

Kentucky Agricultural Experiment Station

UNIVERSITY OF KENTUCKY

THOMAS P. COOPER, Director

COMMERCIAL FERTILIZERS IN KENTUCKY IN 1942

By J. D. TURNER, H. R. ALLEN and LELAH GAULT

CONTENTS

	Page		Page
Sales by grades, Table 1.....	2	Points a dealer should con-	
Grades of mixed fertilizer		sider	8
used in Kentucky in 1943	2	Points a manufacturer	
Use high-grade fertilizers..	3	should consider	9
Farmer's guide	3	Explanation of tables	10
Grow more legumes and		Standing of manufacturers,	
save farm byproducts.....	4	Table 2	11
Function of plant nutrients	5	Analyses of inspection sam-	
Farmers' samples	6	ples of mixed fertilizers,	
Information and guaranty		superphosphate, and fer-	
tag	6	tilizer salts, Table 3.....	12
Penalties for violating the		Analyses of inspection sam-	
fertilizer law	7	ples of bone, rock phos-	
Points a farmer should con-		phate, and basic slag,	
sider in buying fertilizer	8	Table 4	54

This bulletin contains the results of inspection and analyses of commercial fertilizers sold in Kentucky during 1942 and other information and suggestions relative to the purchasing and use of fertilizers. Estimated from the license tags issued, 146,400 tons of fertilizer were sold, an increase of about 20 percent over the tonnage for 1941. About 59 percent of this was mixed fertilizer, 38 percent was superphosphate, and the remainder fertilizer salts and other materials.

In addition, 192,109 tons of 20-percent superphosphate were distributed to Kentucky farmers by the Agricultural Adjustment Administration of the United States Department of Agriculture.

SALES BY GRADES, 1942

A summary of fertilizer sales by grades, as reported by manufacturers is given in Table 1. The total tonnage in this summary is somewhat less than that calculated from stamp sales. The difference is due chiefly to small amounts of stamps bought but not used during the year, and perhaps to incomplete returns of some manufacturers.

TABLE 1.—SALES BY GRADES AS REPORTED BY MANUFACTURERS

Mixed Fertilizers			
	Tons		Tons
3-8-6	19,327	0-10-6	453
2-8-4	12,367	3-8-16	397
3-10-3	6,964	0-10-10	373
4-12-8	5,532	3-10-6	291
6-8-6	4,844	3-9-6	291
0-14-7	4,461	3-12-12	251
0-10-4	3,681	4-8-8	202
2-10-4	3,509	6-8-3	182
4-8-4	3,463	4-10-12	172
4-10-6	2,739	10-6-4	153
3-8-5	2,062	3-10-4	148
2-12-6	2,034	6-12-12	130
5-10-5	1,813	6-10-10	122
3-8-10	1,436	4-16-4	100
4-12-0	1,318	6-12-6	78
4-10-4	1,005	7-14-14	74
0-12-12	826	4-12-12	74
4-12-4	613	2-8-6	51
3-12-4	558	6-8-8	48
4-8-6	560	9-18-18	33
Miscellaneous mixtures.....		527	

Materials

	Tons		Tons
Superphosphate, 20%	51,299	Amnite	130
Superphosphate, 18%	2,475	Bone	116
Rock phosphate	2,086	Muriate of potash	103
Nitrate of soda	828	Sulfate of potash	100
Basic slag	500	Superphosphate 40 to	
Sulfate of ammonia	485	45%	60
Waste pond phosphate	220	Cyanamid	45

GRADES OF MIXED FERTILIZER USED IN KENTUCKY IN 1943

The number of grades of mixed fertilizer was limited to 19 by the Food Production Administration, as given in the following list:

0-14-7	0-20-10	3-12-3	3-8-7	4-12-8
0-12-12	0-20-20	3-12-12	4-8-8	4-16-4
0-16-8	2-12-6	3-9-18	4-10-6	5-10-10
0-14-14	3-9-6	3-18-9	4-12-4	

This was done as a war economy measure to conserve the supply of chemical nitrogen and to reduce costs such as transportation, labor, bags, overhead. It is a good policy and should be followed in peace time as well.

Some of these mixtures are different analyses of the same ratio. For example, 0-14-7, 0-16-8 and 0-20-10 are all of the 0-2-1 ratio. In addition to the grades of mixed fertilizer, superphosphate, potash salts, and chemical nitrogen materials are available.

USE HIGH-GRADE FERTILIZERS

A total of 83,264 tons of mixed fertilizer was sold in Kentucky during 1942, of which 16,048 tons contained only 14 units of plant food and 33,868 tons contained 16 units or less of plant food. About 19 percent of the mixed fertilizer in 1942 was 14-unit grade as compared with 22.5 percent in 1941. About 41 percent of the mixed fertilizer in 1942 was 16-unit grade or less, as compared with 47.5 percent in 1941.

The amount of low-grade fertilizer sold in the state during 1942 was slightly less than the amount sold in 1941. While this improvement was slight, it shows a trend toward higher-grade fertilizer. This Department considers that a mixed fertilizer should contain not less than 20 units (sum of nitrogen, phosphoric acid, and potash) of total plant food and that the nitrogen should not be less than 3 percent, available phosphoric acid not less than 8 percent, and potash not less than 4 percent; and it recommends that farmers buy their fertilizer on this basis.

The value of using high-grade fertilizers may be illustrated as follows: 3-9-6 and 4-12-8 have the same ratio (1-3-2) but 1,500 pounds of 4-12-8 fertilizer contain the same amount of plant food as 2,000 pounds of 3-9-6 fertilizer. In buying the higher grade the purchaser saves freight, bags, and other costs on 500 pounds of inert filler.

FARMER'S GUIDE

A farmer who buys fertilizer has several aids in selecting a fertilizer. He should know the needs of his soil, but if he does not he should consult his County Agent or the Experiment Station. He should read the guaranty tag carefully and base his selection on the information given on the tag. Then by consulting the tables of results in this bulletin he can gain an

idea of the honesty of the manufacturer. If the manufacturer's record is good, the fertilizer is likely to be what it is represented to be on the tag. If his record is bad, then the fertilizer is likely to be poor.

Farmers who buy on price instead of on price plus quality are practicing false economy. Low-grade fertilizer is costliest.

GROW MORE LEGUMES AND SAVE FARM BYPRODUCTS*

There will be a shortage of nitrogen fertilizers for some time and it is very necessary that farmers grow more legumes and conserve all crop residues and farm manure to the fullest extent possible to overcome this shortage. If Kentucky farmers will do these things they can produce larger crops than they have been producing, and do it more cheaply.

All legumes should have grass with them to conserve the nitrogen fixed by the legumes. If there is no grass with lespedeza, a winter crop of small grain or Italian ryegrass should be seeded with it as early after September 1 as can be done. The same should be done with second-year red-clover sods.

Winter legumes should be grown after cultivated crops where the ground is to be planted to cultivated crops the next year. Hairy vetch and crimson clover are the best crops for this purpose in Kentucky. It is perhaps better to sow these with a small grain or Italian ryegrass than to sow them alone.

When sowing a grass-legume mixture for hay or pasture, it is best to sow the grasses in the fall and the legumes the next spring. An exception is orchard grass, unless it can be sown by the middle of September.

No land should be left without a winter cover crop.

On sloping land all tillage and seeding should be done on the contour.

The loss of fertility from failure to conserve manure and crop residues is enormous. It is estimated that the manure produced in Kentucky is worth about 40 million dollars annually, and that almost half of it is lost through improper handling. The greatest loss is in failure to conserve liquid manure through proper use of bedding, and storage. The liquid excretion con-

* By George Roberts, Head of the Department of Agronomy, Kentucky Experiment Station.

tains about two-thirds of the potash and nearly half of the nitrogen in the feed consumed by animals.

It is believed that there is a sufficiency of phosphate and potash fertilizers. With the proper use of lime, phosphate, potash, and legumes, and with good conservation practices, Kentucky farmers can far more than make good any shortage of nitrogen fertilizers.

FUNCTION 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 :

	Value per pound, cents	Value per unit, dollars
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		33.2

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 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. See page 3.

2. Be guided by the information given on the state guaranty tag. See page 6.

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. Buy high-grade fertilizers because plant food comes cheaper in those even though the price per bag is higher than for low-grade fertilizer.

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 TABLES

Table 2 gives the standing of manufacturers as determined by the results of analysis of official samples. Figures in the last column give the number of deficiencies of more than one-fourth of 1 percent in nitrogen, phosphoric acid, or potash. This is the tolerance allowed in the Kentucky Fertilizer Law. Deficiencies less than this tolerance are not considered evidence of fraudulent intent by the manufacturer.

Table 3 gives the results of analysis of all inspection samples except bones, rock phosphate and basic slag, which are given in Table 4.

If an analysis shows a deficiency of more than one-fourth of 1 percent 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 in bold-face type.

TABLE 2—STANDING OF MANUFACTURERS, BASED ON OFFICIAL SAMPLES ANALYZED IN 1942.

Company	Number of inspection samples	Number equal to guaranty in value	Number 4 percent or more low in value	Nitrogen, phosphoric acid, and potash	
				Number of analyses made	Number of deficiencies of more than $\frac{1}{4}$ of 1%
American Agricultural Chemical Company	71	66	2	180	8
Armour Fertilizer Works	79	57	0	196	14
Buhner Fertilizer Company	21	21	0	54	1
Chilean Nitrate Sales Corporation	1	1	0	1	0
Consolidated Chemical Company	12	12	0	14	0
Cumberland Chemical Company ..	28	24	0	66	4
Darling and Company	2	2	0	5	0
Davison Chemical Corporation Hopkins Fertilizer Division....	27	27	0	73	2
Read Phosphate Division	49	39	5	110	18
Federal Chemical Company	94	80	5	227	35
Hutson Chemical Company	6	5	1	14	4
International Minerals and Chemical Corporation	50	47	1	124	5
Knoxville Fertilizer Company	56	52	1	126	8
Louisville Fertilizer Company	3	2	0	7	1
Midwest Phosphate Company	1	0	0	1	0
Morris Fertilizer Company	1	1	0	3	0
National Chemical Company	9	7	1	24	7
North American Fertilizer Company	26	23	3	72	13
Price Chemical Company	51	50	1	127	3
Ruhm Phosphate and Chemical Company	1	1	0	1	0
Swift and Company Fertilizer Works	17	17	0	43	1
Tennessee Chemical Company	9	8	1	22	3
Tennessee Coal, Iron and Railroad Company	1	1	0	1	0
Tennessee Corporation	3	3	0	4	0
Virginia - Carolina Chemical Corporation	63	56	2	151	6
Totals	681	602	23	1646	133

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The American Agricultural Chemical Co., Cincinnati, O.		
4962	10-6-4 (Muriate)	Geo. W. Hill, Covington
5086	6-8-6 (Sulfate)	Norfleet Hardware Co., Harrodsburg
5350		E. T. Flora, Carlisle
4963	5-10-5 (Muriate)	Harlan Fruit Co., Harlan
4964		Eastern State Hospital, Lexington
5087		W. E. Bibb, Sacramento
5351	4-12-8 (Sulphate)	L. C. McLoney, Cynthiana
5352		Bedford & Tuttle, Winchester
4965	4-12-0	E. T. Walker Co., Glendale
5088		H. C. Harmon, Perryville
5089	4-10-6 (Muriate)	Bonn H. Crawford, Lynn Grove
5353		Norris Hardware & Seed Co., Henderson
5354		J. H. Fedders & Son, Covington
4966	4-10-6 (Sulfate)	J. E. Bryant, Scottsville
5090		J. H. McClure, Springfield
5355		John A. Sheehan, Falmouth
4967	4-8-6 (Muriate)	Paintsville Grocery Co., Paintsville
4968	4-8-4 (Muriate)	The Mountain Wholesale Co., Lothair
4969	3-10-6 (Muriate)	Harlan Fruit Co., Harlan
5091		J. W. Schoolcraft, Somerset
4970	3-10-3 (Muriate)	W. E. Whittle, Rocky Hill
5092		Lebanon Carriage & Implement Co., Lebanon
5093		Davidson & Crawford, Science Hill
5094		Young & Conway, Morganfield
5095		Osborne & Crowley, Poole
5356		Henderson & Hardy Co., Shepherdsville
5096	3-8-16 (Muriate 8, Sulfate 8)	Lebanon Carriage & Implement Co., Lebanon
5097		H. W. Smith, Horse Cave
5357		Bobbitt & Hudson, Paris
5358		L. C. McLoney, Cynthiana
4971	3-8-10 (Muriate)	J. W. Hicks, Upton
5359	3-8-10 (Sulfate)	L. C. McLoney, Cynthiana

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
9.64	9.25	6.70	4.43	.....	47.0	47.1	4962
5.92	5.82	8.50	6.19	yes	37.8	38.4	5086
5.71	5.58	8.55	6.29	no ¹	37.8	37.8	5350
4.94	4.82	10.50	5.06	.....	35.5	36.0	4963
4.93	4.81	10.35	4.97	.....	35.5	35.6	4964
5.04	4.93	11.00	5.05	.....	35.5	36.9	5087
3.89	3.70	13.40	7.60	yes	38.0	38.8	5351
3.88	3.50	12.80	7.78	yes	38.0	38.3	5352
4.03	3.71	12.90	.....	.....	28.4	29.6	4965
4.07	3.77	12.50	.....	.....	28.4	29.3	5088
4.13	4.04	10.60	6.15	.....	33.2	34.6	5089
3.98	3.87	10.05	6.47	.....	33.2	33.8	5353
3.95	3.77	10.10	6.54	.....	33.2	33.8	5354
4.11	3.79	10.40	6.19	yes	33.2	34.6	4966
3.91	3.73	10.45	6.46	yes	33.2	33.7	5090
4.07	3.82	10.50	6.01	yes	33.2	34.1	5355
3.88	3.77	8.20	6.19	.....	30.8	30.9	4967
3.87	3.77	8.90	4.36	.....	28.4	29.5	4968
2.98	2.90	9.95	6.22	.....	29.7	29.8	4969
3.04	2.95	9.75	6.15	.....	29.7	29.7	5091
2.90	2.75	10.55	3.38	.....	26.1	26.9	4970
2.91	2.78	10.25	3.09	.....	26.1	26.2	5092
2.95	2.83	10.35	3.33	.....	26.1	26.7	5093
3.02	2.88	10.30	3.09	.....	26.1	26.6	5094
2.98	2.84	10.45	3.16	.....	26.1	26.8	5095
3.04	2.87	10.30	3.24	.....	26.1	26.9	5356
2.97	2.84	8.60	14.53	yes	39.3	38.2	5096
3.00	2.83	8.70	14.98	yes	39.3	38.9	5097
2.98	2.79	8.10	15.90	yes	39.3	39.2	5357
2.93	2.80	8.20	13.75	no ²	39.3	36.6	5358
3.02	2.89	9.70	6.81	.....	32.1	30.4	4971
2.98	2.79	8.65	9.43	yes	32.1	32.1	5359

¹ Excess muriate equivalent to 0.26 percent potash.

