

Kentucky Agricultural Experiment Station

UNIVERSITY OF KENTUCKY

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COMMERCIAL FERTILIZERS IN KENTUCKY
IN 1943

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Consumption of fertilizer in Kentucky in 1943 reached a high mark. The tonnage was larger than in any previous year and the grades, higher in plant food. The increase in total plant food was very marked because of increased tonnage and higher grades of mixed fertilizer approved by the Food Production Administration as a war economy measure.

The tonnage estimated from tax receipts was more than 164,000 tons, an increase of 12 percent over the tonnage in 1942. Of this total, about 62 percent was mixed fertilizer, 28 percent was superphosphate, and the remainder fertilizer salts and other fertilizer material. In addition, 105,272 tons of superphosphate were distributed to Kentucky farmers by the Agricultural Adjustment Administration of the U. S. Department of Agriculture.

SALES BY GRADE, 1943

A summary of fertilizer sales by grade, as reported by the manufacturers, is given in Table I. The total tonnage, 154,356 tons, in this summary is somewhat less than that calculated from the tax receipts.

TABLE 1.—SALES BY GRADE AS REPORTED BY MANUFACTURERS

Mixed fertilizer	Tons	Other materials	Tons
2-12-6	42,939	Superphosphate 20% ..	24,254
3-9-6	25,631	Superphosphate 18% ..	19,705
0-14-7	13,423	Rock phosphate	3,389
4-10-6	5,954	Nitrate soda	1,195
3-8-7	2,544	Basic slag	560
3-12-12	2,406	Sulfate of ammonia	374
4-12-8	2,370	Sulfate of potash	152
4-8-8	1,927	Bone meal	107
3-12-3	1,835	Muriate of potash	97
0-12-12	1,623	Triple superphosphate ..	62
0-14-4	1,160	Sheep manure	50
4-12-4	872	Calcium cyanamid.....	37
2-14-4	620		
3-9-18	382	Total	49,982
5-10-10	125		
Miscellaneous	563		
Total	104,374		

The tonnage of 20 percent superphosphate distributed by the Agricultural Adjustment Administration was 105,272 tons.

APPROVED GRADES OF MIXED FERTILIZERS, 1944

The list of approved grades of mixed fertilizer for Kentucky for 1944 was limited to sixteen, by the War Food Administration, as a war economy measure. An additional list of four grades of a miscellaneous nature, applicable to all states, was also approved. The list is as follows:

0-12-12	3- 9- 6
0-14- 4	3-12-12
0-14- 7	4-10- 6
0-14-14	4-12- 8
0-20-10	4-12- 4
0-20-20	5-10-10
2-12- 6	6- 8- 6
2-14- 4	10- 6- 4
Nitrate of potash	14- 0-14
Ammonium phosphate	11-48- 0
Ammonium phosphate	16-20- 0
Potassium nitrate	14- 0-44 (or higher)

In addition to the grades of mixed fertilizer, superphosphate, potash salts, and chemical nitrogen materials are available.

HIGH-GRADE FERTILIZER

Manufacturers report that 104,374 tons of mixed fertilizer were sold in Kentucky during 1943, an increase of 25 percent over the amount purchased in 1942. All of the mixed fertilizer sold in 1943 contained a minimum of 18 percent of plant food and about 70 percent of it contained 20 percent or more.

This improved situation is due chiefly to the reduction in the number of grades by the Food Production Administration, with elimination of low-analysis grades. The reduction in the number of grades has helped the manufacturers to offset very adverse labor conditions and has enabled farmers to buy their fertilizer at a lower cost than would have been possible otherwise. The fertilizer industry has cooperated fully in the program.

This emergency program was made as a war economy measure. It would be a good peace-time policy also and we should use the experience gained in this time of forced economy.

Manufacturers, agronomists, and fertilizer-control officials should cooperate and agree upon a group of mixed fertilizer grades to be manufactured and sold after the war. This Department believes that the minimum plant nutrients of any mixture should not be less than 20 percent (sum of nitrogen, phosphoric acid, and potash guaranteed), the minimum nitrogen not less than 3 percent, the minimum phosphoric acid not less than 8 percent, and the minimum potash not less than 4 percent.

The following list of grades of mixed fertilizer is submitted for consideration by manufacturers and agronomists, from which a suitable group may be selected to furnish the plant food requirements of any soil in Kentucky deficient in nitrogen, phosphorus, or potassium: 0-12-12, 0-14-7, 3-12-12, 4-12-8, 5-10-10, 6-8-6, 8-8-8, 10-6-4.

USE OF FERTILIZER*

"Commercial fertilizers" are manufactured products used to supply the plant foods lacking in many soils. The nutrients

*By P. E. Karraker, Agronomist, Soil Technology.

or plant foods commonly supplied are nitrogen, phosphorus, and potassium—the three most likely to be lacking.

A commercial fertilizer may contain only one, any two, or all three of these nutrients. Fertilizers containing two or more of them are called "mixed fertilizers." Those containing only one are called "straight fertilizers." Fertilizers containing only one nutrient may be applied directly to the soil, or used in making mixed fertilizers.

How Nutrients Are Shown

The amount of nutrients in commercial fertilizers is shown by stating the percentages present. For example, sodium nitrate with 16-percent nitrogen contains 16 pounds of nitrogen in 100 pounds of the material. The percentages may be marked on the bag, *but they must always be shown on the Experiment Station guaranty tag attached to the bag.* This tag is the official guarantee and no fertilizer should be bought without it. Percentage of phosphorus in fertilizers is stated as phosphoric acid (P_2O_5) and percentage of potassium is stated as potash (K_2O).

The grade (or analysis) of a mixed fertilizer shows the percentages of nutrients present. Percentage of nitrogen is always stated first, phosphoric acid next, and potash last. A 4-12-8 grade, for example, contains 4 percent of nitrogen, 12 percent of phosphoric acid, and 8 percent of potash.

Need for Nitrogen, Phosphorus, and Potassium

Most soils in Kentucky are low in nitrogen. Constant attention must be given to have enough for crops. Enough nitrogen may be furnished by growing legumes and by returning part or all of the top growth to the land, or by feeding them and returning the manure.

If not, a nitrogen fertilizer should be used provided the expected value of the crop increase exceeds the cost of the fertilizer.

When production of livestock or livestock products is a main farm enterprise and a considerable acreage of legume crops is grown for feed and pasturage, enough nitrogen should be furnished by the legumes for good crop yields.

The phosphorus content of most soils is too low for good crop yields. This is true of all soils in Kentucky except part of the soils in the Bluegrass region, particularly in the Inner Bluegrass, and the most productive bottomland soils. It is very profitable to use fertilizer phosphorus on low-phosphorus soils.

Most soils in Kentucky are well supplied with potassium, but often it does not become available fast enough for large crops. Most of the potassium in crops is in the roots, stalks, stems, and leaves. If these parts of the crop are carefully returned to the soil either as crop residues or as farm manure, fairly good yields of most crops can be produced without using potassium fertilizers. If this is not done, these fertilizers must be used on most soils for continued production of good crops. Tobacco and corn are the first crops to suffer from lack of potassium. Alfalfa is close behind. On soils needing them, both phosphorus and potassium can be used profitably even when crop prices are low.

Whether To Buy Mixed or Straight Fertilizers

If only one nutrient is needed, a fertilizer containing only that nutrient should be bought. If more than one nutrient is needed, the cost will be more in mixed fertilizers than in the straight fertilizers because of certain additional costs in manufacturing the mixed fertilizers. Mixed fertilizers, however, are usually in better condition for applying than most straight fertilizers, and there is some advantage in having all the nutrients in one material.

How To Tell Which Fertilizer and the Quantity to Buy

In determining which fertilizer or fertilizers and the quantity to buy, one should first decide what plant foods and the amounts of each are needed per acre. Then from the analysis a fertilizer can be selected, and the rate of application and the amount necessary to buy, can be figured.

Nitrogen.—Fertilizer nitrogen will have most of its effect on the immediate crop. In a seasonable year, on soil needing nitrogen but not lacking phosphorus and potassium, the proper application of nitrogen should give increases as large as the

following: corn, one bushel for each two to three pounds applied; wheat, one bushel for each three pounds applied; tobacco, five pounds for each pound applied; and grass hay crops, 50 pounds for each pound applied. On land capable of giving moderate to high yields without addition of nitrogen, smaller increases than these are to be expected. Estimate the crop yield if no nitrogen is used, and apply enough to obtain the yield wanted. Nitrogen fertilizers usually are not profitable on meadows and pastures where legumes make up over half the herbage.

Phosphorus.—On low-phosphate land phosphorus should be added in fertilizers at the rate of 20 pounds of phosphoric acid per acre per year. Half this amount should be enough on soils of moderate phosphorus content in the Bluegrass region. None is needed on the high-phosphorus soils of the Inner Bluegrass. The entire quantity for a rotation usually should be applied to the small-grain crop in which the legumes and grasses are seeded. Another application, however, furnishing 60 to 80 pounds of phosphoric acid per acre should be made on tobacco. Also before a new seeding of alfalfa, an application should be made to furnish 20 pounds per acre of phosphoric acid for each year the crop is to occupy the land. Permanent pastures should be topdressed every few years with enough phosphorus fertilizer to add 10 pounds of phosphoric acid per acre per year.

Potassium.—For most crops, where potassium fertilizer is needed, it should be applied at a rate to supply a total of 25 to 50 pounds of potash per acre during a 3- to 4-year rotation. Usually this can be applied most conveniently on the small grain in the rotation. If this has not been done and potassium deficiency is expected, a potassium fertilizer also should be applied on corn at a rate to furnish 20 to 40 pounds of potash per acre. Also enough potassium fertilizer should be applied on tobacco to supply 40 to 80 pounds of potash per acre unless it is certain that the soil has enough potassium for tobacco. For a new seeding of alfalfa, 20 to 30 pounds of potash should be applied for each year the crop is to occupy the land. On limed land well supplied with phosphorus, it probably will be profitable to topdress permanent pasture with a potassium

fertilizer every few years at the rate of 10 pounds of potash per acre per year.

Supplement Manure and Tobacco Stalks with Phosphate

An application of 10 to 15 tons of average farm manure per acre or 1½ to 2½ tons of tobacco stalks per acre in the rotation will supply the nitrogen and potassium needed for good yields of general farm crops in Kentucky. But as these materials are low in phosphate, 300 pounds per acre of superphosphate should be added except on those soils in the Bluegrass region which have a moderate to high phosphate content.

Nitrogen fertilizers such as ammonium nitrate, ammonium sulfate, and sodium nitrate, are effective when applied to the surface of the soil for small grain, hay, and pasture crops or as side dressings for row crops. They are soluble and are carried into the soil by rain. However, in dry seasons they are most effective for row crops when plowed under or applied at the bottom of the furrow in plowing, but this should be done after the first of April, because nitrogen may be lost by leaching if applied earlier. These fertilizers when placed deep also stimulate growth of seedling weeds much less than when placed shallow.

Phosphorus and potassium are held by the soil where placed and hence are not very effective on the immediate crop unless placed in the soil so as to be easily accessible to plant roots. These fertilizer constituents, unless applied heavily, are much less effective on the immediate crop when mixed with the soil than when concentrated in bands.

How to Apply Commercial Fertilizer

On tobacco, commercial fertilizer, unless applied heavily (more than 800 pounds per acre) is most effective applied in two bands, one on each side of the row, 3 to 4 inches from the row and at least three inches below the surface of the soil. The fertilizer should not come in contact with the roots of the plants when set, and should be deep enough to be in moist soil during dry periods. Special fertilizer attachments to setters apply fertilizers fairly well in this way, or a one-row fertilizer dis-

tributor can be used. The application should be made shortly before, during, or soon after setting, except that nitrogen is fairly effective applied later.

When more than 800 pounds is applied, it may be best to apply only 200 or 300 pounds at the row and distribute the rest more uniformly. A more even residual effect of the fertilizer on following crops is obtained in this way. The part not to be applied at the row can be broadcast before plowing and plowed under; or, better yet, applied at the bottom of the furrow in plowing. Attachments to plows to do this can be bought or made. Less preferably, the fertilizer may be broadcast after plowing and disked in as deep as possible. This does not place the fertilizer deep enough in dry seasons. If applied after plowing, drilling in deep with a grain drill may be better.

On corn, fertilizer attachments to planters apply fertilizer with satisfactory results up to 200 or 300 pounds per acre at the hill or 500 pounds along the row. When more is applied, stand and growth of the young plants may be injured in dry seasons. For heavier applications, use one of the methods mentioned in the foregoing paragraph.

RELATION BETWEEN SOIL FERTILITY AND QUALITY OF FEEDS GROWN

How to grow good yields of high-quality food and feed crops, rich in the mineral elements essential for both man and livestock, is one of the great problems of agriculture. Knowledge that infertile, worn-out soil will not return good yields is, of course, nearly as old as farming itself. But the fact that crops grown on soil capable of producing satisfactory yields may be inferior as feed or food because they are deficient in some nutrient element for which they are dependent on the soil, is less generally known and is only beginning to receive the attention it deserves. Experiments have shown that where the soil is deficient in some essential nutrient, the crops grown, though satisfactory in yield, may nevertheless be inferior as feed, and may lead to unthriftiness of livestock.¹ In Tennessee, for example, legume hay produced on soil where phosphorus

¹U. S. Dept. Agr. Misc. Pub. 369, *The Mineral Composition of Crops With Particular Reference to the Soils in Which They Were Grown*. 1941.

was deficient was too low in phosphorus to give the results generally expected of legumes for growing or producing livestock, unless supplemented by some other source of phosphorus.¹ Improvement of the feeding quality of crops is therefore another important reason for use of the proper fertilizers, where needed.

