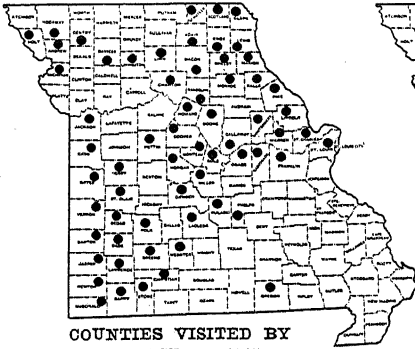


UNIVERSITY OF MISSOURI

COLLEGE OF AGRICULTURE

Agricultural Experiment Station

BULLETIN 139



COUNTIES VISITED BY
INSPECTOR, 1915



OUTLYING EXPERIMENT
FIELDS TEST FERTILIZERS, 1916

EACH COUNTY IS VISITED AT LEAST ONCE IN THREE YEARS

Inspection of Commercial Fertilizers: 1915

COLUMBIA, MISSOURI
January, 1916

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COLLEGE OF AGRICULTURE

Agricultural Experiment Station

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¹ In the service of the U. S. Department of Agriculture.

Inspection of Commercial Fertilizers: 1915

THE MISSOURI FERTILIZER LAW

This Missouri Fertilizer Law was enacted for the protection of Missouri farmers. The administration of the law was placed in the hands of the Director of the Missouri Experiment Station, whose duty it is to see that manufacturers of fertilizers and dealers selling such materials to farmers are complying with the law.

The essential requirements of this law are as follows:

I. Each brand of fertilizer offered for sale in Missouri must first be registered with the Director of the Experiment Station.

II. The registration must include a guaranteed chemical composition.

III. Each package, parcel, or bag offered for sale must have plainly indicated upon it the guaranteed chemical composition and a registration tag which the manufacturer or dealer must secure from the Agricultural Experiment Station at Columbia, Missouri.

IV. It is made the duty of the Agricultural Experiment Station to collect samples of fertilizer for the purpose of analysis from the cars, farmers' wagons, or any other place, to determine if the manufacturers are complying with the law.

The report of the chemist submitted herewith gives all the evidence which has been collected by the Agricultural Experiment Station in reference to the practice of manufacturers and dealers in connection with the application of this law. The facts given in this bulletin indicate that, on the whole, the farmers of Missouri are well protected in the purchase of fertilizer. The guarantees are in some cases higher than the composition found by the chemists. In an equal number of cases, the composition as determined by the chemists has been greater than the guarantee. There is every reason to believe that the reliable manufacturers of fertilizer are honestly endeavoring to comply with the requirements of the Missouri Fertilizer Law.

NOTICE TO DEALERS

The local dealers in fertilizer materials are warned not to sell fertilizers that do not have the license tag of the Agricultural Experiment Station affixed to each package of fertilizer. Dealers are also warned not to sell fertilizers which have not plainly printed on the

bag the name of the brand and the guaranteed chemical composition. If a dealer is in doubt in reference to the registration of a particular brand, he can easily determine whether such a brand is legally registered, by application to the Agricultural Experiment Station, Columbia, Missouri.

F. B. MUMFORD, Director.

REPORT OF THE CHEMIST

P. F. TROWBRIDGE

INSPECTION

During 1915, 177 localities in 63 counties were visited by the fertilizer inspectors. Eight hundred eighty-nine samples were taken, representing 222 different brands.

Owing to the shortage of potash in this country, the fertilizers registered for sale during the year 1915 show less potash than formerly. In general, the brands containing a high percentage of potash have been withdrawn from the market. This has created a considerable amount of confusion and a number of brands which were not registered have appeared on the market. In most cases, this was apparently an oversight and the registration was promptly filed with the Experiment Station as soon as the manufacturer was notified.

The Chicago Feed and Fertilizer Company registered two brands for sale in Missouri which our inspectors have failed to find. Four other brands of this manufacturer were found at Kirkwood and repeated requests to this company have failed to bring a registration of these brands. Literature sent out by this company promises to analyze any soil free, and to furnish a fertilizer particularly adapted to that soil.

Persons contemplating taking advantage of this remarkable offer are advised to send the reports of the soil analyses to the Experiment Station, together with a sample of the fertilizer the manufacturer proposes to furnish.

The Day Flower Fertilizer Company of Kansas City has not responded to requests that its brand be registered showing a guarantee of its composition. The following may suggest the reason: A fifteen-cent package collected from J. C. Brockhart of Harrisonville weighed a little over half a pound of which one and a half ounces was charcoal, which the housewife was instructed to put in the bottom of the flower pot. The remainder contained fertilizer material worth \$8.46 a ton, or less than a quarter of a cent for the fifteen-cent package.

REGISTRATION

While all of the brands shown in Table 3 were registered for sale in 1915 many of these same brands find practically no sale within the state. Some of them are bought in relatively small quantities and by only a few individuals. For these reasons, it is not possible for the inspectors to find samples of all brands registered. This information is published, however, so that dealers and farmers may know approximately what brands can be purchased in the state. Fertilizers not registered cannot legally be sold in the state. Registration must be made each year by every manufacturer before sales are made. The registration is a guarantee on the part of the manufacturer that he will offer for sale only those brands registered and that each brand shall have the composition guaranteed in the registration.

Every sack of fertilizer sold in the state must have its composition plainly printed either on the sack or on a tag attached to the sack. There must also appear on each sack a tag issued by the Agricultural Experiment Station showing that the brand has been registered by the manufacturer. This tag issued by the Agricultural Experiment Station is not a guarantee to the dealer or farmer that the fertilizer contains the amount of plant food as indicated on the sack or tag, but that such a brand of fertilizer has been registered and that its sale is permitted.

The purpose of the fertilizer inspection and analysis is to see that the certificate of registration is on each bag, that the guaranteed analysis is on each bag, and that this guaranteed analysis corresponds with the guaranteed analysis registered by the manufacturers. The sample is taken for analysis to determine if the composition of the fertilizer is in accordance with this guarantee. The publication of the results in the bulletin each year helps to enable the dealer or farmer to determine how nearly he is obtaining the plant food which is guaranteed to him in the different brands.

CALCULATION OF VALUES

Since the value of potash has increased from less than \$100 to more than \$300 a ton, and the value of sulphuric acid (used in making acid phosphate) from less than \$10 to over \$50 a ton, the relative values used in previous years cannot be said to apply at the present time. The disturbed condition of values makes it difficult to use prices that are any more nearly representative for the entire season. It is, therefore, deemed advisable to use the same prices as in previous years, with the understanding that these figures are of value only when comparing fertilizers of similar composition.

Nitrogen is figured at 20 cents a pound or \$4 for each per cent a ton.

Phosphoric acid from bone, 3½ cents a pound or 70 cents for each per cent a ton.

Phosphoric acid, insoluble, 2 cents a pound or 40 cents for each per cent a ton.

Phosphoric acid, available, 6 cents a pound or \$1.20 for each per cent a ton.

Potash, 6 cents a pound or \$1.20 for each per cent a ton.

For example, take Sample 135, the first in Table 6.

The nitrogen guaranteed is 1.65 per cent or 33 pounds in each ton, worth \$6.60. The nitrogen found is 1.62 per cent or 32.4 pounds a ton, worth \$6.48. The relative loss on the nitrogen is therefore twelve cents a ton.

The total phosphoric acid, 10 per cent, is supposed to consist of 9 per cent available or soluble and one per cent insoluble. The analysis showed 6.28 per cent insoluble or 125.5 pounds a ton which valued at two cents a pound would be \$2.51 a ton as compared with the guarantee of one per cent or 20 pounds a ton at a value of forty cents. This makes the over-run on insoluble phosphoric acid \$2.11 a ton.

The available (soluble) phosphoric acid found was 7.67 per cent or 153.4 pounds a ton, with a value at six cents per pound of \$9.20 per ton. The guarantee of 9 per cent or 180 pounds a ton calls for a value of \$10.80 a ton. This gives a loss on available phosphoric acid of \$1.60 a ton. The excess of \$2.11 a ton on insoluble phosphoric acid offsets this loss of \$1.60 a ton and leaves an excess on the total phosphoric acid of fifty-one cents a ton.

The guaranteed potash, 2 per cent or 40 pounds a ton at six cents a pound, calls for a value of \$2.40 a ton. The 2.18 per cent found represents 43.6 pounds a ton valued at \$2.62. This gives on the potash an excess valuation of 22 cents a ton. A summary of this material is given in Table 1.

TABLE 1.—COMPARISON OF ACTUAL AND GUARANTEED VALUES IN FERTILIZER SAMPLE 135

Plant Food	Value guaranteed	Value found
Nitrogen.....	\$ 6.60	\$ 6.48
Insoluble phosphoric acid.....	.40	2.51
Available phosphoric acid.....	10.80	9.20
Potash.....	2.40	2.62
Total.....	\$20.20	\$20.81

CHEMICAL ANALYSES

Table 6 gives the detailed report of the results of the analysis of 480 samples of fertilizers. These results are listed alphabetically under the name of the manufacturer. Results below the amount guaranteed are indicated in heavy faced type.

At the end of Table 6, under miscellaneous samples, are listed the samples analyzed which were not taken by regular inspectors. No charge is made for analyzing fertilizers and, while most of the samples to be analyzed must be taken by regularly delegated inspectors, we are glad to accommodate dealers and farmers by analyzing samples they may wish to send in unless such demand should be so great as to interfere with the care of the official samples.

When samples are sent in for analysis, they should always be accompanied by the name of the sender, the manufacturer, and the brand the sample is supposed to represent. If this information is not furnished, the sample will not be analyzed free of charge.

While limestones have not been classed as fertilizers in the usual use of the term, the quite general acidity of Missouri soils has shown the great need for this material. Missouri has an abundance of limestone deposits and they are quite generally distributed. Most agricultural communities can secure the rock within reasonable distance. The Station has been testing free of charge all samples sent in to determine the relative value for correcting soil acidity. The report on the 120 samples tested during the last year is given in Table 7.

A general summary of the results of the analysis of the official samples is found in Table 5.

TABLE 2.—SUMMARY OF DEFICIENCIES: 1915

Plant Food	Samples analyzed	Samples deficient		Deficiency in 1914	Improvement
			Per cent	Per cent	
Nitrogen.....	402	172	42.8	49.4	6.6
Total phosphoric acid.....	438	86	19.6	28.2	8.6
Available phosphoric acid.....	341	178	52.2	54.1	1.9
Potash.....	339	183	54.0	27.6	-26.4
Total.....	1520	619	40.7	39.3	- 1.4

For comparison with 1914 we note that of the 1380 analyses made 542 or 39.3 per cent were below the guarantee. For both 1914 and 1915, the showing is poorer in every constituent than for 1913. While the total for 1915 is a little poorer than 1914, there is some improvement in the nitrogen and in the total phosphoric acid.

Of all 462 official samples analyzed, 164 samples, or 35.5 per cent, give a total value below the guarantee. This average value below of the 164 samples is \$1.28 a ton. For 1914, this figure was 88 cents a ton.

The total 462 samples showed an average value of 53 cents a ton above the guarantee. In 1914, the amount was 57 cents a ton.

For 1915, only three manufacturers show an average valuation below the guarantee. In 1914, there were six whose values averaged below.

WHAT FERTILIZER SHALL I BUY?

Potash and sulphuric acid are in such great demand in the manufacture of explosives at this time that their use in fertilizers must be limited or the cost to the consumer very materially increased.

Small amounts of potash are present in tankage and in manures. When wood ashes are available, from three to seven per cent potash may be obtained. The usual supply of potash salts from Germany is now entirely cut off. Some potash is now obtained from kelp on the Pacific coast but it is all used west of the Rocky Mountains. In Missouri, we must temporarily get along without that fertilizer ingredient and naturally wish to consider whether we have a substitute, or how we can best meet the emergency.

There is no substitute for potash. All plants must have this element but some need much more than others. Fortunately, most Missouri soils are supplied with a great abundance of potash but it is in the form of insoluble silicates. Experience has demonstrated that soils abundantly supplied with organic matter and lime will produce abundant yields without the addition of the soluble potash. Pulverized limestone can be added at once, two or three tons to the acre. Utilize all the old straw stacks and work them down to make all the manure possible. Do not burn the corn stalks, disk them thoroly and plow them under. Grow clover, cow peas, rye, or even oats to plow under to furnish the organic matter. It is generally advisable to plow under the weeds rather than to burn them.

The phosphoric acid question is more serious. Missouri soils are deficient in that element. We cannot grow it on the farm as we grow the nitrogen. Every bushel of grain, every steer, or other animal sold from the farm removes a certain amount of phosphoric acid. This must be returned in the form of fertilizers or we are depleting the land.

The supply of bone meal is limited. Use all you can get. Rock phosphate is abundant and the war should not affect the price. The past results hardly warrant us to recommend its general use in Missouri where immediate returns are desired, owing to its being so

insoluble and therefore so slowly available. However, the same conditions which favor the availability of the insoluble potash silicates will favor the availability of the phosphorus from the pulverized rock phosphate. We can, therefore, say to the land owner who is planning for the future as well as for the present, apply some of the phosphorus as the pulverized rock phosphate where you have an abundance of lime and organic matter. Use also some bone or acid phosphate for present needs. Generally speaking we may consider the phosphoric acid of acid phosphate as being chiefly available the first year. When added in bone, its effect extends over four or five years and when added as rock phosphate the effect will extend over 10 or 12 years.

The only limitation of the supply of the acid phosphate will be the cost of the sulphuric acid used to make it. We are making more sulphuric acid now in the United States than ever before, but the demand has made an enormous increase in the price. This condition will result in an increase in the price of acid phosphate. Farmers are not advised to reduce the amount of phosphoric acid used, especially in the production of grain crops. It is generally estimated that one pound of the available phosphoric acid is worth fully three pounds of the insoluble phosphoric acid of the mixed fertilizers. High-grade fertilizers are cheaper per pound of plant food than the low-grade ones.

The nitrogen in fertilizers should not cost any more than formerly and it should be used liberally wherever there is insufficient plant growth. It is always to be emphasized that the farmer can produce the nitrogen on the farm cheaper than he can buy it in the commercial fertilizer. This takes a season, however, and must be planned for in advance. For the particular crop and field in question, buy the nitrogen in the fertilizer if you do not already have it in the soil.

For permanent soil improvement, get plenty of limestone and organic matter in the soil. Buy phosphoric acid; the soluble forms for immediate needs and the insoluble forms as the deposit in the bank for future needs. Buy (with your neighbors) a car load of rock phosphate. Use it on the manure spreader at the rate of from five hundred to a thousand pounds an acre. Then, when planting the crop (wheat, corn, or oats), use from one to two hundred pounds of 16 per cent acid phosphate, with nitrogen if needed.

In order to furnish a guide in the selection of fertilizers for the year 1916, Table 8 includes a list of all the fertilizers registered to date of publication for sale in the state during 1916.