² Excess muriate equivalent to 0.53 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The American Agricultural Chemical Co., Cincinnati, O.—Continued.		
4972	3-8-6 (Muriate)	Kentucky Wholesale Co., Pikeville
5098		Woodson Lewis & Son, Greensburg.....
5360		Henderson & Hardy Co., Shepherdsville
5361		Raymond Martin, Utica
5362		Hayes Hardware Co., Dawson Springs...
5363		Clarence Rowland, Owensboro
5099	3-8-6 (Sulfate)	C. V. King, Oakland
5364		L. C. McLoney, Cynthiana
5365		Bedford & Tuttle, Winchester
5366	2-12-6 (Muriate)	Walton & Readnour, Walton
5367		John A. Sheehan, Falmouth
4973	2-10-4 (Muriate)	Middlesboro Grocery, Middlesboro
5100		Crab Orchard Lumber Co., Crab Orchard
4974	2-8-4 (Muriate)	J. H. Fedders & Son, Covington
5101		C. B. Goering, Hawesville
5102		Woodson Lewis & Son, Greensburg.....
5103		Ross Feed Co., Murray
5368		C. B. Carden, Hartford
5369		J. R. Russell, Hartford
5370		Raymond Martin, Utica
5542	0-14-7 (Muriate)	B. E. Roberts & Son, Mill Springs
5543		Davidson & Crawford, Science Hill
5544		Lebanon Carriage & Implement Co., Lebanon
5545		Henderson & Hardy, Shepherdsville.....
5546		Robert James, Franklin
5547	0-12-12 (Muriate)	Robert James, Franklin
5104	0-10-4 (Muriate)	Davidson & Crawford, Science Hill.....
5105	Superphosphate 20%	Lebanon Carriage & Implement Co., Lebanon
5106		V. H. Towles, Pike View
5371		W. M. Humphrey, Nuckols
5372		Farm Bureau, Carrollton
5548		Davidson & Crawford, Science Hill.....
5549		Woodson Lewis & Son, Greensburg.....
5550		Lebanon Carriage & Implement Co., Lebanon
5551		Denton Hardware Co., Madisonville.....
5643		Norris Hardware & Seed Co. Henderson
5644		E. T. Walker Co., Glendale
5107	Superphosphate 18%	Middlesboro Grocery Co., Middlesboro
5108		Robert James, Franklin

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.02	2.95	8.20	6.32	.....	27.3	28.0	4972
3.12	3.05	8.00	6.04	.....	27.3	27.8	5098
3.01	2.92	8.15	6.31	.....	27.3	27.9	5360
3.01	2.92	8.20	6.09	.....	27.3	27.7	5361
3.08	3.02	8.35	6.13	.....	27.3	28.2	5362
3.00	2.91	8.40	6.13	.....	27.3	27.9	5363
2.98	2.87	8.60	5.87	yes	27.3	27.8	5099
3.23	3.04	8.00	6.41	yes	27.3	28.6	5364
3.14	2.88	8.00	6.34	yes	27.3	28.2	5365
2.08	1.97	12.05	6.21	.....	28.6	29.2	5366
2.16	2.05	12.00	5.96	.....	28.6	29.1	5367
1.93	1.78	10.35	4.31	.....	23.8	24.4	4973
1.99	1.90	10.20	4.07	.....	23.8	24.1	5100
2.18	2.10	8.15	4.06	.....	21.4	22.3	4974
2.01	1.95	8.35	4.04	.....	21.4	21.9	5101
2.11	2.04	7.95	3.96	.....	21.4	21.7	5102
1.91	1.85	8.15	3.78	.....	21.4	21.0	5103
2.06	1.96	8.40	3.99	.....	21.4	22.1	5368
2.16	2.08	8.20	4.06	.....	21.4	22.3	5369
2.10	2.01	8.25	3.99	.....	21.4	22.0	5370
.....	.....	14.30	7.56	.....	25.2	26.2	5542
.....	.....	14.30	7.31	.....	25.2	25.9	5543
.....	.....	14.65	7.12	.....	25.2	26.1	5544
.....	.....	14.55	7.28	.....	25.2	26.2	5545
.....	.....	14.40	7.51	.....	25.2	26.3	5546
.....	.....	12.45	12.71	.....	28.8	30.2	5547
.....	.....	10.70	4.69	.....	16.8	18.5	5104
.....	.....	20.80	.....	.....	24.0	25.0	5105
.....	.....	20.85	.....	.....	24.0	25.0	5106
.....	.....	20.65	.....	.....	24.0	24.8	5371
.....	.....	20.50	.....	.....	24.0	24.6	5372
.....	.....	19.85	.....	.....	24.0	23.8	5548
.....	.....	20.60	.....	.....	24.0	24.7	5549
.....	.....	20.60	.....	.....	24.0	24.7	5550
.....	.....	20.75	.....	.....	24.0	24.9	5551
.....	.....	20.65	.....	.....	24.0	24.8	5643
.....	.....	21.05	.....	.....	24.0	25.3	5644
.....	.....	18.50	.....	.....	21.6	22.2	5107
.....	.....	18.85	.....	.....	21.6	22.6	5108

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Armour Fertilizer Works, Cincinnati, O., Jeffersonville, Ind., Nashville, Tenn.		
5109	Armour's 10-6-4 (Muriate)	F. B. Marksbury, Lancaster
5373		Sphar & Co., Winchester
5110	Armour's 6-8-6 (Muriate)	Taylor County Supply Co., Campbellsville
5111		W. B. Gammon, Perryville
5374		Owen Hulett, Williamstown
5375		Flemingsburg Mills, Flemingsburg
5376		A. W. Jolly, Cloverport
5377	Armour's 6-8-6 (Sulfate)	Sharpsburg Milling Co. Sharpsburg
4975	Armour's 5-10-5 (Muriate)	Harlan Fruit Co., Harlan
4976		N. E. West, Gamaliel
4977		Ross-Hollingsworth & Co., Tompkinsville
5112		Home Fruit Co., Harlan
5378		Lester L. Lynd, Ashland
5113	Armour's 4-16-4 (Muriate)	Jellico Grocery Co., Barbourville
5114		Nay Chestnut, London
5115	Armour's 4-12-8 (Muriate)	Wilson, Miles & Co., Russellville
5116		Jasper Produce Co., Science Hill
4978	Armour's 4-12-8 (Sulfate)	J. C. Everett & Co., Maysville
4979		Upton Hardware Store, Upton
5117		Humphrey Bros., Bloomfield
5118		T. E. Clausen, Bonnieville
5379		Carlisle Mill & Supply Co., Carlisle
5119	Armour's 4-12-4 (Muriate)	Jellico Grocery Co., Barbourville
4980	Armour's 4-8-4 (Sulfate)	Clyde Dean, Augusta
5120		Mrs. C. P. Loving, Cave City
5121		Hatter Hardware Co., Franklin
5122		J. A. Bennett, Taylorsville
5380		Barren County Hardware Co., Glasgow
5381		Carlisle Mill & Supply Co., Carlisle
4981	Armour's 3-10-3 (Muriate)	Parman Brothers, London
4982		W. D. Bryant, Williamsburg
5123		Parman Brothers, London
4983	Armour's 3-8-6 (Muriate)	G. C. Cornett, Cumberland
4984		Thomas Smith, Bulan
5124		Burnside Milling Co., Burnside

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
9.58	9.30	6.80	3.71	.....	47.0	46.1	5109
10.06	9.67	6.50	4.11	.....	47.0	47.9	5373
5.85	5.69	8.30	6.54	.....	37.8	38.3	5110
5.79	5.48	8.25	6.11	.....	37.8	37.5	5111
5.88	5.48	8.50	6.09	.....	37.8	38.1	5374
5.83	5.51	8.40	6.34	.....	37.8	38.1	5375
5.73	5.37	8.45	6.23	.....	37.8	37.7	5376
5.69	4.91	8.55	5.89	yes	37.8	37.2	5377
4.87	4.52	9.85	5.30	.....	35.5	35.2	4975
4.86	4.43	10.35	5.11	.....	35.5	35.6	4976
4.76	4.36	10.35	5.28	.....	35.5	35.4	4977
4.84	4.61	10.10	5.80	.....	35.5	36.0	5112
5.01	4.63	10.60	4.83	.....	35.5	36.1	5378
4.18	3.85	16.60	4.24	.....	38.0	39.6	5113
4.04	3.66	16.00	4.31	.....	38.0	38.5	5114
3.75	3.54	12.30	8.05	.....	38.0	37.6	5115
3.94	3.46	12.00	7.97	.....	38.0	37.8	5116
4.14	3.25	12.35	7.97	yes	38.0	38.9	4978
4.00	2.97	11.70	8.92	yes	38.0	38.7	4979
3.92	2.86	11.35	8.54	yes	38.0	37.6	5117
3.91	2.94	11.80	8.40	yes	38.0	37.9	5118
3.99	3.20	12.45	7.87	yes	38.0	38.4	5379
4.12	3.60	12.90	3.98	.....	33.2	34.7	5119
3.97	2.93	8.50	3.55	yes	28.4	28.4	4980
3.89	3.08	7.95	4.25	yes	28.4	28.3	5120
3.90	3.20	9.10	3.64	no ¹	28.4	28.9	5121
3.85	2.84	8.15	3.92	yes	28.4	28.0	5122
3.93	2.95	8.40	4.19	yes	28.4	28.9	5380
3.93	2.96	8.10	4.17	yes	28.4	28.5	5381
2.92	2.49	10.45	3.50	.....	26.1	27.0	4981
3.06	2.69	10.10	3.26	.....	26.1	26.7	4982
2.88	2.44	10.25	3.68	.....	26.1	26.8	5123
2.94	2.64	7.85	6.00	.....	27.3	26.9	4983
2.92	2.64	7.85	6.16	.....	27.3	27.0	4984
3.03	2.68	8.40	6.34	.....	27.3	28.3	5124

¹ Excess muriate equivalent to 0.4 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Armour's Fertilizer Works, Cincinnati, O., Jeffersonville, Ind., Nashville, Tenn.—Continued.		
4985	Armour's 3-8-6 (Sulfate)	T. E. Clausen, Bonnieville
4986		Walter R. McGlasson, Horse Cave
5125		London Hardware Co., London
5126		Borders Hardware Co., Lebanon
5127		Irvington Truck Line, Irvington
5382		Sphar & Co., Winchester
5128	Armour's 2-12-6 (Muriate)	J. W. Schoolcraft, Somerset
5129		Ravenna Grocery, Ravenna
4987	Armour's Old Black Joe 2-10-4	
	(Muriate)	J. H. Peterson, Hiseville
5130		H. Singleton, Brodhead
5131		L. C. Orndorff, Adairville
5132		L. D. Flanagan, Russell Springs
5383		Wallace Hardware Co., Central City
5384		Marion Coal Co., Marion
5385		Flemingsburg Mills, Flemingsburg
4988	"Big Crop" 2-8-4 (Muriate)	J. F. Bertram, Vanceburg
5133		L. D. Flanagan, Russell Springs
5134		Watkins Wholesale Co., E. Bernstadt
5386		Herbert Hardesty, Whitesville
5387		A. W. Jolly, Cloverport
5552	"Big Crop" 0-14-7 (Muriate)	J. W. Schoolcraft, Somerset
5553		Jasper Produce Co., Science Hill
5554		Taylor County Supply Co., Camp-
		bellsville
5555		J. C. Everett & Co., Maysville
5556		Scottsville Feed Co., Scottsville
5557		Hatter Hardware Co., Franklin
5660		The T. J. Turley Co., Owensboro
5558	"Big Crop" 0-12-12 (Muriate).....	Taylor County Supply Co., Camp-
		bellsville
5559		J. C. Everett & Co., Maysville
5560		R. A. Wilson, Russellville
5135	"Big Crop" 0-10-4 (Muriate)	Jasper Produce Co., Science Hill
5136	"Big Crop" Superphosphate 20%	J. W. Schoolcraft, Somerset
5137		Taylor County Supply Co., Camp-
		bellsville
5388		Lambert-Grisham Hardware Co., Hen-
		derson
5389		Herbert Hardesty, Whitesville
5561		J. W. Schoolcraft, Somerset
5562		Jasper Produce Co., Science Hill