For good yields of high-quality plants the mineral nutrients must not only be present in the soil, but they must be in proper amounts and in available form. Some are required in relatively large amounts; some only in small amount. Nitrogen, phosphorus, potassium, and calcium are required in largest amounts and, of all the nutrients, are most likely to be needed as soil amendments; consequently these (except calcium) are the nutrients usually guaranteed in commercial fertilizers. Magnesium, sulfur, iron, manganese, boron, copper, zinc, and probably molybdenum also are essential nutrients of plants but they are needed only in relatively small amounts. Animals need, in addition, iodine, cobalt, sodium, and chlorine, which are obtained from the soil indirectly through feed plants, though sodium and chlorine are supplied chiefly in common salt. Iron, manganese, boron, copper, zinc, iodine, and cobalt become toxic if present in quantities slightly larger than those required. Fluorine, barium, arsenic, lead, and selenium are highly toxic at low percentages.

Present knowledge of the need for "minor elements" in Kentucky soils does not justify general recommendations for inclusion of them in fertilizer mixtures. There are some indications that the application of these nutrients to soils where they are not needed might, in time, do much more harm than good. Best practice seems to favor the use of a minor-element fertilizer only when a definite need for a particular element has been demonstrated. Most Kentucky soils seem, according to our present knowledge, to be supplied with these minor elements for ordinary farm crops, though boron has been found deficient for alfalfa and some fruits in some soils. These crops on these soils have responded to fertilization with borax.

¹ Investigation by Tennessee Agricultural Experiment Station, "High-phosphorus vs. low-phosphorus red clover hay for growing calves."

FARMERS' GUIDE

A farmer who buys fertilizer has several aids in selecting the right kind. He should know the needs of his soil, but if he does not he should consult his County Agent or the Experiment Station. He should read the guaranty tag carefully and base his selection on the information given on the tag. Then by consulting the tables of results in this bulletin he can gain an idea of the reliability of the manufacturer. If the manufacturer's record is good, the fertilizer is likely to be what it is represented to be on the tag. If his record is bad, then the fertilizer is likely to be poor.

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

FUNCTION OF NITROGEN, PHOSPHORUS, AND POTASSIUM IN PLANT NUTRITION

The percentages of *guaranteed* nutrients present in a commercial fertilizer are printed on the state tag as nitrogen, phosphoric acid, and potash. These are the nutrients needed in greatest amount and most likely to be deficient in soils. Some of the functions of these nutrients are the following:

Nitrogen promotes leaf and stem development, produces rapid early growth and, in proper amount, aids in maturing the plant. It adds to the percentage of protein in the plant. In excess it may delay maturity. The principal sources of water-soluble nitrogen in fertilizers are ammonium sulfate, ammonia liquors, sodium nitrate, calcium cyanamid, and urea. The sources of water-insoluble nitrogen are bone, tankage and similar materials. Most of the nitrogen in mixed fertilizers is water soluble.

Phosphorus promotes root formation, acts as a balancer of an excess of nitrogen, aids maturity of plants and fruiting, and increases the ratio of grain and fruit to the plant stalk. It is usually present in fertilizers in various forms of calcium and ammonium phosphates. It is guaranteed and reported as phosphoric acid (P_2O_5) of which 43.7 percent is phosphorus. Available phosphoric acid is that part of this plant nutrient in a fertilizer which can be readily utilized by plants. The per-

centage of *available* phosphoric acid in mixed fertilizers and superphosphate is guaranteed and printed on the guaranty tag. The percentage of *total* phosphoric acid in bone, tankage, rock phosphate, basic slag, and similar materials is guaranteed and printed on the guaranty tag.

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

FARMERS' SAMPLES

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

INFORMATION AND GUARANTY TAG

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

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

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

The estimated value, or index of relative value, is determined by giving a value to each component, which value represents the cost of that component to the manufacturer plus an equitable share of the total cost of placing the fertilizer on the market. The present values have been in use for some time and it is believed that they should be changed somewhat under the present conditions. Unquestionably, they will have to be changed after the war is over. The present values are:

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

A unit is 20 pounds, or 1 percent of a ton. If the unit value of each component is multiplied by the percent of the component in the fertilizer and all the results are added, the estimated value per ton, or index of relative value, is obtained. This valuation is used in comparing the value of samples analyzed with the manufacturers' guaranties. The valuation depends upon the actual content of the fertilizer components and should not be confused with the crop-producing power of the fertilizer.

Calculation for a 4-12-4 fertilizer:

Nitrogen	4 x 3.5 equals	14.0
Available phosphoric acid	12 x 1.2 equals	14.4
Potash	4 x 1.2 equals	4.8
		33.2
Index of relative value		33.2

PENALTIES FOR VIOLATING THE FERTILIZER LAW

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

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

POINTS A FARMER SHOULD CONSIDER IN BUYING FERTILIZER

1. Ascertain the needs of the soil and what will supply them. No fertilizer will give proper results if it does not contain the plant nutrients in which the soil is deficient. If in doubt as to the kind of fertilizer the soil needs, consult the county agent or the Experiment Station. See page 10.

2. Be guided by the information given on the state guaranty tag. See page 11.

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

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

POINTS A DEALER SHOULD CONSIDER

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

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

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

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

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

POINTS A MANUFACTURER SHOULD CONSIDER

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

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

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

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

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

5. All fertilizers must equal or exceed the guaranties made

by the manufacturers. An excess of one plant nutrient does not compensate for a deficiency of another.

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

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

8. Consider the needs of the farmers; cooperate with and help them to get high-grade fertilizers suitable to the needs of their soils; unite with one another in reducing the multiplicity of brands and in eliminating low-grade fertilizers because of their high and uneconomical cost in productiveness; cooperate with the Experiment Station in teaching that the important constituents cost less in high-grade fertilizers than in the low grades, and that their intelligent use means better agriculture, larger use of fertilizers, and better and more successful living for the farmer.

Could not and should not every progressive manufacturer who has at heart the interest of the fertilizer business as a whole, as well as his own, and of the farmers who support this business, and of the state, get behind a progressive program of this sort?

EXPLANATION OF THE TABLES

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

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

If an analysis shows a deficiency of more than one-fourth of 1 percent below the amount claimed for nitrogen, phosphoric acid, or potash, or if the relative value is 4 percent or more below the guaranty, the result is indicated in bold-face type.

TABLE 2—STANDING OF MANUFACTURERS, BASED ON OFFICIAL SAMPLES ANALYZED IN 1943.

COMPANY	Number of inspection samples	Number equal to guaranty in value	Number 4 percent or more low in value	Nitrogen, phosphoric acid, and potash	
				Number of analyses made	Number of deficiencies of more than $\frac{1}{4}$ of 1%
American Agricultural Chemical Company	60	57	0	137	2
Armour Fertilizer Works	68	57	2	167	14
Louisville Fertilizer Company	1	1	0	3	0
Tennessee Chemical Company	8	7	0	16	2
The Barrett Division, Allied Chemical and Dye Corp.....	1	1	0	1	0
Buhner Fertilizer Company.....	14	13	0	36	1
Cumberland Chemical Company	24	22	0	51	5
Darling and Company	2	1	0	4	0
Davison Chemical Corporation					
Hopkins Fertilizer Division	33	33	0	90	2
Read Phosphate Division.....	46	34	5	102	17
Federal Chemical Company.....	72	60	1	176	20
Hutson Chemical Company	3	2	1	9	4
International Minerals and Chemical Corporation	42	39	0	96	6
Knoxville Fertilizer Company....	48	46	0	111	4
North American Fertilizer Company	42	23	8	110	27
National Chemical Company	1	1	0	2	0
Price Chemical Company	39	39	0	91	2
Consolidated Chemical Company	7	6	0	16	2
Ruhm Phosphate and Chemical Company	1	1	0	1	0
Swift and Company Fertilizer Works	21	21	0	58	1
Tennessee Corporation	13	10	0	34	1
Thomson Phosphate Company..	1	1	0	1	0
Virginia-Carolina Chemical Corporation	54	48	0	122	6
Totals	601	523	17	1434	116

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The American Agricultural Chemical Co., Cincinnati, O.		
5664	4-10-6 (Muriate)	Harlan Fruit Co., Harlan
5854		W. E. Bibb, Sacramento
5703	4-10-6 (Sulfate)	L. C. McLoney & Sons, Cynthiana
5704	3-12-3 (Muriate)	J. H. Fedders & Son, Covington
5855		Geo. W. Hill & Co., Covington
5665	3-9-6 (Muriate)	Middlesboro Grocery Co., Middlesboro
5705		L. F. Wellman, Louisa
5856		Norris Hardware & Seed Co., Henderson
5857		Dairyman's Feed & Supply Co., Mayfield
5706	3-9-6 (Sulfate)	L. C. McLoney & Son, Cynthiana
5858		Lebanon Carriage & Implement Co., Lebanon
5859		Caulk Hardware Co., Campbellsville
5707	Victory Garden 3-8-7 (Muriate)	Geo. W. Hill & Co., Covington
5708		John A. Sheehan, Falmouth
5666	2-12-6 (Muriate)	Lebanon Carriage & Implement Co., Lebanon
5709		Pruitt & Pruitt, Halfway
5710		Herman L. Gibson, Upton
5711		J. W. Schoolcraft, Somerset
5734		L. F. Wellman, Louisa
5860		Robert James, Franklin
5861		C. B. Carden, Hartford
5862		E. T. Walker Co., Glendale
6109		J. W. Schoolcraft, Somerset
6110		Triplett Store, S. Corbin
6111		Lebanon Carriage & Implement Co., Lebanon
6112		C. O. Bibb, Sacramento
6113		Raymond Martin, Utica
6114		Henderson & Hardy Co., Shepherdsville
6216		Clarence Rowland, Owensboro
6217		C. B. Carden, Hartford
5712	2-12-6 (Sulfate)	C. V. King, Oakland
5863		Bobbitt and Hudson, Paris
5864		Woodson Lewis, Greensburg
5865		J. H. McClure, Springfield
5866		H. W. Smith, Horse Cave
5867		C. B. Goering, Hawesville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
4.04	3.94	10.30	5.86	.....	33.2	33.5	5664
3.66	3.61	10.32	6.21	.....	33.2	32.6	5854
3.96	3.84	10.47	6.29	yes	33.2	34.0	5703
3.11	2.97	12.70	3.55	.....	28.5	30.4	5704
3.19	3.02	12.32	3.74	.....	28.5	30.4	5855
3.15	3.06	9.20	6.38	.....	28.5	29.7	5665
3.17	3.08	9.42	6.28	.....	28.5	29.9	5705
3.10	3.00	9.00	6.33	.....	28.5	29.3	5856
3.23	3.14	9.30	6.52	.....	28.5	30.3	5857
3.01	2.89	9.55	6.00	yes	28.5	29.2	5706
3.10	2.97	10.22	5.78	yes	28.5	30.1	5858
3.03	2.91	9.42	6.00	yes	28.5	29.1	5859
3.00	2.92	8.32	7.08	.....	28.5	29.0	5707
3.00	2.91	9.37	7.18	.....	28.5	30.4	5708
2.12	2.07	12.00	6.02	.....	28.6	29.0	5666
2.04	1.96	12.40	6.40	.....	28.6	29.7	5709
2.01	1.89	12.67	6.53	.....	28.6	30.1	5710
2.00	1.87	12.10	6.16	.....	28.6	28.9	5711
2.13	2.04	12.12	6.06	.....	28.6	29.3	5734
2.00	1.80	12.25	6.03	.....	28.6	28.9	5860
2.00	1.79	12.35	6.13	.....	28.6	29.2	5861
2.04	1.93	12.32	6.27	.....	28.6	29.4	5862
1.88	1.84	11.70	6.31	.....	28.6	28.2	6109
2.07	1.91	12.55	6.62	.....	28.6	30.3	6110
1.81	1.74	12.00	6.48	.....	28.6	28.5	6111
1.94	1.87	12.10	6.52	.....	28.6	29.1	6112
1.89	1.76	12.77	6.58	.....	28.6	29.8	6113
1.87	1.80	11.97	6.21	.....	28.6	28.4	6114
1.91	1.77	12.72	6.64	.....	28.6	29.9	6216
1.98	1.90	12.15	6.35	.....	28.6	29.1	6217
2.06	1.95	12.65	6.04	yes	28.6	29.6	5712
2.04	1.88	12.27	5.91	yes	28.6	29.0	5863
2.10	1.93	12.00	6.01	yes	28.6	29.0	5864
2.00	1.83	12.45	5.85	yes	28.6	29.0	5865
2.02	1.88	12.67	6.03	yes	28.6	29.5	5866
2.08	1.92	12.07	6.19	yes	28.6	29.2	5867