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Arkansas Fertilizer Co., Little Rock, Arkansas	Per cent	Per cent	Per cent	Per cent	Per cent
White Diamond Brands					
Acid Phosphate.....				14.00	.....
Ammoniated Bone Superphosphate.....	1.65		1.00	9.00	2.00
Blood, Bone and Potash.....	2.00		1.00	12.00	1.50
Corn Fertilizer.....	2.00		1.00	9.50	3.50
Corn Grower.....	1.65		1.00	8.00	3.00
Economy Fertilizer.....	.82		1.00	10.00	2.00
Early Potato and Truck Fertilizer.....	2.50		1.00	8.00	4.00
"Gro-Fast" Fertilizer.....	1.65		1.00	8.00	2.00
Special Acid Phosphate.....				16.00	.....
Corn and Wheat Fertilizer.....	1.70		1.00	10.00	4.00
Potash Special.....	2.00		1.00	9.00	5.00
Kali Bone Meal.....	1.65		6.00	8.00	4.00
Kali Superphosphate.....			1.00	11.00	3.00
Number 39.....	.82		1.00	10.00	1.00
Phospho-Kainit.....			1.00	11.50	4.00
Raw Bone and Potash.....	2.50		8.00	10.00	2.00
Raw Bone Meal Fertilizer.....	3.30		10.00	10.00	.....
Soluble Bone and Blood.....	1.65		1.00	8.00	2.00
20th Century Fertilizer.....	1.65		1.00	9.00	2.00
Vegetable Fertilizer.....	2.00		.50	7.50	3.00
Farmers' Choice.....	2.00		1.00	10.00	3.00
Kainit.....					12.00
Muriate of Potash.....					50.00
Sulphate of Potash.....					48.00
Nitrate of Soda.....	15.60				.....
Superphosphate.....				10.00	2.00
High Grade Grain Grower.....		15.00			2.00
Special Wheat Grower.....		15.00			2.00
High Grade Corn and Wheat Grower.....		15.00			4.00
Bone and Potash.....		15.00			3.00
Commonwealth Wheat Grower.....	.82		1.00	8.00	1.00
Commonwealth Corn Grower.....	.82		1.00	8.00	2.00
¹ Economy Corn and Wheat Grower.....	.82		1.00	10.00	2.00
Armour Fertilizer Works, Chicago, Illinois					
Shield Brands					
Phosphate and Potash.....			.50	12.00	2.00
14% Acid Phosphate.....			.50	14.00	.....
16% Acid Phosphate.....			.50	16.00	.....
Standard.....	.82		.50	8.00	3.00
Armour's 1-8-2 Fertilizer.....	.82		.50	8.00	2.00
Armour's 1-8-1 Fertilizer.....	.82		.50	8.00	1.00
Armour's 1-9-1 Fertilizer.....	.82		.50	9.00	1.00
Record Brand.....	.82		.50	10.00	2.00
Armour's 1-12-1 Fertilizer.....	.82		.50	12.00	1.00
Sulphate of Ammonia.....	20.57				.....
Armour's 1-14-2 Fertilizer.....	0.82		.50	14.00	2.00
Nitrate of Soda.....	14.81				.....
Bone Meal Phosphate and Potash.....	.82	18.00			2.00

¹ Withdrawing "Economy" previously registered.

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitrogen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
Armour Fertilizer Works—Cont.	Per cent	Per cent	Per cent	Per cent	Per cent
Odorless Lawn Fertilizer.....	3.30	.....	0.50	9.00	3.00
Grain Grower.....	1.65	.....	.50	8.00	2.00
Armour's 0-14-2 Fertilizer.....	.....	.....	.50	14.00	2.00
Armour's 2-8-3 Fertilizer.....	1.65	.....	.50	8.00	3.00
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
Ammoniated Phosphate and Potash.....	1.65	.....	.50	10.00	2.00
Bone Meal.....	2.47	24.00	.....	.....	.....
Armour's 2-12-3 Fertilizer.....	1.65	.....	.50	12.00	3.00
Phosphate and Potash.....	.....	.....	.50	10.00	2.00
Cereal Phosphate.....	.....	.....	.50	10.00	.....
Steamed Bone Meal.....	1.65	20.00	.....	.....	.....
Crop Grower.....	.82	.....	.50	8.00	2.00
Wheat, Corn and Oats Special.....	.82	.....	.50	8.00	1.00
No. 386 Fertilizer.....	2.47	.....	.50	8.00	6.00
Blood and Bone Fertilizer Co., St. Louis, Missouri					
Steer Head Brands					
Ammoniated Bone, H. G.....	1.65	12.00	2.00	10.00	.....
Ammoniated Bone, M. G.....	1.00	12.00	2.00	10.00	.....
Special Wheat Grower, H. G.....	1.00	12.00	2.00	10.00	3.00
Special Wheat Grower, M. G.....	1.00	9.00	2.00	7.00	1.00
Special Corn Grower, H. G.....	2.00	9.00	1.00	8.00	3.00
Special Corn Grower, M. G.....	1.65	10.00	2.00	8.00	2.00
Special Oat Grower, H. G.....	1.65	10.00	2.00	8.00	2.00
Special Oat Grower, M. G.....	1.00	9.00	2.00	7.00	1.00
Special Truck Grower, M. G.....	2.00	9.00	1.00	8.00	3.00
Soluble Bone Phosphate, H. G.....	.....	.....	.....	16.00	.....
Soluble Bone Phosphate, M. G.....	.....	.....	.....	14.00	.....
"Old Time" Wheat Grower, H. G.....	2.05	.....	2.00	8.00	.....
"Old Time" Wheat Grower, M. G.....	1.02	.....	2.00	7.00	.....
Chicago Feed and Fertilizer Co., Chicago, Illinois					
Magic Brands					
Raw Bone Meal.....	4.00	22.00	.....	.....	.....
Fertilizer No. 1.....	2.00	8.00	.....	.....	2.00
The Cochrane Packing Co., Kansas City, Kansas					
Cochrane's Ground Dried Blood.....	13.18	.....	.....	.....	.....
Cochrane's Champion Grain Grower.....	1.65	.....	1.00	10.00	1.00
Cochrane's Phosphopotash.....	1.65	.....	2.00	8.00	1.00
Cochrane's Dried Pulv. Manure.....	1.65	2.00	.....	.....	1.00
Commercial Fertilizer Co., St. Louis, Missouri					
Clover Brands					
Special Wheat Grower, Grade A.....	1.00	.....	2.00	10.00	3.00
Special Wheat Grower, Grade B.....	1.00	.....	2.00	7.00	1.00
Special Corn Grower, Grade A.....	2.00	.....	1.00	8.00	3.00
Special Corn Grower, Grade B.....	1.63	.....	2.00	8.00	2.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Commercial Fertilizer Co.	Per cent	Per cent	Per cent	Per cent	Per cent
Clover Brands—Continued					
Special Truck Grower, Grade A.....	3.25	.....	2.00	8.00	5.00
Special Truck Grower, Grade B.....	2.00	.....	1.00	8.00	3.00
Complete Fertilizer.....	1.63	.....	2.00	8.00	2.00
Bone and Potash.....	1.00	.....	2.00	7.00	1.00
Raw Bone Meal.....	3.50	21.00	.....	.....	.....
Raw Bone Meal and Potash.....	3.50	21.00	.....	.....	3.00
Commercial Bone Meal.....	3.00	18.00	.....	.....	.....
Steamed Bone Meal.....	.82	29.00	.....	.....	.....
Steamed Bone Meal and Potash.....	.82	29.00	.....	.....	1.00
Available Bone Phosphate.....	.....	.....	.....	14.00	.....
Available Bone Phosphate.....	.....	.....	.....	16.00	.....
Pure Raw Bone Meal.....	3.50	21.00	.....	.....	.....
Commercial Brands					
Special Wheat Grower, Grade A.....	1.00	.....	2.00	10.00	3.00
Special Wheat Grower, Grade B.....	1.00	.....	2.00	7.00	1.00
Special Corn Grower, Grade A.....	2.00	.....	1.00	8.00	3.00
Special Corn Grower, Grade B.....	1.65	.....	2.00	8.00	2.00
Special Grain Grower.....	1.65	.....	2.00	10.00	2.00
Special Ten-Two.....	.....	.....	2.00	10.00	2.00
Special Berry and Fruit Grower.....	1.65	.....	1.00	10.00	6.00
Complete Fertilizer.....	1.65	.....	2.00	8.00	2.00
Special Truck Grower, Grade A.....	3.25	.....	2.00	8.00	5.00
Special Truck Grower, Grade B.....	2.00	.....	1.00	8.00	3.00
Bone and Potash.....	1.00	.....	2.00	7.00	1.00
Available Bone Phosphate.....	.....	.....	1.00	14.00	.....
Available Bone Phosphate.....	.....	.....	1.00	16.00	.....
Odorless Lawn Fertilizer.....	1.65	.....	2.00	8.00	2.00
Raw Bone Meal.....	3.50	21.00	.....	.....	.....
Raw Bone Meal and Potash.....	3.50	21.00	.....	.....	3.00
Commercial Bone Meal.....	3.00	18.00	.....	.....	.....
Steamed Bone Meal.....	.82	29.00	.....	.....	.....
Steamed Bone Meal and Potash.....	.82	29.00	.....	.....	1.00
Phosphate Bone Meal, Grade A.....	1.65	20.00	.....	.....	.....
Phosphate Bone Meal, Grade B.....	.82	25.00	.....	.....	.....
Muriate of Potash.....	.....	.....	.....	.....	50.00
Nitrate of Soda.....	15.00	.....	.....	.....	.....
Tobacco Dust.....	.82	.....	.....	1.00	1.00
Continental Fertilizer Co., Chicago, Illinois					
Bear Brands					
16% Acid Phosphate.....	.....	.....	.50	16.00	.....
14% Acid Phosphate.....	.....	.....	.50	14.00	.....
Bone Meal.....	2.47	24.00	.....	.....	.....
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
0-14-2 Fertilizer.....	.....	.....	.50	14.00	2.00
Phosphate and Potash.....	.....	.....	.50	12.00	2.00
1-9-1 Fertilizer.....	.82	.....	.50	9.00	1.00
1-12-1 Fertilizer.....	.82	.....	.50	12.00	1.00
Grain and Grass Grower.....	1.65	.....	.50	8.00	2.00
Standard.....	1.65	.....	.50	10.00	2.00
1-8-1 Fertilizer.....	.82	.....	.50	8.00	1.00
1-8-2 Fertilizer.....	.82	.....	.50	8.00	2.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Contiental Fertilizer Co.—Cont.	Per cent	Per cent	Per cent	Per cent	Per cent
Bear Brands—Continued					
1-10-2 Fertilizer.....	0.82	.....	0.50	10.00	2.00
1-14-2 Fertilizer.....	.82	.....	.50	14.00	2.00
2-8-3 Fertilizer.....	1.65	.....	.50	8.00	3.00
2-12-3 Fertilizer.....	1.65	.....	.50	12.00	3.00
Bone Meal, Phosphate and Potash.....	.82	18.00	.....	.....	2.00
Phosphate and Potash.....	.....	.....	.50	10.00	2.00
10% Phosphate.....	.....	.....	.50	10.00	.....
1-8-3 Fertilizer.....	.82	.....	.50	8.00	3.00
Darling & Co., Chicago, Illinois					
Darling's Brands					
Farmers' Favorite Special.....	2.4	.....	2.00	8.00	3.00
Big Harvest Special.....	1.6	.....	2.00	12.00	3.00
Sure Winner Brand.....	.8	.....	2.00	8.00	3.00
Chicago Brand.....	1.6	.....	2.00	8.00	2.00
Sugar Beet and Root Grower Special.....	1.6	.....	2.00	8.00	3.00
Pure Bone and Potash Special.....	1.6	26.50	.....	.....	3.00
Bone Blend.....	.8	16.00	.....	.....	3.00
Pure Ground Bone.....	1.8	28.00	.....	.....	.....
Ground Raw Bone.....	3.3	21.00	.....	.....	.....
High Grade Acid Phosphate.....	.....	.....	.....	14.00	.....
Twelve-Two Brand.....	.....	.....	.....	12.00	2.00
Blood and Bone.....	4.94	14.00	.....	.....	.....
Nitrate of Soda.....	14.80	.....	.....	.....	.....
Sulphate of Potash.....	.....	.....	.....	.....	48.00
Muriate of Potash.....	.....	.....	.....	.....	50.00
Kainit.....	.....	.....	.....	.....	12.00
Sheep Manure.....	2.05	1.50	.....	.....	1.50
Pure Bone and Potash.....	1.60	27.00	.....	.....	2.00
Wheat Grower.....	.82	.....	2.00	9.00	1.00
Phosphate and Potash.....	.....	.....	.....	10.00	2.00
Empire Carbon Works, National Stock Yards, Illinois					
Boar's Head Brands					
Goodcrop.....	1.65	.....	.50	8.00	3.00
World of Good Superphosphate.....	2.06	.....	.50	8.00	1.50
World of Good Corn and Wheat Grower.....	1.65	.....	.50	8.00	2.00
Ammoniated Bone and Potash.....	.82	.....	.50	10.00	1.00
Seeding Down Guano.....	.82	.....	.50	8.00	2.00
Faultless Grain Grower.....	.82	.....	.50	.700	1.00
Sure Growth.....	.....	.....	.50	10.00	2.00
Tiptop Phosphate.....	.....	.....	.50	16.00	.....
Gilt Edge Phosphate.....	.....	.....	.50	14.00	.....
Pure Raw Bone Meal.....	3.29	20.00	.....	.....	.....
Special Bone Meal.....	1.65	20.00	.....	.....	.....
Wheat and Corn Special.....	.41	.....	.50	9.00	2.00
Ammoniated Phosphate.....	1.65	.....	.50	12.00	.....
Harvest King.....	1.65	.....	.50	11.00	1.00
Bradley's Standard Brands					
Double Crop.....	1.65	.....	.50	8.00	3.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
Empire Carbon Works—Continued National Stock Yards, Illinois	Per cent	Per cent	Per cent	Per cent	Per cent
Bradley's Standard Brand—Continued					
B. D. Sea Fowl Guano.....	2.06		0.50	8.00	1.50
Wheat and Clover Fertilizer.....	.82		.50	10.00	1.00
Corn and Wheat Phosphate.....	.82		.50	8.00	2.00
Niagara Phosphate.....	.82		.50	7.00	1.00
Alkaline Bone and Potash.....			.50	10.00	2.00
High Grade Phosphate.....			.50	16.00	
Soluble Dissolved Bone.....			.50	14.00	
Pure Raw Bone Meal.....	3.29	20.00			
Special Bone Meal.....	1.65	20.00			
Special.....	1.65		.50	12.00	
Ideal Grain Grower.....	1.65		.50	11.00	1.00
Empire Brands					
Better Than Bone.....	2.47		.50	8.00	3.00
Heavycrop.....	1.65		.50	8.00	3.00
Bone Black Fertilizer.....	2.06		.50	8.00	1.50
Crop Grower.....	1.65		.50	8.00	2.00
Wheat and Clover Fertilizer.....	.82		.50	8.00	2.00
Complete Manure.....	.82		.50	7.00	1.00
Phosphate with Potash.....			.50	10.00	2.00
16% Phosphate.....			.50	16.00	
Dissolved Bone.....			.50	14.00	
Pure Raw Bone Meal.....	3.29	20.00			
Special Bone Meal.....	1.65	20.00			
Phosphate.....			.50	10.00	
Middle West Grain Grower.....	1.65		.50	11.00	1.00
Nitro Phos.....	1.65		.50	12.00	
Farmers' Favorite.....	.82		.50	10.00	1.00
Horse Shoe Brands					
Early Crop.....	1.65		.50	8.00	3.00
National Bone Dust.....	2.06		.50	8.00	1.50
Corn and Wheat Grower.....	1.65		.50	8.00	2.00
Reliable Wheat Grower.....	.82		.50	8.00	2.00
Acidulated Bone and Potash.....	.82		.50	10.00	1.00
Animal Bone Manure.....	.82		.50	7.00	1.00
Bone and Potash.....			.50	10.00	2.00
Economy Phosphate.....			.50	16.00	
Pure Raw Bone Meal.....	3.29	20.00			
Special Bone Meal.....	1.65	20.00			
Pioneer Grain Grower.....	1.65		.50	11.00	1.00
War Brand.....	1.65		.50	12.00	
Empire Guano Co., Nashville, Tennessee					
Blood Bone and Potash.....	1.65		5.00	8.00	2.00
Red Banner Special.....	1.65		5.00	10.00	2.00
Favorite Manure.....	.82		5.00	10.00	3.00
Wheat, Oat and Corn Special.....	.82		5.00	7.00	1.00
Peruvian Guano Mixture.....	.82		5.00	8.00	4.00
Clover and Wheat Special.....	.82		5.00	12.00	2.00
Missouri Grain Grower.....	.41		5.00	8.00	4.00
Corn and Wheat Special.....	.41		5.00	9.00	2.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
	Per cent	Per cent	Per cent	Per cent	Per cent
Empire Guano Co.—Continued					
Soluble Bone Guano.....	0.82		5.00	8.00	2.00
Missouri Grain Special.....	.41		5.00	12.00	1.00
High Grade Potash Mixture.....			5.00	10.00	4.00
Bone and Potash.....			5.00	10.00	2.00
High Grade Acid Phosphate.....			2.00	14.00	
Bone Meal Mixture.....	2.47		10.00	7.00	2.00
Pure Raw Bone Meal.....	3.90	22.00			
Half and Half.....	1.65		10.00	7.00	2.00
Gate City Fertilizer Co., Texarkana, Arkansas					
Red Ball Brands					
Raw Bone Fertilizer.....	3.30		10.00	10.00	
Row Bone and Potash.....	2.50		8.00	10.00	
Extra Acid Phosphate.....			.50	16.00	
Corn Fertilizer.....	2.00		1.00	10.00	3.00
Early Trucker.....	2.50		1.00	8.00	4.00
Potash-Acid.....			1.00	11.50	4.00
Acid Phosphate.....			.50	14.00	
Complete Fertilizer.....	1.65		1.00	10.00	1.00
Four States' Standard.....	1.65		1.00	8.50	2.50
"Old Time" Vegetable Grower.....	2.00		.50	7.50	3.00
Phosphate and Potash.....			1.00	11.00	3.00
Southern Corn Grower.....	1.65		1.00	8.00	3.00
Acidulated Bone.....	.82		1.00	10.00	1.00
Soluble Bone Fertilizer.....	1.65		1.00	8.00	2.00
Wheat Grower.....	.82		1.00	10.00	2.00
National Wheat Grower.....	.82		1.00	8.00	1.00
National Corn Grower.....	.82		1.00	8.00	2.00
German Kali Works, Inc., New York, New York					
Muriate of Potash.....					48.00
Sulfate of Potash.....					47.00
Kainit.....					12.00
Gro-Mo Manufacturing Co., St. Louis, Missouri					
Gro-Mo Plant Food.....	3.25		1.00	8.00	3.00
Hirsh Stein and Co., Chicago, Illinois					
Calumet Brands					
Complete Fertilizer.....	1.64		1.00	8.00	2.00
Special Corn Grower.....	.82		1.00	8.00	4.00
Potato, Tobacco and Onion Grower.....	1.64		1.00	8.00	5.00
Potato, Tomato and Onion Grower.....	1.64		1.00	8.00	5.00
Special Wheat Grower.....	.82		1.00	8.00	4.00
Grain Grower.....			1.00	14.00	
Bone Phosphate and Potash.....	.41		1.00	10.00	2.00
Special Crop Grower.....	.82		1.00	11.00	3.00
Special Phosphate and Potash.....			1.00	11.00	3.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitrogen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
	Per cent	Per cent	Per cent	Per cent	Per cent
Hirsh Stein & Co—Continued					
Special High Grade Phosphate and Potash.....			1.00	15.00	3.00
Special Pure Bone Meal and Potash.....	0.82	20.00			4.00
Bone, Blood and Potash.....	.82		1.00	13.00	1.00
Special Pure Bone Meal.....	.82	29.77			
Pure Raw Bone Meal.....	3.70	20.00			
Special Bone Mixture.....	.41	18.00			2.00
Pure Bone Meal and Potash.....	.82	14.00		10.00	2.00
Acid Phosphate.....				14.00	
Ammoniated Phosphate and Potash.....	.82			10.00	1.00
Hummer Wheat Grower.....	.82			10.00	.50
P. B. Mathiason Mfg. Co., St. Louis, Missouri					
Increscent Brands					
Raw Bone Meal.....	3.29	20.00			
Pure Bone Meal.....	2.47	23.00			
Bone Meal.....	1.65	20.00			
Extra Fine Ground Bone Meal.....	2.06	22.00			
Raw Bone Meal and Potash.....	2.47	18.00			3.00
Alkaline Bone.....				10.00	3.00
Grain Grower.....	1.65		2.00	8.00	2.00
Acidulated Bone and Potash.....	2.47		2.00	9.00	2.00
Special Corn and Oats Grower.....	.83		1.00	7.00	1.00
Complete Fertilizer.....	.83		1.00	8.00	3.00
Lawn Fertilizer.....	4.00			9.00	5.00
Potato and Tobacco Grower.....	1.65		2.00	7.00	4.50
Dissolved Bone.....	3.09		2.00	9.00	4.00
Bearing Tree Mixture.....	2.00		2.00	10.00	7.50
Acidulated Bone Meal.....	2.47		2.00	10.00	
Special Wheat Grower.....	1.65		2.00	9.00	1.00
No. 1 Wheat Grower.....	1.00			9.00	3.00
Kainit.....					12.00
Muriate of Potash.....					48.00
Nitrate of Soda.....	15.50				
Acid Phosphate.....				14.00	
St. Louis Fertilizer.....	1.65		2.00	8.00	2.00
Basing Mixture.....	2.88			19.00	15.00
Odorless Lawn Food.....	3.29		4.00	4.00	4.00
Morris & Co., Chicago, Illinois					
Big One—Ground Raw Bone.....	3.30	24.00			
Big Two—Pure Bone Meal.....	2.00	28.00			
Big Three.....	2.50		3.00	7.00	2.00
Big Five.....	2.50		3.00	7.00	1.00
Big Six—Special Bone Meal and Potash.....	.41	16.00			2.00
Big Seven—Bone Meal and Potash.....	1.24	16.00			3.00
Big Eight—Ammoniated Acid Phosphate and Potash.....	.82		1.00	7.00	1.00
Big Ten—Prepared Manure with Phosphate and Potash.....	1.65		2.00	8.00	2.00
Big Twelve—Prepared Manure with Phos- phate and Potash.....	.82		2.00	7.00	3.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K O)
		Total	Insolu- ble	Avail- able	
Pulverized Manure Co., National Stock Yards, Illinois	Per cent	Per cent	Per cent	Per cent	Per cent
Wizard Brand Manure.....	1.80			1.00	1.00
Read Phosphate Co., Nashville, Tennessee					
Pure Raw Bone Meal.....	3.90	22.00			
Half and Half.....	1.65		10.00	7.00	2.00
Missouri Wheat Grower.....	1.65		5.00	12.00	3.00
Blood and Bone No. 1.....	1.65		5.00	8.00	2.00
H. G. Ammoniated Dissolved Bone.....	1.65		5.00	10.00	2.00
Farmers Special Manure.....	.82		5.00	10.00	3.00
Corn, Wheat and Oat Grower.....	.82		5.00	7.00	1.00
Nitro Phospho Potasso.....	.82		5.00	8.00	4.00
Wheat and Clover Grower.....	.82		5.00	12.00	2.00
Standard Grain Grower.....	.41		5.00	8.00	4.00
Wheat and Corn Grower.....	.41		5.00	9.00	2.00
H-G-Special Potash Mixture.....			5.00	10.00	4.00
Alkaline Bone.....			5.00	10.00	2.00
H. G. Acid Phosphate.....			2.00	14.00	
Bone Meal Mixture.....	2.47		10.00	7.00	2.00
Soluble Bone.....	.82		5.00	8.00	2.00
Missouri Grain Special.....	.41		5.00	12.00	1.00
Ruhm Phosphate Mining Co., Mt. Pleasant, Tennessee					
Ground Phosphate Rock.....		30.00	30.00		
Saint Louis Seed Co., St. Louis, Missouri					
Bone Meal (P. B. Mathiason).....	1.65	20.00			
Sheep Manure, Swift & Co.....	1.65	1.00			1.50
Cattle Manure, Swift & Co.....	1.65	1.00			1.00
Bonora, Bonora Chemical Co.....	15/17			5/6	3/4
Walker's Plant Food.....	10/12		12/14		11/12
Sterling Fertilizer Co., Chicago, Illinois					
Sterling's Brands					
Bone Meal and Potash.....	1.6	26.5			3.00
Pure Bone Meal.....	1.8	28.00			
Raw Bone Meal.....	3.3	21.00			
Blended Bone.....	.8	16.00			3.00
Acid Phosphate.....				14.00	
Twelve-Two Brand.....				12.00	2.00
Grain Grower.....	.8		2.00	8.00	3.00
Universal.....	1.6		2.00	8.00	2.00
Golden Harvest.....	1.6		2.00	8.00	3.00
Harvest Queen.....	1.6		2.00	12.00	3.00
Harvest King.....	2.4		2.00	8.00	3.00
Nitrate of Soda.....	14.8				
Sulphate of Potash.....					48.00
Muriate of Potash.....					50.00