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.88	2.28	7.80	6.14	yes	27.3	26.8	4985
2.98	2.33	7.55	6.09	yes	27.3	26.8	4986
3.01	2.24	8.25	6.00	yes	27.3	27.6	5125
2.91	2.21	7.30	6.06	yes	27.3	26.2	5126
2.90	2.25	7.82	6.09	yes	27.3	26.8	5127
3.02	2.22	7.95	5.41	yes	27.3	26.6	5382
2.09	1.74	11.95	6.20	.....	28.6	29.1	5128
2.00	1.63	12.00	6.20	.....	28.6	28.8	5129
1.99	1.67	10.05	4.25	.....	23.8	24.1	4987
2.02	1.70	10.50	5.13	.....	23.8	25.8	5130
1.95	1.59	10.20	4.09	.....	23.8	24.0	5131
2.02	1.77	10.20	4.11	.....	23.8	24.2	5132
1.98	1.65	10.10	4.02	.....	23.8	23.9	5383
2.14	1.82	10.35	4.19	.....	23.8	24.9	5384
1.98	1.57	9.95	4.30	.....	23.8	24.0	5385
1.97	1.73	8.20	4.37	.....	21.4	22.0	4988
1.89	1.56	8.05	4.40	.....	21.4	21.6	5133
1.93	1.59	7.85	4.08	.....	21.4	21.1	5134
1.89	1.56	8.00	4.05	.....	21.4	21.1	5386
2.02	1.70	8.20	4.37	.....	21.4	22.2	5387
.....	.....	14.00	7.69	.....	25.2	26.0	5552
.....	.....	14.30	7.31	.....	25.2	25.9	5553
.....	.....	14.25	7.42	.....	25.2	26.0	5554
.....	.....	14.50	7.60	.....	25.2	26.5	5555
.....	.....	14.22	7.71	.....	25.2	26.3	5556
.....	.....	14.17	7.29	.....	25.2	25.8	5557
.....	.....	14.22	7.35	.....	25.2	25.9	5660
.....	.....	12.55	12.15	.....	28.8	29.6	5558
.....	.....	12.40	12.60	.....	28.8	30.0	5559
.....	.....	12.12	12.45	.....	28.8	29.5	5560
.....	.....	10.70	4.36	.....	16.8	18.1	5135
.....	.....	20.15	.....	.....	24.0	24.2	5136
.....	.....	20.25	.....	.....	24.0	24.3	5137
.....	.....	20.50	.....	.....	24.0	24.6	5388
.....	.....	20.00	.....	.....	24.0	24.0	5389
.....	.....	20.02	.....	.....	24.0	24.0	5561
.....	.....	20.10	.....	.....	24.0	24.1	5562

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Armour's Fertilizer Works, Cincinnati, O., Jeffersonville, Ind., Nashville, Tenn.—Continued.		
5563	"Big Crop" Superphosphate 20%	Humphrey Bros., Bloomfield
5564		W. J. Ford Produce Co., Greensburg
5565		M. G. Parman, London
5566		H. D. Jones, Glasgow
5567		C. E. Martin & Co., Greenville
5138	Armour's Sulfate of Potash 48%	Ed. Allen, Smith's Grove
5390		Flemingsburg Mills, Flemingsburg
The Buhner Fertilizer Co., Seymour, Ind.		
4989	6-8-6 (Muriate)	Joe Fister, Lexington
5139		Clell Coleman & Son, Harrodsburg
4990	5-10-5 (Muriate)	E. C. Miller, Buechel
4991	4-8-4 (Muriate)	Fulkerson Bros., Sonora
5140	4-10-6 (Muriate)	Beck & Harris, Jamestown
4992	4-8-6 (Muriate)	R. W. Lafferty, Rowletts
5141	3-10-3 (Muriate)	Beck & Harris, Jamestown
5142	3-8-6 (Muriate)	Dowell Grocery, Liberty
5143		E. C. Miller, Buechel
5391		U. B. Sellers, Louisville
5392	2-12-6 (Muriate)	U. B. Sellers, Louisville
5144	2-8-6 (Muriate)	E. C. Miller, Buechel
5145	2-8-4 (Muriate)	Allison Shippe, Campbellsville
5146		Harris & Beck, Jamestown
5393		Aaron L. Moore & Son, Leitchfield
5568	0-14-7 (Muriate)	Aaron L. Moore & Son, Leitchfield
5147	0-10-4 (Muriate)	Beck & Harris, Jamestown
5148		Dowell Grocery, Liberty
5569	Superphosphate 20%	V. B. Sellers, Okolona
5570		Columbia Building & Supply Co., Columbia
5571	Superphosphate 18%	Brown Supply Co., Vine Grove
Chilean Nitrate Sales Corporation, New York, N. Y.		
5149	"Champion Brand" Chilean Nitrate of Soda 16%	McLean County Hardware Co., Calhoun

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	20.27	.....	.....	24.0	24.3	5563
.....	.....	20.00	.....	.....	24.0	24.0	5564
.....	.....	19.67	.....	.....	24.0	23.6	5565
.....	.....	20.12	.....	.....	24.0	24.1	5566
.....	.....	20.40	.....	.....	24.0	24.5	5567
.....	.....	.....	47.72	yes	52.8	52.5	5138
.....	.....	.....	47.56	yes	52.8	52.3	5390
6.37	6.11	10.25	10.01	.....	37.8	46.6	4989
6.35	6.25	8.20	6.00	.....	37.8	39.3	5139
6.03	5.72	11.25	5.04	.....	35.5	40.7	4990
4.38	4.08	9.40	4.35	.....	28.4	31.8	4991
3.97	3.76	10.55	7.12	.....	33.2	35.1	5140
3.95	3.68	9.85	6.19	.....	30.8	33.1	4992
3.39	3.19	10.10	4.99	.....	26.1	30.0	5141
3.16	2.92	8.50	6.69	.....	27.3	29.3	5142
3.17	2.94	8.80	6.05	.....	27.3	28.9	5143
3.44	3.19	8.50	6.22	.....	27.3	29.7	5391
2.31	2.13	12.20	6.94	.....	28.6	31.1	5392
2.17	1.73	11.25	5.68	.....	23.8	27.9	5144
2.00	1.63	8.20	4.12	.....	21.4	21.8	5145
1.93	1.64	8.05	4.09	.....	21.4	21.3	5146
2.03	1.87	9.15	7.18	.....	21.4	26.7	5393
.....	.....	14.07	7.72	.....	25.2	26.1	5568
.....	.....	10.15	4.37	.....	16.8	17.4	5147
.....	.....	10.05	4.48	.....	16.8	17.4	5148
.....	.....	20.25	.....	.....	24.0	24.3	5569
.....	.....	20.05	.....	.....	24.0	24.1	5570
.....	.....	18.45	.....	.....	21.6	22.1	5571
16.04	.....	.....	.....	.....	44.8	44.9	5149

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Consolidated Chemical Co., Subsidiary of Price Chemical Co., Louisville, Kentucky.		
5394	Camel Brand 6-8-6 (Sulfate)	Star Roller Mills, Cloverport
5395	Camel Brand 4-12-8 (Muriate)	Walton Corbin, Owingsville
5396	Camel Brand 4-12-8 (Sulfate)	Clover Farm Store, Sparta
5397		Star Roller Mills, Cloverport
5398	Camel Brand 4-8-4 (Muriate)	Petri's Grocery, Maceo
5399	Camel Brand 3-8-6 (Muriate)	Petri's Grocery, Maceo
5150	Camel Brand 3-8-6 (Sulfate)	Thompson Store, Loretto
5400		Star Roller Mills, Cloverport
5401	Camel Brand 2-8-4 (Muriate)	W. L. Anderson & Son, Caneyville
5402		Star Roller Mills, Cloverport
5151	Camel Brand Superphosphate	
	20%	Thompson Store, Loretto
5403		Star Roller Mills, Cloverport
Cumberland Chemical Co., Hopkinsville, Ky.		
5152	Cumberland 9-18-18 (Muriate)	C. W. Buckner, Pembroke
5153	Cumberland 6-8-6 (Muriate)	T. W. Hall, Elkton
5404		Ratliff Hardware Co., Princeton
5154	Cumberland 4-16-4 (Muriate)	Yopp Seed Co., Paducah
5155	Cumberland 4-12-8 (Muriate)	Thompson Hardware Co., Trenton
5405		Smith & Reynolds, Slaughters
5406	Cumberland 4-10-4 (Muriate)	W. L. Kimbrough & Son, Guthrie
5156	Cumberland 4-8-4 (Muriate)	Yopp Seed Co., Paducah
5407	Cumberland 3-10-3 (Muriate)	Sturgis Implement Co., Sturgis
5157	Cumberland 3-8-6 (Muriate)	Fox Hardware Store, Madisonville
5158		Mose Dunning, Crofton
5408		V. K. Rudd, Hanson
5159	Cumberland 2-10-4 (Muriate)	McLean County Hardware Co., Calhoun
5160	Cumberland 2-8-4 (Muriate)	Economy Feed Store, Murray
5409		Green River Milling Co., Carrollton
5572	Cumberland 0-14-7 (Muriate)	Mose Dunning, Crofton
5573		Cayce-Yost Co., Hopkinsville
5645		Economy Feed Store, Murray

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
5.97	5.45	8.70	6.34	yes	37.8	38.9	5394
4.33	3.91	12.25	8.26	.....	38.0	39.8	5395
4.25	4.08	12.35	8.20	yes	38.0	39.5	5396
4.30	3.87	12.10	8.18	yes	38.0	39.4	5397
4.04	3.59	8.45	4.44	.....	28.4	29.6	5398
3.01	2.71	9.00	5.80	.....	27.3	28.3	5399
3.03	2.57	9.00	6.79	yes	27.3	29.6	5150
3.31	2.85	8.35	6.38	yes	27.3	29.3	5400
1.97	1.82	8.40	4.31	.....	21.4	22.2	5401
2.64	2.34	8.75	5.30	.....	21.4	26.1	5402
.....	.....	20.50	.....	.....	24.0	24.6	5151
.....	.....	20.35	.....	.....	24.0	24.4	5403
8.98	8.90	14.76	19.35	.....	74.7	72.4	5152
6.35	6.21	8.15	6.41	.....	37.8	39.7	5153
6.23	6.00	8.15	5.61	.....	37.8	38.3	5404
4.16	4.00	16.60	4.44	.....	38.0	39.8	5154
4.22	4.06	12.30	8.22	.....	38.0	39.4	5155
4.13	3.97	12.65	8.26	.....	38.0	39.6	5405
4.26	4.10	10.20	4.69	.....	30.8	32.8	5406
4.24	4.12	8.10	4.69	.....	28.4	30.2	5156
3.22	3.03	10.20	3.49	.....	26.1	27.7	5407
3.07	2.94	8.40	6.34	.....	27.3	28.4	5157
3.20	3.08	8.25	6.32	.....	27.3	28.7	5158
3.14	2.95	8.60	6.31	.....	27.3	28.9	5408
2.06	1.90	10.75	4.98	.....	23.8	26.1	5159
2.16	2.06	8.15	4.73	.....	21.4	23.0	5160
2.14	2.03	7.95	4.45	.....	21.4	22.4	5409
.....	.....	15.52	7.87	.....	25.2	28.1	5572
.....	.....	15.07	7.97	.....	25.2	27.6	5573
.....	.....	15.25	7.57	.....	25.2	27.4	5645

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Cumberland Chemical Co., Hopkinsville, Ky.—Continued.		
5410	Cumberland 0-10-6 (Muriate)	Clark & Vaughn, Clay
5161	Cumberland 0-10-4 (Muriate)	Mose Dunning, Crofton
5162	Cumberland Superphosphate 20%	Trigg County Trading Co., Cadiz
5411		C. S. Thomas, Marion
5412		Sturgis Implement Co., Sturgis
5574		T. W. Hall, Elkton
5575		The Planters Hardware Co., Hopkinsville
5576		Greenville Implement Co., Greenville
5577		Ratliff Hardware Co., Princeton
5646		Trigg County Trading Co., Cadiz
Darling & Co., Chicago, Ill., and East St. Louis, Ill.		
5413	Darling's 4-16-4 (Muriate)	Farmers Supply Co., White Plains
5414	Darling's 0-10-4 (Muriate)	Farmers Supply Co., White Plains
The Davison Chemical Corporation, Hopkins Fertilizer Division, New Albany, Ind.		
4993	Old Time 6-8-6 (Muriate)	Buechel Produce Exchange, Buechel
4994		Mrs. Harvey Ward, Munfordville
5163		Climax Roller Mills, Shelbyville
5415	Old Time 6-8-6 (Sulfate)	Henderson Feed & Commission Co., Henderson
5164	Old Time 4-10-6 (Muriate)	Lillard Miles, Nicholasville
4995	Old Time 4-10-4 (Muriate)	Frank J. Murphy, Valley Station
5165	Old Time 4-8-6 (Muriate)	Buechel Produce Exchange, Buechel
5166	Old Time 4-8-4 (Muriate)	Climax Roller Mills, Shelbyville
5416		Blue Grass Produce Co., Carlisle
5417		Calvin Richards, Fordsville
5167	Old Time 3-10-3 (Muriate)	G. C. McPhetridge, London
5168		Conner-Hayden Co., Bardstown
4996	Old Time 3-8-6 (Muriate)	G. C. McPhetridge, London
5169		McFarland Implement & Seed Co., Bowling Green
5170		Conner-Hayden Co., Bardstown
5418		William P. Miller & Son, Shively
4997	Old Time 2-12-6 (Muriate)	G. C. McPhetridge, London
5419		Duncan & Theiss, LaGrange

