		C. M. Langdon, Science Hill .....
4845		Vick Smith, Bowling Green.....
4846		E. T. Meador, Scottsville.....
4847		Allison Shippe, Campbellsville.....
4122	“Pulverized” Superphosphate 44% .....	Salysersville Wholesale Co., Salysersville
4454	“Amnite Brand” 15-0-0 .....	Shippe and Warner, Campbellsville.....
4455		Hood and Berry, Greensburg.....
4456		W. Bryant Robertson, Adairville.....
4928		Vick Smith, Bowling Green.....
4217	Sulfate of Potash 48%.....	Stuart’s Grocery, Horse Cave.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.11	3.03	8.50	6.39	.....	27.3	28.8	4115
3.16	3.03	8.75	6.42	.....	.....	29.3	4116
2.78	2.67	9.35	5.50	.....	.....	27.6	4841
3.38	3.29	10.90	3.22	.....	26.1	28.8	4117
3.47	3.37	10.70	3.59	.....	.....	29.3	4211
3.09	2.94	10.15	3.38	.....	.....	27.1	4842
3.78	3.66	8.40	3.98	.....	28.4	28.1	4118
4.04	3.93	11.10	4.17	.....	30.8	32.5	4212
4.26	3.70	10.25	8.28	3.76 <sup>b</sup>	35.6	37.2	4654
4.14	3.63	11.35	.....	.....	28.4	28.1	4119
4.01	3.84	12.25	4.30	.....	33.2	33.9	4843
3.55	3.29	12.50	6.22	.....	38.0	34.9	4449
4.13	4.02	12.50	7.79	.....	.....	38.8	4655
5.00	4.88	10.55	5.15	.....	35.5	36.3	4120
4.62	4.43	10.50	4.87	.....	.....	34.6	4213
5.21	5.09	10.45	5.16	.....	.....	37.0	4214
5.01	4.85	10.15	5.11	.....	.....	35.9	4450
5.74	4.90	8.95	5.60	.....	37.8	37.6	4121
5.99	5.25	8.45	5.93	.....	.....	38.2	4656
6.79	5.70	8.00	6.05	.....	37.8	40.6	4451
.....	.....	20.00	.....	.....	24.0	24.0	4215
.....	.....	19.90	.....	.....	.....	23.9	4452
.....	.....	20.35	.....	.....	.....	24.4	4453
.....	.....	20.65	.....	.....	.....	24.8	4844
.....	.....	19.60	.....	.....	.....	23.5	4845
.....	.....	20.80	.....	.....	.....	25.0	4846
.....	.....	20.60	.....	.....	.....	24.7	4847
.....	.....	42.60	.....	.....	52.8	51.1	4122
15.16	.....	.....	.....	.....	27.0	27.3	4454
15.76	.....	.....	.....	.....	.....	28.4	4455
15.22	.....	.....	.....	.....	.....	27.4	4456
15.20	.....	.....	.....	.....	.....	27.4	4928
.....	.....	.....	50.24	.....	52.8	55.3	4217

