

## Kentucky Agricultural Experiment Station

UNIVERSITY OF KENTUCKY

THOMAS P. COOPER, Director

### COMMERCIAL FERTILIZERS IN KENTUCKY IN 1939

By H. E. CURTIS,\* J. D. TURNER, H. R. ALLEN and LELAH GAULT

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The results of analyses of the official samples of the various grades of fertilizer sold in Kentucky during 1939 show that the fertilizers usually equaled their guaranties and that the deficiencies, with few exceptions, were of a minor nature. The tonnage was about the same as the average in Kentucky in normal years, or 110,000 tons, but an additional quantity of about 36,000 tons of 20-percent and triple superphosphate was used by farmers of the State under the Agricultural Adjustment Administration of the United States Department of Agriculture.

#### NUTRIENTS IN COMMERCIAL FERTILIZERS

The price of a commercial fertilizer is based on the quantities of available nitrogen, phosphorus and potassium it contains and these nutrients are usually called the primary nutrients, but there are a number of secondary elements or nutrients, many in trace amounts, which are vitally important to crop production also. The more important secondary elements or nutrients are

\* Retired August 31, 1939.

calcium, magnesium, sulfur, manganese, iron, copper, zinc and boron. They usually occur in sufficient amounts in Kentucky soils for crop production, and also occur in commercial fertilizers in varying amounts, in all grades. In a recent investigation<sup>1</sup> chemical analyses were made for all elements ordinarily found in low-grade fertilizers in more than traces and also for those trace elements of proved value. It was found that the high-grade and double-strength mixtures contained all the elements ordinarily present in the low-grade mixtures and in many cases in about the same general proportions as in the low grades. The concentrated mixtures contained somewhat smaller amounts of the secondary elements or nutrients, but of course more nitrogen, phosphorus and potassium.

#### LOW-GRADE FERTILIZERS

Many brands of low-grade mixed fertilizers were sold to farmers in Kentucky during the year. Of the total tonnage of mixed fertilizers sold in the State in 1939, approximately 13,000 tons contained not more than 14 percent of nitrogen, phosphoric acid and potash, and approximately 25,000 tons contained 16 percent or less. The purchase of such a tonnage of low-grade fertilizer represents a tremendous loss in actual cash as well as disappointment to the farmers of Kentucky. This loss in actual money is due to the fact that there are certain costs in producing a ton of fertilizer, regardless of the plant-food content, such as handling, mixing, bags, freight, tax and other charges. The savings by the farmers in buying high-grade fertilizers instead of low-grade fertilizers, because of these costs, would mean 10 to 15 percent on their fertilizer bills, or \$3.50 or \$4.00 a ton, or an estimated cost to the farmers of the State of \$85,000 or more annually. For example, it takes 3 tons of a 2-8-4 fertilizer to supply the same amounts of nitrogen, phosphoric acid and potash as are contained in 2 tons of a 3-12-6 fertilizer. At the prevailing retail prices in Kentucky in 1939:

3 tons of 2-8-4 at \$25.50 a ton cost \$76.50  
2 tons of 3-12-6 at \$32.40 a ton cost \$64.80

The saving in buying the 3-12-6 fertilizer is \$11.70, or about 15 percent. In addition the buyer handles only 2 tons instead of 3

<sup>1</sup>Lundstrom, F. O. and Mehring, A. L., Complete Composition of Commercial Mixed Fertilizers, *Ind. Eng. Chem.*, 31, 354 (1939).



tons. If a larger proportion of high-grade fertilizer was sold in the State, the saving would be greater.

Other costs of an economic nature to the farmers, due to the purchase of low-grade fertilizers, such as failure in crop production, loss in labor, loss in soil conservation, less income to meet the budget and similar losses, may be even larger than the actual loss in money sustained in buying low-grade fertilizers. Agronomy and soil experts, the National Fertilizer Association and control officials are united in advocating the use of high-grade fertilizers.

#### **LOW-GRADE FERTILIZERS NOT RECOMMENDED**

The Fertilizer Department is of the opinion that, because of the cost of mixing and distribution, it is uneconomical for farmers of Kentucky to buy low-grade fertilizers. It would not recommend the purchase of a mixed fertilizer with a total plant food of less than 16 percent. By the same token, it is believed that a total of 18 or 20 percent, or even more, would be more economical because in this way a farmer can get the same amount of plant food in less tonnage and save the extra cost in freight on fillers, spreading and other costs incident to the manufacture and handling. It is further of the opinion that if a farmer's soil needs the three primary nutrients, nitrogen, phosphorus and potassium, it would be uneconomical to buy a fertilizer with less than 3 percent nitrogen, 8 percent phosphoric acid and 4 percent potash, for the same reason of cost.

Farmers could save even more on their fertilizer bills by buying higher grades such as 4-8-6, 4-10-6, 4-12-8, 5-10-5, 6-12-6 and similar combinations. Advice to the contrary is not sound and reliable and if farmers buy on price instead of quality the results will be loss and disappointment. The net savings to farmers annually in buying high-grade fertilizers instead of low-grade fertilizers would be very great.

#### **USE OF COMMERCIAL FERTILIZERS**

Before a farmer selects a fertilizer to use on his land, he first should know what his land needs in plant food. If he does not know, he should consult some authority who does. The farmer has ready access to the County Agent who has first-hand knowledge of the kinds of soil in the vicinity and of other local condi-

tions, including the experience of other farmers. The Agronomy Department of the College of Agriculture of the University of Kentucky is constantly carrying out experimental work with fertilizers. Much of this work has been published and is available in bulletins for free distribution. Usually, the information the farmer needs for intelligent selection of his fertilizer is available for the mere asking. Some helpful publications are: Bulletin 379, Soil Management and Fertilization for Tobacco; Bulletin 397, soil Management Experiments; Extension Circular 54, Soils, An Elementary Treatise, and Extension Circular 272, Soil Management for Kentucky.

It may be found that the soil of a particular farm is deficient only in nitrogen, or in phosphorus, or in potassium. It would be poor economy to buy a fertilizer containing plant food already in the soil in sufficient amounts for maximum crop production. It is exceedingly important, therefore, for the farmer to know what his soil needs, or else he may buy something his soil does not need or fail to buy what it does need. Hence, the necessity of not only knowing what plant food the soil needs, but the selection of a high-grade fertilizer, well balanced in the proportion of the plant food nutrients.

#### EXPLANATION OF PLANT-FOOD ELEMENTS

Nitrogen, phosphorus and potassium are called primary plant food elements. They are the nutrients usually supplied in commercial fertilizers. The percentages of these primary plant nutrients are printed on the State tag as nitrogen, phosphoric acid and potash. The secondary or minor plant food elements are necessary for plant growth but, with the exception of calcium and magnesium for some crops, are required by plants in relatively small amounts and under our present knowledge it is believed they are usually present in most Kentucky soils in sufficient amount for proper plant growth.

The results of many investigations indicate that certain nutrients perform definite functions in the growth and development of plants. Some of these functions are:

*Nitrogen* promotes leaf and stem development, produces rapid early growth and, in proper amount, aids in maturing the plant. In excessive amount, 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* is usually present in fertilizers in various forms of calcium and ammonium phosphates. It is guaranteed and reported as phosphoric acid ( $P_2O_5$ ). It is the plant nutrient that promotes general growth, especially root formation and growth, aids maturity of plants, fruiting, and increases the ratio of grain and fruit to the plant stalk.

Available phosphoric acid is that part of this plant nutrient in a fertilizer which can be utilized quickly 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 ( $K_2O$ ). It aids in the general growth of the plant, in resistance to disease and the development of sugar and starch, and improves the quality of the plant and fruit. Potash in fertilizers is soluble in water.

#### FARMERS' SAMPLES

The fertilizer law provides that any person not a dealer in or agent for the sale of any fertilizer, who may purchase fertilizer, for his own use, in this State 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 and upon such request, the proper instructions and certificate to be signed and returned by the farmer will be sent. This is important as 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 sold or 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 examine closely the information printed on the guaranty tag before purchasing. 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 and rock phosphate. At the bottom of the tag must be placed 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 should not be confused with the selling price. This can not be accurately estimated because of the many factors, some of them variable, which are included in it.

The estimated 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 estimated value, or index of relative value, is calculated from these individual values. The values are:

	Value per pound cents	Value per unit dollars
Nitrogen .....	17.5	3.5
Available phosphoric acid in mixed fertilizers and super- phosphates .....	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

**SOME OF THE DEFINITIONS OF TERMS ON FERTILIZERS  
ADOPTED BY THE ASSOCIATION OF OFFICIAL  
AGRICULTURAL CHEMISTS**

**NITROGEN**

*Cyanamid* is a commercial product composed chiefly of calcium cyanamid ( $\text{CaCN}_2$ ), and it shall contain not less than twenty-one per cent (21%) of nitrogen.

*Cyanamid and urea nitrogen* is synthetic non-proteid organic nitrogen.

*Dried blood* is the collected blood of slaughtered animals, dried and ground and containing not less than twelve per cent (12%) of nitrogen in organic forms.

*Nitrate of soda* is a commercial sodium nitrate containing not less than fifteen per cent (15%) of nitrogen, chiefly as sodium nitrate.

*Sulfate of ammonia* is a commercial product composed of ammonium sulfate. It shall contain not less than twenty and five-tenths per cent (20.5%) of nitrogen.

**PHOSPHORIC ACID**

The term *phosphoric acid* designates  $\text{P}_2\text{O}_5$ .

*Ammoniated superphosphate* is the product obtained when superphosphate is treated with ammonia or with a solution containing free ammonia and other forms of nitrogen dissolved therein.

*Available phosphoric acid* is the sum of the water-soluble and the citrate-soluble phosphoric acid.

"Basic" *lime phosphate* (lime-based superphosphate) is a superphosphate to which liming materials have been added in a quantity at least six per cent (6%) calcium carbonate equivalent in excess of the quantity required to convert all water-soluble phosphate to the citrate-soluble form.

*Citrate-soluble ("reverted") phosphoric acid* is that part of the total phosphoric acid in a fertilizer that is insoluble in water but soluble in a solution of citrate of ammonia according to the method adopted by the A. O. A. C.

*Ground raw bone* is a product resulting from drying and grinding animal bones that have not been previously steamed under pressure.

*Ground steamed bone* is a product resulting from grinding animal bones that have been previously steamed under pressure.

*Phosphate rock* is a natural rock containing one or more calcium phosphate minerals of sufficient purity and quantity as to permit its use, either directly or after concentration, in the manufacture of commercial products.

*Soft phosphate with colloidal clay* is a very finely divided low-analysis by-product from mining Florida rock phosphate by a hydraulic process in which the colloidal materials settle at points in artificial ponds and basins farthest from the washer, and is later removed after the natural evaporation of the water.

*Superphosphate* is a commercial product, the phosphoric acid ( $P_2O_5$ ) content of which is due chiefly to monocalcium phosphate. (The grade that shows the available phosphoric acid should always be used as a prefix to the name. Example: 16 percent superphosphate.)

*Uniformity in Use of Terms "Phosphoric Acid" and "Potash."* As the terms phosphoric acid and potash are used universally in guaranteeing and in reporting the analyses of fertilizers, it is recommended that the same terms also be used in reporting and discussing the results of analyses of related material.

#### POTASH

The term *potash* designates potassium oxide ( $K_2O$ ).

*Muriate of potash* is a potash salt containing not less than forty-eight per cent (48%) of potash ( $K_2O$ ) chiefly as chloride.

*Sulfate of potash* is a potash salt containing not less than forty-eight per cent (48%) of potash ( $K_2O$ ) chiefly as sulfate, and not more than two and one half per cent (2.5%) of chlorine.

#### MISCELLANEOUS

A *unit* of plant food is twenty (20) pounds, or one per cent (1%) of a ton.

*Net Weights.* The weights appearing on packages of fertilizer, agricultural lime, and liming material shall always mean net weights.

*Maximum Amount of Chlorine Permissible in Fertilizers in Which the Potash Is Claimed as Sulfate.* The chlorine in mixed fertilizers in which the potash is claimed as sulfate shall not exceed five-tenths of one per cent (0.5%) more than what is called for in the minimum potash content based on the definition for sulfate of potash as formulated by the committee. Calculate as follows: 0.05 times the percentage of potash found plus 0.5.



An *acid-forming* fertilizer is one that is capable of increasing the residual acidity of soil.

A *non-acid forming* fertilizer is one that is not capable of increasing the residual acidity of the soil.

*Primary Fertilizer Components* are those at present generally recognized by law as necessary to be guaranteed in fertilizers, namely: nitrogen (N), phosphoric acid ( $P_2O_5$ ) and potash ( $K_2O$ ).

*Secondary Fertilizer Components* are those other than the "primary fertilizer components" that are essential to the proper growth of plants and that may be needed by some soils. Some of these components are calcium, magnesium, sulfur, manganese, copper, zinc, and boron.

#### EXPLANATION OF THE TABLES

Table 1 gives the standing of manufacturers as determined by the inspection results. On the whole it is a very good record, in that relatively few samples were as much as 4 percent deficient in value. The number of samples fully equal to value in guaranties is too small for some companies, in proportion to the total number. Table 2 gives the results of analysis of all inspection samples except bones, which are given in Table 3.

If an analysis is 10 percent or more below the amount claimed for nitrogen, phosphoric acid or potash or if the relative value is 4 percent or more below the guaranty this is indicated in the column headed Remarks.

If potash is claimed from sulfate, the percent of chlorine is given in the column adjacent to the potash analysis. The amount of chlorine allowed in sulfate of potash is 2.5 percent.<sup>2</sup> The amount of chlorine allowed in a mixed fertilizer in which potash is claimed from sulfate is calculated by multiplying the percent of potash found by .05 and adding 0.5. Example: If 8 percent of potash is found, .05 times 8 plus 0.5 equals 0.9 percent chlorine allowed.<sup>3</sup> If part of the potash in a mixed fertilizer is claimed from sulfate and part from muriate, the total percent of chlorine is stated and the permissible amount of chlorine is given in a footnote.

<sup>2</sup> See definition of sulfate of potash, p. 8.

<sup>3</sup> See ruling on amount of chlorine permissible in fertilizers in which potash is claimed as sulfate, p. 8.

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

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

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

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

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

**POINTS A DEALER SHOULD CONSIDER**

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

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

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

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

5. It is the practice of some manufacturers to place tags in the truck or car with the shipment of fertilizer without attaching them to the bags, or to claim that they were put in. This often results in confusion and failure to tag at all, as the tags may be misplaced or lost. The tags should be attached to the bags when the shipment is made.



TABLE 1. Standing of manufacturers, based on official samples analyzed in 1939.