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The American Agricultural Chemical Co.—Continued		
5713	0-14-7 (Muriate)	Baughman Milling Co., Stanford
5714		J. W. Schoolcraft, Somerset
5715		J. J. Hughes, Campton
6115		Corbett Hardware Co., Elizabethtown
6218		Cayce-Yost Co., Hopkinsville
5716	Superphosphate 20%	Fountain Run Feed Co., Fountain Run
5717		J. W. Schoolcraft, Somerset
5868		W. M. Humphrey, Nuckols
5869		J. H. McClure, Springfield
5870		E. T. Walker Co., Glendale
5871		Lebanon Carriage & Implement Co., Lebanon
5718	Superphosphate 18%	Baughman Milling Co., Stanford
5719		Paintsville Grocery Co., Paintsville
5872		Denton Hardware Co., Madisonville
5873		J. R. Russell, Hartford
6116		W. M. Humphrey, Nuckols
6117		A. T. Hayes Hardware Co., Glendale
6118		Robert James, Franklin
6119		Crab Orchard Lumber Co., Crab Orchard
6120		Lebanon Carriage & Implement Co., Lebanon
6121		J. W. Schoolcraft, Somerset
6219		C V. King, Oakland
6220		H. D. Jones, Glasgow
6221		Denton Hardware Co., Madisonville
Armour Fertilizer Works, Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.		
5874	"Big Crop" 4-12-8 (Muriate)	The T. J. Turley Co., Owensboro
5875		Slaughtersville Mercantile Co., Slaughtersville.....
5876		R. A. Wilson, Russellville
5720	Armour's 4-12-8 (Sulfate)	J. C. Everett and Co., Maysville
5721		H. B. Willoughby, Richmond
5877		Taylor County Supply Co., Campbellsville
5878		John B. Penn and Co., Georgetown
5879		A. W. Jolly, Cloverport
5722	"Big Crop" 4-12-4 (Muriate)	United Supply Co., Lynch
5880		Willis Galloway, Sacramento
6222	"Big Crop" 4-10-6 (Muriate)	The T. J. Turley Co., Owensboro

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	13.85	7.37	.....	25.2	25.5	5713
.....	.....	14.05	6.90	.....	25.2	25.2	5714
.....	.....	14.57	7.25	.....	25.2	26.2	5715
.....	.....	14.55	7.29	.....	25.2	26.2	6115
.....	.....	14.40	7.24	.....	25.2	26.0	6218
.....	.....	20.72	.....	.....	24.0	24.9	5716
.....	.....	20.37	.....	.....	24.0	24.4	5717
.....	.....	21.22	.....	.....	24.0	25.5	5868
.....	.....	20.55	.....	.....	24.0	24.7	5869
.....	.....	20.70	.....	.....	24.0	24.8	5870
.....	.....	20.52	.....	.....	24.0	24.6	5871
.....	.....	18.60	.....	.....	21.6	22.3	5718
.....	.....	18.90	.....	.....	21.6	22.7	5719
.....	.....	19.47	.....	.....	21.6	23.4	5872
.....	.....	18.32	.....	.....	21.6	22.0	5873
.....	.....	19.65	.....	.....	21.6	23.6	6116
.....	.....	19.37	.....	.....	21.6	23.2	6117
.....	.....	19.70	.....	.....	21.6	23.6	6118
.....	.....	18.07	.....	.....	21.6	21.7	6119
.....	.....	18.55	.....	.....	21.6	22.4	6120
.....	.....	18.85	.....	.....	21.6	22.6	6121
.....	.....	19.50	.....	.....	21.6	23.4	6219
.....	.....	18.65	.....	.....	21.6	22.4	6220
.....	.....	18.15	.....	.....	21.6	21.8	6221
4.20	3.49	11.15	8.19	.....	38.0	37.9	5874
3.39	2.79	11.20	9.53	.....	38.0	36.7	5875
3.98	3.49	11.37	7.22	.....	38.0	36.2	5876
4.06	3.10	12.62	8.98	yes	38.0	40.1	5720
3.94	3.01	12.50	8.58	yes	38.0	39.1	5721
4.08	3.42	12.50	8.79	yes	38.0	39.8	5877
3.89	3.05	12.65	8.93	yes	38.0	39.5	5878
4.20	3.42	12.45	8.12	yes	38.0	39.4	5879
3.85	3.48	12.62	4.42	.....	33.2	33.9	5722
3.14	2.87	12.00	4.97	.....	33.2	31.4	5880
4.14	3.70	9.52	6.20	.....	33.2	33.4	6222

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Armour Fertilizer Works—Continued		
5723	"Big Crop" 3-12-12 (Muriate)	R. P. Clary, Fullerton
5724	"Big Crop" 3-9-6 (Muriate)	United Supply Co., Lynch
5881		McWhorter & Thrasher, Albany
5882		Denton Hardware Co., Madisonville
5725	Armour's 3-9-6 (Sulfate)	Barren County Grocery & Hdw. Co., Glasgow
5726		Ideal Hardware Co., Glasgow
5727		Sphar and Co., Winchester
5728		Hatter Hardware Co., Franklin
5729		J. C. Everett & Co., Maysville
5730		J. W. Schoolcraft, Somerset
5731		T. E. Clausen, Bonnieville
5732		Upton Hardware Store, Upton
5733		Jasper Produce Co., Science Hill
5883		Ed. Allen, Smith's Grove
5884		E. W. Simpson, Owenton
5885		Taylor County Supply Co., Campbellsville
5886	Armour's Victory Garden 3-8-7 (Muriate)	Owen Hulett, Williamstown
5667	"Big Crop" 2-12-6 (Muriate)	Jasper Produce Co., Science Hill
5735		Louisa Supply Co., Louisa
5736		Ravenna Grocery Co., Ravenna
5887		Townsend's Store, Dixon
5888		Borders Hardware Co., Lebanon
5889		Wallace Hardware Co., Central City
5890		Wilson Hardware Co., Henderson
5891		Herbert Hardesty, Whitesville
6122		Hatter Hardware Co., Franklin
6123		Henderson & Hardy Co., Shepherdsville
6124		J. C. Everett & Co., Maysville
6125		Jasper Produce Co., Science Hill
6126		Somerset Produce Co., Somerset
6127		Taylor County Supply Co., Campbellsville
6223		C. E. Martin & Co., Greenville
5668	"Big Crop" 0-14-7 (Muriate)	Salyersville Grocery Co., Salyersville
5737		Jasper Produce Co., Science Hill
5892		Clyde E. Dean, Augusta
6128		T. M. Lee & D. Y. Bybee, Cave City
6129		Jasper Produce Co., Science Hill
6130		Somerset Produce Co., Somerset
6131		J. C. Everett & Co., Maysville
6224		Farmers Supply Co., Hodgenville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
perct.	perct.	perct.	perct.				
3.12	2.89	12.72	11.43	.....	39.3	39.9	5723
2.95	2.80	9.10	5.80	.....	28.5	28.2	5724
3.14	3.02	9.12	6.37	.....	28.5	29.6	5881
2.92	2.64	9.47	6.38	.....	28.5	29.2	5882
3.08	2.30	9.27	6.62	yes	28.5	29.8	5725
2.93	2.84	8.75	6.38	no ¹	28.5	28.4	5726
2.94	2.26	8.97	5.67	yes	28.5	27.9	5727
3.01	2.37	9.35	6.52	no ²	28.5	29.6	5728
3.03	2.27	9.97	6.27	yes	28.5	30.1	5729
2.89	2.25	9.15	6.03	yes	28.5	28.3	5730
3.00	2.36	9.10	6.24	yes	28.5	28.9	5731
3.09	2.39	9.00	6.05	yes	28.5	28.9	5732
3.00	2.20	9.00	6.27	yes	28.5	28.8	5733
3.29	2.53	9.42	5.75	yes	28.5	29.7	5883
3.00	2.31	9.27	5.80	yes	28.5	28.6	5884
3.06	2.34	9.25	6.21	yes	28.5	29.3	5885
2.91	2.74	8.75	7.02	.....	28.5	29.1	5886
2.10	1.70	11.95	6.09	.....	28.6	29.0	5667
1.96	1.67	12.42	6.11	.....	28.6	29.1	5735
1.98	1.56	12.00	6.23	.....	28.6	28.8	5736
2.03	1.76	11.60	6.04	.....	28.6	28.3	5887
1.95	1.74	12.80	6.65	.....	28.6	30.2	5888
2.03	1.82	11.47	5.96	.....	28.6	28.0	5889
2.28	2.02	11.90	6.08	.....	28.6	29.6	5890
1.95	1.53	11.47	6.85	.....	28.6	28.8	5891
2.48	2.08	12.70	5.98	.....	28.6	31.1	6122
2.23	2.04	11.95	6.41	.....	28.6	29.8	6123
2.15	1.92	12.67	6.31	.....	28.6	30.3	6124
2.27	2.15	11.85	6.41	.....	28.6	29.9	6125
2.13	1.97	11.80	6.31	.....	28.6	29.2	6126
2.28	2.13	12.27	6.03	.....	28.6	29.9	6127
1.93	1.56	13.12	5.96	.....	28.6	29.7	6223
.....	.....	13.95	7.04	.....	25.2	25.2	5668
.....	.....	14.10	7.45	.....	25.2	25.9	5737
.....	.....	14.25	7.47	.....	25.2	26.1	5892
.....	.....	14.65	7.29	.....	25.2	26.3	6128
.....	.....	14.10	7.01	.....	25.2	25.3	6129
.....	.....	14.10	7.05	.....	25.2	25.4	6130
.....	.....	15.05	7.29	.....	25.2	26.8	6131
.....	.....	14.52	7.14	.....	25.2	26.0	6224

¹ All potash from muriate.

² Excess muriate equivalent to 1.43 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Armour Fertilizer Works—Continued		
6132	"Big Crop" 0-14-4 (Muriate)	Scottsville Feed Co., Scottsville.....
6133		Taylor County Supply Co., Campbellsville
5738	"Big Crop" 0-12-12 (Muriate)	Hatter Hardware Co., Franklin.....
5893		W. C. Dicken, Mentor
5894		Taylor County Supply Co., Campbellsville
5739	"Big Crop" Superphosphate 20%	G. C. Cornett, Cumberland
5740		J. H. Peterson, Hiseville
5895		Owen Hulett, Williamstown
5896		Irvington Truck Line, Irvington
5897		Carlisle Mill & Supply Co., Carlisle
5898		Taylor County Supply Co., Campbellsville
5899		Walter McGlasson, Horse Cave
6134	"Big Crop" Superphosphate 18%	Somerset Produce Co., Somerset
6135		Humphrey Brothers, Bloomfield
6136		Parman Brothers, London
6225		R. A. Wilson Co., Russellville
5900	Armour's Nitrate of Soda 16%....	John B. Penn & Co., Georgetown
Louisville Fertilizer Co., Div. Armour & Co., Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.		
6018	Louisville 2-12-6 (Muriate)	Slaughtersville Mercantile Co., Slaughters
Tennessee Chemical Co., Div. Armour & Co., Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.		
6067	Ox 3-9-6 (Muriate)	M. L. Levi, Pembroke
6068	Ox 2-12-6 (Muriate)	Young Hardware Co., Hopkinsville
6256		V. B. Nuckols, Elkton
6069	Ox 0-14-7 (Muriate)	Slaughtersville Mercantile Co., Slaughters
6070	Ox Superphosphate 20%	Sexton-Douglas Hardware Co., Murray
6071		M. L. Levi, Pembroke
6257	Ox Superphosphate 18%	V. B. Nuckols, Elkton
The Barrett Div., Allied Chem. & Dye Corporation, New York, N. Y.		
6226	Arcadian the American Nitrate of Soda 16 %	Sexton-Douglas Hardware Co., Murray

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	12.82	4.79	.....	21.6	21.1	6132
.....	14.00	4.35	.....	21.6	22.0	6133
.....	12.72	10.35	.....	28.8	27.7	5738
.....	12.50	11.80	.....	28.8	29.2	5893
.....	12.35	12.66	.....	28.8	30.0	5894
.....	20.05	.....	.....	24.0	24.1	5739
.....	20.40	.....	.....	24.0	24.5	5740
.....	20.60	.....	.....	24.0	24.7	5895
.....	20.47	.....	.....	24.0	24.6	5896
.....	20.32	.....	.....	24.0	24.4	5897
.....	20.55	.....	.....	24.0	24.7	5898
.....	20.67	.....	.....	24.0	24.8	5899
.....	17.97	.....	.....	21.6	21.6	6134
.....	17.85	.....	.....	21.6	21.4	6135
.....	18.37	.....	.....	21.6	22.0	6136
.....	18.00	.....	.....	21.6	21.6	6225
16.20	44.8	45.4	5900
2.13	1.87	11.97	6.38	.....	28.6	29.5	6018
2.89	2.44	10.02	6.63	.....	28.5	30.1	6067
1.98	1.78	11.60	6.33	.....	28.6	28.5	6068
2.13	1.86	12.00	5.76	.....	28.6	28.8	6256
.....	13.90	7.40	.....	25.2	25.6	6069
.....	20.45	.....	.....	24.0	24.5	6070
.....	20.05	.....	.....	24.0	24.1	6071
.....	18.02	.....	.....	21.6	21.6	6257
16.20	44.8	45.4	6226