<sup>b</sup> 4.41 percent chlorine allowed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Louisville Fertilizer Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
4929	Louisville 3-8-6 (Muriate).....	Yopp Seed Co., Paducah.....
4657	Louisville 4-16-4 (Muriate).....	Yopp Seed Co., Paducah.....
4658	Louisville 20% Superphosphate.....	Yopp Seed Co., Paducah.....
4930		Yopp Seed Co., Paducah.....
4931	Louisville 4-8-4 (Sulfate).....	Yopp Seed Co., Paducah.....
4699	Louisville 10-6-4 (Muriate).....	Yopp Seed Co., Paducah.....
4659	Louisville 5-10-5 (Muriate).....	Yopp Seed Co., Paducah.....
<b>Morris Fertilizer Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
4458	"Old Black Joe" 2-10-4 (Muriate) .....	Duncan and Winstead, Dixon.....
4932		Duncan and Winstead, Dixon.....
4933	Morris 20% Superphosphate.....	Duncan and Winstead, Dixon.....
<b>National Chemical Co., Louisville, Ky.</b>		
4660	"Big Pay Brand" 3-8-10 (Muriate) .....	W. K. Harmon, Perryville.....
4849	"Big Pay Brand" 3-10-3 (Muriate) .....	Bunton Seed Co., Louisville.....
4850	"Big Pay Brand" 20% Super-phosphate .....	Henry Durham, Greensburg.....
<b>North American Fertilizer Co., Louisville, Ky.</b>		
4218	N. Am. 0-10-4 (Muriate).....	W. W. Owens, Russell Springs.....
4854	N. Am. 2-12-6 (Muriate).....	W. W. Owens, Russell Springs.....
4219	N. Am. 2-8-4 (Muriate).....	W. W. Owens, Russell Springs.....
4459		Miller Hardware Co., Magnolia.....
4460		H. R. Squires, Greensburg.....
4851		Miller Hardware Co., Magnolia.....
4852		W. W. Owens, Russell Springs.....
4853		Henry Durham, Greensburg.....
4050	N. Am. 3-8-6 (Muriate).....	Boyle-Mercer State Farms, Danville.....
4123		Renfro Supply Co., Williamsburg.....
4220		Baughman Milling Co., Stanford.....
4461		R. D. Reynolds, Cave City.....
4855		W. D. Cunningham, Webbs Cross Roads.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
2.83	2.46	8.00	6.55	.....	27.3	27.4	4929
4.07	3.54	15.50	4.44	.....	38.0	38.2	4657
.....	.....	20.70	.....	.....	24.0	24.8	4658
.....	.....	20.10	.....	.....	.....	24.1	4930
<b>3.27</b>	2.44	8.30	4.64	.....	28.4	<b>27.0</b>	4931
<b>5.64</b>	5.09	12.50	5.17	.....	47.0	<b>40.9</b>	4699
5.37	4.93	10.55	5.40	.....	35.5	37.9	4659
2.00	1.75	9.50	4.10	.....	23.8	23.3	4458
2.08	1.74	10.05	4.16	.....	.....	24.3	4932
.....	.....	20.50	.....	.....	24.0	24.6	4933
3.15	2.89	8.15	10.53	.....	32.1	33.4	4660
2.81	2.53	9.50	3.10	.....	26.1	<b>25.0</b>	4849
.....	.....	20.00	.....	.....	24.0	24.0	4850
.....	.....	10.15	4.32	.....	16.8	17.4	4218
1.88	1.69	12.40	5.45	.....	28.6	28.0	4854
2.31	2.17	7.95	4.09	.....	21.4	22.5	4219
2.07	1.94	7.25	4.15	.....	.....	20.9	4459
1.96	1.83	7.55	3.91	.....	.....	20.6	4460
1.98	1.74	8.30	4.19	.....	.....	21.9	4851
1.75	1.54	8.85	3.76	.....	.....	21.3	4852
1.86	1.64	8.35	4.04	.....	.....	21.4	4853
3.33	3.21	8.85	5.68	.....	27.3	29.1	4050
3.19	3.06	9.05	5.94	.....	.....	29.2	4123
2.73	2.56	9.60	<b>5.18</b>	.....	.....	27.3	4220
3.04	2.85	8.10	6.09	.....	.....	27.7	4461
3.04	2.87	7.95	5.98	.....	.....	27.4	4855

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>North American Fertilizer Co., Louisville, Ky.—Continued</b>		
4462	N. Am. 3-8-10 (Sulfate)	U. L. Rogers, Gradyville
4124	N. Am. 3-10-3 (Muriate)	Renfro Supply Co., Williamsburg
4221		S. P. Tuggle, Albany
4856		Henry Durham, Greensburg
4934		S. P. Tuggle, Albany
4051	N. Am. 3-12-4 (Muriate)	Boyle-Mercer County Farms, Danville
4661		W. K. Harmon, Perryville
4052	N. Am. 4-8-4 (Muriate)	Feeble-Minded Institute, Frankfort
4222		Baughman Milling Co., Stanford
4857		E. C. Wiggington, Fisherville
4053	N. Am. 4-8-6 (Muriate)	Kentucky Houses of Reform, Greendale
4054	N. Am. 4-10-4 (Muriate)	Boyle-Mercer State Farms, Danville
4463		Renfro Supply Co., Williamsburg
4858		Bunton Seed Co., Louisville
4125	N. Am. 4-12-0	Browning Coal & Feed Co., Winchester
4223		Baughman Milling Co., Stanford
4055	N. Am. 4-12-4 (Muriate)	Kentucky Houses of Reform, Greendale
4464		Western State Hospital, Hopkinsville
4465		Central State Hospital, Lakeland
4466	N. Am. 4-12-8 (Muriate)	J. W. Palmer, Stamping Ground
4467		Knight Brothers, Pleasureville
4662		J. W. Richards and Son, Mt. Sterling
4056	N. Am. 5-10-5 (Muriate)	Eastern State Hospital, Lexington
4057		Feeble-Minded Institute, Frankfort
4058		Kentucky Houses of Reform, Greendale
4468		Western State Hospital, Hopkinsville
4469		Kentucky Children's Home, Lyndon
4470	N. Am. 6-8-3 (Muriate)	W. C. Howk, Cynthiana
4224	N. Am. 6-8-6 (Muriate)	Ky. State Reformatory, La Grange
4471		L. C. Littrell, Owenton
4663		J. W. Richards and Son, Mt. Sterling
4664		A. W. Jolly, Cloverport
4665		Browning Coal Co., Winchester
4472	N. Am. 20% Superphosphate	Ky. State Reformatory, La Grange
4473		U. L. Rogers, Gradyville
4474		Western State Hospital, Hopkinsville
4666		Monarch Milling Co., Mt. Sterling
4667		R. Z. Hook, Hardinsburg
4859		W. D. Cunningham, Webbs Cross Roads