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	10.10	6.00	.....	19.2	19.3	5410
.....	.....	10.40	4.38	.....	16.8	17.7	5161
.....	.....	19.75	.....	.....	24.0	23.7	5162
.....	.....	20.60	.....	.....	24.0	24.7	5411
.....	.....	19.50	.....	.....	24.0	23.4	5412
.....	.....	20.32	.....	.....	24.0	24.4	5574
.....	.....	20.37	.....	.....	24.0	24.4	5575
.....	.....	20.25	.....	.....	24.0	24.3	5576
.....	.....	20.70	.....	.....	24.0	24.8	5577
.....	.....	19.40	.....	.....	24.0	23.3	5646
4.19	3.77	16.85	4.64	.....	38.0	40.5	5413
.....	.....	10.05	4.71	.....	16.8	17.7	5414
5.93	5.71	8.50	6.11	.....	37.8	38.3	4993
6.01	5.73	7.95	6.51	.....	37.8	38.4	4994
5.85	5.65	8.40	6.03	.....	37.8	37.8	5163
6.01	5.57	8.40	6.33	yes	37.8	38.7	5415
4.06	3.85	10.25	6.30	.....	33.2	34.1	5164
4.14	3.92	10.85	4.99	.....	30.8	33.5	4995
4.22	4.00	8.15	6.11	.....	30.8	31.9	5165
4.27	4.05	8.50	4.20	.....	28.4	30.2	5166
4.04	3.80	8.15	4.37	.....	28.4	29.2	5416
4.00	3.79	8.05	4.75	.....	28.4	29.4	5417
3.20	2.90	10.10	4.17	.....	26.1	28.3	5167
3.03	2.75	10.05	3.80	.....	26.1	27.2	5168
3.19	2.89	7.70	6.32	.....	27.3	28.0	4996
3.23	2.99	8.35	6.38	.....	27.3	29.0	5169
2.94	2.71	8.00	7.15	.....	27.3	28.5	5170
2.99	2.72	8.15	6.61	.....	27.3	28.2	5418
2.30	2.10	12.10	6.18	.....	28.6	30.0	4997
2.23	2.05	12.05	6.72	.....	28.6	30.3	5419

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The Davison Chemical Corporation, Hopkins Fertilizer Division, New Albany, Ind.—Continued.		
4998	Old Time 2-8-4 (Muriate)	Hardin County Milling Co., Elizabethtown
5171		J. H. Mitchell, Corbin
5172		G. C. McPhetridge, London
5420		Lenn Webb, Hawesville
5578	Old Time 0-14-7 (Muriate)	Cecilian Milling Co., Elizabethtown
5647		Henderson Feed & Commission Co., Henderson
4999	Old Time 20% Superphosphate	Hardin County Milling Co., Elizabethtown
5173		Conner-Hayden Co., Bardstown
5579		G. C. McPhetridge, London
The Davison Chemical Corporation, Nashville, Tenn.		
5000	Read 6-8-6 (Muriate)	C. S. Brent & Co., Lexington
5174		E. S. Ferrill & Son, Buffalo
5175		Noah Spears, Franklin
5176	6-8-4 (Muriate)	Garrard Mills, Lancaster
5001	Read 5-10-5 (Muriate)	J. C. Cook, Tompkinsville
5421	Read 4-12-8 (Muriate)	Mayfield Milling Co., Mayfield
5177	Read 4-12-0	Garrard Mills, Lancaster
5178	Read 4-8-8 (Muriate)	Swann & Miller, Lynn Grove
5422	Read 4-8-6 (Muriate)	Gentry McCauley, Versailles
5002	Read 4-8-4 (Muriate)	Fulkerson Bros., Sonora
5003		C. S. Brent & Co., Lexington
5423		Gentry McCauley, Versailles
5004	Read 3-10-3 (Muriate)	Barney Rasner, Columbia
5179		C. T. Ashley Co., Nicholasville
5005	Read 3-8-6 (Muriate)	Bell County Supply Co., Middlesboro....
5180		H. R. Squires, Greensburg
5181		Cadiz Hardware Co., Cadiz
5424		Eldred Hardware Co., Princeton
5006	Read "Old Kentucky Grower" 3-8-6 (Sulfate)	J. B. Hatcher & Co., Park City
5182		O. M. Holloway, Mayfield
5183	Read 2-10-4 (Muriate)	O. M. Holloway, Mayfield

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.36	2.12	7.95	4.17	.....	21.4	22.8	4998
2.32	2.06	8.10	5.10	.....	21.4	24.0	5171
2.02	1.72	7.60	4.46	.....	21.4	21.5	5172
2.09	1.80	8.05	4.38	.....	21.4	22.2	5420
.....	.....	14.55	7.40	.....	25.2	26.3	5578
.....	.....	15.75	6.91	.....	25.2	27.2	5647
.....	.....	20.45	.....	.....	24.0	24.5	4999
.....	.....	20.65	.....	.....	24.0	24.8	5173
.....	.....	20.07	.....	.....	24.0	24.1	5579
4.87	4.74	9.45	5.79	.....	37.8	35.3	5000
5.67	5.47	9.90	6.32	.....	37.8	39.3	5174
3.87	3.74	10.60	6.54	.....	37.8	34.1	5175
4.92	4.79	11.00	3.61	.....	35.4	34.8	5176
5.03	4.80	9.30	5.44	.....	35.5	35.3	5001
4.21	4.07	12.00	9.53	.....	38.0	40.6	5421
4.05	3.80	11.20	.....	.....	28.4	27.6	5177
3.78	3.56	9.30	7.38	.....	33.2	33.3	5178
2.32	2.05	10.20	5.11	.....	30.8	26.5	5422
4.68	4.49	7.65	3.96	.....	28.4	30.3	5002
4.01	3.84	9.30	4.40	.....	28.4	30.5	5003
4.29	4.16	8.15	4.95	.....	28.4	30.7	5423
3.22	2.92	9.50	3.82	.....	26.1	27.3	5004
3.33	3.03	10.07	3.40	.....	26.1	27.8	5179
3.09	2.85	8.45	6.46	.....	27.3	28.7	5005
3.02	2.76	8.40	6.77	.....	27.3	28.8	5180
3.15	2.94	8.05	7.21	.....	27.3	29.3	5181
3.43	3.26	8.00	6.19	.....	27.3	29.0	5424
3.21	3.09	8.70	6.10	no ¹	27.3	29.0	5006
3.30	3.14	8.75	6.50	yes	27.3	29.9	5182
1.93	1.73	11.10	4.73	.....	23.8	25.8	5183

¹ Excess muriate equivalent to 0.35 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The Davison Chemical Corporation, Nashville, Tenn.—Continued.		
5007	Read 2-8-4 (Muriate)	Barney Rasner, Columbia
5184		H. R. Squires, Greensburg
5185		O. M. Holloway, Mayfield
5425		Garfield Mercantile Co., Garfield
5186	Read 0-10-4 (Muriate)	Barney Rasner, Columbia
5187	Read Superphosphate 20%	H. R. Squires, Greensburg
5580		W. D. Dickinson, Glasgow
5581		Hughes Hardware Co., Franklin
5582		Barney Rasner, Columbia
5008	Nitrate of Soda 16%	Fountain Run Feed Co., Fountain Run
5191		Cadiz Hardware Co., Cadiz
5426	Davco Granulated 6-8-6	
	(Muriate)	Sharpsburg Milling Co., Sharpsburg
5427		Gentry McCauley, Versailles
5428	Davco Granulated 6-8-6 (Sulfate)	Gentry McCauley, Versailles
5429	Davco Granulated 4-8-8 (Muriate)	Gentry McCauley, Versailles
5188	Davco Granulated 3-8-6	
	(Muriate)	Hollingsworth-Young Hardware Co.,
		Bowling Green
5189		Peoples Milling Co., Kevil
5430		Gentry McCauley, Versailles
5190	Davco Granulated Superphos-	
	phate 20%	Hughes Hardware Co., Franklin
5431		Duncan & Theiss, LaGrange
5432		P. S. Young, Caneyville
5433		Wilson Hardware Co., Henderson
5583		Conner-Hayden Co., Bardstown
5584		C. M. Baird, Franklin
5585		Eldred Hardware Co., Princeton
5586		E. S. Ferrill & Son, Buffalo
5648		Sam Terry, Big Clifty
5661		Guenther Hardware Co., Owensboro
Federal Chemical Co., Inc., Louisville, Ky.		
5009	Federal 6-12-12 (Muriate)	R. P. Clary, Fullerton
5434		Clarence LeBus Estate, Cynthiana
5435		Clarence LeBus Estate, Lexington
5436	Federal 6-10-10 (Muriate)	R. S. Toles, Clintonville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.21	1.99	7.70	4.96	.....	21.4	22.9	5007
2.16	1.91	8.30	4.68	.....	21.4	23.1	5184
2.24	2.03	9.20	4.19	.....	21.4	23.9	5185
2.57	2.46	9.35	3.73	.....	21.4	24.7	5425
.....	.....	12.40	5.18	.....	16.8	22.1	5186
.....	.....	14.05	.....	.....	24.0	16.9	5187
.....	.....	19.00	.....	.....	24.0	22.8	5580
.....	.....	19.82	.....	.....	24.0	23.8	5581
.....	.....	19.45	.....	.....	24.0	23.3	5582
16.16	.....	.....	.....	.....	44.8	45.3	5008
16.12	.....	.....	.....	.....	44.8	45.1	5191
6.26	6.07	9.50	5.38	.....	37.8	39.8	5426
6.63	6.44	9.35	6.15	.....	37.8	41.8	5427
5.98	5.84	8.75	6.93	no ¹	37.8	39.8	5428
4.15	4.00	9.15	8.33	.....	33.2	35.5	5429
3.18	3.06	8.85	6.73	.....	27.3	29.8	5188
3.43	3.31	9.25	6.77	.....	27.3	31.2	5189
3.69	3.56	8.45	6.17	.....	27.3	30.5	5430
.....	.....	20.10	.....	.....	24.0	24.1	5190
.....	.....	20.10	.....	.....	24.0	24.1	5431
.....	.....	20.10	.....	.....	24.0	24.1	5432
.....	.....	20.05	.....	.....	24.0	24.1	5433
.....	.....	20.22	.....	.....	24.0	24.3	5583
.....	.....	20.50	.....	.....	24.0	24.6	5584
.....	.....	20.92	.....	.....	24.0	25.1	5585
.....	.....	20.80	.....	.....	24.0	25.0	5586
.....	.....	21.02	.....	.....	24.0	25.2	5648
.....	.....	20.45	.....	.....	24.0	24.5	5661
5.99	5.67	12.20	12.18	.....	49.8	50.2	5009
6.58	6.32	12.30	10.53	.....	49.8	50.4	5434
6.60	6.32	11.72	12.36	.....	49.8	52.0	5435
6.21	5.86	11.05	9.10	.....	45.0	45.9	5436

¹ Excess muriate equivalent to 0.30 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Federal Chemical Co., Inc., Louisville, Ky.—Continued.		
5010	Federal 6-8-6 (Muriate)	Williamsburg Hardware Co., Williamsburg
5011		John P. Fister, Lexington
5012		Corbett Hardware Co., Elizabethtown
5437		O. L. Bristow, Philpot
5438		Farmers Feed Store, Lexington
5439		Vine Street Feed Store, Lexington
5440	Federal 6-8-6 (Sulfate)	R. S. Toles, Clintonville
5013	Federal 5-10-5 (Muriate)	Merchants Grocery, Pikeville
5014		Davis Brothers, Ashland
5192		Miss Agnes Davis, Russellville
5441		W. A. Robinson, Bremen
5015	Federal 4-12-12 (Muriate)	John P. Fister, Lexington
5193		Crawford-Ferguson Co., Benton
5194		John W. Whittemore, Hickory
5016	Federal 4-12-8 (Muriate)	V. R. Sanders, Rocky Hill
5195		A. B. Beale & Son, Murray
5196		Orpha Berryman, Winchester
5442		Hedges Cash Store, Mt. Sterling
5017	Federal 4-12-8 (Sulfate)	John P. Fister, Lexington
5018	Federal 4-10-6 (Muriate)	Corbett Hardware Co., Elizabethtown
5197		Grayson County Supply Co., Leitchfield
5443		R. S. Toles, Clintonville
5444		R. T. Horton, Utica
5019	Federal 4-10-4 (Muriate)	William Stanley, South Corbin
5020	Federal 4-8-4 (Muriate)	Farmers Supply Co., Pikeville
5445		Youngblood Brothers, Mayfield
5198	Federal 4-8-4 (Sulfate)	W. S. Allen, Liberty
5446	Federal 4-12-0	McCauley Brothers Seed Co., Versailles
5021	Federal 3-12-4 (Muriate)	William Stanley, South Corbin
5199	Federal 3-10-3 (Muriate)	I. K. Miller & Son, Campbellsville
5200		W. S. Allen, Liberty
5022	Federal 3-8-10 (Muriate)	Union Grocery, Morehead
5201		Hutchinson's Store, Burgin
5202		J. P. Page & Son, Barlow
5447		Gray Tucker, Cynthiana