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
The Buhner Fertilizer Co., Seymour, Ind.		
5741	Buhner's 4-12-8 (Muriate)	R. W. Lafferty, Rowletts
5669	Buhner's 3-9-6 (Muriate)	Allison Shipp, Campbellsville
5742		Fulkerson Bros., Sonora
5901	Buhner's 3-9-6 (Sulfate)	E. C. Miller, Buechel
5902	Buhner's 2-12-6 (Muriate)	Farmers Supply Co., Danville
6137		Beck & Harris, Jamestown
6138		Allison Shipp, Campbellsville
6227		Aaron L. Moore & Son, Leitchfield
5743	Buhner's 0-14-7 (Muriate)	Beck & Harris, Jamestown
5903		Allison Shipp, Campbellsville
6139		Beck & Harris, Jamestown
6228		Aaron L. Moore & Son, Leitchfield
5744	Buhner's 0-12-12 (Muriate)	Beck & Harris, Jamestown
5904		Joe Fister, Lexington
Cumberland Chemical Co., Hopkinsville, Ky.		
5910	Cumberland 5-10-10 (Muriate)	Economy Feed Store, Murray
5911		Young Hardware Co., Hopkinsville
5912	Cumberland 3-9-6 (Muriate)	Mose Dunning, Crofton
5913		T. W. Hall, Elkton
5914		V. K. Rudd, Hanson
5915	Victory Garden Fertilizer 3-8-7 (Muriate)	W. L. Kimbrough & Son, Guthrie
5916		Trigg County Trading Co., Cadiz
5917	Cumberland 2-12-6 (Muriate)	Sturgis Implement & Hdw. Co., Sturgis
5918		Clark & Vaughn, Clay
5919		Green River Milling Co., S. Carrollton
5920		Mose Dunning, Crofton
6229		Mose Dunning, Crofton
5921	Cumberland 0-14-7 (Muriate)	Smith-Reynolds Co., Slaughters
5922		C. W. Buckner, Pembroke
6141		Fox Hardware Store, Madisonville
5923	Cumberland Superphosphate 20%	V. K. Rudd, Hanson
5924		McLean County Hardware Co., Calhoun
5925		W. G. Putman, Nortonville
5926		C. S. Thomas, Marion
6230		Trigg County Trading Co., Cadiz
6231		Greenville Implement Co., Greenville
6232		The Planters Hardware Co., Hopkinsville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.76	3.65	12.57	9.05	.....	38.0	39.1	5741
2.81	2.66	9.50	8.00	.....	28.5	30.8	5669
2.92	2.75	9.45	7.82	.....	28.5	30.9	5742
3.17	3.01	9.67	6.70	no ¹	28.5	30.7	5901
2.10	1.93	12.67	6.23	.....	28.6	30.0	5902
2.12	1.93	12.20	5.96	.....	28.6	29.2	6137
2.02	1.76	13.37	5.83	.....	28.6	30.1	6138
2.02	1.87	12.17	5.84	.....	28.6	28.7	6227
.....	.....	13.92	8.46	.....	25.2	26.9	5743
.....	.....	14.47	6.32	.....	25.2	24.9	5903
.....	.....	14.12	7.60	.....	25.2	26.1	6139
.....	.....	14.40	7.57	.....	25.2	26.4	6228
.....	.....	12.20	13.14	.....	28.8	30.4	5744
.....	.....	12.40	12.03	.....	28.8	29.3	5904
5.10	4.95	10.22	10.98	.....	41.5	43.3	5910
5.22	5.08	10.00	10.86	.....	41.5	43.3	5911
3.17	3.12	9.90	6.27	.....	28.5	30.5	5912
3.06	3.00	10.05	5.93	.....	28.5	29.9	5913
3.03	2.97	9.50	6.03	.....	28.5	29.2	5914
3.05	2.97	9.10	6.93	.....	28.5	29.9	5915
3.22	3.14	8.42	7.08	.....	28.5	29.9	5916
2.22	2.17	13.12	6.23	.....	28.6	31.0	5917
2.19	2.14	13.30	5.37	.....	28.6	30.1	5918
2.12	2.02	12.52	5.94	.....	28.6	29.6	5919
2.19	2.13	12.95	6.17	.....	28.6	30.6	5920
1.70	1.63	13.55	5.80	.....	28.6	29.2	6229
.....	.....	14.72	7.04	.....	25.2	26.1	5921
.....	.....	14.52	6.66	.....	25.2	25.4	5922
.....	.....	14.85	8.91	.....	25.2	28.5	6141
.....	.....	21.65	.....	.....	24.0	26.0	5923
.....	.....	20.40	.....	.....	24.0	24.5	5924
.....	.....	20.12	.....	.....	24.0	24.1	5925
.....	.....	20.40	.....	.....	24.0	24.5	5926
.....	.....	19.62	.....	.....	24.0	23.5	6230
.....	.....	19.70	.....	.....	24.0	23.6	6231
.....	.....	20.37	.....	.....	24.0	24.4	6232

¹ Excess muriate equivalent to 5.29 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Cumberland Chemical Co.—Continued		
6233	Cumberland Superphosphate	
	18%	Ratliff Hardware Co., Princeton
6234		Ruby Distributing Co., Central City
Darling & Company, Chicago, Ill.		
5927	Darling's 2-12-6 (Muriate)	Farmers Supply Co., White Plains
5928	Darling's Superphosphate	
	20%	Farmers Supply Co., White Plains
The Davison Chemical Corporation, Hopkins Fertilizer Div., New Albany, Ind.		
5929	Old Time 4-12-8 (Muriate)	Climax Roller Mills, Shelbyville
5671	Old Time 4-10-6 (Muriate)	Buechel Produce Exchange, Buechel
5745		G. C. McPhetridge, London
5930		Duncan & Theiss, LaGrange
5746	Old Time 3-12-3 (Muriate)	W. S. Allen, Liberty
5672	Old Time 3-9-6 (Muriate)	Buechel Produce Exchange, Buechel
5747		R. D. Reynolds, Cave City
5931		Wm. P. Miller & Son, Shively
5932		Blue Grass Produce Co., Carlisle
5933		Moore's Feed Store, Shively
5934		Duncan & Theiss, LaGrange
6142		Climax Roller Mills, Shelbyville
6143		J. A. Bennett, Bloomfield
5935	Old Time 3-9-6 (Sulfate)	W. D. McIntyre, Millersburg
5748	Victory Garden	
	3-8-7 (Muriate)	G. C. McPhetridge, London
5936		Buechel Produce Exchange, Buechel
5937		Conner, Hayden Co., Bardstown
5749	Old Time 2-12-6 (Muriate)	Lillard Miles, Nicholasville
5750		G. C. McPhetridge, London
5938		Climax Roller Mills, Shelbyville
5939		Henderson Feed & Commission Co., Henderson
5940		Duncan & Theiss, LaGrange
6144		J. A. Bennett, Bloomfield
6145		Climax Roller Mills, Shelbyville
6146		Jewell & Hayden Co., Bardstown
6235		Henderson Feed & Commission Co., Henderson
5751	Old Time 0-14-7 (Muriate)	R. D. Reynolds, Cave City
5941		Blue Grass Produce Co., Carlisle
5942		Calvin Richards, Fordsville
5943		Len Webb, Hawesville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	18.10		.....	21.6	21.7	6233
.....	.....	18.10		.....	21.6	21.7	6234
1.94	1.48	12.77	6.13	.....	28.6	29.5	5927
.....	.....	19.85		.....	24.0	23.8	5928
4.19	4.05	12.90	8.57	.....	38.0	40.4	5929
4.06	3.89	10.60	6.60	.....	33.2	34.9	5671
4.06	3.85	10.22	6.05	.....	33.2	33.7	5745
3.91	3.75	10.20	6.73	.....	33.2	34.0	5930
2.90	2.72	12.25	3.74	.....	28.5	29.3	5746
2.87	2.65	9.65	6.48	.....	28.5	29.4	5672
3.07	2.90	9.72	6.58	.....	28.5	30.3	5747
3.20	3.05	10.52	6.62	.....	28.5	31.8	5931
3.08	2.93	10.50	6.29	.....	28.5	30.9	5932
3.08	2.91	9.40	6.23	.....	28.5	29.5	5933
3.12	2.97	9.42	6.15	.....	28.5	29.6	5934
2.96	2.76	9.87	6.21	.....	28.5	29.7	6142
3.16	2.97	9.62	6.75	.....	28.5	30.7	6143
3.08	2.83	9.50	6.29	no ¹	28.5	29.7	5935
2.93	2.76	7.97	7.73	.....	28.5	29.1	5748
3.01	2.82	8.42	7.19	.....	28.5	29.3	5936
3.18	3.02	8.82	7.20	.....	28.5	30.4	5937
2.05	1.88	12.57	6.37	.....	28.6	29.9	5749
2.12	1.94	12.40	6.53	.....	28.6	30.1	5750
2.03	1.87	12.27	6.41	.....	28.6	29.5	5938
2.15	1.97	12.47	6.42	.....	28.6	30.2	5939
1.88	1.71	13.35	5.66	.....	28.6	29.4	5940
1.80	1.66	12.82	6.11	.....	28.6	29.0	6144
1.86	1.72	12.55	6.96	.....	28.6	29.9	6145
1.97	1.81	12.27	6.51	.....	28.6	29.4	6146
2.00	1.86	12.60	6.75	.....	28.6	30.2	6235
.....	.....	13.70	8.07	.....	25.2	26.1	5751
.....	.....	14.77	7.66	.....	25.2	26.9	5941
.....	.....	14.05	7.95	.....	25.2	26.4	5942
.....	.....	14.00	7.18	.....	25.2	25.4	5943

¹ Excess muriate equivalent to 0.47 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Davison Chem. Corp., Hopkins Fertilizer Div.—Continued		
5752	Old Time Superphosphate 20%	R. D. Reynolds, Cave City
5944		Conner, Hayden & Co., Bardstown
6147	Old Time Superphosphate 18%	Jewell & Hayden Co., Bardstown
The Davison Chemical Corporation, Nashville, Tenn.		
5753	Read 4-12-8 (Muriate)	Patterson Brothers, Kings Mountain
5945		Sharpsburg Milling Co., Sharpsburg
5946		O. M. Holloway, Mayfield
5947	Read 4-12-4 (Muriate)	Guenther Hardware Co., Owensboro
5673	Read 4-8-8 (Muriate)	C. S. Brent & Co., Lexington
5948		Cadiz Hardware Co., Cadiz
5949		Gentry McCauley, Versailles
5674	Read 3-12-3 (Muriate)	Haydon Mill & Grain Co., Lebanon
5754	Read 3-9-18 (Muriate)	Patterson Brothers, Kings Mountain
5950		Sharpsburg Milling Co., Sharpsburg
5951		O. M. Holloway, Mayfield
5675	Read 3-9-6 (Muriate)	C. S. Brent & Co., Lexington
5676		Bell County Supply Co., Middlesboro....
5755		Seay Brothers, Holland
5756		J. B. Hatcher & Co., Park City
5952		Gentry McCauley, Versailles
6148		C. S. Brent & Co., Lexington
5953	Victory Garden 3-8-7 (Muriate)	Gentry McCauley, Versailles
6236	Read 2-14-4 (Muriate)	L. D. Flanagan, Russell Springs
5677	Read 2-12-6 (Muriate)	C. S. Brent & Co., Lexington
5678		Barney Rasner, Columbia
5757		E. S. Ferrell & Son, Buffalo
5758		G. M. Estes, Science Hill
5759		Hughes Hardware Co., Franklin
6149		Henry Durham, Greensburg
6237		Guenther Hardware Co., Owensboro
5954	Read 0-14-7 (Muriate)	Henry Durham, Greensburg
6150		Henry Durham, Greensburg
6238	Read 0-14-4 (Muriate)	L. D. Flanagan, Russell Springs
5955	Read 0-12-12 (Muriate)	Gentry McCauley, Versailles
5762	Davco Granulated Superphosphate 20%	Stockton Brothers, Albany
5958		Thompson Hardware Co., Trenton
5959		Grigsby & Co., Bardstown
5960		Sharpsburg Milling Co., Sharpsburg
5961		O. M. Holloway, Mayfield
5962		R. A. Wilson, Russelville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	20.35	.....	.....	24.0	24.4	5752
.....	.....	20.35	.....	.....	24.0	24.4	5944
.....	.....	18.07	.....	.....	21.6	21.7	6147
3.49	3.40	11.85	7.54	.....	38.0	35.5	5753
3.01	2.86	12.15	6.95	.....	38.0	33.5	5945
3.83	3.69	11.82	8.76	.....	38.0	38.1	5946
4.17	3.88	12.57	4.64	.....	33.2	35.2	5947
4.20	4.11	9.95	8.57	.....	33.2	36.9	5673
3.78	3.74	8.55	8.07	.....	33.2	33.2	5948
4.18	4.14	7.40	8.78	.....	33.2	34.1	5949
3.53	3.27	13.00	3.70	.....	28.5	32.4	5674
2.12	2.07	8.45	10.79	.....	42.9	30.5	5754
3.01	2.95	9.25	17.92	.....	42.9	43.1	5950
4.18	4.14	10.15	10.07	.....	42.9	38.9	5951
3.06	2.98	10.00	6.26	.....	28.5	30.2	5675
3.25	3.13	11.15	6.50	.....	28.5	32.6	5676
3.70	3.62	10.72	6.93	.....	28.5	34.1	5755
3.47	3.38	10.82	7.06	.....	28.5	33.6	5756
3.43	3.33	10.02	7.02	.....	28.5	32.5	5952
2.90	2.84	9.00	6.29	.....	28.5	28.5	6148
2.31	2.26	9.22	7.22	.....	28.5	27.8	5953
1.95	1.84	14.62	3.99	.....	28.6	29.2	6236
2.27	2.06	14.20	5.68	.....	28.6	31.8	5677
2.16	2.07	13.20	6.02	.....	28.6	30.6	5678
2.02	1.95	12.70	6.19	.....	28.6	29.7	5757
2.10	2.04	12.47	6.47	.....	28.6	31.1	5758
2.01	1.88	12.37	7.68	.....	28.6	31.1	5759
1.79	1.71	12.05	6.27	.....	28.6	28.3	6149
1.88	1.79	12.20	6.31	.....	28.6	28.8	6237
.....	.....	14.15	6.97	.....	25.2	25.3	5954
.....	.....	14.95	7.18	.....	25.2	26.6	6150
.....	.....	14.12	5.18	.....	21.6	23.2	6238
.....	.....	13.22	10.65	.....	28.8	28.6	5955
.....	.....	19.65	.....	.....	24.0	23.6	5762
.....	.....	19.27	.....	.....	24.0	23.1	5958
.....	.....	19.92	.....	.....	24.0	23.9	5959
.....	.....	20.47	.....	.....	24.0	24.6	5960
.....	.....	19.27	.....	.....	24.0	23.1	5961
.....	.....	19.62	.....	.....	24.0	23.5	5962