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
2.96	2.64	8.20	10.50	<b>2.06</b>	32.1	32.8	4462
3.32	3.17	10.25	3.88	.....	26.1	28.6	4124
2.89	2.69	9.70	3.05	.....	26.1	25.4	4221
2.71	2.46	10.05	3.15	.....	.....	25.3	4856
3.33	3.03	9.90	3.46	.....	.....	27.7	4934
3.17	2.95	12.70	4.38	.....	29.7	31.6	4051
3.18	2.83	12.10	4.60	.....	.....	31.2	4661
4.46	4.33	8.35	4.31	.....	28.4	30.8	4052
4.19	4.03	8.10	3.98	.....	.....	29.2	4222
4.23	4.01	8.60	4.13	.....	.....	30.1	4857
3.99	3.80	8.65	6.70	.....	30.8	32.4	4053
4.53	4.36	10.25	4.02	.....	30.8	33.0	4054
4.14	3.94	10.00	3.94	.....	.....	31.2	4463
4.24	4.04	10.15	4.12	.....	.....	32.0	4858
4.29	4.04	12.00	.....	.....	28.4	29.4	4125
4.30	4.03	12.05	.....	.....	.....	29.5	4223
4.21	4.01	12.70	3.81	.....	33.2	34.6	4055
4.35	4.16	12.70	3.77	.....	.....	35.0	4464
4.50	4.31	12.35	3.84	.....	.....	35.2	4465
4.27	4.10	12.15	8.25	.....	38.0	39.4	4466
3.99	3.83	12.90	8.69	.....	.....	39.9	4467
4.12	3.98	12.15	7.60	.....	.....	38.1	4662
5.06	4.90	11.10	4.75	.....	35.5	36.7	4056
5.24	5.09	10.05	4.85	.....	.....	36.2	4057
5.17	5.00	10.15	5.07	.....	.....	36.4	4058
5.37	5.19	9.95	5.22	.....	.....	37.0	4468
5.23	5.05	10.65	4.90	.....	.....	37.0	4469
5.89	5.49	7.95	4.37	.....	34.2	35.4	4470
6.15	6.02	8.45	6.31	.....	37.8	39.2	4224
6.17	6.02	8.25	6.17	.....	.....	38.9	4471
6.10	5.97	8.65	5.63	.....	.....	38.5	4663
6.41	6.28	8.00	6.30	.....	.....	39.6	4664
6.20	6.02	8.15	6.31	.....	.....	39.1	4665
.....	.....	19.70	.....	.....	24.0	23.6	4472
.....	.....	<b>18.95</b>	.....	.....	.....	<b>22.7</b>	4473
.....	.....	20.15	.....	.....	.....	24.2	4474
.....	.....	21.30	.....	.....	.....	24.6	4666
.....	.....	20.70	.....	.....	.....	24.8	4667
.....	.....	20.50	.....	.....	.....	24.6	4859