	Number of inspec- tion samples	Number equal to guaranty in value	Number 4 per cent or more low in value	Number 10 per- cent or more low in one com- ponent*
American Agricultural Chemical Company .....	75	73	0	2
American Cyanamid Company .....	3	1	0	0
Armour Fertilizer Works .....	92	81	1	2
Buhner Fertilizer Company .....	27	22	0	1
Chemical Products Corporation .....	19	18	1	0
Chilean Nitrate Sales Corporation .....	1	1	0	0
Consolidated Chemical Company .....	18	16	1	0
Cumberland Chemical Company .....	26	25	0	0
Darling and Company .....	15	15	0	1
Davison Chemical Corporation, Hopkins Fertilizer Division and Read Proosphate Division .....	109	89	7	3
Federal Chemical Company .....	68	60	2	6
Fox Chemical Company .....	16	16	0	0
Globe Fertilizer Company .....	25	24	0	3
Hutson Chemical Company .....	7	5	1	0
International Agricultural Corporation .....	45	44	0	2
Kentucky Fertilizer Company .....	17	16	0	1
Knoxville Fertilizer Company .....	50	47	1	1
Louisville Fertilizer Company .....	9	8	0	0
Morris Fertilizer Company .....	2	2	0	0
National Chemical Company .....	10	6	3	0
North American Fertilizer Company .....	38	32	0	3
Price Chemical Company .....	56	54	0	0
Standard Wholesale Phosphate and Acid Works .....	7	7	0	0
Swift and Company Fertilizer Works .....	27	25	0	0
Tennessee Chemical Company .....	8	6	1	0
Virginia-Carolina Chemical Corporation .....	69	68	0	0
Totals .....	839	761	18	25

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

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	
	<b>The American Agricultural Chemical Co., Cincinnati, O. and Charleston, S. C.</b>		
2268	20% Superphosphate .....	J. W. Schoolcraft, Somerset .....	
2269		E. T. Walker, Glendale .....	
2452		C. P. Clark and Son, Owensboro .....	
2453		Harlan Fruit Co., Harlan .....	
2832		Bennett and Stinnett, Livia .....	
2922		Watson Coal and Feed Co., Princeton .....	
2923		J. E. Bryant, Scottsville .....	
2924		Davidson and Crawford, Science Hill .....	
2925		E. T. Walker Co., Glendale .....	
2926		W. H. Brock and Co., Maysville .....	
2927		Henderson and Hardy Co., Shepherdsville .....	
2270	0-10-4 (Muriate) .....	Jasper Produce Co., Science Hill .....	
2271		J. E. Bryant, Scottsville .....	
2928		Davidson and Crawford, Science Hill .....	
2272	2-8-4 (Muriate) .....	J. E. Bryant, Scottsville .....	1.79
2273		J. W. Thompson, Kings Mountain .....	2.00
2454		C. B. Goering, Hawesville .....	2.04
2455		Woodson Lewis, Greensburg .....	1.99
2833		C. L. Mason, Fordsville .....	2.02
2834		W. R. Jones, Utica .....	1.79
2929		Woodson Lewis, Greensburg .....	1.86
2456	2-10-4 (Muriate) .....	W. E. Bibb, Sacramento .....	2.14
2457		L. F. Wellman, Louisa .....	2.03
2835		Ross Feed Co., Murray .....	2.08
2836		C. V. King, Oakland .....	1.80
2930		Ross Feed Co., Murray .....	1.87
2458	2-12-6 (Muriate) .....	Walter and Readnour, Walton .....	2.05
2931		J. W. Schoolcraft, Somerset .....	2.00
2932		Woodson Lewis, Greensburg .....	2.02
2217	3-8-6 (Muriate) .....	W. M. Coleman, Smiths Grove .....	2.97
2274		Elmer Jones, Somerset .....	2.85
2275		T. D. Flanagan, Russell Springs .....	2.96
2459		J. B. Benjamine and Son, Providence .....	3.04
2933		Baughman Milling Co., Stanford .....	2.99
2837	3-8-6 (Sulfate) .....	Sellers Hardware Co., Sebree .....	2.76
2276	3-8-10 (Muriate) .....	J. W. Hicks, Upton .....	3.08
2838		Bun H. Crawford, Lynn Grove .....	3.54
2460	3-8-16 (Muriate 8, Sulfate 8) .....	Carroll County Farm Bureau, Carrollton .....	2.76
2461		Woodson Lewis, Greensburg .....	2.99
2462		Cayce-Yost Co., Hopkinsville .....	3.01
2463		Mountain Dew Coal Co., Lexington .....	3.02
2218	3-10-3 (Muriate) .....	W. M. Coleman, Smiths Grove .....	2.79
2277		J. W. Schoolcraft, Somerset .....	3.11
2464		Henderson and Hardy Co., Shepherdsville .....	3.09
2465		J. H. McClure, Springfield .....	3.06
2839		Townsend Bros., Poole .....	2.94
2934		B. E. Roberts and Son, Mill Springs .....	3.07
2935		Lebanon Carriage and Implement Co., Lebanon .....	3.10

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total	Available			Guaranty	Found		
		20.40			24.0	24.5		2268
		20.60				24.7		2269
		20.40				24.5		2452
		20.50				24.6		2453
		20.20				24.2		2832
		21.10				25.3		2922
		20.35				24.4		2923
		20.65				24.8		2924
		20.50				24.6		2925
		20.70				24.8		2926
		20.75				24.9		2927
		10.40	4.23		16.8	17.6		2270
		10.20	4.61			17.8		2271
		13.50	3.46			20.4	C	2928
1.79	2.01	8.20	4.03		21.4	21.7		2272
2.00	2.00	8.20	4.21			21.9		2273
2.04	2.04	8.25	4.15			22.0		2454
1.99	1.99	8.65	4.15			22.3		2455
2.02	2.02	8.30	4.33			22.2		2833
1.79	2.00	10.30	4.39			24.6		2834
1.86	1.86	8.35	4.35			21.8		2929
2.14	2.14	10.40	4.42		23.8	25.3		2456
2.03	2.03	10.15	4.46			24.6		2457
2.08	2.08	10.35	4.37			24.9		2835
1.80	2.02	11.00	4.41			25.6		2836
1.87	1.87	10.00	4.20			23.6		2930
2.05	2.05	12.45	6.18		28.6	29.5		2458
2.00	2.00	11.95	6.37			29.0		2931
2.02	2.02	12.05	6.37			29.2		2932
2.97	2.97	8.60	5.98		27.3	27.9		2217
2.85	2.85	8.60	5.98			27.5		2274
2.96	2.96	8.20	6.14			27.6		2275
3.04	3.04	8.40	6.29			28.3		2459
2.99	2.99	8.40	6.13			27.9		2933
2.76	2.99	8.60	6.12	.42	27.3	28.1		2837
3.68	3.08	8.50	10.17		32.1	33.2		2276
3.54	3.54	9.05	8.27			33.2	C	2838
2.76	2.76	8.50	15.65	6.42 <sup>1</sup>	39.3	38.6		2460
2.99	2.99	8.05	16.44	6.66 <sup>1</sup>		39.9		2461
3.01	3.01	8.40	15.92	6.78 <sup>1</sup>		39.7		2462
3.02	3.02	8.90	15.96	7.98 <sup>1</sup>		40.4	D	2463
2.79	3.00	10.40	3.43		26.1	27.1		2218
3.11	3.11	9.90	3.57			27.1		2277
3.09	3.09	10.15	3.63			27.4		2464
3.06	3.06	10.55	3.36			27.4		2465
2.94	3.15	10.45	3.32			27.6		2839
3.07	3.07	10.10	3.75			27.4		2934
3.10	3.10	10.00	3.51			27.1		2935

<sup>1</sup> 6.92 per cent Chlorine allowed.

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
<b>The American Agricultural Chemical Co., Cincinnati, O., and Charleston, S. C.—Continued</b>			
2278	3-10-6 (Muriate) .....	Jasper Produce Co., Science Hill .....	3.11
2466		Farmers Mill, Clay .....	3.17
2467		Lebanon Carriage and Implement Co., Lebanon .....	3.01
2468	4-8-6 (Muriate) .....	E. C. Miller, Buechel .....	4.00
2469		Hayes Hardware Co., Dawson Springs ..	4.25
2470		G. W. Bowling and Son, Catlettsburg ..	4.02
2471		Harlan Fruit Co., Harlan .....	4.01
2472	4-10-4 (Muriate) .....	C. P. Clark and Son, Owensboro .....	4.11
2279	4-10-6 (Sulfate) .....	Baughman Milling Co., Stanford .....	3.76
2280		Corbett Hardware Co., Elizabethtown ..	3.87
2281		Jasper Produce Co., Science Hill .....	3.78
2473		O. L. Jacobs, Mt. Sterling .....	3.79
2474		Denton Hardware Co., Madisonville ..	3.73
2840		Bennett and Stinnett, Livia .....	3.76
2282	4-12-0 .....	J. W. Schoolcraft, Somerset .....	4.10
2475		John A. Sheehan, Falmouth .....	3.79
2841		Wm. Nantz, Maceo .....	3.72
2936		C. P. Clark and Son, Owensboro .....	3.67
2476	4-12-8 (Sulfate) .....	S. V. Conrad, Cloverport .....	4.10
2477		Harlan Fruit Co., Harlan .....	4.05
2283	5-10-5 (Muriate) .....	J. W. Schoolcraft, Somerset .....	5.03
2478		G. W. Bowling and Son, Catlettsburg ..	5.13
2479		Harlan Fruit Co., Harlan .....	4.96
2937		Geo. W. Hill Co., Covington .....	4.94
2480	6-8-6 (Sulfate) .....	S. V. Conrad, Cloverport .....	5.88
2481	4-10-6 (Muriate) .....	Denton Hardware Co., Madisonville ..	3.99
2842		Norris Hardware and Seed Co., Henderson .....	3.38
<b>American Cyanamid Co., New York, N. Y.</b>			
2938	21% "Aero" Cyanamid Granular ..	W. H. Brock Co., Maysville .....	20.24
2939		H. D. Jones, Glasgow .....	20.47
2940		Wilson Hardware Co., Henderson .....	20.70
<b>The Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Indiana</b>			
2219	Armour's 4-8-4 (Sulfate) .....	Hatter Hardware Co., Franklin .....	2.45
2220		E. T. Ford, Cave City .....	3.16
2284		Scottsville Feed Co., Scottsville .....	3.25
2482		J. C. Everett and Co., Maysville .....	2.96
2483		Hulett Hardware Co., Williamstown ..	2.84
2484		Taylor County Supply Co., Campbellville	3.20
2221	Armour's 3-8-6 (Sulfate) .....	E. T. Ford, Cave City .....	2.30
2285		T. E. Clausen, Bonnierville .....	2.26
2485		Giltner Seed Co., Eminence .....	2.23
2486		Carlisle Mill and Supply Co., Carlisle ..	2.09

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.11	3.11	10.15	6.19					2278
3.17	3.17	10.30	6.38		29.7	30.5		2466
3.01	3.01	10.30	6.15			30.3		2467
4.00	4.00	8.10	6.23			31.2		2468
4.25	4.25	8.55	6.49			32.9		2469
4.02	4.02	8.65	6.19			31.9		2470
4.01	4.01	8.80	6.18			32.0		2471
4.11	4.11	10.60	4.34		30.8	32.3		2472
3.76	3.99	10.35	6.36	1.02	33.2	34.0	D	2279
3.87	4.10	10.10	6.38	.42		34.1		2280
3.78	4.09	10.20	6.17	.36		34.0		2281
3.79	4.08	10.20	6.26	.48		34.0		2473
3.73	4.03	10.50	6.14	.36		34.1		2474
3.76	4.09	10.55	6.14	.48		34.3		2840
4.10	4.35	12.90			28.4	30.7		2282
3.79	4.08	12.20				28.9		2475
3.72	4.13	12.40				29.3		2841
3.67	4.03	12.45				29.1		2936
4.10	4.10	12.20	7.90	.48	38.0	38.5		2476
4.05	4.05	12.55	7.64	.72		38.4		2477
5.03	5.03	10.25	4.83		35.5	35.7		2283
5.13	5.13	11.05	5.03			37.3		2478
4.96	4.96	10.10	5.27			35.8		2479
4.94	5.15	10.35	5.30			36.8		2937
5.88	5.88	8.35	6.03	.54	37.8	37.8		2480
3.99	3.99	10.20	6.14		33.2	33.6		2481
3.38	3.61	11.10	6.15			33.3		2842
20.24	20.60				73.5	72.1		2938
20.47	20.92					73.2		2939
20.70	21.16					74.1		2940
2.45	3.08	10.90	2.88	.72	28.4	27.3	A C D	2219
3.16	3.91	8.60	4.44	.66		29.3		2220
3.25	3.93	11.40	3.42	.60		31.5	C	2284
2.96	4.01	8.20	4.03	.36		28.7		2482
2.84	3.93	8.15	4.09	.30		28.5		2483
3.20	3.98	8.30	4.33	.48		29.1		2484
2.30	3.03	8.25	6.07	.60	27.3	27.8		2221
2.26	3.04	8.70	5.92	.66		28.2		2285
2.23	2.99	8.35	5.98	.72		27.7		2485
2.09	2.96	8.30	6.12	.42		27.7		2486

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
	<b>The Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>		
2222	Armour's 4-12-8 (Sulfate) .....	E. T. Ford, Cave City .....	3.12
2487		Ballard's Depot Store, Bardstown .....	3.13
2488		Taylor County Supply Co., Campbellsville .....	3.00
2519		Carlisle Mill & Supply Co., Carlisle .....	2.91
2520		Henderson & Hardy, Shepherdsville .....	3.16
2521		Sharpsburg Milling Co., Sharpsburg .....	2.89
2223	Armour's Old Black Joe 2-10-4 (Muriate) .....	Hatter Hardware Co., Franklin .....	1.72
2286		McWhorter and Thrasher, Albany .....	1.96
2489		C. E. Martin and Co., Greenville .....	1.65
2490		Shannon-Mercer Co., Depoy .....	1.79
2491		Keller Hay and Grain Co., Newport .....	1.94
2492		Taylor County Supply Co., Campbellsville .....	1.54
2843		Lambert-Grisham Hardware Co., Henderson .....	1.66
2844		Atherton-Kidd Co., Livermore .....	1.62
2941		Wallace Hardware Co., Central City .....	1.72
2942		Jake Tapp and Son, Corydon .....	1.65
2943		Taylor County Supply Co., Campbellsville .....	1.67
2287	Armour's 20% Superphosphate ....	J. W. Schoolcraft, Somerset .....	
2288		Barren County Hardware Co., Glasgow .....	
2493		The T. J. Turley Co., Owensboro .....	
2494		Albert Wallace and Co., Cadiz .....	
2495		Whitesburg Wholesale Grocery, Whitesburg .....	
2496		Jellico Grocery, Barbourville .....	
2845		Marion Coal Co., Marion .....	
2944		The T. J. Turley Co., Owensboro .....	
2945		Robinson and Turley, Richmond .....	
2946		G. M. Haycraft and Son, Leitchfield .....	
2947		J. W. Schoolcraft, Somerset .....	
2948		Wilson, Miles & Co., Russellville .....	
2949		Taylor County Supply Co., Campbellsville .....	
2950		C. E. Martin and Co., Greenville .....	
2951		Forbes Manufacturing Co., Hopkinsville .....	
2952		Ballard's Depot Store, Bardstown .....	
2497	Armour's 45% Multiphos .....	Home Fruit Co., Harlan .....	
2289	Big Crop 0-10-4 Fertilizer (Muriate) .....	Burnside Milling Co., Burnside .....	
2290		Sam Hayes, Clarkson .....	
2953		Scottsville Feed Co., Scottsville .....	
2954		J. W. Schoolcraft, Somerset .....	
2955		Taylor County Supply Co., Campbellsville .....	1.60
2498	Big Crop 2-8-4 Fertilizer (Muriate)	G. M. Haycraft and Son, Leitchfield .....	1.70
2499		Hupp Bros., Caneyville .....	1.66
2500		Taylor County Supply Co., Campbellsville .....	1.53
2501		U. C. James, Columbia .....	