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insol- uble	Avail- able	
Sterling Fertilizer Co. Chicago, Illinois	Pea cent	Per cent	Per cent	Per cent	Per cent
Sterling's Brands—Continued					
Kainit.....					12.00
Bone and Potash.....	1.6	27.00			2.00
Special Wheat Fertilizer.....	.82		2.00	9.00	1.00
Sulzberger and Sons Co., Chicago, Illinois					
S. & S. Brands					
Raw Bone Meal.....	3.75	23.00			
Raw Bone Meal and Plant Potash.....	1.65	14.00			2.00
Pure Bone Meal.....	2.50	24.00			
Bone Grain Grower.....	1.65	10.00			2.00
Blood and Bone.....	4.94	13.50			
Popular Bone Meal.....	1.65	20.00			
Special Bone Meal.....	1.23	28.00			
Corn and Wheat Special.....	1.65		2.00	8.00	2.00
Corn and Oat Grower.....	.82		1.00	9.00	1.00
Special Grain Fertilizer.....	1.65		2.00	10.00	2.00
Acid Phosphate.....				14.00	
Swift & Co., East St. Louis, Illinois					
Swift's Brands					
Red Steer Wheat and Corn Grower.....	1.65		1.00	8.00	2.00
K Grain Grower.....	.82		.50	12.00	1.00
Grain and Grass Grower.....	1.65		1.00	12.00	1.00
M Grain Grower.....	1.65		1.00	11.00	1.00
N Grain Grower.....	1.65		1.00	9.00	1.00
Superphosphate.....	1.65		1.00	8.00	2.00
Special Grain Fertilizer.....	1.65		1.00	10.00	2.00
A Vegetable and Fruit Grower.....	2.47		1.00	8.00	3.00
W Tomato and Vegetable Grower.....	1.65		1.00	8.00	3.00
Complete Fertilizer.....	.82		.50	8.00	1.00
Garden City Phosphate.....				14.00	
High Grade Acid Phosphate.....				16.00	
12-1 Brand.....				12.00	1.00
14-1 Brand.....				14.00	1.00
Standard Grade Phosphate and Potash.....				12.00	2.00
Beef Bone and Potash.....	1.85	25.00			1.00
Pure Bone Meal.....	2.47	24.00			
Ground Steamed Bone.....	1.65	20.00			
Ground Beef Bone.....	2.05	27.00			
Bone Meal and Blood.....	3.75	23.00			
Special Bone Meal.....	.82	29.00			
Raw Bone Meal.....	3.75	23.00			
Steam Bone and Potash.....	.82	18.00			1.00
Pulverized Sheep Manure.....	1.65	1.00			1.50
No. 3 Manure Mixture.....	1.65		1.00	10.00	2.00
No. 4 Manure Mixture.....	1.65	16.00			.75
Pulverized Cattle Manure.....	1.65	1.00			1.00
Shredded Cattle Manure.....	1.65	1.00			1.50
Champion Wheat and Corn Grower.....	1.65		1.00	12.00	2.00
Nitrate of Soda.....	14.81				

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Continued

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Swift & Co., East St. Louis, Illinois	Per cent	Per cent	Per cent	Per cent	Per cent
Swift's Brands—Continued					
Bone Meal and Phosphate.....	.82		7.00	13.00	.....
L Grain Grower.....	1.65		1.00	12.00	1.00
Pioneer Brands					
No 1 Grain Fertilizer.....	1.65		1.00	9.00	1.00
No. 2 Grain Fertilizer.....	.82		.50	12.00	1.00
General Crop Grower.....	1.65		1.00	8.00	2.00
Vegetable and Fruit Grower.....	2.47		1.00	8.00	3.00
High Grade Acid Phosphate.....				16.00	
14-1 Brand.....				14.00	1.00
Bone Meal.....	2.47	24.00			
Bone Mea with Potash.....	1.85	25.00			1.00
Chicago Bone Meal.....	1.65	20.00			
Chicago Bone Meal and Potash.....	.82	18.00			1.00
Raw Bone Meal.....	3.75	23.00			
Bone Meal and Blood.....	3.75	23.00			
12-2 Brand.....				12.00	2.00
1-7-1 Brand.....	.82		.50	7.00	1.00
Wheat and Corn Grower.....	1.65		1.00	10.00	2.00
No. 3 Grain and Grass Grower.....	1.65		1.00	11.00	1.00
Tennessee Chemical Co., Chicago, Illinois					
Ox Brands					
16% Acid Phosphate.....			.50	16.00	.....
0-14-2 Fertilizer.....			.50	14.00	2.00
1-9-1 Fertilizer.....	.82		.50	9.00	1.00
1-12-1 Fertilizer.....	.82		.50	12.00	1.00
Wheat and Grass Fertilizer.....	1.65		.50	8.00	2.00
Ammoniated Phosphate and Potash.....	1.65		.50	10.00	2.00
Bone Meal.....	2.47	24.00			
1-8-1 Fertilizer.....	.82		.50	8.00	1.00
14% Acid Phosphate.....			.50	14.00	.....
Phosphate and Potash.....			.50	12.00	2.00
1-8-2 Fertilizer.....	.82		.50	8.00	2.00
1-10-2 Fertilizer.....	.82		.50	10.00	.200
1-14-2 Fertilizer.....	.82		.50	14.00	2.00
2-8-3 Fertilizer.....	1.65		.50	8.00	3.00
2-12-3 Fertilizer.....	1.65		.50	12.00	3.00
Raw Bone Meal.....	3.70	22.00			
Bone Meal, Phosphate and Potash.....	.82	18.00			2.00
1-8-3 Fertilizer.....	.82		.50	8.00	3.00
Phosphate and Potash.....			.50	10.00	2.00
10 Per cent Phosphate.....			.50	10.00	.....
Special Grain Grower.....	.82		.50	8.00	2.00
Tuscarora Fertilizer Co., Chicago, Illinois					
Tuscarora Brands					
16% Acid Phosphate.....			.50	16.00	.....
14% Acid Phosphate.....			.50	14.00	.....