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>North American Fertilizer Co., Louisville, Ky.—Continued</b>		
4860		Brown Supply Co., Vine Grove.....
4861		R. D. Reynolds, Cave City.....
4225	N. Am. Nitrate of Sode 16%.....	Western State Hospital, Hopkinsville....
4226	N. Am. 4-10-6 (Sulfate).....	Baugman Milling Co., Stanford.....
4475	N. Am. 4-10-6 (Muriate).....	J. W. Palmer, Stamping Ground.....
<b>Organo Corporation of Florida, Orlando, Fla.</b>		
4476	"Vitagen" 1.00-.50-.50 .....	Keene Milling Co., Nicholasville.....
<b>Price Chemical Co., Louisville, Ky</b>		
4228	20% Superphosphate .....	Pruitt and Pruitt, Halfway.....
4477		Trent and Board, Irvington.....
4478		Caulk Hardware Co., Campbellsville.....
4862		Thomas Emerson, Eubank.....
4863		J. H. and J. L. Lyons, Loretto.....
4935		Harralson's Feed and Seed Store, Owensboro .....
4951		A. L. Hazle, Hodgenville.....
4479	2-8-4 (Muriate) .....	L. H. Sparks and Co., McKee.....
4668		J. F. Bertram, Vanceburg.....
4669		Harralson's Feed and Seed Store, Owensboro .....
4670		R. Z. Hook, Hardinsburg.....
4864		W. L. Anderson & Son, Caneyville.....
4936		Harralson's Feed and Seed Store, Owensboro .....
4126	2-10-4 (Muriate) .....	Fox Brothers, Winchester .....
4671		J. F. Bertram, Vanceburg.....
4672	2-12-6 (Muriate) .....	Harralson's Feed and Seed Store, Owensboro .....
4865		G. M. Hedrick, Monticello.....
4937		Harralson's Feed and Seed Store, Owensboro .....
4127	3-8-6 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....
4480		Keene Milling Co., Nicholasville.....
4481		Frank J. Murphy, Valley Station.....
4673		R. Z. Hook, Hardinsburg.....
4866		Feeders Supply Co., Ashland.....
4482	3-8-6 (Sulfate) .....	H. W. Noland, Richmond .....
4674		Fox Brothers, Winchester .....
4675	3-8-10 (Muriate) .....	Monarch Milling Co., Mt. Sterling.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
-----	-----	18.65	-----	-----	-----	22.4	4860
-----	-----	19.55	-----	-----	-----	23.5	4861
16.16	-----	-----	-----	-----	44.8	45.3	4225
4.00	3.74	10.70	6.93	-----	33.2	35.2	4226
3.58	3.31	10.45	7.47	-----	33.2	34.0	4475
1.86	.30	1.75	1.07	-----	4.70	9.9	4476
-----	-----	19.35	-----	-----	24.0	23.2	4228
-----	-----	21.15	-----	-----	-----	25.4	4477
-----	-----	21.05	-----	-----	-----	25.3	4478
-----	-----	20.60	-----	-----	-----	24.7	4862
-----	-----	20.55	-----	-----	-----	24.7	4863
-----	-----	20.40	-----	-----	-----	24.5	4935
-----	-----	21.10	-----	-----	-----	25.3	4951
2.37	2.04	8.60	4.43	-----	21.4	24.7	4479
2.54	2.21	8.95	4.56	-----	-----	25.1	4668
2.32	2.02	8.60	4.67	-----	-----	24.0	4669
2.31	2.00	8.00	4.58	-----	-----	23.2	4670
2.19	1.83	8.70	4.79	-----	-----	23.9	4864
2.41	2.06	8.50	4.36	-----	-----	23.9	4936
2.09	1.68	10.00	4.56	-----	23.8	24.8	4126
2.31	1.99	10.55	4.52	-----	-----	26.2	4671
2.40	2.08	12.75	6.77	-----	28.6	31.8	4672
2.56	1.96	12.60	6.77	-----	-----	32.2	4865
2.09	1.65	12.10	6.50	-----	-----	29.6	4937
3.33	2.98	8.10	6.21	-----	27.3	28.8	4127
3.39	3.07	8.35	6.46	-----	-----	29.6	4480
3.00	2.63	7.55	6.85	-----	-----	27.8	4481
2.90	2.58	8.65	6.28	-----	-----	28.1	4673
3.19	2.65	8.10	6.32	-----	-----	28.5	4866
3.15	2.75	8.10	6.65	-----	27.3	28.7	4482
3.41	3.01	8.70	6.10	-----	-----	29.7	4674
3.27	2.93	8.55	10.78	-----	32.1	34.6	4675

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Price Chemical Co., Louisville, Ky.—Continued</b>		
4483 4676	3-8-10 (Sulfate) .....	Clover Farm Store, Sparta..... Perryville Ice and Produce Co., Perryville.....
4229 4677	3-10-3 (Muriate) .....	G. M. Hedrick, Monticello..... Perryville Ice and Produce Co., Perryville.....
4867		G. M. Hedrick, Monticello.....
4128 4484	4-8-4 (Muriate) .....	H. W. Noland, Richmond..... H. W. Noland, Richmond.....
4129	4-8-6 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....
4485	4-10-4 (Muriate) .....	Frank J. Murphy, Valley Station.....
4130	4-10-6 (Muriate) .....	Feeders Supply Co., Ashland.....
4131	4-12-0 .....	Walters and Thompson, Shelbyville.....
4678	4-12-8 (Muriate) .....	Monarch Milling Co., Mt. Sterling.....
4486 4487 4679	4-12-8 (Sulfate) .....	Clover Farm Store, Sparta..... Farmers Supply Co., Eminence..... Fox Brothers, Winchester.....
4132 4680 4868	5-10-5 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....
		Feeders Supply Co., Ashland..... Feeders Supply Co., Ashland.....
4133	6-8-6 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....
4488 4681		H. W. Noland, Richmond..... Monarch Milling Co., Mt. Sterling.....
4682	6-8-6 (Muriate).....	Harralson's Feed and Seed Store, Owensboro .....
4489	6-8-6 (Sulfate) .....	H. W. Noland, Richmond.....
4230	0-10-4 (Muriate) .....	Thomas Emerson, Eubank .....
4683	4-16-4 (Muriate) .....	Harralson's Feed and Seed Store, Owensboro .....
<b>Swift and Co., Fertilizer Works, National Stock Yards, Ill.</b>		
4491 4684 4685 4938	"Red Star" 20% Superphosphate.....	Knight Brothers, Pleasureville..... Young and Conway, Morganfield..... L. N. Kratzer, Mt. Sterling..... Young and Conway, Morganfield.....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.28	2.81	7.70	10.37	.....	32.1	33.2	4483
3.20	2.80	9.10	10.73	.....	.....	35.0	4676
3.25	2.81	10.90	3.71	.....	26.1	28.9	4229
3.27	2.88	10.05	3.38	.....	.....	27.6	4677
3.41	2.90	10.65	3.64	.....	.....	29.1	4867
4.21	3.74	8.30	4.54	.....	28.7	30.1	4128
3.60	3.04	8.10	4.71	.....	.....	28.0	4484
4.14	3.71	7.75	7.07	.....	30.8	32.3	4129
4.28	3.73	10.10	4.99	.....	30.8	33.1	4485
3.99	3.49	10.15	6.52	.....	33.2	34.0	4130
4.29	3.01	11.85	.....	.....	28.4	29.2	4131
4.18	3.82	12.55	8.67	.....	38.0	40.1	4678
4.05	3.51	12.00	9.02	.....	38.0	39.4	4486
4.45	3.95	12.00	9.15	1.68	.....	41.0	4487
4.18	3.69	12.75	8.41	.....	.....	40.0	4679
5.00	4.38	9.50	5.73	.....	35.5	35.8	4132
5.28	4.68	10.05	5.22	.....	.....	36.8	4680
4.78	4.18	10.30	5.43	.....	.....	35.6	4868
5.88	5.30	8.00	6.96	.....	37.8	38.5	4133
6.12	5.70	8.40	6.48	.....	.....	39.3	4488
6.18	5.72	8.85	6.05	.....	.....	39.5	4681
5.97	5.62	8.50	6.42	.....	37.8	38.8	4682
5.73	5.26	8.50	6.68	.....	37.8	38.3	4489
.....	.....	10.75	3.94	.....	16.8	17.6	4230
3.88	3.52	17.20	4.32	.....	38.0	39.4	4683
.....	.....	19.80	.....	.....	24.0	23.8	4491
.....	.....	21.30	.....	.....	.....	25.6	4684
.....	.....	20.25	.....	.....	.....	24.3	4685
.....	.....	20.25	.....	.....	.....	24.3	4938