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.12	3.96	11.80	7.86	.48	38.0	37.5	2222	
3.13	3.90	11.82	7.95	.60		37.4	2487	
3.00	3.81	12.05	7.62	.66		36.9	2488	
2.91	3.78	13.10	7.94	.66		38.5	2519	
3.16	3.98	12.00	7.82	.54		37.7	2520	
2.89	3.73	12.60	8.13	.54	37.9	2521		
1.72	2.04	10.00	4.10		23.8	24.1	2223	
1.96	2.40	10.90	4.59			27.0	2286	
1.65	2.00	10.55	4.04			24.5	2489	
1.79	2.12	10.70	4.09			25.2	2490	
1.94	2.26	10.05	4.17			25.0	2491	
1.54	2.04	10.20	4.20			24.4	2492	
1.66	2.11	10.45	3.95			24.7	2843	
1.62	1.98	10.35	4.30		24.5	2844		
1.72	2.07	10.45	4.37		25.0	2941		
1.65	2.04	10.55	4.35		25.0	2942		
1.67	2.00	11.00	4.35		25.4	2943		
		20.20			24.0	24.2	2287	
		20.20				24.2	2288	
		20.15				24.2	2493	
		20.15				24.2	2494	
		20.50				24.6	2495	
		20.15			24.2	2496		
		20.45			24.5	2845		
		20.70			24.8	2944		
		21.05			25.3	2945		
		20.30			24.4	2946		
		20.65			24.8	2947		
		20.60			24.7	2948		
		20.65			24.8	2949		
		20.50			24.6	2950		
		20.10			24.1	2951		
		20.30			24.4	2952		
		44.50			54.0	53.4	2497	
		10.55	4.06		16.8	17.5	2289	
		10.45	4.11			17.5	2290	
		10.35	4.29			17.6	2953	
		11.10	4.31			18.5	2954	
		11.35	4.40			18.9	2955	
1.60	2.07	9.00	4.09		21.4	23.0	2498	
1.70	2.23	9.35	4.40			24.3	2499	
1.66	2.13	9.30	4.01			23.4	2500	
1.53	2.00	8.90	3.90			22.4	2501	

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
<b>The Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.—Continued</b>			
2956		Scottsville Feed Co., Scottsville .....	1.59
2957		Huff Bros., Caneyville .....	1.75
2958		Taylor County Supply Co., Campbellsville .....	1.68
2959		J. W. Schoolcraft, Somerset .....	1.67
2502	Bib Crop 2-12-6 (Muriate) .....	Cincinnati Grain and Hay Co., Covington .....	1.68
2503		E. W. Simpson, Owenton .....	1.60
2846		S. V. Conrad, Cloverport .....	1.39
2960		J. W. Schoolcraft, Somerset .....	1.58
2291	Big Crop 3-8-6 Fertilizer (Muriate) .....	J. W. Schoolcraft, Somerset .....	2.55
2292		Wilson, Miles and Co., Russellville .....	2.74
2504		Thos. Buchanan, Rockhold .....	2.63
2505		Lester L. Lynd, Ashland .....	2.71
2506		Henderson and Hardy Co., Shepherdsville .....	2.73
2507		G. C. Cornett, Cumberland .....	2.81
2847		Campbell's Mill, Kevil .....	2.78
2508	Big Crop 3-10-3 Fertilizer (Muriate) .....	W. D. Bryant, Williamsburg .....	2.72
2509		L. H. Sparks, McKee .....	2.71
2510		Ballard's Depot Store, Bardstow .....	2.67
2961		J. W. Schoolcraft, Somerset .....	2.60
2962		Taylor County Supply Co., Campbellsville .....	2.76
2511	Big Crop 4-8-4 Fertilizer (Muriate) .....	Powell Hackney Grocery Co., Hazard .....	3.47
2512	Big Crop 4-12-4 Fertilizer (Muriate) .....	Home Fruit Co., Harlan .....	3.57
2513		Jellico Grocery Co., Barbourville .....	3.45
1479	Big Crop 4-12-8 Fertilizer (Muriate) .....	J. H. Nunnery, Prestonsburg .....	4.04
2514		G. C. Cornett, Cumberland .....	3.42
2963		J. C. Everett and Co., Maysville .....	3.74
2224	Big Crop 4-16-4 Fertilizer (Muriate) .....	Ed. Allen, Smiths Grove .....	3.38
2515		Nay Chestnut, London .....	3.52
1480	Big Crop 5-10-5 Fertilizer (Muriate) .....	Whitesburg Wholesale Co., Whitesburg .....	4.43
2516		Home Fruit Co., Harlan .....	4.68
2293	Big Crop 6-8-6 Fertilizer (Muriate) .....	J. W. Schoolcraft, Somerset .....	5.44
2517		Robinson and Turley, Richmond .....	5.25
2518		John B. Penn, Georgetown .....	5.37
2225	Armour's Nitrate of Soda 16% .....	Hatter Hardware Co., Franklin .....	
2294		Wilson Hardware Co., Auburn .....	
2522	Big Crop 9-18-18 Fertilizer (Muriate) .....	T. J. Turley Co., Owensboro .....	7.62
2848	Armour's Big Crop Fertilizer 4-8-6 (Muriate) .....	Jake Tapp and Son, Corydon .....	3.94
2965		Jake Tapp and Son, Corydon .....	3.55

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total	Available			Guaranty	Found		
1.59	1.99	10.10	4.01			23.9		2956
1.75	2.16	9.00	4.64			23.9		2957
1.68	2.09	9.05	4.33			23.4		2958
1.67	2.05	8.75	4.03			22.5		2959
1.68	2.01	12.35	6.34		28.6	29.5		2502
1.60	2.00	12.20	6.38			29.3		2503
1.39	1.87	12.50	6.67			29.6		2846
1.58	2.01	12.00	6.46			29.2		2960
2.55	2.86	8.20	6.21		27.3	27.3		2291
2.74	3.03	8.85	5.96			28.4		2292
2.63	3.08	8.95	6.45			29.3		2504
2.71	2.96	8.75	5.63			27.6		2505
2.73	3.19	9.25	6.50			30.1		2506
2.81	3.21	9.00	6.50			29.8		2507
2.78	3.03	8.75	6.13			28.5		2847
2.72	3.12	10.45	3.00		26.1	27.1		2508
2.71	3.09	11.05	3.00			27.7		2509
2.67	3.16	10.45	3.49			27.8		2510
2.60	3.02	10.75	3.32			27.5		2961
2.76	3.21	11.20	3.46			28.8		2962
3.47	3.80	8.75	4.64		28.4	29.4		2511
3.57	3.91	12.30	4.06		33.2	33.3		2512
3.45	3.80	12.45	4.23			33.3		2513
4.04	4.29	12.00	8.96		38.0	40.2		1479
3.42	3.78	12.20	8.01			37.5		2514
3.74	3.99	12.90	8.29			39.4		2963
3.38	3.90	15.10	4.50		38.0	37.9		2224
3.52	3.84	16.10	4.68			38.4		2515
4.43	4.77	10.60	4.99		35.5	35.4		1480
4.68	4.94	10.10	5.19			35.6		2516
5.44	5.74	8.05	5.93		37.8	36.9		2293
5.25	5.51	8.90	5.97			37.1		2517
5.37	5.67	9.15	5.80			37.8		2518
	16.16				56.0	56.6		2225
	16.28					57.0		2294
7.62	7.90	18.05	15.09		74.7	67.4	A C E	2522
3.94	4.26	8.90	6.19		30.8	33.0		2848
3.55	3.82	9.45	5.44			31.2		2965

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
	<b>Buhner Fertilizer Co., Seymour, Ind.</b>		
2295	Buhner 6-8-6 (Murite) .....	R. W. Lafferty, Rowletts .....	5.90
2523	Buhner 5-10-5 (Muriate) .....	Oscar Farmer and Sons, Louisville .....	4.82
2296	Buhner 4-10-6 (Muriate) .....	Harris and Beck, Jamestown .....	3.30
2524		Oscar Farmer and Sons, Louisville .....	3.58
2525	Buhner 4-10-4 (Muriate) .....	Oscar Farmer and Sons, Louisville .....	3.35
1481	Buhner 4-8-6 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....	3.65
2297	Buhner 3-10-3 (Muriate) .....	Otto Keith, Upton .....	2.84
2526		Oscar Farmer and Sons, Louisville .....	2.65
1482	Buhner 3-8-6 (Muriate) .....	St. Matthews Produce Exchange, St. Matthews .....	2.75
2298		Harris and Beck, Jamestown .....	3.11
2527		J. D. Ashcraft, Irvington .....	2.66
2528		Oscar Farmer and Sons, Louisville .....	2.75
2966		E. C. Miller, Buechel .....	2.71
2529	Buhner 2-12-6 (Muriate) .....	Oscar Farmer and Sons, Louisville .....	2.14
2530		The Depot Store, Bardstown .....	2.06
2299	Buhner 2-8-4 (Muriate) .....	Otto Keith, Upton .....	1.93
2300		Harris and Beck, Jamestown .....	1.94
2967		Oscar Farmer and Sons, Louisville .....	2.10
2301	Buhner 0-10-4 (Muriate) .....	Harris and Beck, Jamestown .....	
2968		Oscar Farmer and Sons, Louisville .....	
2302	Buhner 20% Superphosphate .....	Harris and Beck, Jamestown .....	
2531		Oscar Farmer and Sons, Louisville .....	
2969		Dowell Grocery, Liberty .....	
2970		Oscar Farmer and Sons, Louisville .....	
2532	Buhner Special 4-12-0 .....	Farmers Grain and Produce Co., Springfield .....	3.67
2972	Buhner Special Crop Grower (with Bone) 2-8-6 (Muriate) .....	E. C. Miller, Buechel .....	1.60
	<b>Chemical Products Corporation, Cincinnati, O.</b>		
2536	Square Brand 4-12-4 (Muriate) .....	J. H. Fedders and Son, Covington .....	3.65
2537		Tony Bezold, Newport .....	3.48
2538	Square Brand 4-10-4 (Muriate) .....	Minges Hardware Co., Newport .....	3.25
2539		J. H. Fedders and Son, Covington .....	3.35
1483	Square Brand 3-8-6 (Muriate) .....	Lewis Wholesale Co., Whitesburg .....	2.80
2533		Walton Feed Mills, Walton .....	2.44
2540		Baker and Hulley, Grants Lick .....	2.35
2973	Square Brand 3-10-3 (Muriate) .....	G. M. Hedrick, Monticello .....	2.55
2541	Square Brand 2-12-2 (Muriate) .....	J. H. Fedders and Son, Covington .....	1.55
2361	Square Brand 2-8-4 (Muriate) .....	A. C. Cox, Science Hill .....	1.71
1484	Square Brand 5-10-5 (Sulfate) .....	Lewis Wholesale Co., Whitesburg .....	4.25
2542		J. H. Fedders and Son, Covington .....	4.31
2543	4-12-0 .....	Tony Bezold, Newport .....	3.60

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



I. TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
5.96	5.96	8.80	5.88		37.8	38.5		2295
4.82	5.12	10.55	5.37		35.5	37.0		2523
3.36	3.65	11.05	5.76		33.2	33.0		2296
3.58	3.87	10.60	5.73			33.1		2524
3.35	3.69	10.75	4.46		30.8	31.2		2525
3.63	3.91	8.30	7.10		30.8	32.2		1481
2.84	3.10	9.80	2.68		26.1	25.8		2297
2.65	2.96	10.45	3.04			26.6		2526
2.75	3.02	7.80	5.66		27.3	26.7		1482
3.11	3.35	9.35	6.42			30.7		2298
2.66	2.92	7.55	6.20			26.7		2527
2.75	2.98	8.60	5.76			27.7		2528
2.71	3.03	9.45	6.23			29.4		2966
2.14	2.14	12.05	5.84		28.6	29.0		2529
2.06	2.28	12.00	6.03			29.6		2530
1.98	2.25	7.60	3.98		21.4	21.8		2299
1.94	2.15	7.95	3.75			21.6		2300
2.10	2.34	9.45	5.26			25.8		2967
		9.75	4.62		16.8	17.2		2301
		10.10	4.79			17.9		2968
		20.55			24.0	24.7		2302
		21.55				25.9		2531
		20.10				24.1		2969
		20.60				24.7		2970
3.67	3.99	11.15			28.4	27.4		2532
1.60	1.98	11.35	6.48		23.8	28.3		2972
3.63	4.05	13.25	4.21		33.2	35.1		2536
3.48	4.13	12.95	4.65			35.6		2537
3.25	3.74	10.95	4.74		30.8	31.9		2538
3.32	3.87	10.25	4.69			31.5		2539
2.80	3.18	8.30	6.23		27.3	28.6		1483
2.44	2.84	8.80	6.07			27.8		2533
2.35	2.70	8.05	5.46			25.7	E	2540
2.53	3.06	10.15	5.97		26.1	30.1		2973
1.59	2.10	12.65	2.54		23.8	25.6		2541
1.71	2.06	8.20	4.24		21.4	22.1		2361
4.29	5.03	11.00	5.67	.96	35.5	37.6	D	1484
4.31	4.83	10.65	5.30	.72		36.1		2542
3.60	4.34	12.20			28.4	29.8		2543

in potash.

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Chemical Products Corporation, Cincinnati, O.—Continued</b>		
2303	20% Superphosphate .....	A. C. Cox, Science Hill .....
2534		Tony Bezold, Newport .....
2535		J. H. Fedders and Son, Covington .....
2974		J. H. Fedder and Son, Covington .....
2975		G. M. Hedrick, Monticello .....
2976	Square Brand 2-12-6 (Muriate)....	G. M. Hedrick, Monticello .....
<b>Chilean Nitrate Sales Corporation, New York, N. Y.</b>		
2849	Champion Brand Chilean Nitrate of Soda 16% .....	W. R. Jones, Utica .....
<b>Consolidated Chemical Co., Louisville, Ky.</b>		
2544	Camel Brand 2-8-4 (Muriate) .....	Thompson Store, Loretto .....
2850		Garfield Mercantile Co., Garfield .....
2851		Star Roller Mills, Cloverport .....
2852		Yopp Seed Co., Paducah .....
2977		Squire and Smith, Cane Valley .....
2304	Camel Brand 2-10-4 (Muriate) .....	T. T. Coe, Jamestown .....
2305	Camel Brand 3-8-6 (Muriate) .....	W. S. Allen and Co., Liberty .....
2853	Camel Brand 3-8-6 (Sulfate) .....	D. O. Davis, Garfield .....
2545	Camel Brand 3-10-3 (Muriate) .....	Rizer Bros., Bardstown .....
2854	Camel Brand 4-8-4 (Muriate) .....	Yopp Seed Co., Paducah .....
2306	Camel Brand 6-8-6 (Muriate) .....	C. M. Langdon, Science Hill .....
2855	Camel Brand 6-8-6 (Sulfate) .....	Star Roller Mills, Cloverport .....
2307	Camel Brand 0-10-4 (Muriate) with lime filler containing Cal- cium and Magnesium Carbon- ates .....	T. T. Coe, Jamestown .....
2308	Camel Brand 0-20-0 with lime filler containing Calcium and Magne- sium Carbonates .....	T. T. Coe, Jamestown .....
2546		Thompson Store, Loretto .....
2856		Yopp Seed Co., Paducah .....
2978		Henderson Feed and Commission Co., Henderson .....
2979	Camel Brand 0-20-0 with 200-lbs. Sterilized tobacco stems .....	Thompson Store, Loretto .....
<b>Cumberland Chemical Co., Hopkinsville, Ky.</b>		
2547	Cumberland 9-18-18 (Muriate) .....	Young Hardware Co., Hopkinsville .....
2548	Cumberland 5-10-5 (Muriate) .....	H. K. Jones, Sacramento .....
2549		Phoenix Milling Co., Providence .....
2550	Cumberland 4-12-8 (Muriate) .....	Forbes Manufacturing Co., Hopkinsville.
2551		Economy Grocery's Feed Store, Murray.
2552		McLean County Hardware Co., Calhoun.
2553	Cumberland 4-10-4 (Muriate) .....	W. L. Kimbrough and Son, Guthrie .....
2554		The Planters Hardware Co., Hopkinsville
2555	Cumberland 4-8-4 (Muriate) .....	Peoples Feed and Produce Co., Clay .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
		20.45			24.0	24.5		2303
		20.45				24.5		2534
		20.40				24.5		2535
		21.10				25.3		2974
		20.70				24.8		2975
1.73	1.99	12.25	6.77		28.6	29.8		2976
	16.16				56.0	56.6		2849
1.94	2.21	9.00	3.86		21.4	23.2		2544
2.10	2.34	8.15	4.72			23.6		2850
2.17	2.42	8.05	5.21			24.4		2851
1.82	2.10	8.65	4.81			23.5		2852
1.65	1.93	8.35	4.72			22.4		2977
2.01	2.01	10.55	4.40		23.8	25.0		2304
2.41	2.62	8.50	5.35		27.3	25.8	C E	2305
2.68	3.03	8.45	6.32	.60	27.3	28.3		2853
2.73	3.11	10.70	3.33		26.1	27.7		2545
3.13	3.59	8.05	5.37		28.4	28.7		2854
5.14	5.50	8.90	6.34		37.8	37.5		2306
5.40	5.79	8.45	6.38	.54	37.8	38.1		2855
		10.10	4.08		16.8	17.0		2307
		19.95			24.0	23.9		2308
		20.10				24.1		2546
		20.60				24.7		2856
		21.00				25.2		2978
		20.65			24.0	24.8		2979†
9.28	9.62	18.50	16.92		74.7	76.2		2547
4.93	5.22	11.00	5.36		35.5	37.9		2548
4.66	5.01	10.80	5.22			36.8		2549
3.81	4.07	13.15	7.70		38.0	39.3		2550
3.73	4.12	13.25	7.82			39.7		2551
4.03	4.26	13.00	7.97			40.1		2552
3.84	4.15	11.10	4.08		30.8	32.7		2553
3.74	4.06	10.90	4.07			32.2		2554
3.76	4.18	9.30	4.02		28.4	30.6		2555

† No tobacco present.