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Davison Chemical Corporation—Continued		
5760	Read Superphosphate 18%	G. M. Estes, Science Hill
6151	Davco Granular Superphosphate 18%	C. S. Brent & Co., Lexington
6152		Climax Roller Mills, Shelbyville
6153		Noah Spears, Franklin
6154		Ideal Hardware Co., Scottsville
6239		Sam Terry, Big Clifty
6240		Coleman Feed & Supply Co., Marion
5761	Nitrate Soda 16%	E. S. Ferrill & Son, Buffalo
5956		O. M. Holloway, Mayfield
5957	Muriate of Potash 50%	Noah Spears, Franklin
Federal Chemical Co., Inc., Louisville, Ky.		
5763	Federal 4-12-8 (Muriate)	J. C. Cook, Tompkinsville
5764		R. P. Clary, Fullerton
5679	Federal 4-10-6 (Muriate)	C. R. Henry & Co., Winchester
5765		Berea Bargain Store, Berea
5963		W. B. Tucker, Cynthiana
5964		W. A. Robinson, Bremen
5965		Corbett Hardware Co., Elizabethtown
5966		Grigsby & Co., Bardstown
5680	Federal 4-8-8 (Muriate)	John P. Fister, Lexington
5681		Bell Grocery Co., Baxter
5967		Benson Valley Milling Co., Frankfort
5968		Vine Street Feed Store, Lexington
5682	Federal 3-12-12 (Muriate)	John P. Fister, Lexington
5969		A. B. Beale & Son, Murray
5970		Clarence LeBus Estate, Cynthiana
5971		Clarence LeBus Estate, Lexington
5766	Federal 3-12-3 (Muriate)	E. T. Meador, Scottsville
5683	Federal 3-9-6 (Muriate)	C. R. Henry & Co., Winchester
5767		Wm. Stanley, South Corbin
5972		Wm. L. Howard, Whitesville
6155		I. K. Miller & Son, Campbellsville
5768	Federal 3-9-6 (Sulfate)	W. S. Allen, Liberty
5973		J. P. Payne & Son, Barlow
5974		I. K. Miller & Son, Campbellsville
5769	Victory Garden 3-8-7 (Muriate)	Grayson County Supply Co., Leitchfield
5770		Sandy Valley Grocery Co., Ashland
5771		Corbett Hardware Co., Elizabethtown
5772		Dodd's Corner, Nicholasville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
-----	-----	18.30	-----	-----	21.6	22.0	5760
-----	-----	18.47	-----	-----	21.6	22.2	6151
-----	-----	18.32	-----	-----	21.6	22.0	6152
-----	-----	18.90	-----	-----	21.6	22.7	6153
-----	-----	19.27	-----	-----	21.6	23.1	6154
-----	-----	18.30	-----	-----	21.6	22.0	6239
-----	-----	18.17	-----	-----	21.6	21.8	6240
16.36	-----	-----	-----	-----	44.8	45.8	5761
16.24	-----	-----	-----	-----	44.8	45.5	5956
-----	-----	-----	40.16	-----	45.0	36.1	5957
3.86	3.62	11.95	9.41	-----	39.0	39.1	5763
4.12	3.87	11.72	9.25	-----	39.0	39.6	5764
4.16	3.89	10.35	6.54	-----	33.2	34.8	5679
4.04	3.73	10.15	6.38	-----	33.2	34.0	5765
3.91	3.63	10.62	6.46	-----	33.2	34.2	5963
3.86	3.49	10.05	6.58	-----	33.2	33.5	5964
4.02	3.75	10.30	6.63	-----	33.2	34.4	5965
3.77	3.47	9.82	6.42	-----	33.2	32.7	5966
4.21	3.96	8.47	8.29	-----	33.2	34.8	5680
4.32	4.08	8.45	13.11	-----	33.2	41.0	5681
4.14	3.89	9.15	8.17	-----	33.2	35.3	5967
4.22	3.89	7.80	8.40	-----	33.2	34.2	5968
2.99	2.72	12.55	12.44	-----	39.3	40.5	5682
2.96	2.66	12.12	11.58	-----	39.3	38.8	5969
2.86	2.59	12.85	11.27	-----	39.3	39.0	5970
2.88	2.59	12.37	12.94	-----	39.3	40.5	5971
3.01	2.81	12.30	3.29	-----	28.5	29.2	5766
3.07	2.79	9.45	6.27	-----	28.5	29.6	5683
2.87	2.60	9.10	6.16	-----	28.5	28.4	5767
3.45	3.14	8.57	6.65	-----	28.5	30.3	5972
3.27	2.90	8.60	6.94	-----	28.5	30.1	6155
2.94	2.65	9.40	6.77	no ¹	28.5	29.7	5768
2.92	2.33	10.30	6.66	no ²	28.5	30.6	5973
2.89	2.52	9.55	6.58	no ³	28.5	29.5	5974
3.16	2.91	8.55	7.26	-----	28.5	30.0	5769
3.35	3.09	8.42	7.43	-----	28.5	30.7	5770
3.00	2.75	8.55	7.62	-----	28.5	29.9	5771
2.88	2.61	7.90	7.33	-----	28.5	28.4	5772

¹ All potash from muriate.

² All potash from muriate.

³ Excess muriate equivalent to 1.75 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Federal Chemical Co.—Continued		
5684	Federal 2-12-6 (Muriate)	Blair Grocery Co., West Liberty
5685		C. R. Henry & Co., Winchester
5773		E. T. Meador, Scottsville
5774		W. S. Allen, Liberty
5975		Hincle & Jones, LaCenter
5976		Crawford-Ferguson Co., Benton
5977		Joe Fister, Lexington
5978		J. L. Taggart, Depoy
5979		M. F. Bryant, Nebo
5980		Florence Feed Store, Florence
6156		U. L. Rogers, Gradyville
6157		Hobert Warner, Nancy
6158		G. M. Estes, Science Hill
6159		Brown Supply Co., Vine Grove
6241		Grayson County Supply Co., Leitchfield
6242		Ross Feed Co., Murray
5775	Federal 0-14-7 (Muriate)	H. D. Jones, Glasgow
5981		J. P. Page & Son, Barlow
5982		A. B. Beale & Son, Murray
5983		U. L. Rogers, Gradyville
5776	Federal 0-14-7 (Muriate) with 200 pounds tobacco stems	W. S. Allen, Liberty
5777		Williamsburg Hardware Co., Williamsburg
5984		Henry H. Allen & Son, Brandenburg
6160	Federal 0-14-4 (Muriate)	Allen & Jenkins, Bowling Green
6161		Brown Supply Co., Vine Grove
6162		Hobert Warner, Nancy
6163		G. M. Estes, Science Hill
6243		L. F. Thurmond, Murray
5778	Federal 0-12-12 (Muriate)	H. D. Jones, Glasgow
5779		W. S. Allen, Liberty
5985		Clarence LeBus Estate, Lexington
5780	Federal Superphosphate 20%	Lee & Bybee, Cave City
5781		Louisa Grocery Co., Louisa
5986		Ross Feed Co., Murray
5987		I. K. Miller & Son, Campbellsville
5782	Federal Superphosphate 18%	Farmers Supply Co., Pikeville
5783		Berea Bargain Store, Berea
6165		Hobert Warner, Nancy
6166		G. M. Estes, Science Hill
6168		Lewisport Mill Co., Lewisport
6169		E. T. Meador, Scottsville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.12	1.80	12.25	6.48	.....	28.6	29.9	5684
2.21	1.91	12.02	7.24	.....	28.6	30.8	5685
2.55	2.33	12.00	5.89	.....	28.6	30.4	5773
2.39	2.08	11.37	6.73	.....	28.6	30.1	5774
2.02	1.85	12.87	6.31	.....	28.6	30.1	5975
2.09	1.85	12.17	6.58	.....	28.6	29.8	5976
2.00	1.85	12.00	6.31	.....	28.6	29.0	5977
2.04	1.75	12.37	6.37	.....	28.6	29.6	5978
2.09	1.81	12.70	6.07	.....	28.6	29.8	5979
2.03	1.75	12.45	6.54	.....	28.6	29.9	5980
2.26	2.07	11.65	6.28	.....	28.6	29.4	6156
2.17	1.93	11.62	5.92	.....	28.6	28.6	6157
2.12	1.86	11.70	6.29	.....	28.6	29.0	6158
2.28	2.10	11.62	6.01	.....	28.6	29.1	6159
2.02	1.76	12.25	6.00	.....	28.6	29.0	6241
2.10	1.85	12.57	5.17	.....	28.6	28.6	6242
.....	.....	13.97	7.14	.....	25.2	25.3	5775
.....	.....	14.52	6.79	.....	25.2	25.6	5981
.....	.....	13.52	7.60	.....	25.2	25.3	5982
.....	.....	13.62	7.25	.....	25.2	25.0	5983
.....	.....	14.25	7.04	.....	25.2	25.6	5776
.....	.....	14.22	7.01	.....	25.2	25.5	5777
.....	.....	14.62	7.08	.....	25.2	26.0	5984
.....	.....	13.40	4.03	.....	21.6	20.9	6160
.....	.....	13.02	4.23	.....	21.6	20.7	6161
.....	.....	12.90	4.46	.....	21.6	20.8	6162
.....	.....	13.32	4.38	.....	21.6	21.2	6163
.....	.....	14.00	3.63	.....	21.6	21.2	6243
.....	.....	12.37	12.55	.....	28.8	29.9	5778
.....	.....	12.02	12.15	.....	28.8	29.0	5779
.....	.....	12.60	11.58	.....	28.8	29.0	5985
.....	.....	20.50	.....	.....	24.0	24.6	5780
.....	.....	20.62	.....	.....	24.0	24.7	5781
.....	.....	20.07	.....	.....	24.0	24.1	5986
.....	.....	20.10	.....	.....	24.0	24.1	5987
.....	.....	18.20	.....	.....	21.6	21.8	5782
.....	.....	18.00	.....	.....	21.6	21.6	5783
.....	.....	18.00	.....	.....	21.6	21.6	6165
.....	.....	18.10	.....	.....	21.6	21.7	6166
.....	.....	18.00	.....	.....	21.6	21.6	6168
.....	.....	18.07	.....	.....	21.6	21.7	6169