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
5.83	5.49	8.00	7.37	.....	37.8	38.9	5010
6.05	5.70	8.25	6.40	.....	37.8	38.8	5011
5.80	5.49	8.50	6.13	.....	37.8	37.9	5012
6.29	5.99	7.75	6.90	.....	37.8	39.6	5437
6.28	5.88	7.90	6.97	.....	37.8	39.8	5438
6.21	5.88	8.00	6.63	.....	37.8	39.3	5439
6.22	5.82	8.40	6.33	yes	37.8	39.5	5440
5.23	4.88	10.10	5.20	.....	35.5	36.7	5013
5.15	4.83	10.65	5.47	.....	35.5	37.4	5014
4.45	4.22	9.50	4.89	.....	35.5	32.8	5192
5.50	5.24	9.95	5.57	.....	35.5	37.9	5441
4.08	3.78	11.20	11.93	.....	42.8	42.0	5015
3.38	3.26	10.85	9.33	.....	42.8	36.1	5193
3.02	2.92	9.17	7.39	.....	42.8	30.4	5194
3.10	2.90	9.30	6.46	.....	38.0	29.8	5016
4.02	3.77	13.75	7.12	.....	38.0	39.1	5195
3.69	3.39	11.90	7.63	.....	38.0	36.4	5196
4.20	3.92	11.50	7.61	.....	38.0	37.6	5442
4.29	3.92	12.55	7.67	no ¹	38.0	39.3	5017
4.58	4.31	10.15	6.10	.....	33.2	35.5	5018
3.89	3.69	10.95	6.62	.....	33.2	34.7	5197
4.26	3.96	10.20	6.09	.....	33.2	34.5	5443
4.02	3.81	9.70	6.46	.....	33.2	33.5	5444
3.90	3.62	10.30	4.46	.....	30.8	31.4	5019
4.50	4.23	8.80	4.58	.....	28.4	31.8	5020
4.13	3.93	8.15	4.85	.....	28.4	30.1	5445
3.86	3.47	8.50	4.00	no ²	28.4	28.5	5198
4.20	3.48	12.35	.....	.....	28.4	29.5	5446
3.18	2.86	11.45	4.13	.....	29.7	29.8	5021
3.22	2.96	10.20	3.70	.....	26.1	28.0	5199
3.01	2.74	9.95	3.63	.....	26.1	26.8	5200
3.06	2.85	8.65	10.40	.....	32.1	33.6	5022
3.22	2.94	8.05	10.05	.....	32.1	33.0	5201
3.51	3.32	7.50	10.88	.....	32.1	34.3	5202
2.66	2.47	8.20	13.82	.....	32.1	35.7	5447

¹ Excess muriate equivalent to 1.60 percent potash.

² Excess muriate equivalent to 0.34 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Federal Chemical Co., Inc., Louisville, Ky.—Continued.		
5203	Federal 3-8-10 (Sulfate)	H. C. Lawrence, Lynn Grove
5204		U. L. Rogers, Gradyville
5023	Federal 3-8-6 (Muriate)	Williamsburg Hardware Co., Williamsburg
5205		Horace Emmick, Lewisport
5206		Campbell's Mill, Kevil
5207		Hobert Warner, Nancy
5448		Otis Stevens, Beaver Dam
5449		McCauley Brothers Seed Co., Versailles
5450		R. T. Horton, Utica
5451		Henry H. Allen & Son, Brandenburg ...
5452		W. L. Farris, Farmington
5587		Cletus Moss, Bardwell
5649		S. L. Hancock, Louisville
5208	Federal 3-8-6 (Sulfate)	I. K. Miller & Son, Campbellsville
5453		Brown Supply Co., Vine Grove
5454	Federal 2-12-6 (Muriate)	W. A. Robinson, Bremen
5455		Florence Feed Co., Florence
5024	Federal 2-10-4 (Muriate)	Dixie Feed Store, Middlesboro
5025		Carson Bailey, Flippin
5456		Florence Feed Co., Florence
5457		Stanley Brothers, Nebo
5026	Federal 2-8-4 (Muriate)	Qualls Mercantile Co., Olive Hill
5209		U. L. Rogers, Gradyville
5210		Miss Agnes Davis, Russellville
5458		J. L. Taggart, Depoy
5588	Federal 0-14-7 (Muriate)	W. S. Allen & Co., Liberty
5650		Crawford-Ferguson Co., Benton
5651		L. F. Thurmond, Murray
5662		Otis Stevens, Beaver Dam
5211	Federal 0-10-4 (Muriate)	U. L. Rogers, Gradyville
5212		Crawford-Ferguson Co., Benton
5213	Federal Superphosphate 20%	H. D. Jones, Glasgow
5214		Grigsby & Co., Bardstown
5215		U. L. Rogers, Gradyville
5216		Lewisport Mill Co., Lewisport
5459		William L. Howard, Whitesville
5589		Hobert Warner, Nancy
5590		Allen & Jenkins, Bowling Green
5591		J. S. Squires, Cane Valley
5592		Grayson County Supply Co., Leitchfield
5593		Corbett Hardware Co., Elizabethtown....

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.24	3.00	9.40	8.55	no ¹	32.1	32.0	5203
3.03	2.76	8.35	11.17	yes	32.1	34.0	5204
3.11	2.92	8.55	6.22	.....	27.3	28.6	5023
3.10	2.86	8.90	6.55	.....	27.3	29.4	5205
2.63	2.48	8.18	6.07	.....	27.3	26.3	5206
3.01	2.72	8.65	6.44	.....	27.3	28.6	5207
3.08	2.81	8.40	6.24	.....	27.3	28.4	5448
3.61	3.39	8.05	6.11	.....	27.3	29.6	5449
3.22	3.02	8.25	6.13	.....	27.3	28.5	5450
3.16	2.92	8.40	6.45	.....	27.3	28.9	5451
3.06	2.88	9.05	6.01	.....	27.3	28.8	5452
3.00	2.71	7.87	7.60	.....	27.3	29.1	5587
3.09	2.49	8.27	6.53	.....	27.3	28.6	5649
2.88	2.57	8.00	7.39	yes	27.3	28.6	5208
3.15	2.88	8.45	7.24	no ²	27.3	29.9	5453
2.22	2.00	12.75	6.03	.....	28.6	30.3	5454
2.29	2.11	12.40	6.42	.....	28.6	30.6	5455
2.43	2.18	10.20	4.88	.....	23.8	26.6	5024
1.94	1.78	9.65	4.07	.....	23.8	23.3	5025
2.22	1.93	10.40	4.09	.....	23.8	25.2	5456
2.23	2.03	9.05	4.64	.....	23.8	24.2	5457
2.23	2.01	9.10	5.10	.....	21.4	24.9	5026
2.52	2.28	9.20	3.80	.....	21.4	24.4	5209
2.52	2.39	10.10	4.88	.....	21.4	26.8	5210
2.31	2.14	8.75	4.62	.....	21.4	24.1	5458
.....	.....	14.50	6.62	.....	25.2	25.3	5588
.....	.....	14.22	6.50	.....	25.2	24.9	5650
.....	.....	13.92	6.90	.....	25.2	25.0	5651
.....	.....	14.10	7.65	.....	25.2	26.1	5662
.....	.....	10.15	5.23	.....	16.8	18.5	5211
.....	.....	10.55	3.65	.....	16.8	17.0	5212
.....	.....	20.10	.....	.....	24.0	24.1	5213
.....	.....	20.00	.....	.....	24.0	24.0	5214
.....	.....	20.00	.....	.....	24.0	24.0	5215
.....	.....	20.20	.....	.....	24.0	24.2	5216
.....	.....	19.50	.....	.....	24.0	23.4	5459
.....	.....	21.50	.....	.....	24.0	25.8	5589
.....	.....	20.25	.....	.....	24.0	24.3	5590
.....	.....	20.00	.....	.....	24.0	24.0	5591
.....	.....	20.37	.....	.....	24.0	24.4	5592
.....	.....	20.15	.....	.....	24.0	24.2	5593

¹ All potash from muriate.

² Excess muriate equivalent to 0.57 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Federal Chemical Co., Inc., Louisville, Ky.—Continued.		
5594	Federal Superphosphate 20%.....	Lewisport Mill Co., Lewisport
5595		Nay Chestnut, London
5652		John W. Whittemore, Hickory
5653		Bale Hardware & Implement Co., Horse Cave
5027	Federal Superphosphate 18%.....	L. C. Locke, Hiseville
5028		E. T. Meador, Scottsville
5217		Hobert Warner, Nancy
5218		T. M. Lee, Cave City
5460		Davis Brothers, Ashland
5461		M. R. Remmington, Philpot
5596		Hobert Warner, Nancy
5029	Nitrate of Soda 16%	John P. Fister, Lexington
5030		V. R. Sanders, Rocky Hill
5462		Farmers Supply Co., White Plains
Hutson Chemical Co., Murray, Ky.		
5219	4-12-8 (Muriate)	Manufacturer
5220	4-10-12 (Muriate)	Manufacturer
5221	3-9-18 (Muriate)	Yopp Seed Co., Paducah
5222	2-8-4 (Muriate)	Dairyman's Feed & Supply Co., Mayfield
5223	Superphosphate 20%	Dairyman's Feed & Supply Co., Mayfield
5654		Dairyman's Feed & Supply Co., Mayfield
International Minerals & Chemical Corporation, Cincinnati, O.		
5225	6-8-6 (Muriate)	Cox Feed Store, Wilmore
5224	6-8-6 (Sulfate)	H. B. Willoughby, Richmond
5463		R. M. Burnett & Son, Vine Grove
5031	5-10-5 (Muriate)	Harlan Fruit Co., Harlan
5226		Harlan Fruit Co., Harlan
5227	4-12-8 (Sulfate)	V. B. Nuckols, Elkton
5228		H. B. Willoughby, Richmond
5464		Gulley & Pettit, Burlington
5032	4-12-4 (Muriate)	Tony Bezold, Newport
5465		Minges Hardware Co., Newport
5033	4-12-0	Cecilian Milling Co., Elizabethtown
5231	4-10-6 (Muriate)	C. M. Brown, West Somerset
5466		G. H. Mitchell, Clay

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	19.60	.....	.....	24.0	23.5	5594
.....	.....	21.12	.....	.....	24.0	25.3	5595
.....	.....	20.27	.....	.....	24.0	24.3	5652
.....	.....	20.10	.....	.....	24.0	24.1	5653
.....	.....	20.05	.....	.....	21.6	24.1	5027
.....	.....	18.00	.....	.....	21.6	21.6	5028
.....	.....	18.30	.....	.....	21.6	22.0	5217
.....	.....	18.55	.....	.....	21.6	22.3	5218
.....	.....	17.30	.....	.....	21.6	20.8	5460
.....	.....	18.00	.....	.....	21.6	21.6	5461
.....	.....	18.07	.....	.....	21.6	21.7	5596
16.16	.....	.....	.....	.....	44.8	45.3	5029
16.16	.....	.....	.....	.....	44.8	45.3	5030
16.28	.....	.....	.....	.....	44.8	45.6	5462
4.20	3.69	11.85	8.84	.....	38.0	39.5	5219
4.07	3.57	9.70	13.64	.....	40.4	42.3	5220
2.73	2.46	8.20	13.47	.....	42.9	35.6	5221
1.99	1.72	8.05	4.91	.....	21.4	22.5	5222
.....	.....	20.45	.....	.....	24.0	24.5	5223
.....	.....	20.05	.....	.....	24.0	24.1	5654
6.01	5.49	8.85	6.68	.....	37.8	39.7	5225
6.09	5.55	8.60	6.77	yes	37.8	39.8	5224
6.02	5.48	8.85	5.81	yes	37.8	38.7	5463
4.76	4.48	10.00	5.26	.....	35.5	35.0	5031
4.86	4.32	10.35	5.65	.....	35.5	36.2	5226
3.34	3.00	13.10	9.72	no ¹	38.0	39.1	5227
4.43	3.79	13.30	7.34	yes	38.0	40.3	5228
4.05	3.41	12.20	8.74	yes	38.0	39.3	5464
4.27	3.92	12.15	5.06	.....	33.2	35.6	5032
3.88	3.50	12.55	5.04	.....	33.2	34.7	5465
4.07	3.57	12.35	.....	.....	28.4	29.1	5033
4.24	3.84	10.20	7.14	.....	33.2	35.7	5231
3.86	3.64	11.00	6.05	.....	33.2	34.0	5466