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Cumberland Chemical Co., Hopkinsville, Ky.—Continued</b>		
2556	Cumberland 3-8-6 (Muriate) .....	E. O. Stewart, Gracey .....
2557		Fox Hardware Co., Madisonville .....
2558	Cumberland 2-10-4 (Muriate) .....	Mose Dunning, Crofton .....
2559	Cumberland 2-8-4 (Muriate) .....	J. Ruby, Central City .....
2560		Green River Milling Co., Carrollton .....
2980		Phoenix Milling Co., Providence .....
2561	Cumberland 0-10-4 (Muriate) .....	Forbes Manufacturing Co., Hopkinsville .....
2981		Mose Dunning, Crofton .....
2982		Economy Feed Store, Murray .....
2562	Cumberland 20% Superphosphate	Solzman Grocery, Greenville .....
2563		Trigg County Trading Co., Cadiz .....
2983		Fox Hardware Store, Madisonville .....
2984		The Planters Hardware Co., Hopkinsville .....
2985		Solzman's Grocery, Greenville .....
2986		Ratliff Hardware Co., Princeton .....
2564	Cumberland Limestone Phosphate 20% .....	Phoenix Milling Co., Providence .....
<b>Darling and Company, Chicago and E. St. Louis, Ill.</b>		
2988	Darling's 4-16-4 (Muriate) .....	Yopp Seed Co., Paducah .....
2857	Darling's 4-8-4 (Muriate) .....	Yopp Seed Co., Paducah .....
2565	Darling's 3-10-3 (Muriate) .....	V. B. Nuckols, Elkton .....
2566		Cayce-Yost Co., Hopkinsville .....
2567	Darling's 3-8-6 (Muriate) .....	E. A. Cohen, Greenville .....
2858		Yopp Seed Co., Paducah .....
2989		Yopp Seed Co., Paducah .....
2568	Darling's 20% Superphosphate .....	E. S. Ferrill and Son, Buffalo .....
2569		W. B. Taylor, Tilford .....
2990		V. B. Nuckols, Elkton .....
2570	Darling's 2-8-4 (Muriate) .....	R. W. Scates, Crofton .....
2571		E. S. Ferrill and Son, Buffalo .....
2572	Darling's 0-10-4 (Muriate) .....	E. S. Ferrill and Son, Buffalo .....
2859		Morganfield Hardware Co., Morganfield .....
2991		V. B. Nuckols, Elkton .....
<b>The Davison Chemical Corporation, Baltimore, Md., and Nashville, Tenn.</b>		
2573	Davco Granulated Fertilizer 2-12-6 (Muriate) .....	Farmers Supply Co., Ashland .....
2309	Davco Granulated 20% Superphosphate .....	Seay Bros., Holland .....
2310		V. C. Cooksey & Co., Fountain Run .....
1453		C. S. Brent Seed Co., Lexington .....
2594		Farmers Supply Co., Ashland .....
2610		H. W. Smith, Horse Cave .....
3016		Lambert-Grisham Hardware Co., Henderson .....
3017		J. B. Hatcher and Co., Park City .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
2.89	3.19	8.75	6.23		27.3	29.1		2556
2.69	2.99	8.95	6.21			28.7		2557
2.00	2.26	10.65	4.54		23.8	26.1		2558
1.82	2.11	8.60	4.13		21.4	22.7		2559
1.86	2.14	8.85	4.28			23.3		2560
1.67	1.99	9.00	4.33			23.0		2980
		10.00	4.33		16.8	17.2		2561
		10.45	4.18			17.6		2981
		9.80	4.64			17.3		2982
		21.20			24.0	25.4		2562
		20.90				25.1		2563
		20.00				24.0		2983
		20.25				24.3		2984
		20.95				25.1		2985
		20.45				24.5		2986
		19.80			24.0	23.8		2564
3.81	4.01	16.85	4.13		38.0	39.2		2988
3.86	3.86	9.50	4.15		28.4	29.9		2857
2.74	3.00	11.70	3.34		26.1	28.6		2565
2.72	2.72	10.70	4.21			27.4		2566
2.95	2.95	8.60	6.01		27.3	27.9		2567
3.12	3.12	8.50	6.06			28.4		2858
2.78	2.78	9.95	4.98			27.7	C	2989
		20.85			24.0	25.0		2568
		21.05				25.3		2569
		20.00				24.0		2990
1.98	1.98	8.35	4.28		21.4	22.1		2570
1.92	1.92	8.05	4.30			21.5		2571
		9.95	4.80		16.8	17.7		2572
		10.20	5.39			18.7		2859
		10.00	10.65			24.8		2991
2.07	2.07	12.30	6.28		28.6	29.5		2573
		19.30			24.0	23.2		2309
		18.80				22.6	E	2310
		20.10				24.1		1453
		21.00				25.2		2594
		19.35				23.2		2610
		19.75				23.7		3016
		20.00				24.0		3017

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
<b>The Davison Chemical Corporation, Baltimore, Md., and Nashville, Tenn.</b>			
<b>—Continued</b>			
2611	Davco Granulated Fertilizer 3-8-6 (Muriate) .....	Baird's Grocery, Pineville .....	3.06
2612		Sharpsburg Milling Co., Sharpsburg .....	3.09
2613		C. T. Ashley, Nicholasville .....	3.12
3018		Hughes Hardware Co., Franklin .....	3.07
2311	Davco Granulated Fertilizer 2-10-4 (Muriate) .....	Farmers Supply Co., Danville .....	2.62
2614	Davco Granulated Fertilizer 3-8-6 (Sulphate) .....	C. S. Brent Seed Co., Lexington .....	3.03
1473	Davco Granulated Fertilizer 6-8-6 (Muriate) .....	C. S. Brent Seed Co., Lexington .....	6.0
2574		Farmers Supply Co., Ashland .....	5.63
2609		Gentry McCauley, Versailles .....	5.73
<b>The Davison Chemical Corporation, Hopkins Fert. Div., New Albany, Indiana</b>			
1485	Hopkins Old Time 6-8-6 (Muriate)	Buechel Produce Exchange, Buechel .....	6.0
2575		D. S. Richardson, Midway .....	6.0
2576		Climax Roller Mills, Shelbyville .....	5.73
2312	Hopkins Old Time 4-10-6 (Muriate) .....	McFarland Implement & Seed Co., Bowling Green .....	3.9
2860		Craig's Feed Store, Owensboro .....	4.0
1486	Hopkins Old Time 4-10-4 (Muriate) .....	Buechel Produce Exchange, Buechel .....	4.0
2577		U. B. Sellers, Louisville .....	4.0
2578		Duncan and Sherley, LaGrange .....	4.0
2579		Wm. P. Miller and Son, Shively .....	3.9
2580		Moore's Feed Store, Shively .....	4.1
2992		Buechel Produce Exchange, Buechel .....	3.7
2581	Hopkins Old Time 3-10-3 (Muriate) .....	G. C. McPhetridge, London .....	2.5
2993		G. C. McPhetridge, London .....	2.7
2582	Hopkins Old Time 3-8-10 (Muriate) .....	Mitchell's Hardware Co., Corbin .....	2.8
2994		Buechel Produce Exchange, Buechel .....	3.0
1487	Hopkins Old Time 3-8-6 (Muriate) .....	Buechel Produce Exchange, Buechel .....	3.2
2226		H. D. Jones, Glasgow .....	2.9
2583		Conner-Hayden Co., Bardstown .....	3.1
2584		Wm. P. Miller and Son, Shively .....	3.0
2995		Buechel Produce Exchange, Buechel .....	2.8
2585	Hopkins Old Time 2-12-6 (Muriate) .....	Duncan and Sherley, LaGrange .....	1.9
2586	Hopkins Old Time 2-8-4 (Muriate)	Wm. P. Miller and Son, Shively .....	2.0
2587		G. C. McPhetridge, London .....	2.0
2861		Lenn Webb, Hawesville .....	3.0

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.06	3.06	8.35	6.06		27.3	28.0		2611
3.09	3.09	9.00	5.81			28.6		2612
3.12	3.12	8.05	6.25			28.1		2613
3.07	3.07	10.55	5.78			30.3		3018
2.62	2.62	9.60	4.44		23.8	26.0		2311
3.03	3.03	8.85	5.82	1.26	27.3	28.2	D	2614
6.04	6.04	8.20	6.01		37.8	38.2		1473
5.68	5.68	8.05	5.94			36.7		2574
5.73	5.73	8.00	6.15			37.0		2609
6.02	6.25	8.70	6.11		37.8	39.7		1485
6.02	6.25	8.65	6.14			39.6		2575
5.72	6.00	8.70	6.00			38.6		2576
3.90	4.25	11.00	6.76		33.2	36.1		2312
4.00	4.27	10.80	6.46			35.7		2860
4.09	4.39	10.60	4.59		30.80	33.6		1486
4.09	4.32	11.15	4.37			33.7		2577
4.00	4.32	10.20	4.37			32.6		2578
3.91	4.20	11.00	3.99			32.7		2579
4.18	4.49	10.25	4.37			33.3		2580
3.76	4.13	10.65	5.34			33.6		2992
2.57	2.92	10.95	4.46		26.1	28.7		2581
2.77	3.17	10.40	3.65			28.0		2993
2.89	3.11	8.70	9.98		32.1	33.3		2582
3.04	3.31	8.75	10.22			34.4		2994
3.23	3.52	8.60	6.38		27.3	30.3		1487
2.92	3.30	8.20	6.58			29.3		2226
3.17	3.17	8.90	6.53			29.6		2583
3.00	3.22	9.10	6.48			30.0		2584
2.83	3.16	8.50	6.92			29.6		2995
1.92	2.15	11.70	8.26		28.6	31.5		2585
2.00	2.23	9.30	4.57		21.4	24.5		2586
2.05	2.32	8.50	4.14			23.3		2587
3.05	3.31	8.55	5.80			28.8		2861

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
	<b>The Davison Chemical Corporation, Hopkins Fert. Div., New Albany.</b>	
	—Continued	
2996		McFarland Implement & Feed Co., Bowling Green .....
2997		G. C. McPhetridge, London .....
2998		Buechel Produce Exchange, Buechel .....
2588	Hopkins Old Time 3-8-16 (Muriate 6, Sulfate 10) .....	Climax Roller Mills, Shelbyville .....
2999	Hopkins Old Time 0-10-4 (Muriate) .....	Squire and Smith, Cane Valley .....
2591	Hopkins Old Time 20% Superphosphate .....	G. C. McPhetridge, London .....
2592		Craig's Feed Store, Owensboro .....
2593		Conner-Hayden Co., Bardstown .....
3000		Hardin County Supply Co., Elizabethtown .....
3001		G. C. McPhetridge, London .....
3002		Conner-Hayden Co., Bardstown .....
3003		Keene Ice Co., Scottsville .....
2589	Hopkins Old Time 4-8-4 (Muriate) .....	Duncan and Sherley, LaGrange .....
2590		Climax Roller Mills, Shelbyville .....
3004		G. C. McPhetridge, London .....
1488	Hopkins Old Time 4-8-6 (Muriate) .....	Buechel Produce Exchange, Buechel .....
3005	Hopkins Old Time 2-10-4 (Muriate) .....	Sam Terry, Big Clifty .....
	<b>The Davison Chem. Corp., Read Phos. Div., Nashville, Tennessee.</b>	
1454	Red Diamond 4-12-0 .....	C. S. Brent Seed Co., Lexington .....
2313	Red Riamond 2-8-4 (Muriate) .....	W. D. Dickenson, Glasgow .....
2314		W. M. Jasper, West Somerset .....
2862		I. N. Aldridge, Dixon .....
2863		Mayfield Milling Co., Mayfield .....
2864		Sam Roister, Poole .....
3007		Cecilian Milling Co., Elizabethtown .....
3008		W. M. Jasper, West Somerset .....
3009		Aaron L. Moore, Leitchfield .....
2315	3-8-6 (Muriate) .....	O. F. Shearer, Monticello .....
2596		Bell County Supply Co., Middlesboro .....
2597		Eldred Hardware Co., Princeton .....
2598		Guenther Hardware Co., Owensboro .....
2865		Mayfield Milling Co., Mayfield .....
1455	Old Kentucky 3-8-6 (Sulfate) .....	C. S. Brent Seed Co., Lexington .....
2866		O. M. Holloway, Sedalia .....
1474	Red Diamond 3-10-3 (Muriate) .....	C. S. Brent Seed Co., Lexington .....
2599		Grigsby and Co., Bardstown .....
2600		C. T. Ashley, Nicholasville .....
1456	Red Diamond 4-8-4 (Muriate) .....	C. S. Brent Seed Co., Lexington .....
2227		J. B. Hatcher and Co., Park City .....
2228		Bowling Green Milling Co., Branch, Franklin .....
2229		C. S. Brent Seed Co., Lexington .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
1.88	2.23	8.20	4.55			23.1		2996
2.02	2.33	9.05	4.83			24.8		2997
1.87	2.18	8.40	5.03			23.8		2998
2.97	2.97	9.75	13.83	4.20 <sup>1</sup>	39.3	38.7	C	2588
		11.55	4.64			16.8		2999
		20.55				24.0		2591
		20.75				24.9		2592
		20.75				24.9		2593
		20.30				24.4		3000
		20.00				24.0		3001
		20.85				25.0		3002
		20.75				24.9		3003
4.09	4.36	8.80	4.76		28.4	31.5		2589
4.02	4.34	8.40	4.87			31.1		2590
3.41	3.82	9.05	4.92			30.1		3004
4.06	4.30	8.60	6.69		30.8	33.4	F	1488
1.66	2.02	10.90	5.18			23.8	F	3005
3.02	3.60	12.65				28.4		1454
2.21	2.41	9.65	4.27			21.4		2313
2.68	2.94	10.35	3.57			27.0		2314
1.82	2.09	9.15	3.73			22.8		2862
2.53	2.75	9.95	5.49			28.2		2863
2.33	2.59	7.95	4.26			23.7		2864
1.80	2.13	9.15	4.83			24.2		3007
1.90	2.17	9.35	3.55			23.1		3008
1.50	1.75	10.35	3.71			23.0		3009
2.79	3.06	9.10	7.39		27.3	30.5		2315
2.73	3.10	8.05	5.54			27.2		2596
3.79	4.25	9.25	5.88			33.0		2597
2.82	3.31	8.90	5.84			29.3		2598
2.91	2.91	8.95	6.02			28.2		2865
2.81	2.81	8.95	6.56	1.08	27.3	28.5	D	1455
3.24	3.59	9.30	5.48	1.68		30.3	D	2866
2.66	2.93	10.15	4.95		26.1	28.4		1474
2.56	2.95	10.50	3.43			27.0		2599
2.53	2.83	10.30	3.51			26.5		2600
3.78	4.02	8.50	4.75		28.4	30.0		1456
3.66	4.01	8.85	4.86			30.5		2227
2.51	2.79	10.90	3.40			26.9	C E	2228
3.57	3.87	8.30	4.65			29.1		2229

<sup>1</sup> 5.41 per cent Chlorine allowed.