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Federal Chemical Co.—Continued		
5988	Federal Superphosphate 18% with 200 lbs. tobacco stems	Lewisport Mill Co., Lewisport
6164	"Money-Maker" 0-14-4 (Muriate)	E. C. Foltz, Louisville
6167	"Money-Maker" Superphosphate 18%	Hall Seed Co., Louisville
Hutson Chemical Co., Murray, Ky.		
5989	Hutson's 3-12-12 (Muriate)	Swann & Miller, Lynn Grove
5990	Hutson's 3-9-6 (Muriate)	Swann & Miller, Lynn Grove
6244		Manufacturer's Warehouse
International Minerals & Chemical Corporation, Cincinnati, O., Wales, Tenn.		
5784	4-10-6 (Muriate 2, Sulfate 4)	H. B. Willoughby, Richmond
5785		L. C. McLoney & Sons, Cynthiana
5991		V. B. Nuckols, Elkton
5786	3-12-12 (Muriate)	C. M. Brown, West Somerset
5992		Denton Mercantile Co., Hillsboro
5993		Gulley & Pettit, Burlington
5787	3-12-12 (Muriate 6, Sulfate 6)	H. B. Willoughby, Richmond
5994		V. B. Nuckols, Elkton
5788	3-9-6 (Muriate)	Lawson Hardware Co., Greenup
5789		Tony Bezold, Newport
5995		Gulley & Pettit, Burlington
5996		Cecilian Milling Co., Elizabethtown
5686	3-9-6 (Sulfate)	Clell Coleman & Sons, Harrodsburg
5790		L. C. McLoney & Son, Cynthiana
5997		Lexington Seed Co., Lexington
5791	Victory Garden 3-8-7 (Muriate)	Tony Bezold, Newport
5998	2-12-6 (Muriate)	Gulley & Pettit, Burlington
6170		C. M. Brown, West Somerset
6171		Stinson Cundiff, Faubush
6172		W. S. Allen, Liberty
5792	2-12-6 (Sulfate)	L. C. McLoney & Sons, Cynthiana
5793		C. M. Brown, West Somerset
5794		Waynesburg Lumber Co., Waynesburg

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	18.55	.....	.....	21.6	22.3	5988
.....	.....	13.52	4.24	.....	21.6	21.3	6164
.....	.....	18.17	.....	.....	21.6	21.8	6167
2.74	2.62	11.57	11.58	.....	39.3	37.4	5989
3.15	2.94	9.20	7.64	.....	28.5	31.2	5990
2.90	2.78	10.57	5.65	.....	28.5	29.6	6244
3.87	3.09	10.47	6.69	no ¹	33.2	34.1	5784
3.88	3.10	10.87	6.44	no ²	33.2	34.4	5785
3.54	3.37	11.60	5.22	yes	33.2	32.6	5991
3.01	2.82	12.37	11.70	.....	39.3	39.4	5786
3.16	2.92	12.00	13.52	.....	39.3	41.7	5992
3.19	2.90	12.07	11.87	.....	39.3	39.9	5993
2.96	2.76	12.05	12.25	yes	39.3	39.5	5787
3.02	2.84	13.15	10.69	no ³	39.3	39.2	5994
3.04	2.32	9.37	6.58	.....	28.5	29.8	5788
3.06	2.79	9.87	6.24	.....	28.5	30.0	5789
2.86	2.60	9.32	6.75	.....	28.5	29.3	5995
2.83	2.50	9.37	6.07	.....	28.5	28.4	5996
3.03	2.77	9.70	6.38	yes	28.5	29.9	5686
2.93	2.30	9.72	6.36	yes	28.5	29.6	5790
3.02	2.77	10.02	5.98	yes	28.5	29.8	5997
2.94	2.69	8.85	7.41	.....	28.5	29.8	5791
1.84	1.73	12.30	6.19	.....	28.6	28.6	5998
1.97	1.86	12.40	6.38	.....	28.6	29.4	6170
2.14	2.03	12.62	6.48	.....	28.6	30.4	6171
2.03	1.93	12.97	6.31	.....	28.6	30.2	6172
2.10	1.82	12.55	5.90	yes	28.6	29.5	5792
2.17	1.93	12.10	6.05	no ⁴	28.6	29.4	5793
1.95	1.68	12.45	5.87	yes	28.6	28.8	5794

¹ Excess muriate equivalent to 0.71 percent potash.
² Excess muriate equivalent to 0.13 percent potash.
³ Excess muriate equivalent to 0.45 percent potash.
⁴ Excess muriate equivalent to 0.13 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
International Minerals & Chemical Corp.—Continued		
5795	0-14-7 (Muriate)	Cecilian Milling Co., Elizabethtown
5796		Waynesburg Lumber Co., Waynesburg
5999		Farmers Mill, Clay
6000		Denton Mercantile Co., Hillsboro
6173		Woodson Lewis & Son, Greensburg
6245		G. H. Bowles & Son, Glasgow
5797	0-12-12 (Muriate)	L. C. McLoney & Son, Cynthiana
5798		C. M. Brown, West Somerset
5799	Superphosphate 20%	J. L. Wilson, Canmer
5800		C. M. Brown, West Somerset
5801		Waynesburg Lumber Co., Waynesburg
6001		Denton Mercantile Co., Hillsboro
6002		Bale Hardware Co., Horse Cave
6003		Columbia Building Supply Co., Columbia
6174		Cecilian Milling Co., Elizabethtown
6175		R. M. Burnett & Son, Vine Grove
6176		C. M. Brown, West Somerset
6246		G. H. Bowles & Son, Glasgow
6004	Superphosphate 18%	V. B. Nuckols, Elkton
Knoxville Fertilizer Co., Knoxville and Nashville, Tenn.		
5802	4-12-4 (Muriate)	W. H. Brock & Co., Maysville
6177	Victory Garden 4-12-4 (Muriate)	C. M. Langdon, Science Hill
5687	Knox 4-8-8 (Muriate)	McCauley Bros. Seed Co., Versailles
5803	Knox 3-9-6 (Muriate)	C. M. Langdon, Science Hill
5804		W. H. Brock & Co., Maysville
6005		W. H. Brock & Co., Maysville
6006		John Beard, Crofton
5688	Knox 3-9-6 (Muriate 3, Sulfate 3)	Richmond Hatchery, Richmond
6007		W. H. Brock & Co., Maysville
5689	Victory Garden 3-8-7 (Muriate)	Jellico Grocery Co., Corbin
5805		Geo. P. Taylor, Burnside
6008		Parker Grocery Co., Hartford
6178	Knox 2-14-4 (Muriate)	Vick Smith, Bowling Green
5690	Knox 2-12-6 (Muriate)	Chappell Grocery Co., Pineville
5806		C. M. Langdon, Science Hill
5807		Dixie Feed Store, Middlesboro
6009		Fayette Feed Co., Franklin
6179		Parker S. Cooper, Monticello

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	14.62	7.39	.....	25.2	26.4	5795
.....	.....	13.95	7.33	.....	25.2	25.5	5796
.....	.....	14.10	7.56	.....	25.2	26.0	5999
.....	.....	13.92	7.88	.....	25.2	26.2	6000
.....	.....	13.40	7.81	.....	25.2	25.5	6173
.....	.....	15.00	9.10	.....	25.2	28.9	6245
.....	.....	12.05	12.47	.....	28.8	29.4	5797
.....	.....	12.40	12.44	.....	28.8	29.8	5798
.....	.....	20.70	.....	.....	24.0	24.8	5799
.....	.....	19.57	.....	.....	24.0	23.5	5800
.....	.....	20.95	.....	.....	24.0	25.1	5801
.....	.....	20.90	.....	.....	24.0	25.1	6001
.....	.....	20.00	.....	.....	24.0	24.0	6002
.....	.....	20.50	.....	.....	24.0	24.6	6003
.....	.....	20.00	.....	.....	24.0	24.0	6174
.....	.....	20.75	.....	.....	24.0	24.9	6175
.....	.....	21.60	.....	.....	24.0	25.9	6176
.....	.....	22.60	.....	.....	24.0	27.1	6246
.....	.....	19.95	.....	.....	21.6	23.9	6004
3.89	3.77	12.40	4.33	.....	33.2	33.7	5802
3.94	3.83	12.57	4.25	.....	33.2	34.0	6177
3.86	3.53	8.42	8.00	.....	33.2	33.2	5687
3.07	3.02	9.40	5.90	.....	28.5	29.1	5803
3.26	3.21	9.75	6.18	.....	28.5	30.5	5804
2.77	2.73	10.07	6.32	.....	28.5	29.4	6005
2.97	2.81	9.37	6.18	.....	28.5	29.1	6006
3.07	2.43	9.30	6.17	yes	28.5	29.3	5688
3.01	2.30	9.50	6.19	yes	28.5	29.4	6007
3.00	2.92	9.65	6.45	.....	28.5	29.8	5689
2.83	2.76	9.65	6.33	.....	28.5	29.1	5805
2.82	2.54	8.40	6.87	.....	28.5	28.2	6008
2.18	2.00	14.35	4.15	.....	28.6	29.8	6178
2.10	2.04	12.35	6.27	.....	28.6	29.7	5690
2.00	1.96	12.00	6.23	.....	28.6	28.9	5806
2.02	1.92	12.27	6.32	.....	28.6	29.4	5807
2.12	2.05	12.35	6.38	.....	28.6	29.9	6009
2.00	1.86	12.15	6.03	.....	28.6	28.8	6179

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Knoxville Fertilizer Co.—Continued		
5808	2-12-6 (Muriate 2, Sulfate 4)	Harris Feed Co., Franklin
5809		Gid Hollinsworth, Tompkinsville
5810		Richmond Hatchery, Richmond
5811		W. H. Brock & Co., Winchester
5812		G. H. Bowles & Son, Glasgow
6010		Farmers Grain & Produce Co., Springfield
6011		Denton Mercantile Co., Hillsboro
6012		Fayette Seed Co., Lexington
6180		C. M. Langdon, Science Hill
6247		G. H. Bowles & Son, Glasgow
5813	Knox 0-14-7 (Muriate)	Parker S. Cooper, Monticello
5814		J. B. Babb, Adairville
5815		Geo. P. Taylor, Burnside
5816		C. M. Langdon, Science Hill
6181	Basic 0-14-4 (Muriate)	C. M. Langdon, Science Hill
6248		H. B. McClary, Auburn
5817	Knox Pulverized Superphosphate 20%	Jellico Grocery Co., Corbin
6013		Allison Shippe, Campbellsville
6249		G. H. Bowles & Son, Glasgow
6014	Knox Superphosphate 18%	Stuart's Grocery, Horse Cave
6182	Basic Magnesia Phosphate 18%	Harris Feed Co., Franklin
6183		E. T. Meador, Scottsville
6184		Stuart's Grocery, Horse Cave
6185		W. C. Turner, Greensburg
6186		C. M. Langdon, Science Hill
6187		Parker S. Cooper, Monticello
6016	Nitrate of Soda 16%	Stuart's Grocery, Horse Cave
6017		W. H. Brock & Co., Maysville
5818	Sulfate of Potash 48%	H. B. McClary, Auburn
North American Fertilizer Co., Louisville, Ky.		
5691	N. Am. 4-10-6 (Muriate)	Grigsby & Co., Bardstown
5819		Arnold Turpin, Nancy
5820		Robinson & Turley, Richmond
6020		Eastern State Hospital, Lexington
6021		Young Realty Co., Providence
6022	N. Am. 4-10-6 (Sulfate)	W. C. Howk, Cynthiana
6108		G. C. Gammon, Perryville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.23	1.70	11.97	6.56	no ¹	28.6	30.0	5808
2.11	1.97	12.40	6.31	no ²	28.6	29.8	5809
1.97	1.64	12.67	6.26	yes	28.6	29.6	5810
2.19	1.81	12.57	6.32	yes	28.6	30.3	5811
2.14	1.63	12.17	6.31	yes	28.6	29.7	5812
2.12	1.56	12.47	6.35	yes	28.6	30.0	6010
2.17	1.78	12.00	6.85	yes	28.6	30.2	6011
2.09	1.66	12.57	5.79	yes	28.6	29.3	6012
1.99	1.86	12.95	6.03	no ³	28.6	29.7	6180
1.57	1.26	13.97	5.19	no ⁴	28.6	28.5	6247
.....	.....	14.22	7.60	.....	25.2	26.2	5813
.....	.....	14.02	7.43	.....	25.2	25.7	5814
.....	.....	14.20	7.56	.....	25.2	26.1	5815
.....	.....	14.35	7.49	.....	25.2	26.2	5816
.....	.....	14.22	4.38	.....	21.6	22.3	6181
.....	.....	14.10	4.33	.....	21.6	22.1	6248
.....	.....	19.97	.....	.....	24.0	24.0	5817
.....	.....	20.85	.....	.....	24.0	25.0	6013
.....	.....	20.10	.....	.....	24.0	24.1	6249
.....	.....	18.17	.....	.....	21.6	21.8	6014
.....	.....	18.80†	.....	.....	21.6	22.6	6182
.....	.....	17.97†	.....	.....	21.6	21.6	6183
.....	.....	18.47†	.....	.....	21.6	22.2	6184
.....	.....	18.92†	.....	.....	21.6	22.7	6185
.....	.....	18.00†	.....	.....	21.6	21.6	6186
.....	.....	18.67†	.....	.....	21.6	22.4	6187
16.24	.....	.....	.....	.....	44.8	45.5	6016
16.16	.....	.....	.....	.....	44.8	45.2	6017
.....	.....	.....	51.8	yes	52.8	56.2	5818
3.66	3.46	10.35	6.19	.....	33.2	32.7	5691
3.38	3.23	10.05	6.00	.....	33.2	31.1	5819
4.10	3.94	10.25	6.32	.....	33.2	34.2	5820
3.83	3.68	10.70	6.48	.....	33.2	34.0	6020
4.30	4.09	10.67	6.90	.....	33.2	36.1	6021
4.01	3.88	10.57	6.33	yes	33.2	34.3	6022
3.23	3.11	10.95	7.08	no ⁵	33.2	32.9	6108

¹ Excess muriate equivalent to 1.23 percent potash.