TABLE 3.—FERTILIZER BRANDS REGISTERED IN MISSOURI: 1915—Concluded

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Tuscarora Fertilizer Co., Chicago, Illinois	Per cent	Per cent	Per cent	Per cent	Per cent
Tuscarora Brands—Continued					
Bone Meal.....	2.47	24.00	.....	.....	.....
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
0-14-2 Fertilizer.....	.....	.....	.50	14.00	2.00
Phosphate and Potash.....	.....	.....	.50	12.00	2.00
1-9-1 Fertilizer.....	.82	.....	.50	9.00	1.00
1-12-1 Fertilizer.....	.82	.....	.50	12.00	1.00
Standard Fertilizer.....	1.65	.....	.50	8.00	2.00
Wheat and Corn Grower.....	1.65	.....	.50	10.00	2.00
1-8-1 Fertilizer.....	.82	.....	.50	8.00	1.00
Grain Special.....	.82	.....	.50	8.00	3.00
1-8-2 Fertilizer.....	.82	.....	.50	8.00	2.00
1-10-2 Fertilizer.....	.82	.....	.50	10.00	2.00
1-14-2 Fertilizer.....	.82	.....	.50	14.00	2.00
2-8-3 Fertilizer.....	1.65	.....	.50	8.00	3.00
2-12-3 Fertilizer.....	1.65	.....	.50	12.00	3.00
Bone Meal, Phosphate and Potash.....	.82	18.00	.....	.....	2.00
Phosphate and Potash.....	.....	.....	.50	10.00	2.00
10% Phosphate.....	.....	.....	.50	10.00	.....
Special Grain Grower.....	.82	.....	.50	8.00	2.00
Virginia-Carolina Chemical Co., Memphis, Tennessee					
Royal High Grade Guano.....	1.65	.....	.....	10.00	2.00
Beef, Blood and Bone Fertilizer BBB.....	1.65	.....	.....	8.00	2.00
Scott's State Standard Guano.....	1.65	.....	.....	8.00	2.00
Champion Corn and Wheat Grower.....	.82	.....	.....	8.00	2.00
Royal Vegetable Fertilizer.....	2.47	.....	.....	8.00	4.00
V-C Garden Truck Special.....	4.95	.....	.....	6.00	4.00
V-3-C Fruit and Truck Special.....	3.30	.....	.....	6.00	8.00
Memphis Truck Special.....	3.30	.....	.....	8.00	4.00
Progressive Farmer Compound.....	4.94	.....	.....	6.00	1.50
Victor Bone and Potash Compound.....	.....	.....	.....	15.00	3.00
Royal Grain Grower.....	.....	.....	.....	10.00	4.00
Capital Bone and Potash Compound.....	.....	.....	.....	10.00	2.00
Virginia-Carolina Superphosphate.....	.....	.....	.....	16.00	.....
Victor High Grade Acid Phosphate.....	.....	.....	.....	14.00	.....
Tip Top Nitrogen Compound.....	13.20	2.00	.....	.....	.....
Ground Animal Bone.....	3.30	20.00	.....	.....	.....
Crescent Complete Fertilizer.....	1.65	.....	.....	12.00	1.00
Monarch Bone and Potash Compound.....	.....	.....	.....	15.00	2.00
Scott's Potasso Phospho.....	.....	.....	.....	12.00	2.00

TABLE 4.—VARIATION FROM MANUFACTURER'S GUARANTEE

Manufacturer	Samples analyzed	Below guarantee		Average loss ¹ per ton	Average gain ² per ton
			Per cent		
Sulzberger & Sons Co.....	15	1	6.7	\$0.04	\$2.91
Empire Carbon Works, Bradley Brands. . .	14	0	.0	.00	1.67
Empire Guano Co.....	2	0	0	.00	1.66
Empire Carbon Works, Horse Shoe Brands..	20	3	15.0	.70	1.32
Darling & Co.....	19	7	36.8	.66	.98
Blood and Bone Fertilizer Co.....	3	0	0	.00	.98
Virginia-Carolina Chemical Co.....	5	1	20.0	.36	.84
Empire Carbon Works, Empire Brands.	38	7	18.4	1.73	.83
Empire Carbon Works, Boar's Head Brands.	29	9	31.0	.70	.71
Morris & Co.....	24	7	29.2	1.43	.60
Commercial Fertilizer Co., Commercial Brands.....	8	2	25.0	2.06	.56
Armour Fertilizer Works.....	44	21	47.7	.78	.53
Hirsh, Stein & Co.....	28	11	39.3	1.29	.40
Swift & Co.....	82	32	39.0	1.39	.34
Tuscarora Fertilizer Company.....	24	9	37.5	1.02	.32
Continental Fertilizer Co.....	16	7	43.8	.99	.31
Tennessee Chemical Co.....	14	7	50.0	1.06	.22
Commercial Fertilizer Co., Clover Brands...	19	9	47.4	1.00	.06
Read Phosphate Co.....	26	12	46.2	1.62	.01
P. B. Mathiason Manufacturing Co.	2	2	100.0	.44	— .44
Arkansas Fertilizer Co.....	22	11	50.0	2.72	— .74
Gate City Fertilizer Co.....	8	6	75.0	2.11	— 1.49
Total.....	462	164	35.5	\$128.00	\$.53

¹ This is the average for those samples which show losses—not for all the samples of this company. The last column shows the average gain or loss for all samples secured from each manufacturer. The reader must remember that this table has no reference to the price paid on the market. The gain or loss per ton is the value of the plant food present above or below that guaranteed by the manufacturer. If the fertilizer contains 20 pounds, or one per cent more nitrogen per ton than guaranteed, the gain at 20 cents a pound is \$4 for the purposes of this table, even tho the price charged for the fertilizer is so high as to cause a loss, or so low as to cause a gain of \$10 from the standpoint of market price.

² A minus sign (—) indicates a loss instead of a gain. This is the average for all samples analyzed.

TABLE 5.—SAMPLES ANALYSED GIVING RESULTS BELOW THE GUARANTEE

Manufacturer	Nitrogen		Total Phosphoric Acid			Available Phosphoric Acid			Potash			All Analyses			
	Total	Deficient		Total	Deficient		Total	Deficient		Total	Deficient		Total	Deficient	
		Per cent			Per cent			Per cent			Per cent				
Empire Carbon Works, Bradley's Brands. . .	13	0	0.0	14	1	7.1	12	6	50.0	11	5	45.5	50	12	24.0
P. B. Mathiason Mfg. Co.	2	1	50.0	2	0	.0	2	0	.0	2	1	50.0	8	2	25.0
Blood and Bone Fertilizer Co.	3	0	.0	3	0	.0	3	1	33.3	2	2	100.0	11	3	27.3
Virginia-Carolina Chemical Co.	2	1	50.0	.....	.....	.....	5	1	20.0	4	1	25.0	11	3	27.3
Empire Carbon Works, Horse Shoe Brands.	15	0	.0	20	2	10.0	18	12	66.7	17	6	35.3	70	20	28.6
Empire Carbon Works, Boar's Head Brands.	24	4	16.7	29	2	6.9	26	14	53.8	24	10	41.7	103	30	29.1
Empire Carbon Works, Empire Brands.	33	5	15.2	38	3	7.9	29	18	62.1	25	12	48.0	125	38	30.4
Sulzberger & Sons Co.	15	5	33.3	15	1	6.7	2	1	50.0	6	5	83.3	38	12	31.6
Hirsh, Stein & Co.	26	8	30.8	28	10	35.7	20	3	15.0	21	11	52.4	95	32	33.7
Commercial Fertilizer Co., Commercial Brands.	8	3	37.5	8	3	37.5	5	0	.0	5	3	60.0	26	9	34.6
Tennessee Chemical Co.	12	6	50.0	14	1	7.1	11	5	45.5	11	6	54.5	48	18	37.5
Morris & Co.	24	13	54.2	24	9	37.5	11	7	63.6	18	2	11.1	77	31	40.3
Tuscarora Fertilizer Co.	21	8	38.1	24	6	25.0	19	8	42.1	17	11	64.7	81	33	40.7
Empire Guano Co.	1	0	.0	2	0	.0	2	1	50.0	2	2	100.0	7	3	42.9
Commercial Fertilizer Co., Clover Brands.	17	10	58.8	17	4	23.5	14	7	50.0	12	5	41.7	60	26	43.3
Armour Fertilizer Works.	39	26	66.7	43	6	14.0	31	13	41.9	32	21	65.6	145	66	45.5
Arkansas Fertilizer Co.	18	9	50.0	22	0	.0	21	17	81.0	19	11	57.9	80	37	46.3
Continental Fertilizer Co.	13	5	38.5	16	6	37.5	11	6	54.5	11	7	63.6	51	24	47.1
Darling & Co.	14	8	57.1	14	3	21.4	15	5	33.3	14	11	78.6	57	27	47.4
Swift & Co.	73	46	63.0	72	20	27.8	52	33	63.5	55	28	50.9	252	127	50.4
Read Phosphate Co.	22	11	50.0	25	9	36.0	24	12	50.0	24	17	70.8	95	49	51.6
Gate City Fertilizer Co.	7	3	42.9	8	0	.0	8	8	100.0	7	6	85.7	30	17	56.7
Total.	402	172	42.8	438	86	19.6	341	178	52.2	339	183	54.0	1520	619	40.7

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
				Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.		
135	Arkansas Fertilizer Co., Little Rock, Arkansas White Diamond Brands Ammoniated Bone Superphosphate.....	D. W. Robertson L. Co., Marshfield.....	1.65	1.62	10.00	13.95	1.00	6.28	9.00	7.67	2.00	2.18	\$20.20	\$20.81	135
284	Ammoniated Bone Superphosphate.....	Forsythe-Goostree G. Co., Fairview.....	1.65	1.97	10.00	14.89	1.00	5.83	9.00	9.06	2.00	.71	20.20	21.93	284
134	Blood, Bone and Potash.....	Co. Warehouse, Carthage.....	2.00	1.40	13.00	14.80	1.00	5.51	12.00	9.29	1.50	1.10	24.60	20.27	134
279	Blood, Bone and Potash.....	Farmer's Elevator, Purdy.....	2.00	1.50	13.00	14.45	1.00	5.45	12.00	9.45	1.50	1.86	24.60	21.57	279
278	Corn Grower.....	Horn & Algeo, Lockwood.....	2.00	1.36	10.50	13.13	1.00	6.34	9.50	6.79	3.50	2.09	24.00	18.64	278
281	Kali Superphosphate.....	Forsythe-Goostree G. Co., Fairview.....	.....	.....	12.00	15.37	1.00	5.22	11.00	10.15	3.00	.48	17.20	14.85	281
280	Kali Superphosphate.....	Neice & Farris, Miller.....	.....	.....	12.00	13.50	1.00	5.38	11.00	8.12	3.00	2.95	17.20	15.43	280
275	Number 39.....	Neice & Farris, Miller.....	.82	.86	11.00	14.79	1.00	5.98	10.00	8.81	1.00	2.13	16.88	18.96	275
282	Phospho Kainit.....	Forsythe-Goostree G. Co., Fairview.....	.....	.....	12.50	16.73	1.00	4.89	11.50	11.84	4.00	.66	19.00	16.96	282
285	Raw Bone and Potash.....	Neice & Farris, Miller.....	2.50	1.83	18.00	18.77	8.00	12.80	10.00	5.97	2.00	4.20	27.60	24.64	285
138	Raw Bone and Potash.....	Co. Warehouse, Carthage.....	2.50	2.27	18.00	18.02	8.00	10.88	10.00	7.14	2.00	2.88	27.60	25.46	138
137	Raw Bone and Potash.....	D. W. Robertson L. Co., Marshfield.....	2.50	2.10	18.00	18.97	8.00	10.82	10.00	8.15	2.00	2.43	27.60	25.43	137
23	Raw Bone Meal Fertilizer.....	F. J. Pugh & Sons, Golden City ..	3.30	2.96	20.00	22.02	10.00	11.56	10.00	10.46	.....	.....	29.20	29.01	23

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Arkansas Fertilizer Co.,		Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	
	White Diamond Brands, Continued		ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	
139	Raw Bone Meal Fertilizer.....	D. W. Robertson L. Co., Marshfield.....	3.30	3.48	20.00	21.67	10.00	13.34	10.00	8.33	.....	.....	\$29.20	\$29.26	139
276	Raw Bone Meal Fertilizer.....	Horn & Algeo, Lockwood.....	3.30	2.91	20.00	22.72	10.00	16.66	10.00	6.06	.....	.....	29.20	25.57	276
133	Soluble Bone and Blood.....	Company Warehouse, Carthage....	1.65	2.08	9.00	14.38	1.00	6.04	8.00	8.34	2.00	1.49	19.00	22.54	133
277	Soluble Bone and Blood.....	Farmer's Elevator, Purdy.....	1.65	1.77	9.00	13.58	1.00	6.84	8.00	6.74	2.00	1.67	19.00	19.91	277
283	High Grade Corn and Wheat Grower.....	Johannes & Sons, Lamar.....	.....	.....	15.00	16.36	.....	.....	.....	.....	4.00	4.41	15.30	16.74	283
132	Economy Corn and Wheat Grower.....	Co. Warehouse, Carthage.....	.82	.97	11.00	14.94	1.00	5.74	10.00	9.20	2.00	1.32	18.08	18.80	132
273	Economy Corn and Wheat Grower.....	Ark. F. Co. Warehouse, Carthage	.82	1.03	11.00	13.83	1.00	6.07	10.00	7.76	2.00	2.05	18.08	18.52	273
272	Economy Corn and Wheat Grower.....	Forsythe-Goostree G. Co., Fairview.....	.82	1.31	11.00	15.65	1.00	5.72	10.00	9.93	2.00	.40	18.08	19.93	272
271	Economy Corn and Wheat Grower.....	J. W. Frame, Springfield.....	.82	.89	11.00	14.81	1.00	5.94	10.00	8.87	2.00	1.49	18.08	18.37	271
	Armour Fertilizer Works, Chicago, Illinois Shield Brands														
102	Phosphate and Potash.....	Farmer's Supply Co., Purcell.....	.....	.....	10.50	10.14	0.50	0.32	10.00	9.82	2.00	1.50	14.60	13.71	102
15	14 per cent Acid Phosphate.....	O. E. Kligenburg, Truesdail.....	.....	.....	14.50	14.26	.50	.97	14.00	13.29	.....	.....	17.00	16.34	15