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Swift and Co., Fertilizer Works, National Stock Yards, Ill.—Continued</b>		
4492	Swift's Superphosphate 45%.....	Berea College Farm, Berea.....
4493 4686	"Red Steer" 2-10-4 (Muriate).....	Dorsey Brothers and Fisher, Carlisle... Stagg Brothers, Vanceburg.....
4494	"Red Steer" 3-8-6 (Sulfate) .....	Millersburg Coal and Lumber Co., Millersburg .....
4495		Spears-Kiser Co., Paris.....
4496	"Red Steer" 3-8-6 (Muriate).....	Knight Brothers, Pleasureville.....
4134 4497	"Red Steer" 4-8-4 (Muriate).....	Spears-Kiser, Paris .....
		Millersburg Coal and Lumber Co., Millersburg .....
4498	"Red Steer" 4-10-6 (Sulfate).....	Millersburg Coal and Lumber Co., Millersburg .....
4499		Swift and Co., Bowling Green.....
4687	"Vigoro Brand" 4-12-4 (Muriate).....	O. S. Honaker and Co., Lexington.....
4500	"Red Steer" 4-12-8 (Sulfate).....	Shelby Feed and Seed Co., Shelbyville..
4688	"Red Steer" 6-12-6 (Sulfate).....	L. N. Kratzer, Mt. Sterling.....
4689	Swift's Nitrate of Soda 16%.....	Morganfield Hardware Co., Morganfield
4501	Sulfate of Ammonia 20.50%.....	Berea College Farm, Berea.....
4502	Muriate of Potash 50% .....	Berea College Farm, Berea.....
4503	Red Steer" 3-10-3 (Muriate).....	Swift and Co., Bowling Green.....
<b>Tennessee Chemical Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
4504	"Ox Brand Old Black Joe"	
4505	2-10-4 (Muriate) .....	J. H. Maholland, Franklin.....
		S. B. Bilbro, Nortonville.....
4506	"Ox Brand" 3-8-6 (Muriate).....	Parker Grocery Co., Hartford.....
4507 4690	"Ox Brand" 3-8-6 (Sulfate).....	M. L. Levi, Pembroke..... J. M. Dawson, Philpot.....
4508 4509	"Ox Brand" 4-12-8 (Muriate).....	Young Hardware Co., Hopkinsville..... Parker Grocery Co., Hartford.....
4691	"Ox Brand" 4-16-4 (Muriate).....	J. M. Dawson, Philpot .....
4510	"Ox Brand" 20% Superphosphate	J. H. Maholland, Franklin .....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
.....	.....	45.05	.....	.....	54.0	54.1	4492
2.27	1.93	9.90	4.64	.....	23.8	25.4	4493
2.17	1.87	10.20	4.52	.....	.....	25.3	4686
3.22	2.73	8.85	6.03	.....	27.3	29.1	4494
3.09	2.59	8.60	6.19	.....	.....	28.6	4495
3.05	2.61	8.40	6.72	.....	27.3	28.8	4496
3.93	3.46	8.50	4.18	.....	28.4	29.0	4134
3.99	3.52	8.50	4.21	.....	.....	29.2	4497
4.02	3.64	10.65	6.24	.....	33.2	34.3	4498
4.00	3.60	10.65	6.23	<b>1.02</b>	.....	34.3	4499
4.22	4.03	12.80	4.55	.....	33.2	35.6	4687
4.04	3.65	12.50	7.97	.....	38.0	38.7	4500
5.73	5.26	12.30	<b>7.12</b>	2.38	42.6	43.4	4688
16.28	.....	.....	.....	.....	44.8	45.6	4689
20.80	.....	.....	.....	.....	36.9	37.4	4501
.....	.....	.....	54.7	.....	45.0	49.3	4502
3.09	2.59	10.40	3.59	.....	26.1	27.6	4503
1.92	1.57	9.90	3.99	.....	23.8	23.4	4504
2.53	2.27	9.50	5.04	.....	.....	26.3	4505
2.93	2.59	8.05	6.08	.....	27.3	27.2	4506
2.72	2.08	7.95	5.77	.....	27.3	<b>26.0</b>	4507
2.87	2.28	7.95	6.09	<b>1.06</b>	.....	26.9	4690
3.80	3.42	11.55	7.80	.....	38.0	36.5	4508
3.92	3.55	12.05	8.05	.....	.....	37.8	4509
<b>2.94</b>	2.60	<b>13.00</b>	4.01	.....	38.0	<b>30.7</b>	4691
.....	.....	20.55	.....	.....	24.0	24.7	4510