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>The Davison Chem. Corp., Read Phos. Div., Nashville, Tennessee.</b>		
—Continued		
2316	Red Diamond 4-12-8 (Muriate) ....	W. M. Jasper, West Somerset .....
2601		C. S. Brent Seed Co., Lexington .....
2867		Mayfield Milling Co., Mayfield .....
2868		O. M. Holloway, Sedalia .....
2317	Red Diamond 5-10-5 (Muriate) .....	Hagen, Landrum, Cook & Co., Tompkinsville .....
2602		C. S. Brent Seed Co., Lexington .....
2603		Bell County Supply Co., Middlesboro .....
2604	Red Diamond 0-10-10 (Muriate) ....	McChesney and Thompson, Trenton .....
2318	20% Superphosphate .....	O. F. Shearer, Monticello .....
2605		Cadiz Hardware Co., Cadiz .....
3010		O. F. Shearer, Monticello .....
3011		J. H. and J. L. Lyons, Loretto .....
3012		Eldred Hardware Co., Princeton .....
3013		W. M. Jasper, West Somerset .....
3014		W. D. Dickinson, Glasgow .....
2319	0-10-4 Potash Mixture .....	W. M. Jasper, West Somerset .....
2606		Bell County Supply Co., Middlesboro .....
2870		L. F. Thurmond, Murray .....
3015		W. M. Jasper, West Somerset .....
2871	Nitrate Soda 16% .....	Mayfield Milling Co., Mayfield .....
1475	Davco Granulated Fertilizer 6-8-6 (Sulfate) .....	C. S. Brent Seed Co., Lexington .....
2607		Sphar & Co., Winchester .....
2608		C. S. Brent Seed Co., Lexington .....
1476	Davco Granulated Fertilizer 5-10-5 (Muriate) .....	C. S. Brent Seed Co., Lexington .....
2869		Mayfield Milling Co., Mayfield .....
<b>Federal Chemical Co., Louisville, Ky.</b>		
2872	Federal 45% Superphosphate .....	Morganfield Hardware Co., Morganfield..
2321	Federal 2-10-4 (Muriate) .....	W. Z. Lawson, Whitley City .....
2615		Hammond and Robinson, Florence .....
2322	Federal 2-12-6 (Muriate) .....	Robert Warner, Nancy .....
2323	Federal 3-10-3 (Muriate) .....	W. Z. Lawson, Whitley City .....
2324		Guthrie and Staton, Albany .....
2325		H. D. Jones, Glasgow .....
2616		Horace Emmeck, Lewisport .....
3019		Hall Seed Co., Louisville .....
3020		J. F. Stamper, Waynesburg .....
3021		Edwards Feed Store, Campbellsville .....
2326	Federal 3-8-6 (Sulfate) .....	H. D. Jones, Glasgow .....
1489	Federal 3-8-10 (Muriate) .....	Merchants Grocery, Pikeville .....
2327	Federal 4-8-6 (Muriate) .....	E. C. Foltz, Louisville .....
2328	Federal 4-10-4 (Muriate) .....	Hall Seed Co., Louisville .....
2617		Nay Chesnut, London .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
2.83	2.83	14.60	5.36		38.0	33.9	A C E	2316
3.76	3.76	9.65	6.11			32.1	B C E	2601
3.61	3.61	13.70	8.21			38.9		2867
4.08	4.08	11.35	8.70			38.3		2868
4.24	4.46	9.95	5.59		35.5	34.3	A	2317
4.04	4.04	12.80	5.38			36.0	A	2602
4.85	5.15	10.25	5.24			36.6		2603
		9.45	10.29		24.0	23.7		2604
		20.45			24.0	24.5		2318
		19.55				23.5		2605
		20.55				24.7		3010
		19.70				23.6		3011
		21.30				25.6		3012
		20.35				24.4		3013
		19.30				23.2		3014
		10.50	4.18		16.8	17.6		2319
		9.85	4.76			17.5		2606
		10.40	4.99			18.5		2870
		10.70	4.43			18.2		3015
	16.12				56.0	56.4		2871
6.31	6.31	8.20	6.07	1.26	37.8	39.2	D	1475
5.07	5.07	8.20	5.91	1.56		34.7	A D E	2607
4.98	4.98	8.20	5.93	1.80		34.4	A D E	2608
4.87	4.87	10.55	5.44		35.5	36.2		1476
3.78	3.78	11.05	4.74			32.2	A E	2869
		44.35			54.0	53.2		2872
1.97	1.97	8.60	4.02		23.8	22.0	B E	2321
1.70	2.09	10.05	4.33			24.6		2615
2.20	2.20	12.80	5.99		28.6	30.3		2322
2.72	2.98	10.60	3.56		26.1	27.4		2323
2.55	2.82	9.70	3.41			25.6		2324
2.89	3.21	10.85	3.70			28.7		2325
2.47	2.91	10.55	2.29			25.6	C	2616
2.65	2.95	11.25	3.06			27.5		3019
2.52	2.76	10.35	4.20			27.1		3020
2.64	2.89	10.80	3.15			26.9		3021
2.75	3.08	8.45	6.36	5.28	27.3	28.6	D	2326
2.86	3.24	9.30	9.72		32.1	34.2		1489
4.04	4.37	9.15	6.05		30.8	33.5		2327
3.92	4.23	10.20	4.53		30.8	32.5		2328
3.70	4.19	10.50	4.21			32.3		2617

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
	<b>Federal Chemical Co., Louisville,</b>	<b>Ky.—Continued</b>
2329	Federal 4-10-6 (Muriate) .....	Harris and Beck, Jamestown .....
2618		A. Bresler, Son and Co., Owensboro .....
2873		R. T. Horton, Utica .....
2874		Wilson Hardware Co., Henderson .....
2619	Federal 4-12-8 (Muriate) .....	The Mahan Co., Winchester .....
2620		A. B. Beale and Son, Murray .....
2621		W. P. Weckesser, Mt. Sterling .....
2875		Crawford-Ferguson Co., Benton .....
2230	Federal 5-10-5 (Muriate) .....	Bell Grocery Co., Baxter .....
2622	Federal 6-8-6 (Muriate) .....	Berea Bargain Store, Berea .....
2623		Gray Tucker, Cynthia .....
2624		Williamsburg Hardware Co., Williamsburg .....
1491	Federal 4-12-0 .....	Gentry McCauley, Versailles .....
2625		W. P. Weckesser, Mt. Sterling .....
2231	Federal 0-10-4 (Muriate) .....	E. F. Pearson, Franklin .....
2330		Burnside Milling Co., Burnside .....
2331		Guthrie and Staton, Albany .....
2626		Williamsburg Hardware Co., Williamsburg .....
2876		Crawford-Ferguson Co., Benton .....
3022		C. P. Farmer, Franklin .....
3023		L. F. Thurmond, Murray .....
3024	Federal Kalko-Phos. 20% .....	H. Bresler, Son and Co., Owensboro .....
2333	Federal Lime Bone Phos- phate 20% .....	J. F. Stamper, Waynesburg .....
3025		J. F. Stamper, Waynesburg .....
3026		C. P. Farmer, Franklin .....
1490	Federal 0-10-5 (Muriate) .....	Scott Grocery, Pikeville .....
2334	Money-Maker 2-8-4 (Muriate) .....	E. C. Foltz, Louisville .....
3027		E. C. Foltz, Louisville .....
2335	Money-Maker 3-10-3 (Muriate) .....	Hall Seed Co., Louisville .....
2336	Money-Maker 3-8-6 (Muriate) .....	Hall Seed Co., Louisville .....
2627	Money-Maker 4-8-4 (Muriate) .....	Union Grocery Co., Morehead .....
2337	Money-Maker 20% Super- phosphate .....	Hall Seed Co., Louisville .....
3028		E. C. Foltz, Louisville .....
2628	Federal 4-16-4 Fertilizer (Muriate)	R. C. Bruce's Feed and Produce Co., Corbin .....
2878		M. T. Riley, Paducah .....
2338	Daybreak 2-8-4 (Muriate) .....	Grayson County Supply Co., Leitchfield .....
3029		Grayson County Supply Co., Leitchfield .....
3030		Corbett Hardware Co., Elizabethtown .....
1492	Daybreak 3-8-6 (Muriate) .....	Merchants Grocery, Pikeville .....
2339		Fountain Run Feed Co., Fountain Run .....
2629		Henry Allen and Son, Brandenburg .....
2630		L. A. Collins, Lebanon .....
2631		John P. Fister, Lexington .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.90	4.19	11.70	6.55		33.2	36.6		2329
3.83	4.29	10.85	6.00			35.2		2618
3.95	4.28	10.00	5.86			34.0		2873
4.14	4.35	10.55	6.31			35.5		2874
3.54	3.95	14.30	7.26		38.0	39.7		2619
3.81	3.81	14.05	6.84			38.4	C	2620
3.87	4.34	12.65	7.12			38.9	C	2621
3.17	3.46	11.05	7.99			35.0	A B E	2875
4.84	5.36	11.10	5.00		35.5	38.1		2230
4.68	5.21	8.85	7.19		37.8	37.5	A	2622
5.32	5.94	9.15	5.68			38.6		2623
5.25	5.87	9.10	5.41			38.0		2624
3.43	4.10	11.95			28.4	28.7		1491
3.34	4.01	12.65				29.2		2625
		10.65	4.14		16.8	17.8		2231
		10.00	5.21			18.3		2330
		9.90	4.13			16.8		2331
		11.45	4.26			18.9		2626
		9.75	4.01			16.5		2876
		10.20	4.09			17.2		3022
		10.10	3.96			16.9		3023
		20.35			24.0	24.4		3024
		20.00			24.0	24.0		2333
		20.10				24.1		3025
		20.25				24.3		3026
		10.30	5.73		18.0	19.2	F	1490
2.32	2.55	8.00	4.52		21.4	24.0		2334
2.06	2.30	9.60	4.27			24.7		3027
3.03	3.31	10.35	4.73		26.1	29.7		2335
2.95	3.23	8.35	6.07		27.3	28.6		2336
3.42	3.85	8.35	3.97		28.4	28.3		2627
		20.25			24.0	24.3		2337
		20.35				24.4		3028
3.61	4.05	16.25	4.29		38.0	38.8		2628
4.09	4.39	13.80	3.96			36.7	B	2878
1.93	2.13	7.90	4.42		21.4	22.2		2338
1.90	2.15	8.25	4.14			22.4		3029
2.09	2.32	9.15	4.30			24.3		3030
2.80	3.23	8.50	6.11		27.3	28.8		1492
3.08	3.32	8.65	6.34			29.6		2339
2.90	3.26	9.00	6.09			29.5		2629
2.88	3.25	8.70	6.16			29.2		2630
2.91	3.30	8.90	6.27			29.8		2631

TABLE II

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Federal Chemical Co., Louisville, Ky.—Continued</b>		
2632	Daybreak 4-8-4 (Muriate) .....	Gray Tucker, Cynthiana .....
2879		Earl Ward and Son, Paducah .....
2633	Daybreak 20% Superphosphate ....	Union Grocery Co., Morehead .....
2634		W. B. Robinson, Bremen .....
2880		Wilson Hardware Co., Henderson .....
3031		Wilson Hardware Co., Henderson .....
2881	1st Prize 0-20-0 .....	C. T. Day, Whitesville .....
<b>Fox Chemical Co. Branch, Federal Chem. Co., Louisville, Ky.</b>		
2340	Fox 2-8-4 (Muriate) .....	W. Z. Lawson, Whitley City .....
2635		Brown Supply Co., Vine Grove .....
2636		A. B. Beale and Son, Murray .....
3032		Squire and Smith, Cane Valley .....
2637	Fox 3-12-4 (Muriate) .....	Wm. Stanley, S. Corbin .....
1493	Fox 3-8-6 (Muriate) .....	Farmers Supply Co., Pikeville .....
2341		Burnside Milling Co., Burnside .....
2342		Hagen, Landrum, Cook & Co., Tompkinsville .....
2638		Brown Supply Co., Vine Grove .....
1494	Fox 4-8-4 (Muriate) .....	Farmers Supply Co., Pikeville .....
2882		J. P. Page and Son, Barlow .....
2343	Fox 20% Superphosphate .....	City Feed and Grain Co., Whitley City...
2639		A. B. Beale and Son, Murray .....
2640		T. Z. Leachman, Greensburg .....
3033		Brown Supply Co., Vine Grove .....
3034		A. B. Beale and Son, Murray .....
<b>Globe Fertilizer Co., Branch, Federal Chemical Co., Louisville, Ky.</b>		
2232	Globe 2-8-4 (Muriate) .....	E. F. Pearson, Franklin .....
2641		Smith and Squire, Cane Valley .....
2642		M. J. Wright, Flemingsburg .....
2643		J. L. Taggart, Depoy .....
2644		Williamsburg Hardware Co., Williamsburg .....
2883		Otis H. Stevens, Beaver Dam .....
3035		Otis H. Stevens, Beaver Dam .....
3036		I. K. Miller and Son, Campbellsville .....
2645	Globe 3-12-4 (Muriate) .....	R. C. Bruce's Feed and Produce Co., Corbin .....
2344	Globe 3-8-6 (Muriate) .....	A. L. Harmon and Son, Junction City .....
2345		Guthrie and Staton, Albany .....
2646		Benson Valley Milling Co., Frankfort .....
2884		W. L. Farris, Farmington .....
2885		John W. Whittemore, Hickory .....
2886		J. S. Whittinghill, Fordsville .....
2887		R. T. Horton, Utica .....
2233	Globe 4-8-4 (Muriate) .....	E. F. Pearson, Franklin .....
2647		John T. Jones, Benton .....
2648		H. T. Hackney Grocery Co., Harlan .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.67	4.12	8.35	3.88		28.4	29.1		2632
3.48	3.48	9.95	6.81			32.3	A	2879
		20.40			24.0	24.5		2633
		20.45				24.5		2634
		20.50				24.6		2880
		20.95				25.1		3031
		21.10			24.0	25.3		2881
2.00	2.27	8.35	4.25		21.4	23.1		2340
1.87	2.19	9.10	4.22			23.7		2635
2.79	2.79	9.75	5.28			27.8		2636
1.83	2.03	8.95	3.94			22.6		3032
2.76	3.06	12.00	4.02		29.7	29.9		2637
3.06	3.50	9.35	6.38		27.3	31.1		1493
2.87	3.28	9.05	5.88			29.4		2341
2.94	3.20	8.65	6.03			28.8		2342
2.77	3.11	8.40	6.03			28.2		2638
4.10	4.62	9.80	4.74		28.4	33.6		1494
3.19	3.52	8.90	5.68			29.8		2882
		20.40			24.0	24.5		2343
		20.80				25.0		2639
		20.05				24.1		2640
		20.60				24.7		3033
		21.20				25.4		3034
2.41	2.75	11.80	5.43		21.4	30.3		2232
2.10	2.39	8.50	4.18			23.6		2641
1.93	2.22	8.50	4.28			23.1		2642
2.04	2.37	8.55	4.88			24.4		2643
1.92	2.21	8.05	3.95			22.1		2644
2.02	2.35	8.05	4.22			23.0		2883
1.80	1.80	9.10	3.67			21.6		3035
2.14	2.37	9.85	4.29			25.3		3036
3.13	3.45	11.75	4.82		29.7	32.0		2645
2.51	2.89	9.90	5.12		27.3	28.1	C	2344
2.86	3.26	9.65	5.82			30.0		2345
2.99	3.40	8.65	5.11			28.4		2646
3.28	3.50	8.70	6.61			30.6		2884
3.18	3.18	9.15	5.68			28.9		2885
2.80	3.16	8.60	5.55			28.0		2886
2.92	3.20	8.50	5.39			27.9	C	2887
2.93	3.43	9.15	3.89		28.4	27.7	A	2233
3.63	3.83	9.40	3.97			29.6		2647
4.05	4.53	8.85	4.72			32.1		2648