¹ Excess muriate equivalent to 1.75 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
International Minerals & Chemical Corporation—Continued.		
5229	4-10-6 (Muriate 2, Sulfate 4).....	V. B. Nuckols, Elkton
5230		H. B. Willoughby, Richmond
5467	4-8-4 (Muriate)	Denton Mercantile Co., Hillsboro
5234	3-12-12 (Muriate)	V. B. Nuckols, Elkton
5468		Gulley and Pettit, Burlington
5232	3-12-12 (Muriate 6, Sulfate 6)....	C. M. Brown, W. Somerset
5233		Columbia Building Supply Co., Columbia
5034	3-12-6 (Muriate)	Bale Hardware & Implement Co.,
5469		Horse Cave
5470	3-10-3 (Muriate)	Gulley & Pettit, Burlington
5035	3-8-6 (Muriate)	Cecilian Milling Co., Elizabethtown
5036		Harlan Fruit Co., Harlan
5237		H. B. Willoughby, Richmond
5238		C. M. Brown, W. Somerset
5235	3-8-6 (Sulfate)	H. B. Willoughby, Richmond
5236		Woodson Lewis & Son, Greensburg
5471		Farmers Mill, Clay
5239	2-12-6 (Muriate)	H. B. Willoughby, Richmond
5472		Youtsey Brothers, Alexandria
5240	2-8-4 (Muriate)	H. B. Willoughby, Richmond
5473		Denton Mercantile Co., Hillsboro
5597	0-14-7 (Muriate)	C. M. Brown, W. Somerset
5598		Lewis Seed Co., Louisville
5599		Woodson Lewis & Son, Greensburg
5241	0-12-12 (Muriate)	V. B. Nuckols, Elkton
5600		C. M. Brown, W. Somerset
5601		Lewis Seed Co., Louisville
5242	0-10-4 (Muriate)	Columbia Building Supply Co.,
5037	Superphosphate 20%	Columbia
5038		Cecilian Milling Co., Elizabethtown
5243		Seay Bros., Holland
5244		Woodson Lewis & Son, Greensburg
5602		H. B. Willoughby, Richmond
5603		C. M. Brown, W. Somerset
		Woodson Lewis & Son, Greensburg

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.61	2.60	10.75	6.54	yes	33.2	33.4	5229
4.11	3.45	10.30	6.88	yes	33.2	35.0	5230
3.84	3.48	8.90	4.48	.....	28.4	29.5	5467
3.15	2.96	12.25	12.65	.....	39.3	40.9	5234
3.06	2.79	12.25	12.84	.....	39.3	40.8	5468
3.15	2.87	12.50	12.64	no ¹	39.3	41.2	5232
3.14	2.87	13.05	12.49	no ²	39.3	41.6	5233
2.85	2.59	12.90	6.45	.....	32.1	33.2	5034
2.83	2.54	13.10	5.76	.....	32.1	32.5	5469
3.02	2.73	10.15	3.40	.....	26.1	26.8	5470
3.01	2.65	8.25	6.07	.....	27.3	27.7	5035
3.09	2.90	8.15	6.04	.....	27.3	27.8	5036
3.01	2.63	8.25	6.21	.....	27.3	27.9	5237
2.97	2.60	8.25	6.47	.....	27.3	28.1	5238
3.06	2.73	8.65	6.24	yes	27.3	28.6	5235
2.94	2.60	8.15	6.42	no ³	27.3	27.8	5236
2.94	2.22	8.15	6.40	no ⁴	27.3	27.8	5471
2.03	1.75	12.25	6.54	.....	28.6	29.7	5239
2.44	2.14	12.95	6.81	.....	28.6	32.3	5472
1.88	1.60	8.20	4.06	.....	21.4	21.3	5240
1.99	1.71	8.35	4.23	.....	21.4	22.1	5473
.....	.....	13.65	7.56	.....	25.2	25.5	5597
.....	.....	14.00	7.53	.....	25.2	25.8	5598
.....	.....	14.25	6.81	.....	25.2	25.3	5599
.....	.....	13.30	12.25	.....	28.8	30.7	5241
.....	.....	12.42	11.81	.....	28.8	29.1	5600
.....	.....	12.65	12.61	.....	28.8	30.3	5601
.....	.....	10.10	4.39	.....	16.8	17.4	5242
.....	.....	18.55	.....	.....	24.0	22.3	5037
.....	.....	22.60	.....	.....	24.0	27.1	5038
.....	.....	21.30	.....	.....	24.0	25.6	5243
.....	.....	20.50	.....	.....	24.0	24.6	5244
.....	.....	20.50	.....	.....	24.0	24.6	5602
.....	.....	20.07	.....	.....	24.0	24.1	5603

¹ Excess muriate equivalent to 0.93 percent potash.

² Excess muriate equivalent to 0.88 percent potash.

³ Excess muriate equivalent to 1.40 percent potash.

⁴ Excess muriate equivalent to 1.01 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
International Minerals & Chemical Corporation, Cincinnati, O.		
—Continued.		
5604	Superphosphate 20%	Youtsey Bros., Alexandria
5655		Homer Embry, Lee
5605	Superphosphate 18%	V. B. Nuckols, Elkton
Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.		
5474	Pulverized 6-8-6 (Sulfate)	Fayette Seed Co., Lexington
5245	Pulverized 5-10-5 (Muriate)	Jellico Grocery Co., Harlan
5475	Pulverized 4-12-8 (Muriate)	H. B. McClary, Auburn
5246	Pulverized 4-12-8 (Sulfate)	Giltner Seed & Feed Co., Eminence
5039	Knox 4-12-0	W. H. Brock & Co., Maysville
5247		Giltner Seed & Feed Co., Eminence
5040	Pulverized 4-10-6 (Muriate)	W. H. Brock & Co., Maysville
5248	4-10-4 (Muriate)	Allison Shippe, Campbellsville
5041	Pulverized 4-8-6 (Muriate)	Chappell Grocery, Pineville
5249	Pulverized 4-8-4 (Muriate)	Giltner Seed & Feed Co., Eminence
5250		Jellico Grocery Co., Harlan
5251	Pulverized 3-12-12 (Muriate)	Giltner Seed & Feed Co., Eminence
5042	Knox 3-10-4 (Muriate)	Jellico Grocery, Harlan
5043		Cole, Hughes & Co., Grays
5477		McCauley Brothers Seed Co., Versailles
5252	"Hi-Bred" 3-10-4 (Muriate)	G. H. Bowles & Son, Glasgow
5476		J. W. Vincent, Central City
5253	Pulverized 3-10-3 (Muriate)	Parker S. Cooper, Monticello
5044	Knox 3-8-6 (Muriate)	Jellico Grocery, Corbin
5254		Parker S. Cooper, Monticello
5478	Basic 3-8-6 (Muriate)	H. B. McClary, Auburn
5045	3-8-5 (Muriate 3, Sulfate 2)	Richmond Hatchery, Richmond
5255		Young Hardware Co., Hopkinsville
5479		M. J. Wright, Flemingsburg
5480		Fayette Seed Co., Lexington
5256	3-8-5 (Muriate 4, Sulfate 1)	Harris Feed Co., Franklin
5257	2-10-4 (Muriate)	Chappell Grocery, Pineville
5258		O. L. Stephens, Crab Orchard
5046	Pulverized 2-8-4 (Muriate)	W. H. Brock & Co., Maysville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	20.85	.....	.....	24.0	25.0	5604
.....	.....	20.05	.....	.....	24.0	24.1	5655
.....	.....	19.17	.....	.....	21.6	23.0	5605
5.66	5.00	8.65	6.91	yes	37.8	38.5	5474
5.12	5.01	10.80	5.04	.....	35.5	36.9	5245
3.94	3.71	12.85	7.72	.....	38.0	38.5	5475
4.10	3.75	11.95	7.97	yes	38.0	38.3	5246
3.72	3.36	12.30	.....	.....	28.4	27.8	5039
3.50	3.12	12.60	.....	.....	28.4	27.4	5247
3.79	3.59	11.00	6.01	.....	33.2	33.7	5040
3.88	3.71	10.70	4.25	.....	30.8	31.5	5248
4.09	3.91	8.60	6.03	.....	30.8	31.9	5041
3.96	3.62	8.20	4.13	.....	28.4	28.7	5249
4.05	3.87	9.40	4.21	.....	28.4	30.5	5250
2.89	2.62	12.75	12.44	.....	39.3	40.3	5251
2.89	2.77	10.35	4.49	.....	27.3	27.9	5042
3.36	3.26	10.15	4.51	.....	27.3	29.4	5043
3.28	3.14	10.00	5.26	.....	27.3	29.8	5477
2.97	2.77	10.65	4.27	.....	27.3	28.3	5252
2.90	2.74	10.85	4.29	.....	27.3	28.3	5476
3.13	2.94	9.90	3.23	.....	26.1	26.7	5253
3.01	2.94	8.85	6.03	.....	27.3	28.4	5044
2.76	2.66	9.15	5.57	.....	27.3	27.3	5254
2.88	2.75	8.85	6.10	.....	27.3	28.0	5478
3.05	2.58	8.00	5.44	yes	26.1	26.8	5045
3.09	2.56	8.75	5.41	yes	26.1	27.8	5255
3.05	2.60	8.50	5.28	yes	26.1	27.2	5479
3.02	2.58	8.05	5.36	yes	26.1	26.7	5480
3.12	2.60	8.25	5.25	yes	26.1	27.1	5256
2.09	2.03	10.20	4.26	.....	23.8	24.7	5257
2.08	2.02	10.65	4.48	.....	23.8	25.4	5258
2.17	2.06	8.60	4.19	.....	21.4	22.9	5046

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.—Continued.		
5606	Knox 0-14-7 (Muriate)	Turner & Whitlock, Greensburg
5607		Allison Shippe, Campbellsville
5608		Vick Smith, Bowling Green
5656		G. H. Bowles & Son, Glasgow
5609	Knox 0-12-12 (Muriate)	Harris Seed Co., Franklin
5259	Basic 0-10-10 (Muriate)	Barnett-Sullivan & Co., Harrodsburg
5260	Basic 0-10-6 (Muriate)	W. C. Turner, Greensburg
5261		G. H. Bowles & Son, Glasgow
5047	Basic 0-10-4 (Muriate)	W. C. Stuart's Cash Grocery, Horse Cave
5262		W. Bryant Robertson, Adairville
5263		Harris Feed Co., Franklin
5264		Allison Shippe, Campbellsville
5265		Dixie Feed Store, Middlesboro
5048	Knox Pulverized Superphosphate	
	20%	Gid Hollingsworth, Tompkinsville
5266		A. T. Sanders, Lancaster
5267		Allison Shippe, Campbellsville
5481		H. B. McClary, Auburn
5610		W. H. Brock & Co., Maysville
5611		Parker S. Cooper, Monticello
5612		E. T. Meador, Scottsville
5613		G. H. Bowles & Son, Glasgow
5614		H. B. McClary, Auburn
5482	Nitrate of Soda 16%	H. B. McClary, Auburn
5268	"Amnite" 15-0-0	W. C. Turner, Greensburg
5269		W. Bryant Robertson, Adairville
5483		Fayette Seed Co., Lexington
Louisville Fertilizer Co., Division Armour & Co., Cincinnati, O., Jeffersonville, Ind., Nashville, Tenn.		
5270	Louisville Old Black Joe 2-10-4	
	(Muriate)	Yopp Seed Co., Paducah
5484		Ratliff Hardware Co., Princeton
5485	Louisville Superphosphate 20%	Ratliff Hardware Co., Princeton
Morris Fertilizer Co., Division Armour & Co., Cincinnati, O., Jeffersonville, Ind., Nashville, Tenn.		
5486	Morris 2-10-4 (Muriate)	Duncan & Winstead, Dixon

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	14.50	7.47	.....	25.2	26.4	6506
.....	15.15	6.91	.....	25.2	26.5	5607
.....	14.80	7.06	.....	25.2	26.2	5608
.....	14.85	7.66	.....	25.2	27.0	5656
.....	12.87	12.10	.....	28.8	30.0	5609
.....	9.60	8.59	.....	24.0	21.8	5259
.....	10.95	6.35	.....	19.2	20.8	5260
.....	10.00	6.01	.....	19.2	19.2	5261
.....	10.30	4.44	.....	16.8	17.7	5047
.....	10.55	4.36	.....	16.8	17.9	5262
.....	10.75	4.36	.....	16.8	18.1	5263
.....	10.70	4.44	.....	16.8	18.2	5264
.....	10.00	4.17	.....	16.8	17.0	5265
.....	20.80	.....	.....	24.0	25.0	5048
.....	20.40	.....	.....	24.0	24.5	5266
.....	20.15	.....	.....	24.0	24.2	5267
.....	20.35	.....	.....	24.0	24.4	5481
.....	20.65	.....	.....	24.0	24.8	5610
.....	20.52	.....	.....	24.0	24.6	5611
.....	20.22	.....	.....	24.0	24.3	5612
.....	20.15	.....	.....	24.0	24.2	5613
.....	20.10	.....	.....	24.0	24.1	5614
16.28	44.8	45.6	5482
14.50	14.47	.....	.....	.....	27.0	26.1	5268
15.04	15.01	.....	.....	.....	27.0	27.1	5269
15.56	15.49	.....	.....	.....	27.0	28.0	5483
2.15	1.78	10.00	3.98	.....	23.8	24.3	5270
2.14	1.73	10.50	4.33	.....	23.8	25.3	5484
.....	19.35	.....	.....	24.0	23.2	5485
2.05	1.70	10.25	4.13	.....	23.8	24.4	5486