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Tennessee Chemical Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>		
4692		Sexton Brothers, Murray .....
4693		John W. Whittemore, Hickory .....
4939		Denton Hardware Co., Madisonville .....
4940		Sexton-Douglass Hardware Co., Murray .....
4511	“Ox Brand” 0-10-4 (Muriate) .....	J. H. Maholland, Franklin .....
4870		J. H. Maholland, Franklin .....
4231	“Ox Brand” 9-18-18 (Muriate) ....	V. B. Nuckols, Elkton .....
<b>Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., Mt. Pleasant, Tenn.</b>		
4234	V-C 0-10-4 (Muriate) .....	George Richardson, Somerset .....
4235		Polson's Grocery, Glasgow .....
4236		H. B. McCollum and Co., Eubank .....
4513		Hogen, Landrum and Cook, Tompkinsville .....
4873		Scottsville Feed Co., Scottsville .....
4874		George Richardson, Somerset .....
4941		Murray Feed Store, Murray .....
4237	V-C 0-10-10 (Muriate) .....	Miss Agnes Davis, Russellville .....
4942		Miss Agnes Davis, Russellville .....
4238	V-C 2-8-4 (Muriate) .....	George Richardson, Somerset .....
4239		Hardin County Milling Co., Elizabethtown .....
4514		C. A. Casteel, E. Bernstadt .....
4515		Scottsville Feed Co., Scottsville .....
4694		W. I. Smith, Sebree .....
4875		George Richardson, Somerset .....
4876		Scottsville Feed Co., Scottsville .....
4877		U. L. Rogers, Gradyville .....
4943		G. M. Haycraft and Son, Leitchfield .....
4240	V-C 2-10-4 (Muriate) .....	Scottsville Feed Co., Scottsville .....
4241	V-C 2-12-6 (Muriate) .....	George Richardson, Somerset .....
4878		George Richardson, Somerset .....
4944		Miss Agnes Davis, Russellville .....
4135	V-C 3-8-6 (Muriate) .....	Powell-Hackney Grocery Co., Jackson..
4516		John Beard, Crofton .....
4517		Tuxedo Feed Store, Lexington .....
4518		Polson's Grocery, Glasgow .....
4695		W. I. Smith, Sebree .....
4242	V-C 3-8-6 (Sulfate) .....	George Richardson, Somerset .....
4696	V-C 3-8-10 (Muriate) .....	M. G. Williams Co., Hopkinsville .....



FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
.....	.....	20.00	.....	.....	.....	24.0	4692
.....	.....	21.00	.....	.....	.....	25.2	4693
.....	.....	20.60	.....	.....	.....	24.7	4939
.....	.....	20.60	.....	.....	.....	24.7	4940
.....	.....	9.85	3.89	.....	16.8	16.5	4511
.....	.....	9.60	4.09	.....	.....	16.4	4870
8.56	8.20	20.60	15.49	.....	74.7	73.3	4231
.....	.....	10.50	4.45	.....	16.8	17.9	4234
.....	.....	10.80	4.77	.....	.....	18.7	4235
.....	.....	10.35	4.55	.....	.....	17.9	4236
.....	.....	10.15	4.53	.....	.....	17.6	4513
.....	.....	10.05	4.35	.....	.....	17.3	4873
.....	.....	10.30	4.58	.....	.....	17.9	4874
.....	.....	10.45	4.54	.....	.....	18.0	4941
.....	.....	10.90	9.71	.....	24.0	24.7	4237
.....	.....	10.55	9.80	.....	.....	24.4	4942
2.18	2.02	8.00	4.37	.....	21.4	22.5	4238
2.07	1.90	8.30	4.38	.....	.....	22.5	4239
2.21	2.06	8.40	4.48	.....	.....	23.2	4514
2.03	1.85	8.60	4.56	.....	.....	22.9	4515
2.49	2.33	9.90	4.66	.....	.....	26.2	4694
2.12	1.95	8.75	4.32	.....	.....	23.1	4875
1.97	1.76	9.10	4.05	.....	.....	22.7	4876
2.18	2.04	8.40	4.44	.....	.....	23.0	4877
2.12	1.98	8.35	4.34	.....	.....	22.7	4943
2.27	2.09	10.65	4.07	.....	23.8	25.6	4240
2.11	1.96	12.05	6.60	.....	28.6	29.8	4241
2.15	1.99	12.75	6.21	.....	.....	30.3	4878
1.95	1.78	9.70	4.58	.....	.....	24.0	4944
3.23	3.09	8.50	6.24	.....	27.3	29.0	4135
3.27	3.08	9.15	5.79	.....	.....	29.4	4516
3.17	2.99	8.50	6.31	.....	.....	28.9	4517
3.13	2.98	8.20	6.40	.....	.....	28.5	4518
3.22	3.07	8.90	6.25	.....	.....	29.5	4695
3.15	2.94	8.30	6.32	.....	27.3	28.6	4242
2.98	2.98	8.60	10.15	.....	32.1	32.9	4696