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
	<b>Globe Fertilizer Co., Branch Federal Chemical Co., Louisville, Ky.—Cont.</b>	
2346	Globe 20% Superphosphate .....	L. C. Locke, Hiseville .....
2347		Guthrie and Staton, Albany .....
2649		Smith and Squire, Cane Valley .....
2650		Hayden Miles, Ekron .....
3037		I. K. Miller and Son, Campbellsville .....
3038		L. F. Thurmond, Murray .....
	<b>Kentucky Fertilizer Co., Branch, Federal Chemical Co., Louisville, Ky.</b>	
2651	O-K 2-8-4 (Muriate) .....	Nay Chesnut, London .....
2652		Edwards Feed Store, Campbellsville .....
2888		Crawford-Ferguson Co., Benton .....
1495	O-K 3-8-6 (Muriate) .....	Martin Cash Store, Vicco .....
2348		Hobert Warner, Nancy .....
2653		Vine Street Feed Store, Lexington .....
2654		Lewisport Mill Co., Lewisport .....
2655		T. E. Furrie, West Point .....
2889		L. P. Butler, Harned .....
2656	O-K 4-8-4 (Muriate) .....	Dan L. Cobbs, Rockhold .....
2657		Hammond and Robinson, Florence .....
2890		H. C. Lawrence, Lynn Grove .....
2658	O-K 20% Superphosphate .....	Lewis Wholesale Co., Whitesburg .....
2659		Hammond and Robinson, Florence .....
2891		Crawford-Ferguson Co., Benton .....
3039		Crawford-Ferguson Co., Benton .....
3040		H. W. Warner, Nancy .....
	<b>Hutson Chemical Co., Murray, Ky.</b>	
2892	Hutson's Limed 20% Superphosphate .....	N. P. Hutson, Murray .....
3041		Dairyman's Feed and Supply Co., Mayfield .....
2893	Hutson's 4-10-6 (Muriate) .....	N. P. Hutson, Murray .....
2894	Hutson's 2-8-4 (Muriate) .....	Dairyman's Feed and Supply Co., Mayfield .....
2895	Hutson's 3-8-6 (Muriate) .....	Dairyman's Feed and Supply Co., Mayfield .....
2896	Hutson's 4-10-10 (Muriate) .....	Dairyman's Feed and Supply Co., Mayfield .....
2660	Hutson's 0-10-4 (Muriate) .....	N. P. Hutson, Murray .....
	<b>International Agricultural Corporation, Cincinnati, O., Wales, Tenn.</b>	
2661	International 6-8-6 (Sulfate) .....	Richardson and Greer Grocery, Mt. Sterling .....
2349	International 6-8-6 (Muriate) .....	C. L. Jewell and Son, Louisville .....
2662		Richardson and Greer Grocery, Mt. Sterling .....
2350	International 5-10-5 (Muriate) .....	C. L. Jewell and Son, Louisville .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
		20.60			24.0	24.7		2346
		20.35				24.4		2347
		20.40				24.5		2649
		20.05				24.1		2650
		20.55				24.7		3037
		20.40				24.5		3038
1.78	2.06	8.35	4.57		21.4	22.7		2651
1.85	2.17	8.75	4.11			23.0		2652
2.08	2.35	8.00	4.52			23.3		2888
2.90	3.32	9.10	6.16		27.3	29.9		1495
2.49	2.86	8.20	5.68			26.7		2348
2.64	3.08	8.10	5.67			27.3		2653
2.77	3.17	8.95	5.79			28.8		2654
3.08	3.35	9.35	5.77			29.9		2655
2.43	2.78	9.55	5.12			27.3	C	2889
3.28	3.69	8.80	4.71		28.4	29.1		2656
3.70	4.18	8.75	4.44			30.5		2657
4.11	4.11	8.85	4.33			30.2		2890
		20.35			24.0	24.4		2658
		20.35				24.4		2659
		20.45				24.5		2891
		20.80				25.0		3039
		20.20				24.2		3040
		21.20			24.0	25.4		2892
		20.85				25.0		3041
3.03	3.74	10.15	6.34		33.2	32.9		2893
1.84	2.13	8.05	4.08		21.4	22.0		2894
3.05	3.05	8.75	6.34		27.3	28.8		2895
2.99	3.60	10.00	6.27		38.0	32.1	C E	2896
		10.20	4.79		16.8	18.0		2660
5.20	6.01	9.15	6.23	.60	37.8	39.5		2661
5.34	5.99	8.80	6.40		37.8	39.2		2349
4.59	5.22	11.65	7.83			41.7	A	2662
4.55	5.16	10.25	5.40		35.5	36.8		2350

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
	<b>International Agricultural Corporation, Cincinnati, O., Wales, Tenn.—Cont.</b>	
2663	International 4-12-8 (Sulfate) .....	Richardson and Greer Grocery, Mt. Sterling .....
2664		Farmers Feed and Produce Co., Shelbyville .....
2665	International 4-12-8 (Muriate) .....	Richardson and Greer Grocery, Mt. Sterling .....
2351	International 4-10-6 (Sulfate) .....	C. M. Brown, West Somerset .....
2666		Richardson and Greer Grocery, Mt. Sterling .....
2667		H. B. Willoughby, Richmond .....
2668	International 4-10-4 (Muriate) .....	Cooksey Feed Store, Ashland .....
2669		Youtsey Bros., Alexandria .....
2352	International 4-8-4 (Muriate) .....	C. L. Jewell and Son, Louisville .....
2670		Richardson and Greer Grocery, Mt. Sterling .....
2234	International 3-8-6 (Muriate) .....	M. C. Raymer, Bowling Green .....
2353		C. M. Brown, West Somerset .....
2354		Cecilian Milling Co., Elizabethtown .....
2671		J. T. Lawson Hardware Co., Greenup .....
2672		The Peoples Store, Pineville .....
3042		C. M. Brown, West Somerset .....
2673	International 3-10-3 (Muriate) .....	Richardson and Greer Grocery, Mt. Sterling .....
2897		Sturgis Implement and Hardware Co., Sturgis .....
3043		C. M. Brown, West Somerset .....
3044		C. L. Jewell and Son, Louisville .....
2674	International 2-10-4 (Muriate) .....	Richardson and Greer Grocery, Mt. Sterling .....
2675		R. M. Burnett and Son, Vine Grove .....
3045		C. L. Jewell and Son, Louisville .....
2355	International 2-8-4 (Muriate) .....	Cecilian Milling Co., Elizabethtown .....
2676		H. B. Willoughby, Richmond .....
3046		C. L. Jewell and Son, Louisville .....
2356	International 4-12-0 .....	C. L. Jewell and Son, Louisville .....
2677		A. K. Hedges, Mt. Sterling .....
2678		Woodson Lewis Co., Greensburg .....
2357	International 0-10-4 (Muriate) .....	M. C. Raymer, Bowling Green .....
2358		C. M. Brown, West Somerset .....
2898		Sturgis Implement and Hardware Co., Sturgis .....
2235	International 20% Superphosphate	M. C. Raymer, Bowling Green .....
2359		C. M. Brown, West Somerset .....
2679		Cooksey, Feed Store, Ashland .....
3047		C. M. Brown, West Somerset .....
3048		Woodson Lewis, Greensburg .....
3049		R. M. Burnett and Son, Vine Grove .....
3050		C. L. Jewell and Son, Louisville .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.45	3.93	12.45	8.25	.66	38.0	38.6		2663
3.48	4.00	12.75	7.82	.84		38.7		2664
3.25	3.83	12.30	9.75		38.0	39.9		2665
3.19	4.14	10.50	6.49	.48	33.2	34.9		2351
2.97	4.00	10.80	6.27	.66		34.5		2666
3.01	4.05	10.15	6.62	.54		34.3		2667
3.44	4.01	10.95	4.71		30.8	32.8		2668
3.49	4.06	10.60	4.71			32.6		2669
3.33	3.83	8.45	4.47		28.4	28.9		2352
2.81	3.32	9.00	4.35			27.6	A	2670
2.82	2.82	11.20	6.54		27.3	30.8		2234
2.65	3.07	8.20	6.27			28.1		2353
2.69	3.11	8.65	6.02			28.5		2354
2.56	3.01	8.45	6.16			28.1		2671
2.64	3.02	8.30	6.30			28.1		2672
2.41	2.79	9.25	6.24			28.4		3042
2.45	3.02	10.00	3.50		26.1	26.8		2673
3.00	3.00	10.40	3.23			26.9		2897
2.57	3.10	10.40	4.09			28.2		3043
2.58	3.14	11.15	3.31			28.3		3044
1.65	2.05	10.50	4.56		23.8	25.3		2674
1.51	2.00	9.95	4.83			24.6		2675
1.61	2.08	11.35	3.78			25.4		3045
1.68	2.05	8.70	4.38		21.4	22.9		2355
1.69	2.08	8.30	4.47			22.6		2676
1.78	2.10	8.95	4.23			23.2		3046
3.66	4.20	12.20				29.3		2356
3.56	4.15	12.35				29.3		2677
3.44	4.15	12.25				29.2		2678
		13.45	4.52		16.8	21.6		2357
		10.30	4.58			17.9		2358
		10.60	4.16			17.7		2898
		20.65			24.0	24.8		2235
		20.95				25.1		2359
		20.75				24.9		2679
		20.45				24.5		3047
		20.55				24.7		3048
		21.00				25.2		3049
		21.40				25.7		3050

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
2360	International Agricultural Corporation, Cincinnati, O., Wales, Tenn.—Cont.	
2680	International 4-14-6 (Sulfate) .....	C. L. Jewell and Son, Louisville .....
		Giltner Seed Co., Eminence .....
2362	Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.	
2681	Pulverized 5-10-5 (Muriate) .....	Ross Hollingsworth Co., Tompkinsville..
2682	Pulverized 4-12-8 (Muriate) .....	Jellico Grocery Co., Harlan .....
2683	Knox Triple "A" 4-10-4 (Muriate) ..	Allison Shippe, Campbellsville .....
2684		Renfro Supply Co., Williamsburg .....
2685	Knox Home Grower 4-8-8 (Muriate) .....	Grays Hardware Co., Grays .....
2686		R. W. Scates, Crofton .....
2363	Basic 4-8-4 (Muriate) .....	Allison Shippe, Campbellsville .....
2687		Powell Hackney Grocery Co., Jackson ..
2899		Jellico Grocery Co., Corbin .....
2688	Basic 3-10-3 (Muriate) .....	Whittemore Bros., Hickory .....
3051		Grays Hardware Co., Grays .....
2236	Basic 3-8-6 (Muriate) .....	Allison Shippe, Campbellsville .....
2364		Cole-Hughes Co., Barbourville .....
2365		Williams Produce Co., Russell Springs ..
2237	3-8-5 (Muriate 3, Sulfate 2) .....	H. B. McClary, Auburn .....
2366		Harris Feed Co., Franklin .....
2367		C. M. Langdon, Science Hill .....
2689		Babb and Watkins, Adairville .....
2690		Allison Shippe, Campbellsville .....
2368	2-8-4 (Muriate) .....	Fayette Seed Co., Lexington .....
2691		C. M. Langdon, Science Hill .....
2692		Farmers Supply Co., White Plains .....
3052		Hood and Berry, Greensburg .....
3053	Knox 2-10-4 (Muriate) .....	T. I. Smith and Son, Cane Valley .....
3054		Allison Shippe, Campbellsville .....
3055		C. M. Langdon, Science Hill .....
2369	Basic 0-10-4 (Muriate) .....	W. E. Dixon, Hodgenville .....
2370		C. M. Langdon, Science Hill .....
2693		Vick Smith, Bowling Green .....
2694		G. H. Bowles and Son, Glasgow .....
2900		Allison Shippe, Campbellsville .....
3056		Geo. R. Hinch, Marion .....
3057		G. H. Bowles and Son, Glasgow .....
3058		Harris Feed Co., Franklin .....
3059		Allison Shippe, Campbellsville .....
3060		C. M. Langdon, Science Hill .....
2371	Knox Magnesia Phosphate 20% .....	Vick Smith, Bowling Green .....
2372		Powell Hackney Grocery Co., Jackson..
2373		C. M. Langdon, Science Hill .....
2374		J. E. Bryant, Scottsville .....
2695		Stewart's Grocery, Horse Cave .....
3061		T. W. Hall, Elkton .....
3062		Allison Shippe, Campbellsville .....
		C. M. Langdon, Science Hill .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
3.22	4.28	14.30	6.41	.42	38.0	39.8		2360
3.14	4.11	13.80	6.29	.48		38.5		2680
4.81	4.81	10.60	5.12		35.5	35.7		2362
4.61	4.61	11.85	4.79			36.1		2681
3.73	3.73	12.60	7.33		38.0	37.0		2682
4.02	4.02	10.65	4.25		30.8	32.0		2683
4.32	4.32	10.00	4.52			32.5		2684
4.19	4.19	8.25	8.47		33.2	34.7		2685
3.91	3.91	9.05	6.99			32.9	C	2686
4.29	4.29	9.10	4.64		28.4	31.5		2363
3.73	4.03	8.30	4.50			29.5		2687
4.22	4.22	8.45	4.40			30.2		2899
3.12	3.12	10.85	3.45		26.1	28.1		2688
2.53	2.80	10.70	3.39			26.7		3051
3.12	3.12	8.30	6.23		27.3	28.4		2236
3.23	3.23	8.90	6.41			29.7		2364
2.76	3.16	8.50	6.34			28.9		2365
2.56	3.13	8.65	5.29	2.64 <sup>1</sup>	26.1	27.7		2237
2.66	3.16	8.50	5.44	2.46 <sup>1</sup>		27.8		2366
2.55	3.08	8.80	5.42	2.88 <sup>1</sup>		27.8		2367
2.58	3.01	8.50	5.42	2.34 <sup>1</sup>		27.2		2689
2.51	2.98	8.40	5.35	2.34 <sup>1</sup>		26.9		2690
2.17	2.17	8.65	4.29		21.4	23.1		2368
2.21	2.21	8.85	4.30			23.5		2691
2.06	2.06	8.35	4.34			22.4		2692
1.94	2.18	8.95	4.12			23.3		3052
1.83	2.10	10.85	4.33		23.8	25.6		3053
1.76	1.76	10.50	4.52			24.2		3054
1.85	2.13	10.50	4.53			25.5		3055
		10.50	4.66		16.8	18.2		2369
		10.05	4.59			17.6		2370
		10.05	4.79			17.8		2693
		10.50	4.56			18.1		2694
		10.15	4.48			17.6		2900
		10.50	4.54			18.1		3056
		10.20	4.58			17.7		3057
		10.10	4.48			17.5		3058
		10.10	4.31			17.3		3059
		10.20	4.39			17.5		3060
		21.20			24.0	25.4		2371
		20.10				24.1		2372
		20.45				24.5		2373
		20.35				24.4		2374
		21.05				25.3		2695
		20.55				24.7		3061
		20.00				24.0		3062

<sup>1</sup> 2.88 per cent Chlorine allowed.