² All potash from muriate.

³ Excess muriate equivalent to 3.69 percent potash.

⁴ All potash from muriate.

† Not basic.

⁵ Excess muriate equivalent to 0.54 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
North American Fertilizer Co.—Continued		
5821	N. Am. 3-12-3 (Muriate)	A. G. Miller, Magnolia
5692	N. Am. 3-9-6 (Muriate)	Robinson & Turley, Richmond
5822		Robinson & Turley, Richmond
5823		A. G. Miller, Magnolia
5824		R. D. Reynolds, Cave City
6023		Farmers Supply Co., Campbellsville
6024		H. C. Thrasher, Lewisport
6188		W. D. Cunningham,
		Webbs Cross Roads
6189		Arnold Turpin, Nancy
6190		A. T. Sanders, Lancaster
5693	N. Am. Victory Garden 3-8-7 (Muriate)	The H. T. Hackney Co., Harlan
5825		Robinson & Turley, Richmond
6025		Farmers Supply Co., Lexington
6191	N. Am. 2-14-4 (Muriate)	John J. Carter, Waynesburg
5694	N. Am. 2-12-6 (Muriate)	John J. Carter, Waynesburg
5826		W. W. Owens, Russell Springs
6026		Barney Rasner, Columbia
6027		W. W. Owens, Russell Springs
6028		Young Realty Co., Providence
6192		Bunton Seed Co., Louisville
6193		Robinson & Turley, Richmond
6194		I. K. Miller & Son, Campbellsville
6195		W. W. Owens, Russell Springs
5827	N. Am. 0-14-7 (Muriate)	W. D. Cunningham,
		Webb's Cross Roads
6029		Young Realty Co., Providence
6030		W. D. Cunningham, Webb's Cross Roads
6031		H. C. Thrasher, Lewisport
6032		Boyd F. Elliott, Independence
6196		Arnold Turpin, Nancy
6197		Robinson & Turley, Richmond
6198		W. W. Owens, Russell Springs
6199	N. Am. Superphosphate 18%	A. T. Sanders, Lancaster
6200		W. D. Cunningham,
		Webb's Cross Roads
6201		R. D. Reynolds, Cave City
6250		Watson Coal & Feed Co., Princeton
National Chemical Co. (owned by North American Fertilizer Co.,) Louisville, Ky.		
6019	"Big Pay" 0-14-7 (Muriate)	Grigsby & Co., Bardstown
Price Chemical Co., Louisville, Ky.		
6033	4-12-8 (Sulfate)	Monarch Milling Co., Mt. Sterling

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.10	2.94	11.72	3.91	-----	28.5	29.6	5821
2.77	2.57	10.10	5.92	-----	28.5	28.9	5692
2.71	2.57	10.05	6.11	-----	28.5	28.9	5822
3.09	2.94	9.27	6.53	-----	28.5	29.8	5823
3.16	3.01	9.32	6.28	-----	28.5	29.8	5824
3.77	3.61	9.77	5.14	-----	28.5	31.1	6023
2.28	2.08	9.07	6.58	-----	28.5	26.8	6024
3.02	2.86	9.90	5.35	-----	28.5	28.9	6188
2.84	2.66	8.65	6.26	-----	28.5	27.8	6189
2.04	1.81	10.42	6.00	-----	28.5	26.8	6190
2.83	2.72	8.37	7.78	-----	28.5	29.3	5693
2.63	2.52	8.02	7.45	-----	28.5	27.8	5825
2.89	2.75	8.02	6.85	-----	28.5	28.0	6025
1.96	1.80	13.30	4.92	-----	28.6	28.7	6191
2.00	1.76	12.30	5.94	-----	28.6	28.9	5694
2.28	2.14	11.82	6.17	-----	28.6	29.6	5826
1.95	1.81	12.30	6.14	-----	28.6	29.0	6026
1.73	1.58	11.35	6.19	-----	28.6	27.1	6027
2.12	1.94	12.90	6.85	-----	28.6	31.1	6028
1.49	1.31	12.00	6.20	-----	28.6	27.1	6192
1.37	1.19	10.65	6.38	-----	28.6	25.2	6193
2.37	2.15	12.50	6.63	-----	28.6	31.3	6194
1.46	1.28	11.15	6.12	-----	28.6	25.8	6195
-----	-----	13.60	6.73	-----	25.2	24.4	5827
-----	-----	14.02	6.77	-----	25.2	24.9	6029
-----	-----	14.00	8.77	-----	25.2	27.3	6030
-----	-----	14.20	6.51	-----	25.2	24.9	6031
-----	-----	14.42	8.56	-----	25.2	27.6	6032
-----	-----	13.15	6.42	-----	25.2	23.5	6196
-----	-----	13.42	6.28	-----	25.2	23.6	6197
-----	-----	14.05	6.82	-----	25.2	25.0	6198
-----	-----	17.50	-----	-----	21.6	21.0	6199
-----	-----	18.32	-----	-----	21.6	22.0	6200
-----	-----	18.40	-----	-----	21.6	22.1	6201
-----	-----	18.00	-----	-----	21.6	21.6	6250
-----	-----	14.22	7.12	-----	25.2	25.6	6019
4.30	4.13	12.07	8.85	yes	38.00	40.2	6033

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Price Chemical Co.—Continued		
5695	4-10-6 (Muriate)	St. Matthews Produce Exchange, St. Matthews
5696	4-8-8 (Muriate)	St. Matthews Produce Exchange, St. Matthews
6034		Lyle Brothers, North Middletown
5697	3-12-3 (Muriate)	Walters & Thompson, Shelbyville
5698	3-9-6 (Muriate)	H. W. Noland, Richmond
5828		Triplett Store, South Corbin
6035		Frank J. Murphy, Valley Station
6036		Monarch Milling Co., Mt. Sterling
6037		Walter Corbin, Owingsville
6038	3-9-6 (Sulfate)	Collins Hardware Co., Frankfort
6039		J. S. Whittinghill, Fordsville
5829	Victory Garden 3-8-7 (Muriate)	Feeders Supply Co., Ashland
5830		Meade & Co., Paintsville
5699	2-12-6 (Muriate)	Arnold Emerson, Eubank
5831		W. L. Anderson & Son, Caneyville
5832		Monarch Milling Co., Mt. Sterling
6040		R. E. Moore & Son, Madisonville
6041		Monarch Milling Co., Mt. Sterling
6202		Sherman Bengé, London
6251		W. L. Anderson & Son, Caneyville
6203	2-14-4 (Muriate)	Sherman Bengé, London
5834	0-14-7 (Muriate)	Arnold Emerson, Eubank
6045		Perryville Ice and Produce Co., Perryville
6046	0-14-7 (Muriate) with 200 lbs. tobacco stems	Monarch Milling Co., Mt. Sterling
6252	0-14-4 (Muriate) with 200 lbs. tobacco stems	R. E. Moore & Son, Madisonville
5833	0-12-12 (Muriate)	Arnold Emerson, Eubank
6042		R. Z. Hook, Hardinsburg
6043		Eastern State Hospital, Lexington
6044	0-12-12 (Muriate) with 200 lbs. tobacco stems	Walter Corbin, Owingsville
5835	Superphosphate 20%	Stewart & Co., Mumfordsville
6047		J. S. Whittinghill, Fordsville
6048	Superphosphate 18%	Perryville Ice & Produce Co., Perryville
6204		Walters & Thompson, Shelbyville
6205		J. H. Lyons, Loretto
6253		A. L. Hazle, Hodgenville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
4.23	4.07	10.30	6.47	.....	33.2	34.9	5695
4.18	4.03	8.25	7.84	.....	33.2	33.9	5696
4.11	3.97	8.15	8.43	.....	33.2	34.3	6034
3.21	2.97	12.15	3.55	.....	28.5	30.1	5697
3.18	3.03	9.50	6.07	.....	28.5	29.8	5698
2.83	2.66	10.22	6.48	.....	28.5	29.9	5828
3.31	3.17	9.00	6.42	.....	28.5	30.1	6035
3.11	2.94	9.60	6.72	.....	28.5	30.5	6036
3.24	3.11	9.37	5.98	.....	28.5	29.8	6037
3.29	3.11	9.00	7.68	no ¹	28.5	31.5	6038
3.26	3.00	9.50	6.25	yes	28.5	30.3	6039
3.30	3.13	9.35	7.66	.....	28.5	32.0	5829
3.33	3.16	9.22	7.34	.....	28.5	31.5	5830
2.32	2.15	12.12	6.39	.....	28.6	30.3	5699
2.15	1.86	12.70	6.87	.....	28.6	31.0	5831
2.47	2.30	12.17	5.71	.....	28.6	30.1	5832
1.95	1.75	12.25	7.66	.....	28.6	30.7	6040
2.21	2.05	12.25	7.38	.....	28.6	31.3	6041
2.09	1.91	13.10	7.01	.....	28.6	31.5	6202
2.30	2.13	12.15	6.56	.....	28.6	30.5	6251
2.05	1.88	15.15	5.00	.....	28.6	31.4	6203
.....	.....	13.97	7.51	.....	25.2	25.8	5834
.....	.....	15.10	7.58	.....	25.2	27.2	6045
.....	.....	14.27	7.74	.....	25.2	26.4	6046
.....	.....	14.90	4.47	.....	21.6	23.2	6252
.....	.....	11.70	12.47	.....	28.8	29.0	5833
.....	.....	12.50	11.97	.....	28.8	29.4	6042
.....	.....	12.45	12.06	.....	28.8	29.4	6043
.....	.....	11.85	13.08	.....	28.8	29.9	6044
.....	.....	20.40	.....	.....	24.0	24.5	5835
.....	.....	20.75	.....	.....	24.0	24.9	6047
.....	.....	19.55	.....	.....	21.6	23.5	6048
.....	.....	18.50	.....	.....	21.6	22.2	6204
.....	.....	18.60	.....	.....	21.6	22.3	6205
.....	.....	18.37	.....	.....	21.6	22.0	6253

¹ Excess muriate equivalent to 0.38 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Price Chemical Co.—Continued		
5836	Superphosphate 18% with 200	
6049	lbs. tobacco stems	Sherman Bengé, London
6206		Condit & Johnson, Livermore
		G. M. Hedrick, Monticello
Consolidated Chemical Co., (subsidiary of Price Chemical Co.),		
Louisville, Ky.		
5905	Camel Brand 4-12-8 (Sulfate)....	Star Roller Mills, Cloverport
5670	Camel Brand 3-12-3 (Muriate) ..	Thompson Store, Loretto
5906	Camel Brand 3-9-6 (Sulfate)	Star Roller Mills, Cloverport
5907	Camel Brand 2-12-6 (Muriate) ..	Star Roller Mills, Cloverport
6140	Camel Brand 0-14-4 (Muriate) ..	Stockton Bros., Albany
5908	Camel Brand Superphos- phate 20%	Star Roller Mills, Cloverport
5909	Camel Brand Superphos- phate 18%	Thompson Store, Loretto
Swift and Co., Fertilizer Works, National Stock Yards, Ill.		
6051	"Vigoro Brand" 4-12-4	
6254	(Muriate)	L. N. Kratzer, Mt. Sterling
6052	Red Steer 4-10-6 (Sulfate)	Yopp Seed Co., Paducah
6053	Red Steer 4-10-6 (Sulfate)	B. M. Goodpaster, Owingsville
5837	Red Steer 3-12-12 (Muriate)	Keene Milling Co., Nicholasville
6054	Red Steer 3-12-12 (Muriate)	Stagg Brothers, Vanceburg
6055	Red Steer 3-9-6 (Muriate)	Spears-Kiser Co., Paris
6056	Red Steer 3-9-6 (Sulfate)	L. N. Kratzer, Mt. Sterling
6057	Red Steer 3-9-6 (Sulfate)	Millersburg Coal & Lumber Co., Millersburg
6058	"Vigoro Brand" Victory	Dorsey Brothers & Fisher, Carlisle
6059	Garden 3-8-7 (Muriate)	Spears-Kiser Co., Paris
5838	Red Steer 2-12-6 (Muriate)	Hollingsworth-Young Hardware Co., Bowling Green
6060	Red Steer 2-12-6 (Muriate)	Stagg Brothers, Vanceburg
6061	Red Steer 2-12-6 (Muriate)	Morganfield Hardware Co., Morganfield
6062	Red Steer 2-12-6 (Muriate)	Yopp Seed Co., Paducah
6062	Red Steer 2-12-6 (Muriate)	L. N. Kratzer, Mt. Sterling

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	.....	18.17	.....	.....	21.6	21.8	5836
.....	.....	18.47	.....	.....	21.6	22.2	6049
.....	.....	18.82	.....	.....	21.6	22.6	6206
3.88	3.71	10.90	12.10	yes	38.0	41.2	5905
3.17	2.99	12.45	3.47	.....	28.5	30.2	5670
3.36	3.19	9.42	6.46	yes	28.5	30.8	5906
2.01	1.87	13.12	6.37	.....	28.6	30.4	5907
.....	.....	14.80	4.86	.....	21.6	23.6	6140
.....	.....	20.37	.....	.....	24.0	24.4	5908
.....	.....	17.55	.....	.....	21.6	21.1	5909
4.37	4.16	12.12	4.62	.....	33.2	35.4	6051
4.22	4.01	12.85	4.76	.....	33.2	35.9	6254
4.18	3.80	9.97	6.03	yes	33.2	33.8	6052
3.97	3.81	11.07	6.13	yes	33.2	34.5	6053
2.99	2.79	13.05	12.22	.....	39.3	40.8	5837
3.09	2.85	9.00	6.50	.....	28.5	29.4	6054
2.85	2.68	9.52	6.60	no ¹	28.5	29.3	6055
3.19	2.95	9.45	5.88	no ²	28.5	29.6	6056
2.78	2.53	10.95	5.57	no ³	28.5	29.6	6057
3.06	2.79	8.35	7.54	.....	28.5	29.8	6058
3.40	3.15	8.00	7.03	.....	28.5	29.9	6059
2.06	1.79	12.57	6.27	.....	28.6	29.8	5838
2.02	1.77	11.97	6.01	.....	28.6	28.6	6060
2.05	1.68	12.02	6.28	.....	28.6	29.1	6061
2.00	1.94	13.17	6.68	.....	28.6	30.8	6062

¹ Excess muriate equivalent to 0.29 percent potash.