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., Mt. Pleasant, Tenn.—Continued</b>		
4519	V-C 3-8-10 (Sulfate)	J. H. Greene, Nicholasville
4520	V-C 3-8-10 (Muriate 4, Sulfate 6)	J. H. Greene, Nicholasville
4521		U. L. Rogers, Gradyville
4522		Miss Agnes Davis, Russellville
4697	V-C 3-9-18 (Muriate)	Murray Feed Store, Murray
4136	V-C 3-10-3 (Muriate)	Dyche Jones, London
4523		W. L. Rice, Rice Station
4524		Young Lumber Co., Beaver Dam
4879		G. M. Hedrick, Monticello
4945		G. P. Jones and Son, Hartford
4946		H. A. Ralph, Hartford
4137	V-C 3-12-4 (Muriate)	Knox County Supply Co., Barbourville
4138	V-C 4-8-4 (Muriate)	Whitesburg Wholesale Co., Whitesburg
4243	V-C 4-10-6 (Muriate)	T. T. Coe, Jamestown
4525		Adams and Moore, Cynthia
4526		Scottsville Feed Co., Scottsville
4527		Young Lumber Co., Beaver Dam
4947		Miss Agnes Davis, Russellville
4528	V-C 4-12-4 (Muriate)	A. T. Sanders, Lancaster
4244	V-C 4-12-8 (Muriate)	Miss Agnes Davis, Russellville
4245	V-C 4-12-8 (Sulfate)	Miss Agnes Davis, Russellville
4529	V-C 4-12-8 (Sulfate)	Farmers Supply Co., Eminence
4530		Adams and Moore, Cynthia
4139	V-C 5-10-5 (Muriate)	Whitesburg Wholesale Co., Whitesburg
4531		John Beard, Crofton
4140	V-C 6-8-6 (Muriate)	J. W. Purkey, Berea
4532		Dellis K. Hurt, Elkton
4533		Denton Mercantile Co., Hillsboro
4534	V-C 6-8-6 (Sulfate)	J. H. Greene, Nicholasville
4141	V-C 10-6-4 (Muriate)	J. W. Purkey, Berea
4246	V-C 20% Superphosphate	Powell-Hackney Grocery, Jackson
4535		U. L. Rogers, Gradyville
4536		G. P. Jones and Son, Hartford
4537		Young Lumber Co., Beaver Dam
4698		Coleman Feed and Supply Co., Marion