433	16 per cent Acid Phosphate.....	Sampled at Factory, Kansas City	.....	.....	16.50	18.17	0.50	1.97	16.00	16.20	.....	.....	\$19.40	\$20.23	433
14	Standard.....	Hoech, New Truxton.....	0.82	0.64	8.50	8.21	.50	0.55	8.00	7.66	3.00	2.77	16.68	15.29	14
146	Standard.....	Vick & Bucholtz, New Haven....	.82	.80	8.50	9.27	.50	1.47	8.00	7.80	3.00	2.53	16.68	16.19	146
145	Standard.....	Bray Supply Co., St. James.....	.82	.69	8.50	8.80	.50	1.42	8.00	7.38	3.00	2.65	16.68	15.37	145
446	Armour's 1-8-1 Fertilizer.....	Sampled at Factory, Kansas City	.82	.58	8.50	8.38	.50	.74	8.00	7.64	1.00	1.20	14.28	13.23	446
2	Armour's 1-9-1 Fertilizer.....	A. H. Williams, Silex.....	.82	.76	9.50	9.93	.50	.49	9.00	9.44	1.00	1.15	15.48	15.95	2
1	Armour's 1-9-1 Fertilizer.....	J. F. Coontz, Vandalia.....	.82	.79	9.50	9.73	.50	.65	9.00	9.08	1.00	1.03	15.48	15.56	1
155	Armour's 1-9-1 Fertilizer.....	Alexander & Sons, Paris.....	.82	.95	9.50	9.62	.50	.48	9.00	9.14	1.00	1.10	15.48	16.28	155
442	Record Brand.....	Sampled at Factory, Kansas City	.82	.93	10.50	11.46	.50	1.02	10.00	10.44	2.00	2.21	17.88	19.31	442
151	Armour's 1-12-1 Fertilizer.....	Vick & Bucholtz, New Haven....	.82	.82	12.50	14.13	.50	2.38	12.00	11.75	1.00	.97	19.08	19.49	151
437	Armour's 1-12-1 Fertilizer.....	Sampled at Factory, Kansas City	.82	.93	12.50	14.11	.50	1.22	12.00	12.89	1.00	.91	19.08	20.77	437
286	Nitrate of Soda.....	Sampled at Factory, St. Louis...	14.81	15.78	.....	.....	.....	.....	.....	.....	.....	.....	59.24	63.12	286
17	Bone Meal Phosphate and Potash	J. C. Coontz, Vandalia.....	.82	.88	18.00	17.27	.....	.....	.....	.....	2.00	1.68	18.28	17.64	17
16	Bone Meal, Phosphate and Potash	J. F. Hill, California.....	.82	.71	18.00	19.23	.....	.....	.....	.....	2.00	2.14	18.28	18.87	16
144	Bone Meal, Phosphate and Potash.....	C. E. Bagby, Leslie.....	.82	.90	18.00	18.63	.....	.....	.....	.....	2.00	1.82	18.28	18.82	144
451	Odorless Lawn Fertilizer.....	Sampled at Factory, Kansas City	3.30	3.05	9.50	10.63	.50	1.00	9.00	9.63	3.00	3.67	27.80	28.56	451
9	Grain Grower.....	Archias Seed Co., Sedalia.....	1.65	1.35	8.50	10.39	.50	2.13	8.00	8.26	2.00	1.93	18.80	18.48	9
8	Grain Grower.....	Laverne Woody, Golden City.....	1.65	1.55	8.50	9.58	.50	1.29	8.00	8.29	2.00	2.30	18.80	19.55	8
154	Grain Grower.....	Turner & Anderson, Center.....	1.65	1.35	8.50	8.83	.50	.78	8.00	8.05	2.00	1.74	18.80	17.46	154
289	Armour's 0-14-2 Fertilizer.....	Cassville Produce Co., Cassville.....	.....	.....	14.50	15.10	.50	1.75	14.00	13.35	2.00	2.08	19.40	19.22	289
3	Armour's 0-14-2 Fertilizer.....	Archias Seed Co., Sedalia.....	.....	.....	14.50	14.68	.50	.63	14.00	14.05	2.00	1.72	19.40	19.17	3
288	Armour's 2-8-3 Fertilizer.....	L. L. Hall, Asbury.....	1.65	1.44	8.50	9.36	.50	1.45	8.00	7.91	3.00	2.85	20.00	19.25	288
13	Raw Bone Meal.....	O. E. Klingenburg, Truesdall....	3.70	3.72	22.00	25.83	.....	.....	.....	.....	.....	.....	30.20	32.96	13
12	Raw Bone Meal.....	J. F. Hill, California.....	3.70	3.18	22.00	25.71	.....	.....	.....	.....	.....	.....	30.20	30.72	12
152	Raw Bone Meal.....	Turner & Anderson, Center.....	3.70	3.58	22.00	24.85	.....	.....	.....	.....	.....	.....	30.20	31.72	152
287	Ammoniated Phosphate and Potash.....	J. W. Grant, Everton.....	1.65	1.69	10.50	10.68	.50	1.00	10.00	9.68	2.00	1.53	21.20	20.62	287
7	Ammoniated Phosphate and Potash.....	Archias Seed Co., Sedalia.....	1.65	1.14	10.50	12.20	.50	2.46	10.00	9.74	2.00	1.90	21.20	19.51	7
6	Ammoniated Phosphate and Potash.....	A. H. Williams, Silex.....	1.65	1.25	10.50	10.89	.50	.92	10.00	9.97	2.00	1.97	21.20	19.69	6
5	Ammoniated Phosphate and Potash.....	J. F. Coontz, Vandalia.....	1.65	1.49	10.50	11.28	.50	1.00	10.00	10.28	2.00	1.68	21.20	20.72	5
22	Bone Meal.....	J. F. Hill, California.....	2.47	2.22	24.00	29.25	.....	.....	.....	.....	.....	.....	26.68	29.36	22

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number	
			Guaranteed	Found	Total		Insoluble		Available		Guaranteed	Found	Guaranteed	Found		
					Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.						Per ct.
Armour Fertilizer Works,																
Shield Brands—Continued																
21	Bone Meal.....	J. C. Coontz, Vandalia.....	2.47	2.56	24.00	27.61
153	Bone Meal.....	Alexander & Son, Paris.....	2.47	2.58	24.00	25.52
18	Armour's Steamed Bone.....	A. H. Williams, Silx.....	1.65	1.37	20.00	21.24
149	Armour's Steamed Bone.....	Frankford E. Co., Frankford....	1.65	2.17	20.00	28.89
148	Armour's Steamed Bone.....	Holt & Taylor M. Co., New Bloomfield.....	1.65	1.63	20.00	29.04
147	Crop Grower.....	Shelbina Milling Co., Shelbina...	.82	.75	8.50	8.42	0.50	0.42	8.00	8.00	2.00	1.94	15.48	15.10	147	
11	Crop Grower.....	Laverne Woody, Golden City....	.82	.71	8.50	9.08	.50	.48	8.00	8.60	2.00	1.53	15.48	15.19	11	
150	Special Grain Grower.....	C. E. Bagby, Leslie.....	.82	.75	8.50	9.27	.50	1.51	8.00	7.76	2.00	1.57	15.48	14.79	150	
20	Wheat, Corn and Oat Special....	O. E. Klingenburg, Truesdail....	.82	.72	8.50	8.97	.50	.53	8.00	8.44	1.00	1.15	14.28	14.60	20	
19	Wheat, Corn and Oat Special....	Hoech, New Truxton.....	.82	.71	8.50	9.09	.50	.56	8.00	8.53	1.00	.99	14.28	14.49	19	
156	Wheat, Corn and Oat Special....	Frankford E. Co., Frankford....	.82	.87	8.50	8.73	.50	.52	8.00	8.21	1.00	1.06	14.28	14.81	156	
4	3-8-6 Fertilizer.....	Archias Seed Co., Sedalia.....	2.47	1.93	8.50	10.14	.50	1.78	8.00	8.36	6.00	5.92	26.88	25.56	4	
Chicago Feed and Fertilizer Co., Chicago, Illinois																
Magic Brands¹																
422	Magic Fertilizer.....	A. S. Cirney, Kirkwood.....	.....	2.62	.....	10.39	.....	.....	.....	.....	.....	1.58	.....	19.65	422
423	Success Fertilizer.....	A. S. Cirney, Kirkwood.....	.....	1.95	.....	3.17	.....	.....	.....	.....	.....	1.56	.....	11.89	423
424	Magic Brand.....	A. S. Cirney, Kirkwood.....	.....	2.61	.....	23.66	.....	.....	.....	.....	.....	.....	.....	27.00	424
425	Blood and Bone.....	W. A. Rowe, Kirkwood.....	.....	4.04	.....	16.52	.....	.....	.....	.....	.....	.....	.....	27.62	425

¹ Not registered as company failed to comply with repeated requests.

Blood and Bone Fertilizer Co., St. Louis, Missouri																		
Steer Head Brands																		
157	Special Wheat Grower M. G.	Theodore Doss, Hoberg	1.00	1.14	9.00	12.04	2.00	4.98	7.00	7.06	1.00	.35	\$14.40	\$15.44	157			
158	Special Wheat Grower M. G.	Theodore Doss, Hoberg	1.00	1.18	9.00	12.69	2.00	5.79	7.00	6.90	1.00	.37	14.40	15.76	158			
290	"Old Time" Wheat Grower H. G.	Sampled at Factory	2.05	2.08	10.00	10.71	2.00	2.55	8.00	8.16	.....	.....	18.60	19.13	290	
Commercial Fertilizer Co., St. Louis, Missouri																		
Clover Brands²																		
29	Special Wheat Grower, Grade A.	Herman Meyer, Truesdail	1.00	0.80	12.00	14.04	2.00	2.78	10.00	11.26	3.00	3.02	\$20.40	\$21.44	29			
163	Special Wheat Grower, Grade B.	W. H. Smith, Peirce City	1.00	1.04	9.00	9.92	2.00	2.44	7.00	7.48	1.00	1.01	14.40	15.33	163			
162	Special Wheat Grower, Grade B.	W. H. Smith, Peirce City	1.00	1.01	9.00	9.88	2.00	2.64	7.00	7.24	1.00	0.88	14.40	14.85	162			
28	Special Wheat Grower, Grade B.	Herman Meyer, Truesdail	1.00	.72	9.00	10.61	2.00	2.59	7.00	8.02	1.00	1.25	14.40	15.04	28			
166	Special Wheat Grower, Grade B.	Stotts City Imp. Co., Stotts City	1.00	.93	9.00	10.23	2.00	2.57	7.00	7.66	1.00	1.04	14.40	15.19	166			
291	Special Wheat Grower, Grade B.	McDermid & Peterson, Lockwood	1.00	.92	9.00	8.80	2.00	2.29	7.00	6.51	1.00	0.61	14.40	13.14	291			
160	Special Wheat Grower, Grade B.	Sarcoxie Supply Co., Sarcoxie	1.00	1.03	9.00	9.27	2.00	2.28	7.00	6.99	1.00	1.36	14.40	15.05	160			
26	Special Corn Grower, Grade A.	Herman Meyer, Truesdail	2.00	1.34	9.00	11.40	1.00	2.50	8.00	8.90	3.00	2.41	21.60	19.93	26			
469	Special Corn Grower, Grade B.	T. McCall, Aldrich	1.63	1.29	10.00	10.93	2.00	3.07	8.00	7.86	2.00	1.75	19.32	17.92	469			
296	Bone and Potash	Sampled at Factory	1.00	1.39	9.00	8.22	2.00	1.62	7.00	6.60	1.00	.74	14.40	15.02	296			
159	Bone and Potash	W. H. Smith, Peirce City	1.00	1.01	9.00	8.89	2.00	2.06	7.00	6.83	1.00	1.37	14.40	14.70	159			
25	Bone and Potash	Herman Meyer, Truesdail	1.00	.73	9.00	10.10	2.00	2.84	7.00	7.26	1.00	1.02	14.40	13.99	25			
24	Raw Bone Meal	Herman Meyer, Truesdail	3.50	3.01	21.00	23.45	.....	.....	.....	.....	.....	.....	28.70	28.46	24
301	Raw Bone Meal	Sampled at Factory	3.50	3.34	21.00	19.70	.....	.....	.....	.....	.....	.....	28.70	27.15	301
27	Raw Bone Meal	John Francis, California	3.50	3.06	21.00	21.53	.....	.....	.....	.....	.....	.....	28.70	27.31	27
299	Steamed Bone Meal	Sampled at Factory . . . . .	.82	0.92	29.00	33.30	.....	.....	.....	.....	.....	.....	23.58	26.99	299
295	Steamed Bone Meal	Schooler Grain Co., Jasper . . . . .	.82	0.98	29.00	30.01	.....	.....	.....	.....	.....	.....	23.58	24.93	295
165	Available Bone Phosphate	W. H. Smith, Peirce City . . . . .	.....	.....	.....	16.31	.....	1.14	16.00	15.17	.....	.....	19.20	18.66	165
164	Available Bone Phosphate	W. H. Smith, Peirce City . . . . .	.....	.....	.....	16.29	.....	1.06	16.00	15.23	.....	.....	19.20	18.70	164

² Withdrawn from the market during the season.