² Excess muriate equivalent to 0.16 percent potash.

³ All potash from muriate.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Swift and Co.—Continued		
6063	Red Steer 2-12-6 (Sulfate)	Dorsey Brothers & Fisher, Carlisle
6064		Spears-Kiser Co., Paris
6065		L. N. Kratzer, Mt. Sterling
5839	Red Steer 0-12-12 (Muriate)	Stagg Brothers, Vanceburg
6066	Red Steer Superphosphate 20%	Morganfield Hardware Co., Morganfield
6255	Red Steer Superphosphate 18%	Morganfield Hardware Co., Morganfield
Tennessee Corporation, New Albany, Ind.		
6073	4-10-6 (Muriate)	Farmers Supply Co., Lexington
6074		T. J. Turley Co., Owensboro
6075		Lebanon Carriage & Implement Co., Lebanon
6076		I. K. Miller & Son, Campbellsville
6077	3-12-12 (Muriate)	Clarence LeBus Estate, Lexington
6078	3-9-6 (Muriate)	Farmers Supply Co., Lexington
6079		I. K. Miller & Son, Campbellsville
6080	2-12-6 (Muriate)	Farmers Supply Co., Lexington
6081		I. K. Miller & Son, Campbellsville
6082	0-14-7 (Muriate)	I. K. Miller & Son, Campbellsville
6083		Columbia Building Supply Co., Columbia
6258		The T. J. Turley Co., Owensboro
6259	Superphosphate 18%	The T. J. Turley Co., Owensboro
Virginia-Carolina Chemical Corporation, Cincinnati, O., Mt. Pleasant, Tenn.		
5840	V-C 4-12-8 (Muriate)	A. T. Sanders, Lancaster
6085	V-C 4-12-8 (Sulfate)	Miss Agnes Davis, Russellville
6086		Woodford Spears & Sons, Paris
6087		J. H. Greene, Lexington
5841	V-C 4-10-6 (Muriate)	A. T. Sanders, Lancaster
6088		J. H. Greene, Lexington
6089	V-C 4-8-8 (Muriate)	J. H. Greene, Lexington
5842	V-C 3-12-3 (Muriate)	George Richardson, Somerset
5843		A. T. Sanders, Lancaster
6090	V-C 3-9-18 (Muriate 7, Sulfate 11)	Miss Agnes Davis, Russellville
6091		J. H. Greene, Lexington

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
2.09	1.77	12.22	6.16	yes	28.6	29.4	6063
2.07	1.72	12.00	6.38	no ¹	28.6	29.3	6064
1.89	1.66	12.82	6.03	no ²	28.6	29.2	6065
.....	.....	12.75	12.72	.....	28.8	30.6	5839
.....	.....	21.55	.....	.....	24.0	25.9	6066
.....	.....	19.55	.....	.....	21.6	23.5	6255
3.79	3.66	10.27	6.19	.....	33.2	33.0	6073
3.78	3.65	10.22	6.21	.....	33.2	32.9	6074
3.93	3.78	10.05	6.98	.....	33.2	34.2	6075
4.10	3.93	10.27	6.37	.....	33.2	34.3	6076
3.15	3.04	12.00	12.54	.....	39.3	40.5	6077
2.82	2.69	8.95	6.34	.....	28.5	28.2	6078
3.07	2.93	9.02	6.39	.....	28.5	29.2	6079
2.12	2.00	11.95	6.22	.....	28.6	29.2	6080
2.11	1.94	11.62	6.35	.....	28.6	29.0	6081
.....	.....	14.15	7.18	.....	25.2	25.6	6082
.....	.....	14.00	7.50	.....	25.2	25.8	6083
.....	.....	14.57	7.38	.....	25.2	26.3	6258
.....	.....	18.45	.....	.....	21.6	22.1	6259
3.83	3.73	12.75	8.09	.....	38.0	38.4	5840
4.11	3.94	12.60	7.98	yes	38.0	39.1	6085
4.19	4.05	12.47	8.88	yes	38.0	40.3	6086
4.27	4.15	12.37	8.71	yes	38.0	40.2	6087
3.70	3.57	10.02	6.30	.....	33.2	32.5	5841
3.58	3.45	10.40	6.34	.....	33.2	32.6	6088
3.98	3.86	8.92	7.90	.....	33.2	34.1	6089
3.03	2.81	12.42	3.21	.....	28.5	29.4	5842
3.07	2.84	12.35	3.08	.....	28.5	29.3	5843
2.94	2.87	9.62	17.28	yes	42.9	42.6	6090
3.06	2.96	9.40	18.52	yes	42.9	44.2	6091

¹ Excess muriate equivalent to 0.50 percent potash.

² Excess muriate equivalent to 0.24 percent potash.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Virginia-Carolina Chem. Corp.—Continued		
5700	V-C 3-9-6 (Muriate)	Powell-Hackney Grocery Co., Hazard
5844		Scottsville Feed Co., Scottsville
6092		Young Lumber Co., Beaver Dam
6093	V-C 3-9-6 (Sulfate)	Tuxedo Feed Store, Lexington
6094		J. H. Greene, Lexington
5701	Victory Garden 3-8-7 (Muriate) ..	Whitesburg Wholesale Co., Whitesburg
5845		Greenup Milling Co., Greenup
5846		Scottsville Feed Co., Scottsville
5847	V-C 2-12-6 (Muriate)	W. R. Catron & Son, Campton
5848		Knox County Supply Co., Barbourville
5849		G. M. Hedrick, Monticello
6095		Farmers Supply Co., Bowling Green ...
6207		G. M. Hedrick, Monticello
6208		Dyche Jones, London
6209		U. L. Rogers, Gradyville
6260		Young Hardware Co., Beaver Dam
5702	V-C 2-12-6 (Sulfate)	Shelby Feed & Seed Co., Shelbyville ...
5850		Scottsville Feed Co., Scottsville
6096		Woodford Spears & Sons, Paris
6097		U. L. Rogers, Gradyville
5851	V-C 0-14-7 (Muriate)	George Richardson, Somerset
6098		W. I. Smith, Sebree
6210		Hardin County Milling Co., Elizabethtown
6211		Scottsville Feed Co., Bowling Green ...
6099	V-C 0-12-12 (Muriate)	Miss Agnes Davis, Russellville
6100		W. I. Smith, Sebree
5852	V-C Superphosphate 20%	Powell-Hackney Grocery Co., Jackson
5853		George Richardson, Somerset
6101		Cottingham Grain Co., Henderson
6102		W. I. Smith, Sebree
6103		Coleman Feed & Supply Co., Marion ...
6104		J. H. Greene, Lexington
6105		Young Lumber Co., Beaver Dam
6261		Miss Agnes Davis, Russellville

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
3.16	3.00	9.27	6.51	.....	28.5	30.0	5700
2.86	2.74	9.42	6.18	.....	28.5	28.7	5844
2.91	2.80	9.10	6.44	.....	28.5	28.8	6092
3.11	2.92	9.30	6.06	yes	28.5	29.3	6093
3.06	2.90	9.12	6.19	yes	28.5	29.1	6094
3.05	2.92	8.45	7.12	.....	28.5	29.4	5701
2.66	2.56	7.95	7.47	.....	28.5	27.8	5845
3.00	2.81	8.45	7.00	.....	28.5	29.0	5846
2.06	1.95	12.27	6.44	.....	28.6	29.7	5847
2.09	1.85	13.00	6.71	.....	28.6	31.0	5848
2.10	1.97	12.17	6.30	.....	28.6	29.5	5849
2.02	1.88	11.97	6.11	.....	28.6	28.8	6095
2.22	1.96	11.97	6.17	.....	28.6	29.5	6207
2.13	1.96	12.65	6.52	.....	28.6	30.5	6208
2.07	1.86	12.67	6.80	.....	28.6	30.6	6209
2.13	1.96	12.47	6.03	.....	28.6	29.7	6260
2.23	2.04	11.95	6.50	yes	28.6	30.0	5702
2.08	1.96	11.97	6.03	no ¹	28.6	28.9	5850
2.28	2.09	12.02	6.74	yes	28.6	30.5	6096
2.22	2.05	12.10	6.30	yes	28.6	29.9	6097
.....	.....	14.67	7.31	.....	25.2	26.4	5851
.....	.....	13.65	7.08	.....	25.2	24.9	6098
.....	.....	14.20	7.47	.....	25.2	26.0	6210
.....	.....	14.95	6.46	.....	25.2	25.7	6211
.....	.....	11.92	12.27	.....	28.8	29.0	6099
.....	.....	11.92	11.88	.....	28.8	28.6	6100
.....	.....	20.90	.....	.....	24.0	25.1	5852
.....	.....	20.42	.....	.....	24.0	24.5	5853
.....	.....	20.42	.....	.....	24.0	24.5	6101
.....	.....	21.05	.....	.....	24.0	25.3	6102
.....	.....	20.50	.....	.....	24.0	24.6	6103
.....	.....	20.80	.....	.....	24.0	25.0	6104
.....	.....	20.77	.....	.....	24.0	24.9	6105
.....	.....	20.60	.....	.....	24.0	24.7	6261

¹ All potash from muriate.

TABLE 3.—ANALYSES OF INSPECTION SAMPLES OF MIXED

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Virginia-Carolina Chem. Corp.—Continued		
6106	V-C Superphosphate 18%	G. P. Jones & Son, Hartford
6107		J. H. Greene, Lexington
6212		Scottsville Feed Co., Scottsville
6213		Shelby Feed & Seed Co., Shelbyville ..
6214		U. L. Rogers, Gradyville
6215		Dyche Jones, London
6262		Cottingham Grain Co., Henderson
6263		M. G. Williams Implement Co., Hopkinsville
6264		Young Hardware Co., Beaver Dam

FERTILIZERS, SUPERPHOSPHATE, AND FERTILIZER SALTS

Nitrogen		Phosphoric acid available	Potash	Sulfate guaranty met	Index of relative value		Station number
Total	Water soluble				Guaranty	Found	
<i>perct.</i>	<i>perct.</i>	<i>perct.</i>	<i>perct.</i>				
.....	19.42	.....	.....	21.6	23.3	6106
.....	19.85	.....	.....	21.6	23.8	6107
.....	18.00	.....	.....	21.6	21.6	6212
.....	19.52	.....	.....	21.6	23.4	6213
.....	18.45	.....	.....	21.6	22.1	6214
.....	18.72	.....	.....	21.6	22.5	6215
.....	19.00	.....	.....	21.6	22.8	6262
.....	19.35	.....	.....	21.6	23.2	6263
.....	19.05	.....	.....	21.6	22.9	6264

TABLE 4.—ANALYSES OF INSPECTION SAMPLES OF

Station number	Name and address of manufacturer, brand name and guaranty	From whom obtained
Tennessee Chemical Co., Div. Armour & Co., Cincinnati, O., Nashville, Tenn., Jeffersonville, Ind.		
6072	Ox Bone Meal 2-27-0	V. B. Nuckols, Elkton
		Guaranteed
Knoxville Fertilizer Co., Knoxville & Nashville, Tenn.		
6015	Raw Bone Meal 3.70-21.50-0	Harris Feed Co., Franklin
		Guaranteed
Ruhm Phosphate & Chemical Co., Mt. Pleasant, Tenn.		
6050	Red Seal xxx Brand Ruhm Phosphate Rock	S. B. White, Horse Cave
		Guaranteed
Thomson Phosphate Co., Chicago, Ill.		
6084	"Four Leaf Special" Powdered Rock Phosphate	Kentucky Acres Farm, Crestwood
		Guaranteed

BONE, ROCK PHOSPHATE AND BASIC SLAG

Nitrogen Total	Phosphoric acid Total	Index of relative value	Station number
<i>perct.</i>	<i>perct.</i>		
2.70	25.95	35.4	6072
2.00	27.00	34.0	.....
3.87	23.10	36.7	6015
3.70	21.50	34.5
.....	30.30	15.2	6050
.....	30.00	15.0
.....	31.25	15.6	6084
.....	31.00	15.5

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