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
3.13	2.98	8.50	10.79	1.48	32.1	34.1	4519
3.09	2.94	8.40	10.32	3.74 <sup>a</sup>	32.1	33.3	4520
3.31	3.16	8.00	10.02	3.78 <sup>a</sup>	.....	33.2	4521
3.08	2.92	8.70	9.77	3.40 <sup>a</sup>	.....	32.9	4522
3.01	2.90	8.80	18.68	.....	42.9	43.5	4697
3.12	2.94	10.85	3.28	.....	26.1	27.9	4136
3.09	2.88	10.00	3.38	.....	.....	26.9	4523
3.07	2.87	10.55	3.27	.....	.....	27.3	4524
2.95	2.73	10.20	3.47	.....	.....	26.7	4879
3.21	2.97	10.20	3.45	.....	.....	27.6	4945
3.22	2.97	10.30	3.56	.....	.....	27.9	4946
3.10	2.90	12.50	5.00	.....	29.7	31.9	4137
4.13	3.97	8.50	4.13	.....	28.4	29.6	4138
3.46	3.28	12.40	5.26	.....	33.2	33.3	4243
4.21	4.01	10.25	6.31	.....	.....	34.6	4525
3.76	3.16	10.55	6.18	.....	.....	33.2	4526
4.04	3.85	10.60	6.01	.....	.....	34.1	4527
3.86	3.15	10.37	6.98	.....	.....	34.3	4947
4.21	4.02	11.90	4.57	.....	33.2	34.5	4528
5.34	5.10	9.00	6.38	.....	38.0	37.2	4244
3.72	3.43	12.15	7.68	1.08	38.0	36.8	4245
4.28	4.11	12.30	8.43	.....	38.0	39.9	4529
4.29	4.12	11.90	8.36	.....	.....	39.3	4530
5.05	4.85	10.50	5.23	.....	35.5	36.6	4139
4.68	4.36	9.50	5.71	.....	.....	34.6	4531
6.16	6.00	8.30	6.36	.....	37.8	39.2	4140
5.05	4.87	9.60	5.49	.....	.....	35.8	4532
6.13	5.99	8.35	6.26	.....	.....	39.2	4533
5.90	5.71	8.75	6.22	.....	37.8	38.6	4534
9.42	8.99	6.95	4.29	.....	47.0	46.5	4141
.....	.....	21.15	.....	.....	24.0	25.4	4246
.....	.....	20.55	.....	.....	.....	24.7	4535
.....	.....	20.60	.....	.....	.....	24.7	4536
.....	.....	21.00	.....	.....	.....	25.2	4537
.....	.....	20.85	.....	.....	.....	25.0	4698

<sup>a</sup> 3.81 percent chlorine allowed.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
<b>Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., Mt. Pleasant, Tenn.—Continued</b>		
4880		George Richardson, Somerset .....
4881		Polson's Grocery, Glasgow .....
4948		Miss Agnes Davis, Russellville .....
4949		Cottingham Grain Co., Henderson .....
4950	V-C Granular Aero Cyanamid 21% .....	Shelby Feed & Seed Co., Shelbyville ....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued.

Nitrogen		Phosphoric acid	Potash	Chlorine	Index of relative value		Station number
Total	Water soluble	Available			Guaranty	Found	
-----	-----	21.40	-----	-----	-----	25.7	4880
-----	-----	20.40	-----	-----	-----	24.5	4881
-----	-----	21.15	-----	-----	-----	25.4	4948
-----	-----	20.05	-----	-----	-----	24.1	4949
20.66	-----	-----	-----	-----	44.1	43.4	4950

TABLE 4.—ANALYSES OF INSPECTION SAMPLES OF

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
	<b>The American Agricultural Chemical Co., Cincinnati, O.</b>	
4762	Steamed Bone Meal 1.65-27-0 .....	Watson Coal and Feed Co., Princeton ....
	<b>Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>	
4577	Armour's Raw Bone Meal 3.75-22-0 .....	The T. J. Turley Co., Owensboro .....
	<b>Colloidal Phosphate Sales Co., Dunnellon, Fla.</b>	
4328	Florida Waste Pond Rock Phosphate .....	C. A. Mitchell, Clay .....
	<b>Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.</b>	
4457	Raw Bone Meal 3.70-21.50-0 .....	W. Bryant Robertson, Adairville .....
	<b>Milwaukee Sewerage Commission, Milwaukee, Wis.</b>	
4848	"Milorganite" (Activated Sludge)	Louisville Park Board, Louisville .....
	<b>M. R. Porter Co., Ocala, Fla.</b>	
4227	Florida Waste Pond Rock Phosphate .....	Dowell Grocery, Liberty .....
	<b>Ruhm Phosphate and Chemical Co., Mt. Pleasant, Tenn.</b>	
4490	"Red Seal Brand" Ruhm's Phosphate Rock .....	T. C. Carter, Lawrenceburg .....
4869		Shelby Feed and Seed Co., Shelbyville..
	<b>Tennessee Coal, Iron and Railroad Co., Birmingham, Ala.</b>	
4232	"Open Hearth" Low Grade Basic Slag .....	Polson's Grocery, Glasgow .....
4233		Shipp and Warner Feed Co., Campbellsville .....
4512		H. C. Chilson, Columbia .....
4871		Allison Shippe, Campbellsville .....
4872		H. C. Chilson, Columbia .....

BONES, ROCK PHOSPHATE AND BASIC SLAG.

Nitrogen	Phosphoric acid		Index of relative value		Station number
	Available	Total	Guaranty	Found	
1.97	-----	26.55	32.8	33.5	4762
3.75	-----	21.70	35.1	34.8	4577
-----	-----	19.50	9.0	9.7	4328
4.01	-----	22.80	34.5	36.8	4457
5.82	-----	2.95	23.8	23.3	4848
-----	-----	22.2	10.0	11.1	4227
-----	<b>3.45</b>	33.2	16.5	16.6	4490
-----	<b>3.25</b>	32.7	-----	16.4	4869
-----	-----	11.40	8.0	11.4	4232
-----	-----	11.70	-----	11.7	4233
-----	-----	11.30	-----	11.3	4512
-----	-----	12.90	-----	12.9	4871
-----	-----	11.75	-----	11.8	4872