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Commercial Fertilizer Co.		Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	
	Commercial Brands		ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	
297	Special Wheat Grower, Grade B..	Sampled at Factory.....	1.00	1.31	9.00	9.50	2.00	1.23	7.00	8.27	1.00	0.89	\$14.40	\$16.72	297
298	Special Grain Grower.....	Sampled at Factory.....	1.65	1.63	12.00	12.44	2.00	1.80	10.00	10.64	2.00	2.01	21.80	22.42	298
292	Special Grain Grower.....	McDermid & Peterson, Lockwood.....	1.65	1.71	12.00	13.66	2.00	3.51	10.00	10.15	2.00	1.71	21.80	22.47	292
300	Commercial Bone Meal.....	Sampled at Factory.....	3.00	2.70	18.00	15.41	.....	.....	.....	.....	.....	.....	24.60	21.59	300
294	Complete Fertilizer.....	Farmers' Union, Billings.....	1.65	1.75	10.00	9.95	2.00	1.12	8.00	8.83	2.00	2.32	19.40	20.83	294
161	Complete Fertilizer.....	Stotts City Imp. Co., Stotts City	1.65	1.68	10.00	12.03	2.00	2.27	8.00	9.76	2.00	1.78	19.40	21.48	161
293	Phosphate Bone Meal, Grade A..	Farmers' Union, Billings.....	1.65	1.59	20.00	18.77	.....	.....	.....	.....	.....	.....	20.60	19.50	293
303	Phosphate Bone Meal, Grade B..	Sampled at Factory.....	.82	1.00	25.00	26.03	.....	.....	.....	.....	.....	.....	20.78	22.22	303
	Continental Fertilizer Co., Chicago, Illinois														
	Bear Brands														
434	16 per cent Acid Phosphate.....	Sampled at Factory.....	.....	.....	16.50	18.53	.50	1.95	16.00	16.58	.....	.....	19.40	20.68	434
304	Bone Meal.....	Ed. Murray, Golden City.....	2.47	2.54	24.00	22.07	.....	.....	.....	.....	.....	.....	26.68	25.61	304
429	Bone Meal.....	Sampled at Factory.....	2.47	2.75	24.00	25.23	.....	.....	.....	.....	.....	.....	26.68	28.66	429
457	Bone Meal.....	C. R. Bandy, Dederick.....	2.47	2.80	24.00	24.32	.....	.....	.....	.....	.....	.....	26.68	28.22	457
30	Raw Bone Meal.....	H. Kemp, Lockwood.....	3.70	4.22	22.00	21.58	.....	.....	.....	.....	.....	.....	30.20	31.99	30
169	0-14-2 Fertilizer.....	O. P. Combs, Lamar.....	.....	.....	14.50	13.74	.50	0.80	14.00	12.94	2.00	1.64	19.40	17.82	169
170	Phosphate and Potash.....	O. P. Combs, Lamar.....	.....	.....	10.50	10.21	.50	.54	10.00	9.67	2.00	1.57	14.60	13.70	170
438	1-12-1 Fertilizer.....	Sampled at Factory.....	.82	.91	12.50	13.83	.50	.79	12.00	13.04	1.00	.81	19.08	20.58	438
167	Grain and Grass Grower.....	O. P. Combs, Lamar.....	1.65	1.52	8.50	9.60	.50	.87	8.00	8.73	2.00	1.72	18.80	18.97	167

306	Standard.....	Ed. Murray, Golden City.....	1.65	1.66	10.50	11.94	0.50	1.67	10.00	10.27	2.00	2.01	\$21.20	\$22.04	306
447	1-8-1 Fertilizer.....	Sampled at Factory.....	0.82	0.58	8.50	8.36	.50	0.69	8.00	7.67	1.00	1.05	14.28	13.06	447
471	1-8-1 Fertilizer.....	J. T. Brooks & Son, Conway.....	.82	.77	8.50	7.88	.50	.29	8.00	7.59	1.00	1.14	14.28	13.68	471
443	1-10-2 Fertilizer.....	Sampled at Factory.....	.82	.85	10.50	11.69	.50	1.05	10.00	10.64	2.00	2.33	17.88	19.39	443
168	2-8-3 Fertilizer.....	O. P. Combs, Lamar.....	1.65	1.51	8.50	9.77	.50	2.14	8.00	7.63	3.00	2.88	20.00	19.52	168
470	2-8-3 Fertilizer.....	J. T. Brooks & Sons, Conway.....	1.65	1.51	8.50	8.68	.50	1.14	8.00	7.54	3.00	2.83	20.00	18.95	470
305	Bone Meal, Phosphate and Potash.....	Ed. Murray, Golden City.....	.82	1.03	18.00	18.68	.....	.....	.....	.....	2.00	1.88	18.28	19.46	305
Darling & Co., Chicago, Illinois															
Darling's Brands															
178	Farmer's Favorite Special.....	E. W. Logsden, Ewing.....	2.40	2.38	10.00	11.35	2.00	2.05	8.00	9.30	3.00	3.99	23.60	26.29	178
183	Big Harvest Special.....	O'Donnell Bros., Shelby.....	1.60	1.25	14.00	16.58	2.00	4.18	12.00	12.40	3.00	2.69	25.20	24.78	183
32	Sure Winner Brand.....	Edwards Bros., Otterville.....	.80	.65	10.00	11.15	2.00	2.34	8.00	8.81	3.00	2.63	17.20	17.27	32
31	Sure Winner Brand.....	C. E. Tellup, Jonesburg.....	.80	.54	10.00	11.54	2.00	3.45	8.00	8.09	3.00	2.70	17.20	16.49	31
34	Chicago Brand.....	E. M. Paxton, Akinsville.....	1.60	1.18	10.00	12.36	2.00	2.68	8.00	9.68	2.00	1.40	19.40	19.09	34
172	Chicago Brand.....	Cartwright & Cunningham, Holiday.....	1.60	1.71	10.00	11.28	2.00	3.00	8.00	8.28	2.00	1.98	19.20	20.32	172
179	Chicago Brand.....	Ed. Miller, Belle.....	1.60	1.39	10.00	12.20	2.00	3.24	8.00	8.96	2.00	2.09	19.20	20.12	179
174	Pure Ground Bone.....	Ed. Miller, Belle.....	1.80	1.59	28.00	27.69	.....	.....	.....	.....	.....	.....	26.80	25.74	174
173	Pure Ground Bone.....	Cartwright & Cunningham, Holiday.....	1.80	2.16	28.00	27.69	.....	.....	.....	.....	.....	.....	26.80	28.02	173
37	Pure Ground Bone.....	E. M. Paxton, Akinsville.....	1.80	1.85	28.00	28.18	.....	.....	.....	.....	.....	.....	26.80	27.13	37
181	High Grade Acid Phosphate.....	Ed. Miller, Belle.....	.....	.....	.....	17.52	.....	3.46	14.00	14.06	.....	.....	16.80	18.25	181
35	High Grade Acid Phosphate.....	W. S. and Walter Cook, Fortuna.....	.....	.....	.....	18.09	.....	2.60	14.00	15.49	.....	.....	16.80	19.62	35
33	Twelve-two Brand.....	C. E. Tellup, Jonesburg.....	.....	.....	.....	15.78	.....	5.03	12.00	10.75	2.00	1.56	16.80	16.78	33
180	Twelve-Two Brand.....	Ed. Miller, Belle.....	.....	.....	.....	14.16	.....	2.69	12.00	11.47	2.00	1.78	16.80	16.98	180
176	Pure Bone and Potash.....	Kemper & Bowman, New Bloomfield.....	1.60	1.44	26.50	29.48	.....	.....	.....	.....	2.00	1.29	26.35	27.95	176
171	Wheat Grower.....	Cartwright & Cunningham, Holiday.....	.82	.90	11.00	11.45	2.00	3.26	9.00	8.19	1.00	.82	16.08	15.71	171
36	Wheat Grower.....	E. M. Paxton, Akinsville.....	.82	.89	11.00	10.47	2.00	3.51	9.00	6.96	1.00	.86	16.08	14.34	36
182	Wheat Grower.....	Ed. Miller, Belle.....	.82	1.84	11.00	11.66	2.00	2.75	9.00	8.91	1.00	.79	16.08	20.10	182
177	Phosphate and Potash.....	E. W. Logsden, Ewing.....	.....	.....	.....	13.14	.....	.62	10.00	12.52	2.00	2.18	14.40	17.89	177

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Day Flower Fertilizer Co., Kansas City, Missouri		Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	
458	Day's Flower Fertilizer ³	J. C. Brockhart, Harrisonville.	1.60	0.54							1.40		\$ 8.46	458	
	Empire Carbon Works, St. Louis, Missouri Boar's Head Brands														
308	Goodcrop.....	C. D. Bieler, Bois D'Arc.	1.65	1.94	8.50	9.11	0.50	0.80	8.00	8.31	3.00	2.70	\$20.00	21.29	308
336	Goodcrop.....	Sampled at Factory.....	1.65	1.87	8.50	9.21	.50	0.87	8.00	8.34	3.00	2.83	20.00	21.24	336
313	World of Good Superphosphate..	C. D. Bieler, Bois D'Arc.	2.06	2.18	8.50	9.32	.50	1.07	8.00	8.25	1.50	1.72	19.84	21.11	313
41	World of Good Superphosphate..	S. G. Wright, Truesdail.....	2.06	2.12	8.50	9.08	.50	1.69	8.00	7.39	1.50	1.59	19.84	19.94	41
356	World of Good Superphosphate..	Sampled at Factory.....	2.06	2.24	8.50	9.24	.50	1.64	8.00	7.60	1.50	1.49	19.84	20.53	356
307	World of Good Corn and Wheat Grower.....														
46	World of Good Corn and Wheat Grower.....	Brown & Dyer, Mt. Vernon.....	1.65	1.90	8.50	8.82	.50	1.23	8.00	7.59	2.00	2.02	18.80	19.62	307
359	World of Good Corn and Wheat Grower.....	S. G. Wright, Truesdail.....	1.65	1.59	8.50	8.61	.50	.95	8.00	7.66	2.00	1.90	18.80	18.21	46
	Ammoniated Bone and Potash...	Sampled at Factory.....	1.65	1.60	8.50	8.89	.50	1.55	8.00	7.34	2.00	1.94	18.80	18.16	359
311	Ammoniated Bone and Potash...	J. R. McNeill, Lockwood.....	.82	1.09	10.50	11.89	.50	1.75	10.00	10.14	1.00	1.06	16.68	18.50	311
49	Ammoniated Bone and Potash...	D. C. Hardy, Glensted.....	.82	.86	10.50	11.46	.50	1.27	10.00	10.19	1.00	1.10	16.68	17.50	49
341	Ammoniated Bone and Potash...	Sampled at Factory.....	.82	1.24	10.50	12.29	.50	2.24	10.00	10.05	1.00	1.21	16.68	19.37	341
309	Seeding Down Guano.....	Brown & Dyer, Mt. Vernon.....	.82	1.00	8.50	8.83	.50	.76	8.00	8.07	2.00	1.91	15.48	16.27	309
310	Seeding Down Guano.....	John Reindell, Queen City.....	.82	1.04	8.50	9.11	.50	1.07	8.00	8.04	2.00	1.78	15.48	16.38	310
40	Seeding Down Guano.....	Henry Paul, Foristell.....	.82	.91	8.50	8.19	.50	0.60	8.00	7.59	2.00	2.03	15.48	15.43	40

³ Not registered (company failed to comply with request to register).

349	Seeding Down Guano.....	Sampled at Factory.....	0.82	1.08	8.50	9.44	0.50	1.20	8.00	8.24	2.00	1.84	\$15.48	\$16.90	349
472	Faultless Grain Grower.....	John Buckheit, Strafford.....	.82	.92	7.50	7.78	.50	0.95	7.00	6.83	1.00	0.99	13.08	13.45	472
47	Faultless Grain Grower.....	D. C. Hardy, Versailles.....	.82	.85	7.50	7.95	.50	.81	7.00	7.14	1.00	1.13	13.08	13.65	47
48	Faultless Grain Grower.....	S. G. Wright, Truesdall.....	.82	.75	7.50	6.80	.50	.51	7.00	6.29	1.00	1.04	13.08	12.00	48
312	Sure Growth.....	H. C. & H. P. Collins, Ozark.....			10.50	11.53	.50	1.96	10.00	9.57	2.00	2.34	14.60	15.07	312
43	Sure Growth.....	S. G. Wright, Truesdall.....			10.50	10.33	.50	1.45	10.00	8.88	2.00	2.12	14.60	13.78	43
44	Sure Growth.....	D. C. Hardy, Versailles.....			10.50	10.43	.50	1.38	10.00	9.05	2.00	2.00	14.60	13.81	44
352	Tip Top Phosphate.....	Sampled at Factory.....			16.50	19.88	.50	3.53	16.00	16.35			19.40	21.03	352
42	Gilt Edge Phosphate.....	S. G. Wright, Truesdall.....				15.14		2.44	14.00	12.70			16.80	16.22	42
328	Pure Raw Bone Meal.....	Sampled at Factory.....	3.29	4.52	20.00	20.08							27.16	32.14	328
50	Special Bone Meal.....	D. C. Hardy, Glensted.....	1.65	1.82	20.00	18.91							20.60	20.52	50
332	Special Bone Meal.....	Sampled at Factory.....	1.65	1.91	20.00	20.06							20.60	21.68	332
314	Harvest King.....	H. C. & H. P. Collins, Ozark.....	1.65	1.90	11.50	12.09	.50	1.63	11.00	10.46	1.00	1.24	21.20	22.29	314
344	Harvest King.....	Sampled at Factory.....	1.65	2.14	11.50	12.51	.50	1.70	11.00	10.81	1.00	1.50	21.20	24.01	344
185	Wheat Grower.....	Wm. Knehaus, Owensville.....	1.65	1.24	9.00	9.15	1.00	.95	8.00	8.20	2.00	1.77	19.00	17.30	185
Bradley's Standard Brands															
315	Doublecrop.....	W. W. Stoddart, Monroe City... .	1.65	1.80	8.50	8.76	.50	.99	8.00	7.77	3.00	2.70	20.00	20.16	315
339	Doublecrop.....	Sampled at Factory.....	1.65	1.92	8.50	9.25	.50	.83	8.00	8.42	3.00	2.98	20.00	21.69	339
183	B. D. Sea Fowl Guano.....	L. H. Oltman, Gerald.....	2.06	2.22	8.50	9.58	.50	1.63	8.00	7.95	1.50	1.46	19.84	20.82	183
51	B. D. Sea Fowl Guano.....	W. F. Nicklin, Hawk Point.....	2.06	2.10	8.50	9.21	.50	1.58	8.00	7.63	1.50	1.81	19.84	20.36	51
357	B. D. Sea Fowl Guano.....	Sampled at Factory.....	2.06	2.23	8.50	9.86	.50	1.65	8.00	8.21	1.50	1.41	19.84	21.12	357
340	Wheat and Clover Fertilizer.....	Sampled at Factory.....	.82	1.23	10.50	11.88	.50	2.29	10.00	9.59	1.00	1.32	16.68	18.93	340
53	Corn and Wheat Phosphate.....	E. H. Ham, Buell.....	.82	.83	8.50	8.90	.50	.78	8.00	8.12	2.00	1.77	15.48	15.49	53
347	Corn and Wheat Phosphate.....	Sampled at Factory.....	.82	1.08	8.50	9.70	.50	1.11	8.00	8.59	2.00	2.05	15.48	17.53	347
187	Niagara Phosphate.....	L. H. Oltman, Gerald.....	.82	1.04	7.50	8.11	.50	1.01	7.00	7.10	1.00	1.21	13.08	14.53	187
52	Niagara Phosphate.....	E. H. Ham, Buell.....	.82	.87	7.50	7.81	.50	.83	7.00	6.98	1.00	1.37	13.08	13.83	52
354	High Grade Phosphate.....	Sampled at Factory.....			16.50	19.62	.50	3.51	16.00	16.11			19.40	20.73	354
329	Pure Raw Bone Meal.....	Sampled at Factory.....	3.29	4.46	20.00	19.82							27.16	31.71	329
333	Special Bone Meal.....	Sampled at Factory.....	1.65	1.91	20.00	24.26							20.60	24.62	333
346	Ideal Grain Grower.....	Sampled at Factory.....	1.65	2.13	11.50	12.49	.50	1.78	11.00	10.71	1.00	1.26	21.20	23.59	346