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.—Cont.</b>		
3063		H. B. McClary, Auburn .....
3064		G. H. Bowles and Son, Glasgow .....
3065		Moore Grocery Co., Central City .....
2375	Amnite 15% .....	Babb and Watkins, Adairville .....
2696		Allison Shippe, Campbellsville .....
<b>Louisville Fertilizer Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
2697	Louisville Old Black Joe 2-10-4 (Muriate) .....	Ratliff Hardware Co., Princeton .....
2698	Louisville 20% Superphosphate .....	Ratliff Hardware Co., Princeton .....
3066		Yopp Seed Co., Paducah .....
2699	Louisville 3-8-6 Fertilizer (Muriate) .....	Ratliff Hardware Co., Princeton .....
3067		J. C. Everett Co., Maysville .....
3068		Yopp Seed Co., Paducah .....
3069		J. W. Schoolcraft, Somerset .....
2901	Louisville 4-12-8 Fertilizer (Muriate) .....	Yopp Seed Co., Paducah .....
3070	Louisville 6-8-6 Fertilizer (Muriate) .....	Yopp Seed Co., Paducah .....
<b>Morris Fertilizer Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind</b>		
3071	Morris Old Black Joe 2-10-4 (Muriate) .....	Duncan and Winstead, Dixon .....
2902	Morris 20% Superphosphate .....	Duncan and Winstead, Dixon .....
<b>National Chemical Co., Louisville, Ky.</b>		
2700	Big Pay 5-10-5 (Muriate) .....	Farmers Feed & Produce Co., Shelbyville .....
2377	Big Pay 4-16-4 (Muriate) .....	W. D. Cunningham, Webbs Cross Roads .....
2701	Big Pay 4-12-8 (Muriate) .....	Farmers Feed & Produce Co., Shelbyville .....
2378	Big Pay 3-8-6 (Muriate) .....	W. D. Cunningham, Webbs Cross Roads .....
2702		Farmers Feed and Produce Co., Shelbyville .....
2379	Big Pay 2-8-4 (Muriate) .....	W. D. Cunningham, Webbs Cross Roads .....
2703		E. S. Ferrill and Son, Buffalo .....
2380	Big Pay 20% Superphosphate .....	Morris Bros., Somerset .....
2381		W. D. Cunningham, Webbs Cross Roads .....
3072		Grigsby and Co., Bardstown .....
<b>North American Fertilizer Co., Louisville, Ky.</b>		
2704	N. A. 6-8-6 (Muriate) .....	Clarence LeBus, Lexington .....
2705		Browning Coal and Feed Co., Winchester .....
2706	N. A. 6-8-3 (Sulfate) .....	W. C. Howk, Cynthiana .....
2903		Garfield Mercantile Co., Garfield .....
2382	N. A. 5-10-5 (Muriate) .....	Bunton Seed Co., Louisville .....
2707		E. J. Blackburn, Dry Ridge .....
2708		Clarence LeBus, Lexington .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
		20.60				24.7		3063
		20.75				24.9		3064
		21.00				25.2		3065
15.56	15.56				52.5	54.5		2375
14.00	14.00					49.0	A E	2696
1.58	1.92	10.40	3.88		23.8	23.9		2697
		20.25			24.0	24.3		2698
		20.30				24.4		3066
2.56	2.86	9.65	5.78		27.3	28.5		2699
2.72	3.11	10.90	5.76			30.9		3067
2.63	2.98	8.90	6.76			29.2		3068
2.55	2.98	9.95	5.98			29.6		3069
3.53	3.77	12.35	7.84		38.0	37.4		2901
4.88	5.60	9.35	5.82		37.8	37.8		3070
1.68	2.06	10.85	4.13		23.8	25.2		3071
		20.50			24.0	24.6		2902
4.38	4.79	11.85	5.26		35.5	37.3		2700
3.87	4.13	17.55	4.41		38.0	40.8		2377
3.71	3.99	12.35	9.02		38.0	39.6		2701
2.89	3.24	8.85	5.96		27.3	29.1		2378
2.76	3.16	8.30	5.88			28.1		2702
1.77	2.00	8.75	3.94		21.4	22.2		2379
1.67	2.00	8.25	3.00			20.5	C E	2703
		15.15			24.0	18.2	B E	2380
		19.25				23.1		2381
		18.80				22.6	E	3072
5.34	5.68	8.10	6.36		37.8	37.2		2704
5.59	5.92	8.65	5.82			38.1		2705
5.32	5.62	9.20	4.03	.18	34.2	35.5		2706
5.37	5.67	9.10	4.44	.96		36.1	D	2903
4.68	5.19	10.70	4.27		35.5	36.1	C	2382
4.98	5.28	10.70	5.64			38.1		2707
4.91	5.23	10.20	6.91			38.8		2708

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
<b>North American Fertilizer Co., Louisville, Ky.—Continued</b>			
2709	N. A. 4-12-8 (Muriate) .....	Browning Coal and Feed Co., Winchester	4.17
2710		Grigsby & Co., Bardstown .....	3.47
2711		Clarence LeBus, Lexington .....	4.32
3073	N. A. 4-12-4 (Muriate) .....	Bunton Seed Co., Louisville .....	3.40
2238	N. A. 4-12-0 .....	R. D. Reynolds, Cave City .....	3.96
2383	N. A. 4-10-4 (Muriate) .....	Bunton Seed Co., Louisville .....	4.23
3074		Bunton Seed Co., Louisville .....	3.64
2712	N. A. 3-10-3 (Muriate) .....	Henry Durham, Greensburg .....	1.94
2713		V. L. Cantrell, Magnolia .....	2.60
2714		E. J. Blackburn, Dry Ridge .....	2.48
3075		Bunton Seed Co., Louisville .....	2.95
3076		Henry Durham, Greensburg .....	2.61
3077		Grigsby and Co., Bardstown .....	2.72
2239	N. A. 3-8-6 (Muriate) .....	R. D. Reynolds, Cave City .....	2.86
2384		W. W. Owens, Russell Springs .....	2.78
2715		Browning Coal & Feed Co., Winchester .....	2.90
2716		Henry Durham, Greensburg .....	2.74
3078		W. W. Owens, Russell Springs .....	2.37
2717	N. A. 3-8-6 (Sulfate) .....	V. L. Cantrell, Magnolia .....	2.70
2240	N. A. 2-8-4 (Muriate) .....	R. D. Reynolds, Cave City .....	2.08
2385		W. W. Owens, Russell Springs .....	1.86
2718		V. L. Cantrell, Magnolia .....	1.85
2719		Henry Durham, Greensburg .....	1.77
3079		Henry Durham, Greensburg .....	1.78
3080		U. L. Rogers, Gradyville .....	1.73
3081		W. W. Owens, Russell Springs .....	1.86
2386	N. A. 0-10-4 (Muriate) .....	W. W. Owens, Russell Springs .....	1.77
2720	N. A. 20% Superphosphate .....	Manchester Grocery Co., Manchester .....	1.85
2721		U. L. Rogers, Columbia .....	1.77
2722		Irvington Truck Line, Irvington .....	1.78
3082		U. L. Rogers, Gradyville .....	1.73
<b>Price Chemical Co., Inc., Louisville, Ky.</b>			
2387	2-8-4 (Muriate) .....	Thomas Emerson, Eubank .....	2.07
2388		Prewitt and Prewitt, Half Way .....	2.68
2723		W. L. Anderson and Son, Caneyville .....	2.09
2724		Ed. M. Dillingham, Dawson Springs .....	1.85
3083		Thomas Emerson, Eubank .....	1.89
3084		W. L. Anderson and Son, Caneyville .....	1.79
3085		Harralson's Feed and Seed Store, Owensboro .....	1.86
3086		Vine Grove Feed Co., Vine Grove .....	1.73
2389	2-10-4 (Muriate) .....	Patterson Bros., Kings Mountain .....	2.04
2725		K. Triplett, Barbourville .....	1.67
3087	2-12-6 (Muriate) .....	G. M. Hedrick, Monticello .....	1.95
3088		Vine Grove Feed Co., Vine Grove .....	1.98

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
4.17	4.50	12.00	8.87		38.0	40.8		2709
3.47	3.83	13.15	8.21			39.0		2710
4.32	4.56	12.50	8.35			41.0		2711
3.40	4.01	15.60	3.74		33.2	37.2		3073
3.96	4.40	11.50			28.4	29.2		2238
4.23	4.73	9.50	3.99		30.8	32.8		2383
3.64	4.08	10.70	4.27			32.2		3074
1.94	2.16	11.95	3.83		26.1	26.5	A	2712
2.60	2.93	10.65	2.98			26.6		2713
2.48	2.80	10.60	3.00			26.1		2714
2.95	3.34	9.95	2.73			26.9		3075
2.61	2.92	10.40	2.55			25.8		3076
2.72	3.00	11.10	2.61			27.0		3077
2.86	3.16	8.65	6.71		27.3	29.5		2239
2.78	3.13	8.55	6.07			28.5		2384
2.90	3.19	8.75	6.80			29.8		2715
2.74	3.05	9.40	6.22			29.4		2716
2.37	2.68	8.10	6.66			27.1		3078
2.70	3.07	8.60	6.86	5.04	27.3	29.3	D	2717
2.08	2.38	8.40	3.09		21.4	22.1	C	2240
1.86	2.08	8.25	4.13			22.1		2385
1.85	2.05	8.50	4.40			22.7		2718
1.77	2.00	8.85	4.27			22.7		2719
1.78	2.01	7.90	4.40			21.8		3079
1.73	1.97	8.45	4.09			21.9		3080
1.86	2.10	7.55	4.09			21.3		3081
		10.15	4.95		16.8	18.1		2386
		19.60			24.0	23.5		2720
		19.90				23.9		2721
		19.70				23.6		2722
		19.45				23.3		3082
2.07	2.32	8.10	4.40		21.4	23.1		2387
2.68	2.97	9.05	5.73			28.1		2388
2.09	2.35	8.55	4.52			23.9		2723
1.85	2.11	8.70	4.23			22.9		2724
1.89	2.18	8.75	4.79			23.9		3083
1.79	2.10	8.35	4.46			22.7		3084
1.86	2.17	8.30	4.89			23.4		3085
1.73	2.05	8.05	4.67			22.4		3086
2.04	2.29	10.80	4.56		23.8	26.5		2389
1.67	2.03	10.30	4.90			25.4		2725
1.95	2.26	12.60	6.28		28.6	30.6		3087
1.98	2.37	12.45	6.48			31.0		3088

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Price Chemical Co., Inc., Louisville, Ky.—Continued</b>		
1496	3-8-6 (Muriate)	St. Matthews Produce Exchange, St. Matthews
2726		Walters and Thompson, Shelbyville
2727		Vine Grove Feed Co., Vine Grove
2728		Frank J. Murphy, Valley Station
2904		R. Z. Hook, Hardinsburg
2729	3-8-6 (Sulphate)	Monarch Milling Co., Mt. Sterling
2730		Fox Bros., Winchester
2905		Trent and Board, Irvington
2731	3-8-10 (Muriate)	Triplett Store, South Corbin
2732	3-8-10 (Sulfate)	N. G. Coates, Sparta
2390	3-10-3 (Muriate)	G. M. Hedrick, Monticello
2733		G. W. Bowling & Son, Catlettsburg
2734		Walters & Thompson, Shelbyville
3089		St. Matthews Produce Exchange, St. Matthews
2391	4-8-4 (Muriate)	Farmers Supply Co., Bowling Green
2735		W. H. Noland, Richmond
1497	4-8-6 (Muriate)	St. Matthews Produce Exchange, St. Matthews
3090		W. L. Anderson & Sons, Caneyville
3091		St. Matthews Produce Exchange, St. Matthews
1498	4-10-4 (Muriate)	St. Matthews Produce Exchange, St. Matthews
2736		Frank J. Murphy, Valley Station
2737		Gish Furniture Co., Central City
2738	4-10-6 (Muriate)	Joe Fister, Lexington
1499	4-12-0	Walters & Thompson, Shelbyville
2392		G. M. Hedrick, Monticello
2739	4-12-8 (Sulfate)	M. B. Fox, Winchester
2740		Joe Fister, Lexington
2741		Harralson's Feed and Seed Store, Owensboro
2742		Monarch Milling Co., Mt. Sterling
1500	5-10-5 (Muriate)	St. Matthews Produce Exchange, St. Matthews
2743		Walters & Thompson, Shelbyville
2744	6-8-6 (Muriate)	Harralson's Feed and Seed Store, Owensboro
2745		W. H. Noland, Richmond
2746	0-10-4 (Muriate) with lime filler containing Calcium and Mag- nesium Carbonate	Triplett Store, South Corbin
3092		Thomas Emerson, Eubank

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Available	Guaranty		
2.92	3.23	8.55	6.35		27.3	29.2		1496
3.06	3.38	8.40	6.23			29.4		2726
3.21	3.52	8.80	6.07			30.2		2727
2.77	3.06	8.70	5.74			28.0		2728
3.31	3.31	8.25	5.93			28.6		2904
2.98	3.31	8.70	6.62	.54	27.3	30.0		2729
2.82	3.14	8.25	6.12	.54		28.2		2730
2.71	2.99	8.00	7.14	1.92		28.6	D	2905
2.77	3.17	8.70	10.71		32.1	34.4		2731
2.93	3.23	8.55	10.53	.96	32.1	34.2		2732
2.72	3.19	11.20	3.45		26.1	28.8		2390
2.81	3.21	11.50	3.32			29.0		2733
2.70	3.11	10.50	3.56			27.8		2734
2.45	2.85	10.75	3.63			27.2		3089
3.85	4.25	8.15	4.59		28.4	30.2		2391
3.95	4.33	8.35	4.97			31.1		2735
3.70	4.06	8.40	6.04		30.8	31.5		1497
3.30	3.70	10.00	5.46			31.5		3090
3.54	3.91	8.25	7.00			32.0		3091
4.11	4.56	10.40	4.68		30.8	34.1		1498
3.93	4.39	10.50	4.51			33.4		2736
3.78	4.21	10.95	4.46			33.2		2737
3.86	4.20	10.50	6.16		33.2	34.7		2738
2.79	3.95	12.15			28.4	28.4		1499
2.78	3.81	12.10				27.9		2392
3.75	4.11	12.50	8.23	.66	38.0	39.3		2739
3.97	4.32	12.35	8.63	.48		40.3		2740
3.88	4.24	12.40	8.56	.84		40.0		2741
3.93	4.28	12.00	9.05	.54		40.2		2742
4.49	4.98	10.60	5.25		35.5	36.5		1500
4.53	4.98	10.55	5.41			36.6		2743
5.13	5.61	9.40	5.71		37.8	37.8		2744
5.76	6.12	8.55	7.09			40.2		2745
		11.70	4.04		16.8	18.9		2746
		11.35	4.12			18.6		3092

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained
<b>Price Chemical Co., Inc., Louisville, Ky.—Continued</b>		
2393	0-20-0 with lime filler containing Calcium and Magnesium Carbonate .....	G. M. Hedrick, Monticello .....
2394		Farmers Supply Co., Bowling Green .....
2747		Vine Grove Feed Co., Vine Grove .....
2748		Monarch Milling Co., Mt. Sterling .....
2906		Trent and Board, Irvington .....
2907		Bennett and Stinnett, Livia .....
3093		Harralson's Feed & Seed Store, Owensboro .....
3094		V. L. Cantrell, Magnolia .....
3095		W. H. Noland, Richmond .....
<b>Standard Wholesale Phosphate and Acid Works, Inc., Baltimore, Md.</b>		
2749	Standard 20% Superphosphate.....	C. B. Whitney, Campbellsville .....
2908		Yopp Seed Co., Paducah .....
1502	Standard 5-10-5 (Muriate) .....	Kentucky Wholesale Co., Pikeville .....
2750	Standard 2-9-5 (Muriate) .....	C. B. Whitney, Campbellsville .....
2751	Standard 2-8-16 (Muriate) .....	C. B. Whitney, Campbellsville .....
1501	Standard U. S. 3-8-6 (Muriate) .....	Kentucky Wholesale Co., Pikeville .....
2752		C. B. Whitney, Campbellsville .....
<b>Swift &amp; Co., Fert. Works, National Stock Yards, Ill.</b>		
2753	Swift's Red Steer 6-12-6 (Sulfate)..	L. N. Kratzer, Mt. Sterling .....
2754	Swift's Red Steer 5-10-5 (Muriate)	Geo. C. Goode, Covington .....
2395	Swift's Red Steer 4-12-8 (Sulfate)	Beaty Bros., Science Hill .....
2755		Shelby Feed and Seed Co., Shelbyville.....
2756		L. N. Kratzer, Mt. Sterling .....
2757	Swift's Red Steer 4-12-4 (Muriate)	L. N. Kratzer, Mt. Sterling .....
2396	Swift's Red Steer 4-10-6 (Sulfate)	Beaty Bros., Science Hill .....
2758		Shelby Feed and Seed Co., Shelbyville.....
2397	Swift's Red Steer 4-10-6 (Muriate)	Scottsville Feed Co., Scottsville .....
2398	Swift's Red Steer 4-8-4 (Muriate)..	Scottsville Feed Co., Scottsville .....
2759		Spears-Kiser Co., Paris .....
2760		Dorsey Brothers and Fisher, Carlisle .....
2399	Swift's Red Steer 3-10-3 (Muriate)	Scottsville Feed Co., Scottsville .....
2400	Swift's Red Steer 3-8-6 (Muriate)..	Swift & Co., Bowling Green .....
2761		L. N. Kratzer, Mt. Sterling .....
2762		Geo. C. Goode, Covington .....
2401	Swift's Red Steer 3-8-6 (Sulfate)..	Beaty Bros., Science Hill .....
2763		Shelby Feed & Seed Co., Shelbyville .....
2909		G. H. Harris, Cloverport .....
2402	Swift's Red Steer 20% Superphosphate .....	Swift & Co., Bowling Green .....
2403		Beaty Bros., Science Hill .....
2404		Scottsville Feed Co., Scottsville .....
2764		L. N. Kratzer, Mt. Sterling .....
3096		Morganfield Hardware Co., Morganfield..
3097		Scottsville Feed Co., Scottsville .....