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
National Chemical Co. (owned by North American Fertilizer Co.), Louisville, Ky.		
5342	"Big Pay" 6-8-3 (Sulfate)	W. C. Howk, Cynthiana
5487	"Big Pay" 4-12-8 (Muriate)	J. W. Palmer, Stamping Ground
5272	"Big Pay" 4-12-4 (Muriate)	W. D. Cunningham, Webbs Cross Roads
5273	"Big Pay" 3-10-3 (Muriate)	Miller Hardware Co., Magnolia
5274	"Big Pay" 3-8-6 (Muriate)	Renfro Supply Co., Williamsburg
5488		Elmer Young, Providence
5275	"Big Pay" 2-10-4 (Muriate)	C. D. Barnett, Poole
5489	"Big Pay" 0-10-4 (Muriate)	Elmer Young, Providence
5616	"Big Pay" Superphosphate 20%	I. K. Miller & Son, Campbellsville
North American Fertilizer Co., Inc., Louisville, Ky.		
5490	N. Am. 10-8-4 (Muriate)	P. E. Karraker, Lexington
5049	N. Am. 6-8-6 (Muriate)	Richmond Hatchery, Richmond
5276		Robinson & Turley, Richmond
5277		Richmond Hatchery, Richmond
5343	N. Am. 6-8-3 (Muriate)	W. C. Howk, Cynthiana
5344		W. C. Howk, Cynthiana
5278	N. Am. 5-10-5 (Muriate)	W. W. Owens, Russell Springs
5491		Elmer Young, Providence
5279	N. Am. 4-12-8 (Muriate)	Grigsby & Co., Bardstown
5280	N. Am. 4-12-0	Robinson & Turley, Richmond
5281		R. D. Reynolds, Cave City
5492		Elmer Young, Providence
5493	N. Am. 4-10-4 (Muriate)	Moore's Feed Store, Shively
5282	N. Am. 4-8-6 (Muriate)	W. W. Owens, Russell Springs
5283	N. Am. 3-10-3 (Muriate)	Henry Durham, Greensburg
5284		W. W. Owens, Russell Springs
5050	N. Am. 3-8-6 (Muriate)	Robinson & Turley, Richmond
5285		W. D. Cunningham, Webbs Cross Roads
5286	N. Am. 2-8-4 (Muriate)	Henry Durham, Greensburg
5287		W. W. Owens, Russell Springs
5494		Shannon-Mercer Co., Depoy
5495		Elmer Young, Providence
5617	N. Am. 0-14-7 (Muriate)	U. L. Rogers, Gradyville
5618		Henry Durham, Greensburg
5619		I. K. Miller & Son, Campbellsville
5620		Baughman Milling Co., Stanford

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
6.02	5.66	8.70	4.23	no ¹	34.2	36.6	5342
3.51	3.32	10.05	7.33	.....	38.0	33.1	5487
4.20	3.61	11.35	6.73	.....	33.2	36.4	5272
3.95	3.77	9.62	3.42	.....	26.1	29.5	5273
3.08	2.91	8.35	6.62	.....	27.3	28.7	5274
3.11	2.87	9.00	6.68	.....	27.3	29.7	5488
2.24	1.92	9.17	3.66	.....	23.8	23.2	5275
.....	.....	10.90	6.26	.....	16.8	20.6	5489
.....	.....	20.32	.....	.....	24.0	24.4	5616
8.36	8.08	8.65	5.16	.....	49.4	45.8	5490
5.29	5.07	7.60	5.79	.....	37.8	34.6	5049
5.78	5.45	7.60	7.24	.....	37.8	38.0	5276
5.08	4.87	8.25	9.06	.....	37.8	38.6	5277
6.04	5.82	8.30	4.21	.....	34.2	36.2	5343
6.02	5.84	7.70	4.06	.....	34.2	35.2	5344
5.30	5.11	9.75	5.50	.....	35.5	36.9	5278
5.98	5.82	10.15	5.33	.....	35.5	39.5	5491
4.13	3.97	12.00	8.55	.....	38.0	39.1	5279
4.25	4.07	12.95	.....	.....	28.4	30.4	5280
4.26	4.07	11.65	.....	.....	28.4	28.9	5281
4.27	4.01	11.15	.....	.....	28.4	28.3	5492
4.73	4.49	10.25	4.81	.....	30.8	34.6	5493
4.26	3.96	7.70	9.42	.....	30.8	35.5	5282
3.43	3.08	9.22	3.82	.....	26.1	27.7	5283
2.98	2.73	9.95	4.27	.....	26.1	27.5	5284
3.17	3.00	8.45	6.81	.....	27.3	29.4	5050
3.29	3.13	8.75	7.27	.....	27.3	30.7	5285
2.16	1.91	8.40	5.33	.....	21.4	24.0	5286
2.38	2.16	10.35	4.43	.....	21.4	26.1	5287
2.22	2.00	8.70	6.42	.....	21.4	25.9	5494
2.33	2.07	8.10	4.48	.....	21.4	23.3	5495
.....	.....	12.80	6.33	.....	25.2	23.0	5617
.....	.....	13.85	7.46	.....	25.2	25.6	5618
.....	.....	13.90	7.36	.....	25.2	25.5	5619
.....	.....	13.55	7.59	.....	25.2	25.4	5620

¹ Excess muriate equivalent to 0.40 percent potash

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Price Chemical Co., Louisville, Ky.		
5051	6-8-6 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5288		H. W. Noland, Richmond
5496		Harralson's Feed & Seed Store, Owensboro
5497	6-8-6 (Sulfate)	Monarch Milling Co., Mt. Sterling
5052	5-10-5 (Muriate)	Feeders Supply Co., Ashland
5053		St. Matthews Produce Exchange, St. Matthews
5289	4-12-8 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5498	4-12-8 (Sulfate)	Gish Furniture Co., Central City
5499		Monarch Milling Co., Mt. Sterling
5054	4-12-0	J. H. and J. L. Lyons, Loretto
5290		Farmers Supply Co., Eminence
5500	4-10-6 (Muriate)	J. S. Whittinghill, Fordsville
5055	4-10-4 (Muriate)	Thompson Store, Loretto
5501		Gish Furniture Co., Central City
5056	4-8-8 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5291		St. Matthews Produce Exchange, St. Matthews
5057	4-8-6 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5292		St. Matthews Produce Exchange, St. Matthews
5058	4-8-4 (Muriate)	Monarch Milling Co., Mt. Sterling
5059		Stewart & Co., Munfordville
5293		H. W. Noland, Richmond
5294	3-10-3 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5502	3-8-10 (Muriate)	Walter Corbin, Owingsville
5295	3-8-10 (Sulfate)	Perryville Ice & Produce Co., Perryville
5060	3-8-6 (Muriate)	Walters & Thompson, Shelbyville
5296		Walters & Thompson, Shelbyville
5503		Harralson's Feed & Seed Store
		Owensboro
5504		J. S. Whittinghill, Fordsville
5505	3-8-6 (Sulfate)	Monarch Milling Co., Mt. Sterling
5506		Trent & Board, Irvington

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
6.02	5.59	8.60	6.41	.....	37.8	39.1	5051
6.00	5.72	8.30	6.81	.....	37.8	39.1	5288
6.16	5.91	8.25	6.77	.....	37.8	39.6	5496
2.72	2.35	10.30	10.39	no ¹	37.8	34.4	5497
5.22	4.66	10.20	5.38	.....	35.5	37.0	5052
4.77	4.25	10.10	7.25	.....	35.5	37.5	5053
3.99	3.58	12.25	8.61	.....	38.0	39.0	5289
4.50	3.96	12.80	5.80	yes	38.0	38.1	5498
3.96	3.68	12.40	8.08	yes	38.0	38.4	5499
4.12	3.35	13.05	.....	.....	28.4	30.1	5054
4.05	3.25	12.40	.....	.....	28.4	29.1	5290
4.50	4.26	10.55	6.00	.....	33.2	35.6	5500
4.24	3.78	10.60	4.40	.....	30.8	32.8	5055
4.13	3.68	10.40	5.14	.....	30.8	33.1	5501
4.14	3.75	8.70	8.09	.....	33.2	34.6	5056
4.14	3.95	8.20	8.40	.....	33.2	34.4	5291
4.12	3.73	8.50	6.31	.....	30.8	32.2	5057
4.31	4.18	8.05	7.22	.....	30.8	33.4	5292
3.77	3.50	8.75	5.12	.....	28.4	29.8	5058
4.09	3.62	8.25	4.57	.....	28.4	29.7	5059
3.79	3.54	8.50	4.50	.....	28.4	28.9	5293
3.15	2.95	10.60	3.47	.....	26.1	27.9	5294
3.00	2.70	8.05	11.37	.....	32.1	33.8	5502
3.10	2.64	8.55	10.19	yes	32.1	33.3	5295
3.37	3.04	8.00	6.50	.....	27.3	29.2	5060
3.15	2.83	8.10	6.11	.....	27.3	28.1	5296
3.04	2.82	8.45	5.91	.....	27.3	27.9	5503
2.90	2.50	8.60	6.49	.....	27.3	28.3	5504
3.12	2.67	8.20	6.31	no ²	27.3	28.3	5505
3.26	2.93	8.90	6.42	no ³	27.3	29.8	5506

¹ Excess muriate equivalent to 4.81 percent potash.

² Excess muriate equivalent to 0.21 percent potash.

³ Excess muriate equivalent to 1.33 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Price Chemical Co., Louisville, Ky.—Continued.		
5061	2-16-8 (Muriate)	Feeders Supply Co., Ashland
5062 5507	2-12-6 (Muriate)	Feeders Supply Co., Ashland
5063 5508	2-10-4 (Muriate)	Harralson's Feed Store, Owensboro
5297 5509	2-8-4 (Muriate)	Feeders Supply Co., Ashland
5621	0-14-7 (Muriate)	Monarch Milling Co., Mt. Sterling
5622	0-14-7 (Muriate) with 200 lbs. tobacco stems	Sherman Bengé, London
5298	0-10-10 (Muriate)	Harralson's Feed & Seed Store, Owensboro
5510	0-10-4 (Muriate)	Sherman Bengé, London
5064 5299 5300 5301 5623 5624	Superphosphate 20%	Thomas Emerson, Eubank
5625	Superphosphate 20% with 200 lbs. tobacco stems	St. Matthews Produce Exchange, St. Matthews
5511	Superphosphate 18%	Johnson & Condit, Livermore
5626 5627	Superphosphate 18% with 200 lbs. tobacco stems	Pruitt & Pruitt, Halfway
5066 5302	Red Steer 6-12-6 (Sulfate)	Trent & Board, Irvington
5067	Swift's "K. O. Brand" 6-8-8 (Muriate)	Walters & Thompson, Shelbyville
5303 5512	Red Steer 4-10-6 (Sulfate)	H. W. Noland, Richmond
5068 5513	Red Steer 4-8-4 (Muriate)	Thomas Emerson, Eubank
5304	Red Steer 3-8-6 (Muriate)	Walters & Thompson, Shelbyville
Swift & Co., Fertilizer Works, National Stock Yards, Ill.		
5066 5302	Red Steer 6-12-6 (Sulfate)	L. N. Kratzer, Mt. Sterling
5067	Swift's "K. O. Brand" 6-8-8 (Muriate)	Knight Brothers, Pleasureville
5303 5512	Red Steer 4-10-6 (Sulfate)	L. N. Kratzer, Mt. Sterling
5068 5513	Red Steer 4-8-4 (Muriate)	Knight Brothers, Pleasureville
5304	Red Steer 3-8-6 (Muriate)	Millersburg Coal & Lumber Co. Millersburg

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.18	1.92	17.05	7.24	.....	35.8	36.8	5061
2.07	1.72	13.00	6.20	.....	28.6	30.3	5062
2.01	1.70	13.00	6.73	.....	28.6	30.7	5507
2.33	1.98	10.15	4.82	.....	23.8	26.1	5063
1.87	1.70	10.55	4.51	.....	23.8	24.6	5508
2.26	2.01	8.65	5.01	.....	21.4	24.3	5297
2.14	1.84	8.50	5.18	.....	21.4	23.9	5509
.....	.....	14.67	6.89	.....	25.2	25.9	5621
.....	.....	14.02	7.86	.....	25.2	26.3	5622
.....	.....	10.30	9.98	.....	24.0	24.3	5298
.....	.....	10.00	4.35	.....	16.8	17.2	5510
.....	.....	20.40	.....	.....	24.0	24.5	5064
.....	.....	20.50	.....	.....	24.0	24.6	5299
.....	.....	20.20	.....	.....	24.0	24.2	5300
.....	.....	20.15	.....	.....	24.0	24.2	5301
.....	.....	20.22	.....	.....	24.0	24.3	5623
.....	.....	20.32	.....	.....	24.0	24.4	5624
.....	.....	20.15	.....	.....	24.0	24.2	5625
.....	.....	19.80	.....	.....	21.6	23.8	5511
.....	.....	18.85	.....	.....	21.6	22.6	5626
.....	.....	19.50	.....	.....	21.6	23.4	5627
6.02	5.71	12.60	6.30	yes	42.6	43.8	5066
5.84	5.54	12.25	6.38	yes	42.6	42.8	5302
5.99	5.73	8.85	8.36	.....	40.2	41.6	5067
4.13	3.76	10.40	6.34	yes	33.2	34.5	5303
3.97	3.61	10.65	6.19	yes	33.2	34.1	5512
4.02	3.76	8.25	4.33	.....	28.4	29.2	5068
4.01	3.73	8.20	4.15	.....	28.4	28.9	5513
2.98	2.72	8.40	6.31	.....	27.3	28.1	5304

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
----------------	---	--------------------

Swift & Co., Fertilizer Works, National Stock Yards, Ill.—Continued.