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Empire Carbon Works, St. Louis, Missouri		Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	
	Empire Brands														
337	Better Than Bone.....	Sampled at Factory.....	2.47	1.89	8.50	9.14	0.50	0.87	8.00	8.27	3.00	2.98	\$23.28	\$21.41	337
194	Heavycrop.....	Brewell Bros., Labadie.....	1.65	1.78	8.50	9.17	.50	.85	8.00	8.32	3.00	2.61	20.00	20.57	194
54	Heavycrop.....	James Long, New Florence.....	1.65	1.68	8.50	9.13	.50	.63	8.00	8.50	3.00	2.88	20.00	20.63	54
320	Heavycrop.....	Farmers Elevator, Purdy.....	1.65	1.79	8.50	8.73	.50	.89	8.00	7.84	3.00	2.98	20.00	20.51	320
316	Bone Black Fertilizer.....	Joe England, Exeter.....	2.06	2.26	8.50	9.24	.50	1.58	8.00	7.66	1.50	1.66	19.84	20.85	316
197	Bone Black Fertilizer.....	A. H. Kurz, McCune Station.....	2.06	2.30	8.50	9.92	.50	1.82	8.00	8.10	1.50	1.69	19.84	21.68	197
55	Bone Black Fertilizer.....	Jackson L. Co., Smithton.....	2.06	1.92	8.50	8.77	.50	1.12	8.00	7.65	1.50	1.55	19.84	19.17	55
56	Bone Black Fertilizer.....	James Long, New Florence.....	2.06	2.01	8.50	9.55	.50	.82	8.00	8.73	1.50	1.66	19.84	20.84	56
358	Bone Black Fertilizer.....	Sampled at Factory.....	2.06	2.32	8.50	9.06	.50	1.77	8.00	7.29	1.50	1.48	19.84	20.52	358
196	Crop Grower.....	N. J. Rowan, Meta.....	1.65	1.95	8.50	8.91	.50	1.36	8.00	7.55	2.00	1.91	18.80	19.69	196
195	Crop Grower.....	A. H. Kurz, McCune Station.....	1.65	1.73	8.50	10.57	.50	2.41	8.00	8.16	2.00	2.09	18.80	20.18	195
321	Crop Grower.....	J. S. Glard, Aurora.....	1.65	1.74	8.50	8.89	.50	1.15	8.00	7.74	2.00	2.05	18.80	19.17	321
360	Crop Grower.....	Sampled at Factory.....	1.65	1.70	8.50	8.91	.50	1.51	8.00	7.40	2.00	2.02	18.80	18.70	360
57	Crop Grower.....	Chas. Rohrer & Son, Bellflower..	1.65	1.56	8.50	8.27	.50	1.09	8.00	7.18	2.00	1.87	18.80	17.54	57
186	Wheat and Clover Fertilizer.....	N. J. Rowan, Meta.....	.82	1.23	8.50	9.43	.50	.94	8.00	8.49	2.00	1.96	15.48	17.84	186
193	Wheat and Clover Fertilizer.....	A. H. Kurz, McCune Station.....	.82	1.08	8.50	9.06	.50	1.03	8.00	8.03	2.00	1.78	15.48	16.51	193
200	Wheat and Clover Fertilizer.....	Turner & Anderson, Center.....	.82	1.01	8.50	9.34	.50	1.11	8.00	8.23	2.00	1.92	15.48	16.66	200
322	Wheat and Clover Fertilizer.....	Ed. Murray, Golden City.....	.82	1.18	8.50	9.31	.50	.97	8.00	7.94	2.00	2.06	15.48	17.11	322
348	Wheat and Clover Fertilizer.....	Sampled at Factory.....	.82	1.07	8.50	9.68	.50	1.14	8.00	8.54	2.00	1.75	15.48	17.09	348
192	Complete Manure.....	Winter Bros., Rosebud.....	.82	.99	7.50	8.03	.50	1.22	7.00	6.81	1.00	1.06	13.08	13.89	192
198	Complete Manure.....	Turner & Anderson, Center.....	.82	.95	7.50	8.05	.50	1.06	7.00	6.99	1.00	1.13	13.08	13.97	198
58	Complete Manure.....	E. K. Butts, Vandalia.....	.82	.94	7.50	7.73	.50	.83	7.00	6.90	1.00	1.07	13.08	13.65	58

190	Phosphate With Potash.....	Lindner Bros., Belle.....			10.50	11.02	0.50	2.00	10.00	9.02	2.00	1.80	\$14.60	\$13.78	190
189	16% Phosphate.....	N. J. Rowan, Meta.....			16.50	18.92	.50	3.73	16.00	15.19			19.40	19.72	189
353	16% Phosphate.....	Sampled at Factory.....			16.50	19.31	.50	3.71	16.00	15.60			19.40	20.20	353
473	16% Phosphate.....	J. E. Hendrickson & Sons, Bolivar.....			16.50	11.60	.50	2.02	16.00	9.58			19.40	12.31	473
318	Pure Raw Bone Meal.....	Boyd & Baldwin, Miller.....	3.29	3.68	20.00	18.91							27.16	27.96	318
199	Pure Raw Bone Meal.....	Turner & Anderson, Center.....	3.29	3.40	20.00	23.53							27.16	30.07	199
319	Pure Raw Bone Meal.....	Farmers' Elevator, Purdy.....	3.29	3.42	20.00	20.92							27.16	28.32	319
330	Pure Raw Bone Meal.....	Sampled at Factory.....	3.29	4.46	20.00	20.18							27.16	31.97	330
38	Pure Raw Bone Meal.....	Wilson Bros., Jonesburg.....	3.29	3.17	20.00	21.51							27.16	27.74	38
39	Pure Raw Bone Meal.....	Jackson L. Co., Smithton.....	3.29	3.31	20.00	23.28							27.16	29.54	39
317	Special Bone Meal.....	Ed. Murray, Golden City.....	1.65	1.83	20.00	20.51							20.60	21.68	317
191	Special Bone Meal.....	Lindner Bros., Belle.....	1.65	1.80	20.00	19.57							20.60	20.90	191
334	Special Bone Meal.....	Sampled at Factory.....	1.65	1.93	20.00	23.75							20.60	24.35	334
343	Middle West Grain Grower.....	Sampled at Factory.....	1.65	2.14	11.50	12.59	.50	1.72	11.00	10.87	1.00	1.23	21.20	23.77	343
427	Farmers' Favorite.....	Sampled at Factory.....	0.82	1.20	10.50	12.74	.50	2.22	10.00	10.52	1.00	1.27	16.68	19.83	427
184	14% Acid Phosphate.....	N. J. Rowan, Meta.....			14.50	15.77	.50	2.89	14.00	12.88			17.00	16.62	184
Horse Shoe Brands															
338	Earlycrop.....	Sampled at Factory.....	1.65	1.91	8.50	9.32	0.50	0.91	8.00	8.41	3.00	2.97	20.00	21.65	338
327	National Bone Dust.....	Hickey & Dixon, Madison.....	2.06	2.39	8.50	8.88	.50	1.91	8.00	6.97	1.50	1.50	19.84	20.48	327
355	National Bone Dust.....	Sampled at Factory.....	2.06	2.25	8.50	9.73	.50	1.66	8.00	8.07	1.50	1.39	19.84	21.01	355
325	Corn and Wheat Grower.....	Hickey & Dixon, Madison.....	1.65	2.00	8.50	8.66	.50	1.52	8.00	7.14	2.00	2.01	18.80	19.59	325
326	Corn and Wheat Grower.....	H. C. and H. P. Collins, Ozark.....	1.65	1.85	8.50	9.12	.50	1.82	8.00	7.80	2.00	2.21	18.80	19.54	326
361	Corn and Wheat Grower.....	Sampled at Factory.....	1.65	1.65	8.50	8.92	.50	1.60	8.00	7.32	2.00	2.09	18.80	18.53	361
484	Reliable Wheat Grower.....	McDonnell Keithley M. Co., Cabool.....	.82	0.97	8.50	9.84	.50	1.61	8.00	8.23	2.00	2.85	15.48	17.82	484
324	Reliable Wheat Grower.....	J. R. Gorts, St. James.....	.82	1.37	8.50	8.48	.50	1.08	8.00	7.40	2.00	1.86	15.48	17.02	324
350	Reliable Wheat Grower.....	Sampled at Factory.....	.82	1.16	8.50	9.26	.50	1.10	8.00	8.16	2.00	1.80	15.48	17.03	350
61	Acidulated Bone and Potash.....	Chas. Rohrer & Sons, Belleflower.....	.82	.84	10.50	12.08	.50	2.29	10.00	9.79	1.00	1.49	16.68	17.82	61
342	Acidulated Bone and Potash.....	Sampled at Factory.....	.82	1.13	10.50	11.92	.50	2.21	10.00	9.71	1.00	1.33	16.68	18.65	342
59	Animal Bone Manure.....	Chas. Rohrer & Sons, Belleflower.....	.82	.91	7.50	7.87	.50	.86	7.00	7.01	1.00	1.03	13.08	14.03	59
45	Bone and Potash.....	D. C. Hardy, Glensted.....			10.50	10.95	.50	1.77	10.00	9.18	2.00	2.11	14.60	14.26	45
485	Bone and Potash.....	McDonnell Keithley M. Co., Cabool.....			10.50	12.15	.50	2.36	10.00	9.79	2.00	3.47	14.60	16.85	485

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Empire Carbon Works,		Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per		
	Horse Shoe Brands—Continued		ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.		
60	Bone and Potash.....	Sam Sanderson, Cyrene.....	10.50	11.55	0.50	1.58	10.00	9.97	2.00	1.86	\$14.60	\$14.82	60		
323	Bone and Potash.....	D. C. Hardy, Versailles.....	10.50	10.67	.50	1.90	10.00	8.77	2.00	1.53	14.60	13.12	323		
351	Economy Phosphate.....	Sampled at Factory.....	16.50	19.67	.50	3.37	16.00	16.30	.....	.....	19.40	20.91	351		
331	Pure Raw Bone Meal.....	Sampled at Factory.....	3.29	4.42	20.00	19.62	.....	.....	.....	.....	27.16	31.41	331		
335	Special Bone Meal.....	Sampled at Factory.....	1.65	1.91	20.00	23.07	.....	.....	.....	.....	20.60	23.79	335		
345	Pioneer Grain Grower.....	Sampled at Factory.....	1.65	2.12	11.50	12.38	.50	1.69	11.00	10.69	1.00	1.48	21.20	23.77	345
	Empire Guano Co., Nashville, Tennessee														
201	Missouri Grain Special.....	Sarcoxie Supply Co., Sarcoxie....	.41	.65	13.00	18.76	5.00	9.87	8.00	8.89	4.00	3.37	18.04	21.26	201
202	Bone and Potash.....	H. S. Jones, Frankford.....	15.00	16.28	5.00	6.48	10.00	9.80	2.00	1.78	16.40	16.49	202		
	Gate City Fertilizer Co., Texarkana, Arkansas														
	Red Ball Brands														
366	Raw Bone Fertilizer.....	E. W. Davis, Wheaton.....	3.30	2.84	20.00	23.57	10.00	17.80	10.00	5.77	.....	.....	29.20	25.40	366
367	Raw Bone and Potash.....	E. W. Davis, Wheaton.....	2.50	2.09	18.00	20.50	8.00	14.70	10.00	5.80	2.00	1.91	27.60	23.49	367
362	Phosphate and Potash.....	E. W. Davis, Wheaton.....	.....	.....	12.00	14.06	1.00	5.03	11.00	9.03	3.00	3.36	17.20	16.88	362
369	Southern Corn Grower.....	E. W. Couch, Diamondville.....	1.65	1.39	9.00	12.56	1.00	7.85	8.00	4.71	3.00	2.33	20.20	17.15	369
364	Wheat Grower.....	E. W. Couch, Diamondville.....	.82	.89	11.00	15.25	1.00	6.67	10.00	8.58	2.00	1.75	18.08	18.63	364
365	Wheat Grower.....	E. W. Davis, Wheaton.....	.82	.82	11.00	14.35	1.00	6.06	10.00	8.29	2.00	1.54	18.08	17.50	365

363	National Wheat Grower.....	E. W. Davis, Wheaton.....	0.82	0.85	9.00	13.65	1.00	6.92	8.00	6.73	1.00	0.33	\$14.48	\$14.65	363
368	National Corn Grower.....	E. W. Davis, Wheaton.....	.82	.82	9.00	13.39	1.00	7.08	8.00	6.31	2.00	1.01	15.68	14.89	368
Hirsh Stein & Co., Chicago, Ill.															
Calumet Brands															
672	Complete Fertilizer.....	Ed. Shobe, Laddonia.....	1.64	1.47	9.00	9.23	1.00	0.79	8.00	8.44	2.00	1.84	18.96	18.54	672
68	Complete Fertilizer.....	C. E. De Garmo, Jonesburg....	1.64	1.53	9.00	9.37	1.00	.73	8.00	8.64	2.00	1.93	18.96	19.10	68
77	Special Corn Grower.....	Ed. Shobe, Laddonia.....	.82	.93	9.00	8.97	1.00	.53	8.00	8.44	4.00	3.31	18.08	18.03	77
78	Special Corn Grower.....	Archias Seed Co., Sedalia.....	.82	.84	9.00	8.60	1.00	.52	8.00	8.08	4.00	3.25	18.08	17.17	78
65	Potato, Tobacco and Onion Grower.....	C. E. De Garmo, Jonesburg....	1.64	1.68	9.00	9.23	1.00	.55	8.00	8.68	5.00	5.49	22.56	23.95	65
71	Special Wheat Grower.....	Archias Seed Co., Sedalia.....	.82	.81	9.00	10.53	1.00	1.36	8.00	9.17	4.00	2.90	18.08	18.26	71
374	Grain Grower.....	Jack Gardner, Carthage.....			15.00	15.98	1.00	.65	14.00	15.33			17.20	18.66	374
372	Bone Phosphate and Potash....	Jack Gardner, Carthage.....	.41	.47	11.00	11.27	1.00	1.27	10.00	10.00	2.00	1.79	16.44	16.54	372
75	Bone Phosphate and Potash....	Morris Bros., Bowling Green....	.41	.59	11.00	9.65	1.00	.72	10.00	8.93	2.00	1.41	16.44	15.06	75
76	Bone Phosphate and Potash....	Archias Seed Co., Sedalia.....	.41	.43	11.00	10.40	1.00	.84	10.00	9.56	2.00	1.70	16.44	15.57	76
74	Special Crop Grower.....	C. E. De Garmo, Jonesburg....	.82	.88	12.00	12.04	1.00	.89	11.00	11.15	3.00	3.37	20.48	21.30	74
73	Special Crop Grower.....	Morris Bros., Sillex.....	.82	.74	12.00	11.89	1.00	.74	11.00	11.15	3.00	2.97	20.48	20.20	73
218	Special Pure Bone Meal and Potash.....	N. Johannes & Sons Imp. Co., Lamar.....	.82	1.03	20.00	21.46					4.00	4.24	22.08	24.23	218
62	Special Pure Bone Meal and Potash.....	C. E. De Garmo, Jonesburg....	.82	.91	20.00	17.00					4.00	4.14	22.08	20.51	62
72	Special Pure Bone Meal.....	Archias Seed Co., Sedalia.....	.82	.88	29.77	31.66							24.12	25.68	72
373	Special Pure Bone Meal.....	Jack Gardner, Carthage.....	.82	.83	29.77	34.37							24.12	27.38	373
70	Pure Raw Bone Meal.....	C. E. De Garmo, Jonesburg....	3.70	3.53	20.00	18.00							28.80	26.72	70
370	Pure Raw Bone Meal.....	Jack Gardner, Carthage.....	3.70	3.53	20.00	17.20							28.80	26.16	370
69	Pure Raw Bone Meal.....	Ed. Shobe, Laddonia.....	3.70	3.54	20.00	18.34							28.80	27.00	69
64	Special Bone Mixture.....	C. E. De Garmo, Jonesburg....	.41	.58	18.00	19.54					2.00	2.19	16.64	18.63	64
371	Pure Bone Meal and Potash....	Jack Gardner, Carthage.....	.82	.88	24.00	26.00	14.00	14.37	10.00	11.63	2.00	2.21	23.28	25.88	371
63	Pure Bone Meal and Potash....	Kuhlmann & Meyer, California..	.82	.90	24.00	24.15	14.00	12.66	10.00	11.49	2.00	2.15	23.28	25.03	63
204	Pure Bone Meal and Potash....	Russel Foster, Sarcocie.....	.82	.93	24.00	24.56	14.00	14.14	10.00	10.42	2.00	1.87	23.28	24.12	204
206	14% Acid Phosphate.....	Russel Foster, Sarcocie.....				15.49		.85	14.00	14.64			16.80	17.91	206
203	Ammoniated Phosphate and Potash.....	Russel Foster, Sarcocie.....	.82	.95	11.00	12.48	1.00	1.74	10.00	10.74	1.00	1.56	16.88	19.26	203