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phosphoric Acid Available	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
		19.45			24.0	23.3		2393
		20.60				24.7		2394
		20.65				24.8		2747
		20.05				24.1		2748
		20.15				24.2		2906
		20.70				24.8		2907
		20.75				24.9		3093
		20.95				25.1		3094
		20.65				24.8		3095
		21.05			24.0	25.3		2749
		20.00				24.0		2908
4.43	4.86	10.00	5.41		35.5	35.5		1502
1.77	2.13	9.10	5.76		23.8	25.4		2750
2.68	2.91	10.45	16.06		35.8	42.0		2751
2.70	3.16	9.05	6.48		27.3	29.7		1501
2.69	3.08	9.30	5.99			29.1		2752
5.72	6.10	12.05	6.63	.48	42.6	43.8		2753
4.30	4.66	10.25	5.10		35.5	34.7		2754
3.67	4.03	12.40	7.55	.78	38.0	38.2		2395
3.63	4.01	12.80	7.78	.78		38.7		2755
3.64	4.00	12.30	8.48	.60		38.9		2756
3.80	4.18	12.85	4.40		33.2	35.3		2757
3.60	4.09	10.30	5.96	.54	33.2	33.8		2396
3.60	4.10	10.35	6.42	.66		34.5		2758
3.78	4.15	10.85	6.28		33.2	35.1		2397
3.93	4.33	8.45	4.52		28.4	30.7		2398
3.74	4.07	8.65	4.33			29.8		2759
3.69	4.03	8.65	4.35			29.7		2760
2.85	3.26	10.40	3.41		26.1	28.0		2399
2.73	3.00	9.00	6.03		27.3	28.5		2400
2.84	3.17	8.55	6.14			28.7		2761
2.74	3.03	8.40	6.31			28.3		2762
2.65	3.00	8.85	5.80	.48	27.3	28.1		2401
2.73	3.01	8.75	6.19	.42		28.5		2763
2.71	3.05	8.85	6.00	.48		28.5		2909
		21.15			24.0	25.4		2402
		21.00				25.2		2403
		21.40				25.7		2404
		20.40				24.5		2764
		20.30				24.4		3096
		20.90				25.1		3097

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
	<b>Swift &amp; Co., Fert. Works, National</b>	<b>Stock Yards, Ill.—Continued</b>	
2405	Swift's Red Steer 2-12-6 (Muriate)	Beaty Bros., Science Hill .....	1.89
2910	Swift's Red Steer 4-12-8 (Muriate)	Yopp Seed Co., Paducah .....	3.44
	<b>Tennessee Chem. Co. (Armour owned), Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.</b>		
2406	Ox Old Black Joe 2-10-4 (Muriate)	J. H. Maholland, Franklin .....	1.67
2407		N. E. West, Gamaliel .....	1.67
2765		W. H. Arnold & Co., Madisonville .....	1.70
2408	Ox 20% Superphosphate .....	J. H. Maholland, Franklin .....	
2766		S. B. Bilbro, Nortonville .....	
3098		W. H. Arnold & Co., Madisonville .....	
2767	Ox 4-12-8 Fertilizer (Muriate) .....	Young Hardware Co., Hopkinsville .....	3.42
2911		John W. Whittemore, Hickory .....	3.18
	<b>Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., Mt. Pleasant, Tennessee</b>		
2409	V.C 4-10-6 (Muriate) .....	Scottsville Feed Co., Scottsville .....	3.31
2768		C. A. Mitchell, Clay .....	3.34
2912		Young Lumber Co., Beaver Dam .....	3.45
2410	V-C 0-10-4 (Muriate) .....	Scottsville Feed Co., Scottsville .....	
2411		George Richardson, Somerset .....	
2412		Polson's Grocery, Glasgow .....	
2769		U. C. Janes, Columbia .....	
3099		Scottsville Feed Co., Scottsville .....	
3100		A. T. Sanders, Lancaster .....	
3101		George Richardson, Somerset .....	
2413	V-C 20% Superphosphate .....	George Richardson, Somerset .....	
2414		Polson's Grocery, Glasgow .....	
2770		I. K. Miller and Son, Campbellsville .....	
2913		Coleman Feed and Supply Co., Marion .....	
2914		Young Lumber Co., Beaver Dam .....	
3102		I. K. Miller and Son, Campbellsville .....	
3103		Scottsville Feed Co., Scottsville .....	
3104		Polsen and Co., Glasgow .....	
3105		George Richardson, Somerset .....	
3106		Coleman Feed and Supply Co., Marion .....	
2771	V-C 10-6-4 (Muriate) .....	J. W. Purkey, Berea .....	9.6
2772	V-C 4-8-4 (Muriate) .....	Middlesboro Hardware Co., Middlesboro .....	3.9
2773	V-C 3-12-4 (Muriate) .....	P. S. Young, Caneyville .....	2.9
2774		Knox County Supply Co., Barbourville .....	3.0
2915		Morganfield Implement & Hardware Co., Morganfield .....	2.7
2415	V-C 3-10-3 (Muriate) .....	G. M. Hedrick, Monticello .....	2.8
2775		Clarence Bowling, Catlettsburg .....	2.9
2776		I. K. Miller and Son, Campbellsville .....	2.9
2777		Clyde Brown, Hawesville .....	2.9
2916		Young Lumber Co., Beaver Dam .....	2.9
3107		Cottingham Grain Co., Henderson .....	2.7
3108		G. P. Jones and Son, Hartford .....	2.9
3109		I. K. Miller and Son, Campbellsville .....	2.8

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total				Guaranty	Found		
1.89	2.24	12.30	6.52		28.6	30.4	F	2405
3.44	3.81	12.65	7.52		38.0	37.5	F	2910
1.67	2.08	10.50	4.18		23.8	24.9		2406
1.67	2.02	10.00	4.02			23.9		2407
1.70	2.06	10.30	4.14			24.5		2765
		20.40			24.0	24.5		2408
		20.35				24.4		2766
		20.80				25.0		3098
3.42	3.69	12.60	7.88		38.0	37.5		2767
3.18	3.43	12.30	7.87			36.2		2911
3.31	3.98	10.30	6.77		33.2	34.4		2409
3.34	3.99	10.80	6.37			34.6		2768
3.49	3.73	11.15	6.11			33.8		2912
		10.90	4.58		16.8	18.6		2410
		10.35	4.31			17.6		2411
		10.50	4.50			18.0		2412
		10.80	4.31			18.1		2769
		10.55	4.43			18.0		3099
		10.75	4.40			18.2		3100
		10.35	4.40			17.7		3101
		20.90			24.0	25.1		2413
		21.55				25.9		2414
		21.10				25.3		2770
		21.95				26.3		2913
		20.80				25.0		2914
		21.55				25.9		3102
		21.30				25.6		3103
		21.15				25.4		3104
		20.95				25.1		3105
		19.25				23.1		3106
9.61	10.02	7.00	4.35		47.0	48.7		2771
3.98	3.98	8.40	4.21		28.4	29.1		2772
2.94	3.19	12.10	4.68		29.7	31.3		2773
3.08	3.29	12.05	4.92			31.9		2774
2.75	3.01	12.40	4.79			31.2		2915
2.83	3.06	10.85	3.50		26.1	27.9		2415
2.98	3.19	10.05	3.39			27.3		2775
2.91	3.19	10.75	3.28			28.0		2776
2.90	3.13	11.00	3.40			28.2		2777
2.93	3.21	10.00	3.28			27.2		2916
2.79	3.05	10.05	5.28			29.1		3107
2.93	3.17	10.60	3.40			27.9		3108
2.86	3.10	10.40	3.38			27.4		3109

TABLE II.

Station Number	Name and Address of Manufacturer Brand Name and Guaranty	From Whom Obtained	Water Soluble
	Virginia-Carolina Chemical Corporation, Inc., Cincinnati, O., Mt. Pleasant, Tennessee		
3110		A. T. Sanders, Lancaster .....	2.97
3111		Ycung Lumber Co., Beaver Dam .....	2.82
2416	V-C 2-8-4 (Muriate) .....	George Richardson, Somerset .....	2.07
2778		I. K. Miller and Son, Campbellsville .....	1.89
2779		M. G. Williams, Hopkinsville .....	2.15
2917		W. S. Smith, Sebree .....	2.16
3112		Scottsville Feed Co., Scottsville .....	2.00
3113		Bowling Green Milling Co., Branch, Franklin .....	2.00
		P. S. Young, Caneyville .....	1.80
3114		George Richardson, Somerset .....	1.98
3115		I. K. Miller and Son, Campbellsville .....	1.80
3116		Miss Agnes Davis, Russellville .....	
2780	V-C 0-10-10 (Muriate) .....	B. C. Swann and Miller, Lynn Grove .....	
2918		Miss Agnes Davis, Russellville .....	5.52
3117		M. G. Williams, Hopkinsville .....	6.00
2781	V-C 6-8-6 (Muriate) .....	Woodford Spears & Son, Paris .....	5.67
2782		Denton Mercantile Co., Hillsboro .....	4.01
2783		Miss Agnes Davis, Russellville .....	4.03
2784	V-C 4-12-8 (Muriate) .....	Stewart & Co., Munfordville .....	4.05
2417	V-C 4-12-0 .....	John H. Busby Co., Hodgenville .....	3.81
2785		I. K. Miller and Son, Campbellsville .....	2.88
2786		McGregor and Cluck, Dawson Springs .....	3.02
2418	V-C 3-8-6 (Muriate) .....	The May Grocery, West Liberty .....	3.12
2787		U. C. Janes, Columbia .....	2.98
2788		I. K. Miller & Son, Campbellsville .....	2.67
2789		Cottingham Grain Co., Henderson .....	1.99
3118		Miss Agnes Davis, Russellville .....	3.27
2790	V-C 2-10-4 (Muriate) .....	Denton Mercantile Co., Hillsboro .....	3.54
2791	V-C 4-8-4 (Sulfate) .....	Richmond Hatchery, Richmond .....	3.04
2792		Miss Agnes Davis, Russellville .....	3.05
2793	V-C 3-8-10 (Muriate 4, Sulfate 6) .....	W. A. Conyer, Hardyville .....	2.97
2419	V-C 3-8-6 (Sulfate) .....	Ratliff Bros., Carlisle .....	
2794		M. G. Williams Implement Co., Hopkinsville .....	1.93
3119	V-C 2-12-6 (Muriate) .....	G. P. Jones and Son, Hartford .....	2.80
2919	Mt. Pleasant 3-10-3 (Muriate) .....	G. P. Jones and Son, Hartford .....	2.97
2920	Mt. Pleasant 3-8-6 (Muriate) .....	G. P. Jones and Son, Hartford .....	
2921	Mt. Pleasant 20% Superphosphate	G. P. Jones and Son, Hartford .....	

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE II.

Nitrogen		Phos- phoric Acid	Potash	Chlorine	Index of Relative Value		Remarks	Station Number
Water Soluble	Total	Available			Guaranty	Found		
2.97	3.20	10.60	3.36			28.0		3110
2.82	3.09	10.80	3.40			27.9		3111
2.07	2.07	8.25	4.52		21.4	22.6		2416
1.89	2.10	8.25	4.32			22.4		2778
2.15	2.38	9.20	4.29			24.5		2779
2.16	2.16	9.15	4.31			23.7		2917
2.00	2.00	8.60	4.46			22.7		3112
2.00	2.23	8.80	4.31			23.5		3113
1.80	2.00	8.60	4.33			22.5		3114
1.98	1.98	8.50	4.44			22.5		3115
1.80	2.00	8.50	4.38			22.5		3116
		10.75	10.08		24.0	25.0		2780
		10.40	11.27			26.0		2918
		10.45	10.80			25.5		3117
5.52	5.72	8.70	6.20		37.8	37.9		2781
6.00	6.00	8.35	6.32			38.6		2782
5.67	5.88	8.40	6.34			38.3		2783
4.01	4.22	12.75	7.45		38.0	39.0		2784
4.03	4.32	12.05			28.4	29.6		2417
4.05	4.37	12.40				30.2		2785
3.81	4.15	13.00				30.1		2786
2.88	3.08	9.15	6.54		27.3	29.6		2418
3.02	3.02	8.55	6.15			28.2		2787
3.12	3.12	8.45	6.48			28.8		2788
2.98	3.21	8.70	6.05			28.9		2789
2.67	2.67	11.35	5.57			29.7		3118
1.99	2.21	10.00	4.22		23.8	24.8		2790
3.27	3.53	9.45	5.13	.78	28.4	30.0		2791
3.54	3.75	8.70	5.00	1.26		29.6	D	2792
3.04	3.04	8.95	10.13	1.32 <sup>1</sup>	32.1	33.5		2793
3.05	3.05	8.65	5.97	.54	27.3	28.2		2419
2.97	3.20	8.40	6.75	.66		29.4		2794
1.93	2.18	12.10	6.11		28.6	29.5		3119
2.80	3.04	10.30	3.20		26.1	26.8		2919
2.97	3.23	9.25	6.06		27.3	29.7		2920
		21.40			24.0	25.7		2921

<sup>1</sup> 3.81 per cent Chlorine allowed.

TABLE III.

Number Station	Name and Address of Manufacturer and Name of Board	From Whom Obtained
2964	The Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jffersonville, Indiana Armour's Raw Bone Meal 3.75-22-0	J. W. Schoolcraft, Somerset
2971	Buhner Fertilizer Co., Seymour, Ind. Raw Bone Meal 3.80-22-0	E. C. Miller, Buechel
2987	Cumberland Chemical Co., Hopkinsville, Ky. Cumberland Steamed Bone Meal 2-27-0	Young Hardware Co., Hopkinsville
2320	The Davison Chemical Corp., Read Phosphate Div., Nashville, Tenn. Raw Bone Meal 3.70-20-0	Hollingsworth-Young Hardware Co., Bowling Green
3006	Raw Bone 3.50-21.50-0	Hall Seed Co., Louisville
2332	Federal Chemical Co. Inc., Louisville, Ky. Federal Pure Bone 2-27-0	H. D. Jones, Glasgow
2877		J. P. Page and Son, Barlow
2376	Knoxville Fertilizer Co., Knoxville, Tenn. Steam Bone Meal 2.47-24-0	Harris Feed Co., Franklin

A—Deficient in nitrogen. B—Deficient in phosphoric acid. C—Deficient in potash.  
D—Chlorine excessive. E—Deficient in relative value. F—Not registered.



TABLE III.

Nitrogen	Phos- phoric Acid	Index of Relative Value		Remarks	Station Number
		Guaranty	Found		
Total	Total				
3.68	22.50	35.1	35.4		2964
2.97	25.00	35.3	35.4	A	2971
2.14	27.00	34.0	34.5		2987
3.88	22.40	33.0	36.0	F	2320
4.00	23.20	33.8	37.2		3006
2.70	26.10	34.0	35.6		2332
2.26	27.00		34.9		2877
3.03	25.90	32.6	36.5		2376