5305	Red Steer 3-8-6 (Sulfate)	Knight Brothers, Pleasureville
5514		Dorsey Brothers & Fisher, Carlisle
5515		Spears-Kiser Co., Paris
5069	Red Steer 2-10-4 (Muriate)	Stagg Brothers, Vanceburg
5306	Red Steer 0-14-7 (Muriate)	Morganfield Hardware Co., Morganfield
5307	Red Steer Superphosphate 20%	Morganfield Hardware Co., Morganfield
5308		Knight Brothers, Pleasureville
5657		Young & Conway, Morganfield

Tennessee Chemical Co., Division Armour & Co., Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.

5516	Ox 4-16-4 (Muriate)	S. A. Hale & Sons, Philpot
5310	Ox 4-12-4 (Muriate)	Sexton-Douglas Hardware Co., Murray
5311	Ox 4-8-4 (Sulfate)	J. H. Maholland, Franklin
5312	Ox Old Black Joe 2-10-4 (Muriate)	M. L. Levi, Pembroke
5313		S. B. Bilbro, Nortonville
5314		V. B. Nuckols, Elkton
5658	Ox 0-14-7 (Muriate)	Sexton-Douglas Hardware Co., Murray
5315	Ox Superphosphate 20%	J. H. Maholland, Franklin
5628		W. H. Arnold & Co., Madisonville

Tennessee Corporation, Lockland, O., and New Albany, Ind.

5629	0-14-7 (Muriate)	J. S. Squires, Cane Valley
5630	Superphosphate 20%	J. S. Squires, Cane Valley
5663		L. B. Carden, Hartford

Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., and Mt. Pleasant, Tenn.

5317	V-C 10-6-4 (Muriate)	Cottingham Grain Co., Henderson
5318	V-C 6-8-6 (Muriate)	Dellis K. Hurt, Elkton
5517		Denton Mercantile Co., Hillsboro
5518		Tuxedo Feed Store, Lexington
5519	V-C 6-8-6 (Sulfate)	J. H. Greene, Lexington
5319	V-C 5-10-5 (Muriate)	Dyche Jones, London
5320		Knox County Supply Co., Barbourville
5321	V-C 4-12-8 (Muriate)	Miss Agnes Davis, Russellville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.05	2.70	8.65	6.11	yes	27.3	28.4	5305
3.19	2.90	8.60	6.36	yes	27.3	29.1	5514
3.09	2.69	8.65	6.16	yes	27.3	28.6	5515
2.13	1.83	10.25	4.01	.....	23.8	24.6	5069
.....	.....	14.15	7.37	.....	25.2	25.8	5306
.....	.....	21.05	.....	.....	24.0	25.3	5307
.....	.....	20.80	.....	.....	24.0	25.0	5308
.....	.....	20.50	.....	.....	24.0	24.6	5657
3.50	3.08	16.15	4.02	.....	38.0	36.5	5516
3.74	3.49	12.45	7.89	.....	33.2	37.5	5310
3.40	2.83	9.35	4.51	no ¹	28.4	28.5	5311
2.04	1.77	10.05	4.03	.....	23.8	24.0	5312
1.98	1.63	10.00	4.10	.....	23.8	23.9	5313
2.02	1.70	10.00	4.07	.....	23.8	24.0	5314
.....	.....	14.50	7.34	.....	25.2	26.2	5658
.....	.....	20.55	.....	.....	24.0	24.6	5315
.....	.....	20.70	.....	.....	24.0	24.8	5628
.....	.....	13.82	7.52	.....	25.2	25.6	5629
.....	.....	20.25	.....	.....	24.0	24.3	5630
.....	.....	20.12	.....	.....	24.0	24.1	5663
7.28	6.96	7.85	4.04	.....	47.0	39.8	5317
4.90	4.72	9.60	5.37	.....	37.8	35.1	5318
6.00	5.85	8.45	6.46	.....	37.8	38.9	5517
6.14	6.01	8.05	6.58	.....	37.8	39.1	5518
6.18	6.05	8.35	6.24	yes	37.8	39.1	5519
5.17	4.97	10.40	5.43	.....	35.5	37.1	5319
4.76	4.56	10.05	5.49	.....	35.5	35.3	5320
4.06	3.95	12.40	7.94	.....	38.0	38.6	5321

¹ Excess muriate equivalent to 0.60 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., and Mt. Pleasant, Tenn.—Continued.		
5322	V-C 4-12-8 (Sulfate)	Shelby Feed & Seed Co., Shelbyville
5323		G. M. Haycraft & Sons, Leitchfield
5520		J. H. Greene, Lexington
5070	V-C 4-12-0	The May Grocery, West Liberty
5071		Shelby Feed & Seed Co., Shelbyville
5324	V-C 4-10-6 (Muriate)	John Beard, Crofton
5521		Denton Mercantile Co., Hillsboro
5325	V-C 4-10-6 (Sulfate)	Geo. Richardson, Somerset
5522		Adams & Moore, Cynthiana
5523	V-C 4-8-4 (Muriate)	Whitesburg Wholesale Co., Whitesburg
5072	V-C 3-12-4 (Muriate)	Knox County Supply Co., Barbourville
5326		C. A. Casteel, E. Bernstadt
5073	V-C 3-10-3 (Muriate)	Dyche Jones, London
5327		G. M. Hedrick, Monticello
5328		Cottingham Grain Co., Henderson
5524		Coleman Feed & Supply Co., Marion
5329	V-C 3-9-18 (Muriate)	Murray Feed Store, Murray
5525	V-C 3-8-10 (Sulfate)	J. H. Greene, Lexington
5330	V-C 3-8-10 (Muriate 4, Sul- fate 6)	U. L. Rogers, Gradyville
5331		Miss Agnes Davis, Russellville
5074	V-C 3-8-6 (Muriate)	J. W. Purkey, Berea
5332		J. W. Purkey, Berea
5526		G. P. Jones & Son, Hartford
5527		W. I. Smith, Sebree
5528	V-C 3-8-6 (Sulfate)	Woodford Spears & Sons, Paris
5529		Ratliff Brothers, Carlisle
5075	V-C 2-12-6 (Muriate)	Hardin County Milling Co., Elizabeth- town
5333		George Richardson, Somerset
5334	V-C 2-8-4 (Muriate)	Polson's Grocery, Glasgow
5335		Geo. Richardson, Somerset
5530		Young Lumber Co., Beaver Dam
5531		A. H. Dawson, Owingsville
5631	V-C 0-14-7 (Muriate)	George Richardson, Somerset
5632		Stockton Brothers, Albany
5633		Hardin County Milling Co., Elizabeth- town
5634		Scottsville Feed Co., Scottsville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
perct.	perct.	perct.	perct.				
4.16	4.00	12.80	8.46	yes	38.0	40.1	5322
3.92	3.74	11.75	7.78	yes	38.0	37.2	5323
4.01	3.88	12.60	8.03	no ¹	38.0	38.8	5520
4.17	3.79	12.90	.....	.....	28.4	30.1	5070
4.12	3.80	13.10	.....	.....	28.4	30.1	5071
3.66	3.46	9.87	6.17	.....	33.2	32.1	5324
4.12	3.95	10.70	6.46	.....	33.2	35.0	5521
4.19	4.04	10.00	6.42	yes	33.2	34.4	5325
3.85	3.62	10.65	6.25	yes	33.2	33.8	5522
3.81	3.66	8.50	4.45	.....	28.4	28.9	5523
3.26	3.02	12.70	4.33	.....	29.7	31.9	5072
3.33	3.11	12.55	4.52	.....	29.7	32.1	5326
3.17	2.95	10.45	3.31	.....	26.1	27.6	5073
3.09	2.86	10.20	3.29	.....	26.1	27.0	5327
2.80	2.54	10.30	4.42	.....	26.1	27.5	5328
3.13	2.96	10.40	3.14	.....	26.1	27.2	5524
2.97	2.90	9.10	17.66	.....	42.9	42.5	5329
3.10	2.96	8.65	10.22	yes	32.1	33.5	5525
2.96	2.83	8.90	10.35	no ²	32.1	33.5	5330
2.94	2.77	8.55	10.07	yes	32.1	32.6	5331
3.13	3.00	8.65	6.26	.....	27.3	28.9	5074
3.12	3.00	8.25	6.42	.....	27.3	28.5	5332
3.20	3.04	8.15	6.52	.....	27.3	28.8	5526
3.21	2.97	8.45	5.94	.....	27.3	28.5	5527
3.10	2.86	8.25	6.50	yes	27.3	28.6	5528
3.00	2.77	8.05	6.52	no ³	27.3	28.0	5529
2.03	1.91	13.50	6.06	.....	28.6	30.6	5075
2.15	2.03	12.10	6.38	.....	28.6	29.7	5333
2.14	1.98	8.50	4.19	.....	21.4	22.7	5334
2.09	1.93	8.40	4.46	.....	21.4	22.8	5335
2.20	1.99	8.80	4.18	.....	21.4	23.3	5530
2.10	1.91	8.65	4.21	.....	21.4	22.8	5531
.....	.....	14.00	7.80	.....	25.2	26.2	5631
.....	.....	14.55	7.33	.....	25.2	26.3	5632
.....	.....	14.60	7.54	.....	25.2	26.6	5633
.....	.....	14.95	7.16	.....	25.2	26.5	5634

¹ Excess muriate equivalent to 0.11 percent potash
² Excess muriate equivalent to 3.15 percent potash.
³ Excess muriate equivalent to 0.17 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., and Mt. Pleasant, Tenn.—Continued.		
5635	V-C 0-12-12 (Muriate)	G. M. Hedrick, Monticello
5636		Miss Agnes Davis, Russellville
5336	V-C 0-10-10 (Muriate)	Miss Agnes Davis, Russellville
5337	V-C 0-10-4 (Muriate)	Geo. Richardson, Somerset
5338		U. L. Rogers, Gradyville
5339		Polson's Grocery, Glasgow
5340	V-C Superphosphate 20%	Polson's Grocery, Glasgow
5341		Geo. Richardson, Somerset
5532		Denton Mercantile Co., Hillsboro
5533		Logan & Calvert, Dawson Springs
5534		G. P. Jones & Son, Hartford
5535		Young Lumber Co., Beaver Dam
5637		M. G. Williams Implement Co., Hopkinsville
5638		U. L. Rogers, Gradyville
5639		Dyche Jones, London
5640		G. M. Haycraft & Son, Leitchfield
5659		Coleman Feed & Supply Co., Marion
5641	V-C Superphosphate 18%	Geo. Richardson, Somerset
5536	V-C Nitrate of Soda 16%	J. H. Greene, Lexington

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS—Continued

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	12.72	12.90	.....	28.8	30.7	5635
.....	12.67	12.98	.....	28.8	30.8	5636
.....	10.50	9.72	.....	24.0	24.3	5336
.....	10.35	5.43	.....	16.8	18.9	5337
.....	10.90	4.56	.....	16.8	18.6	5338
.....	10.95	4.37	.....	16.8	18.4	5339
.....	21.20	.....	.....	24.0	25.4	5340
.....	20.90	.....	.....	24.0	25.1	5341
.....	21.35	.....	.....	24.0	25.6	5532
.....	20.05	.....	.....	24.0	24.1	5533
.....	20.45	.....	.....	24.0	24.5	5534
.....	20.35	.....	.....	24.0	24.4	5535
.....	21.07	.....	.....	24.0	25.3	5637
.....	21.30	.....	.....	24.0	25.6	5638
.....	20.57	.....	.....	24.0	24.7	5639
.....	21.57	.....	.....	24.0	25.9	5640
.....	21.05	.....	.....	24.0	25.3	5659
.....	17.75	.....	.....	21.6	21.3	5641
16.12	44.8	45.1	5536

TABLE 4.—ANALYSES OF INSPECTION SAMPLES OF

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Knoxville Fertilizer Co., Knoxville & Nashville, Tenn.		
5615	Raw Bone Meal 3.70-21.50-0	Vick Smith, Bowling Green Guaranteed
Midwest Phosphate Co., Joliet, Ill.		
5271	Midwest "XX Quality Brand" Rock Phosphate	R. D. Riedling, Louisville Guaranteed
Ruhm Phosphate & Chemical Co., Mt. Pleasant, Tenn.		
5065	"Red Seal XXX Brand" Ruhm Phosphate Rock	Shelby Feed & Seed Co., Shelbyville.... Guaranteed
Swift & Co., Fertilizer Works, National Stock Yards, Ill.		
5309	Swift's Steam Bone Fertilizer 2-26-0	Yopp Seed Co., Paducah Guaranteed
Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.		
5316	Low Grade Open Hearth Basic Slag	Polson's Grocery, Glasgow Guaranteed

BONE, ROCK PHOSPHATE AND BASIC SLAG

Nitrogen, total	Phosphoric acid, total	Index of relative value	Station number
<i>perct.</i>	<i>perct.</i>		
3.82	21.65	35.0	5615
3.70	21.50	34.5	-----
-----	31.75	15.8	5271
-----	32.00	16.0	-----
-----	31.40	15.7	5065
-----	30.00	15.0	-----
2.42	24.50	33.0	5309
2.00	26.00	33.0	-----
-----	11.90	11.9	5316
-----	8.00	8.0	-----