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅				Potash (K ₂ O)		Value per ton		Laboratory Number		
			Guaranteed	Found	Total		Insoluble		Available		Guaranteed	Found		Guaranteed	Found
					Guaranteed	Found	Guaranteed	Found	Guaranteed	Found					
	Hirsh Stein & Co.,		Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per		
	Calumet Brands—Continued		ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.		
205	Hummer Wheat Grower.	Russel Foster, Sarcoxie.	0.82	1.15	11.00	11.55	1.00	1.38	10.00	10.17	0.50	0.50	\$16.28	\$17.95	205
375	Hummer Wheat Grower.	Jack Gardner, Carthage. ....	.82	1.15	11.00	11.63	1.00	1.63	10.00	10.00	.50	.85	16.28	18.27	375
66	Amm. Dissolved Pure Bone and Potash ⁴	Archias Seed Co., Sedalia.	1.65	1.38	11.00	10.13	1.00	.97	10.00	9.16	2.00	1.95	21.40	19.24	66
	P. B. Mathiason Mfg. Co., St. Louis, Missouri														
	Increscent Brands														
80	Corn and Oats Grower.	J. H. Menscher, Wentzville. ....	.83	.70	8.00	8.43	1.00	1.35	7.00	7.08	1.00	1.07	13.32	13.12	80
79	Complete Fertilizer.	D. B. Sailor, Buell. ....	.83	.87	9.00	9.94	1.00	1.30	8.00	8.64	3.00	1.57	16.92	16.25	79
	Morris & Co., Chicago, Illinois														
208	Big 1—Ground Raw Bone.	Louis Ritterbusch, Bland.	3.30	3.29	24.00	27.31	.....	.....	.....	.....	.....	.....	30.00	32.28	208
207	Big 1—Ground Raw Bone.	Meyer & Honold, Beaufort.	3.30	3.12	24.00	27.72	.....	.....	.....	.....	.....	.....	30.00	31.88	207
376	Big 2—Pure Bone Meal.	C. L. Hayzlett, Jasper.	2.00	2.17	28.00	28.94	.....	.....	.....	.....	.....	.....	27.60	28.94	376
210	Big 2—Pure Bone Meal.	Louis Ritterbusch, Bland.	2.00	2.09	28.00	29.57	.....	.....	.....	.....	.....	.....	27.60	29.06	210
209	Big 2—Pure Bone Meal.	Meyer & Honold, Beaufort.	2.00	1.99	28.00	30.50	.....	.....	.....	.....	.....	.....	27.60	29.31	209

⁴ Not registered for 1915.

460	Big 2—Pure Bone Meal.....	W. W. Cannon, Butler.....	2.00	2.59	28.00	26.61	\$27.60	\$28.99	460
377	Big 3.....	F. G. Gittings, Neosho.....	2.50	2.47	10.00	9.43	3.00	3.58	7.00	5.85	2.00	2.07	22.00	20.81	377	
81	Big 5.....	Eolia Elevator Co., Eolia.....	2.50	2.60	10.00	8.81	3.00	2.64	7.00	6.17	1.00	1.81	20.80	21.03	81	
211	Big 5.....	Meyer & Honold, Beaufort.....	2.50	1.82	10.00	9.63	3.00	2.22	7.00	7.41	1.00	1.61	20.80	18.99	211	
459	Big 5.....	W. W. Cannon, Butler.....	2.50	2.80	10.00	10.95	3.00	4.60	7.00	6.35	1.00	1.31	20.80	22.23	459	
378	Big 6—Special Bone Meal and Potash.....	C. L. Hayzlett, Jasper.....	.41	.54	16.00	16.63	.....	.....	.....	.....	2.00	2.06	15.24	16.27	378
82	Big 6—Special Bone Meal and Potash.....	Biggs & Biggs, Bowling Green... ..	.41	.39	16.00	13.95	.....	.....	.....	.....	2.00	2.95	15.24	14.87	82
213	Big 6—Special Bone Meal and Potash.....	Winter Bros., Rosebud.....	.41	.31	16.00	13.37	.....	.....	.....	.....	2.00	2.13	15.24	13.16	213
212	Big 6—Special Bone Meal and Potash.....	Meyer & Honold, Beaufort.....	.41	.28	16.00	13.47	.....	.....	.....	.....	2.00	2.22	15.24	13.21	212
83	Big 7—Bone Meal and Potash... ..	Biggs & Biggs, Bowling Green... ..	1.24	.90	16.00	13.78	.....	.....	.....	.....	3.00	4.38	19.76	18.51	83
215	Big 7—Bone Meal and Potash... ..	Louis Ritterbusch, Bland.....	1.24	1.09	16.00	16.28	.....	.....	.....	.....	3.00	3.63	19.76	20.12	215
214	Big 7—Bone Meal and Potash... ..	Meyer & Honold, Beaufort.....	1.24	1.08	16.00	13.68	.....	.....	.....	.....	3.00	3.83	19.76	18.50	214
84	Big 8—Ammoniated Acid Phosphate and Potash.....	Frankford E. Co., Frankford... ..	.82	.76	8.00	9.15	1.00	1.70	7.00	7.45	1.00	1.66	13.28	14.65	84	
474	Big 8—Ammoniated Acid Phosphate and Potash.....	M. L. Motley, Osceola.....	.82	1.05	8.00	9.03	1.00	2.25	7.00	6.78	1.00	1.28	13.28	14.78	474	
216	Big 10—Prepared Manure with Phosphate and Potash.....	Louis Ritterbusch, Bland.....	1.65	1.73	10.00	10.24	2.00	1.62	8.00	8.62	2.00	2.34	19.40	20.72	216	
475	Big 10—Prepared Manure with Phosphate and Potash.....	M. L. Motley, Osceola.....	1.65	2.10	10.00	10.56	2.00	2.92	8.00	7.64	2.00	2.51	19.40	21.75	475	
379	Big 12—Prepared Manure with Phosphate and Potash.....	C. L. Hayzlett, Jasper.....	.82	1.15	9.00	9.74	2.00	2.96	7.00	6.78	3.00	2.68	16.08	17.14	379	
85	Big 12—Prepared Manure with Phosphate and Potash.....	Frankford E. Co., Frankford... ..	.82	.76	9.00	9.04	2.00	.58	7.00	8.46	3.00	4.28	16.08	18.56	85	
380	Big 12—Prepared Manure with Phosphate and Potash.....	Boyd & Baldwin, Miller.....	.82	1.20	9.00	9.90	2.00	3.63	7.00	6.27	3.00	2.88	16.08	17.23	380	
	Read Phosphate Co., Nashville, Tennessee															
391	Pure Raw Bone Meal.....	Farmers' Union, Billings.....	3.90	3.64	22.00	21.08	.....	.....	.....	.....	.....	.....	31.00	29.32	391
221	Pure Raw Bone Meal.....	Farmers' G. E. Co., Owensville..	3.90	3.71	22.00	21.89	.....	.....	.....	.....	.....	.....	31.00	30.16	221

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
			Guaranteed	Found	Total		Insoluble		Available		Guaranteed	Found	Guaranteed	Found	
					Guaranteed	Found	Guaranteed	Found	Guaranteed	Found					
	Read Phosphate Co.—Continued		Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	
270	Half and Half.....	Farmers' G. E. Co., Owensville..	1.65	1.42	17.00	17.71	10.00	10.96	7.00	6.75	2.00	1.84	\$21.40	\$20.37	270
220	Half and Half.....	Farrell & Lane, Gerald.....	1.65	1.54	17.00	17.68	10.00	12.36	7.00	5.32	2.00	1.78	21.40	19.62	220
389	Missouri Wheat Grower.....	Farmers' Union, Billings.....	1.65	1.32	17.00	14.26	5.00	2.12	12.00	12.14	3.00	1.06	26.60	21.97	389
388	Missouri Wheat Grower.....	W. W. Whitaker, Reeds.....	1.65	1.43	17.00	13.06	5.00	2.44	12.00	10.62	3.00	2.55	26.60	22.50	388
222	Blood and Bone No. 1.....	Fred W. Niewald, Rosebud.....	1.65	1.44	13.00	13.46	5.00	5.23	8.00	8.23	2.00	1.91	20.60	20.02	222
88	Blood and Bone No. 1.....	Henry & Adelott, Troy.....	1.65	1.56	13.00	15.59	5.00	6.58	8.00	9.01	2.00	2.00	20.60	22.08	88
89	H. G. Ammoniated Dissolved Bone.....	Henry & Adelott, Troy.....	1.65	1.54	15.00	17.10	5.00	7.22	10.00	9.88	2.00	1.85	23.00	23.13	89
268	Farmers Special Manure.....	Farrell & Lane, Gerald.....	.82	.81	15.00	12.98	5.00	3.62	10.00	9.36	3.00	2.91	20.88	19.41	268
223	Farmers Special Manure.....	Fred W. Niewald, Rosebud.....	.82	.84	15.00	14.81	5.00	4.19	10.00	10.62	3.00	1.87	20.88	19.98	223
382	Corn, Wheat and Oat Grower....	Estes T. & S. Co., Springfield....	.82	.90	12.00	17.74	5.00	10.82	7.00	6.92	1.00	.68	14.88	17.05	382
383	Nitro-Phospho-Potasso.....	Estes T. & S. Co., Springfield....	.82	.85	13.00	16.37	5.00	7.95	8.00	8.42	4.00	3.49	19.68	20.87	383
385	Wheat and Clover Grower.....	W. W. Whitaker, Reeds.....	.82	.94	17.00	13.73	5.00	2.65	12.00	11.08	2.00	2.24	22.08	20.81	385
269	Wheat and Clover Grower.....	Farrell & Lane, Gerald.....	.82	.98	17.00	14.24	5.00	2.61	12.00	11.63	2.00	2.08	22.08	21.42	269
225	Wheat and Clover Grower.....	Fred W. Niewald, Rosebud.....	.82	.64	17.00	16.17	5.00	3.07	12.00	13.10	2.00	1.62	22.08	21.54	225
87	Standard Grain Grower.....	Henry & Adelott, Troy.....	.41	.43	13.00	17.79	5.00	10.58	8.00	7.21	4.00	5.35	18.04	21.02	87
224	Wheat and Corn Grower.....	N. Johannes & Sons Imp. Co., Lamar.....	.41	.47	14.00	15.59	5.00	6.36	9.00	9.23	2.00	2.01	16.84	17.91	224
86	Wheat and Corn Grower.....	Henry & Adelott, Troy.....	.41	.44	14.00	18.92	5.00	9.58	9.00	9.34	2.00	3.23	16.84	20.68	86
381	High Grade Special Potash Mixture.....	Estes T. & S. Co., Springfield.....			15.00	18.25	5.00	7.81	10.00	10.44	4.00	2.92	18.80	19.15	381
390	Alkaline Bone.....	Estes T. & S. Co., Springfield.....			15.00	16.18	5.00	6.36	10.00	9.82	2.00	1.93	16.40	16.64	390
217	Alkaline Bone.....	N. Johannes & Sons Imp. Co., Lamar.....			15.00	17.98	5.00	7.11	10.00	10.87	2.00	1.77	16.40	18.00	217

219	Soluble Bone.....	Fred W. Niewald, Rosebud.....	0.82	0.92	13.00	15.85	5.00	7.41	8.00	8.44	2.00	1.92	\$17.28	\$19.07	219
387	Soluble Bone.....	Estes T. & S. Co., Springfield....	.82	.82	13.00	17.51	5.00	8.79	8.00	8.72	2.00	2.27	17.28	19.98	387
386	Soluble Bone.....	Farmers' Union, Billings.....	.82	.82	13.00	13.90	5.00	6.37	8.00	7.53	2.00	1.83	17.28	17.07	386
384	H. G. Bone and Potash ⁵	Estes T. & S. Co., Springfield....				14.41		5.05	10.00	9.36	6.00	5.38	19.20	19.71	384
Sulzberger & Sons Co., Chicago, Illinois															
S. and S. Brands															
452	Raw Bone Meal.....	Sampled at Factory, Kansas City	3.75	4.03	23.00	24.09							31.10	32.98	452
395	Raw Bone Meal.....	Schooler Grain Co., Jasper.....	3.75	3.71	23.00	24.62							31.10	32.07	395
392	Raw Bone Meal and Plant Potash.....	Pugh & Son, Golden City.....	1.65	1.81	14.00	17.19					2.00	1.90	18.80	21.55	392
453	Pure Bone Meal.....	Sampled at Factory, Kansas City	2.50	2.82	24.00	28.27							26.80	31.07	453
396	Pure Bone Meal.....	Schooler Grain Co., Jasper.....	2.50	2.17	24.00	29.42							26.80	29.27	396
227	Bone Grain Grower.....	W. W. Stoddart, Monroe City....	1.65	1.70	10.00	12.18					2.00	1.73	16.00	17.41	227
394	Bone Grain Grower.....	Pugh & Son, Golden City.....	1.65	1.81	10.00	12.12					2.00	1.78	16.00	17.86	394
393	Bone Grain Grower.....	Schooler Grain Co., Jasper.....	1.65	1.54	10.00	12.14					2.00	1.68	16.00	16.68	393
90	Blood and Bone.....	Pugh & Sons, Golden City.....	4.94	4.48	13.50	18.33							29.21	30.75	90
230	Blood and Bone.....	J. F. Lowery, Crocker.....	4.94	5.14	13.50	17.87							29.21	33.07	230
93	Popular Bone Meal.....	J. W. Sharp & Son, Brunswick....	1.65	1.66	20.00	30.88							20.60	28.26	93
397	Special Bone Meal.....	Pugh & Son, Golden City.....	1.23	2.10	28.00	28.82							24.52	28.57	397
398	Special Bone Meal.....	Schooler Grain Co., Jasper.....	1.23	2.73	28.00	26.97							24.52	29.80	398
91	Corn and Wheat Special.....	G. J. Pugh & Son, Golden City....	1.65	2.21	10.00	10.27	2.00	5.01	8.00	5.26	2.00	1.84	19.40	19.36	91
92	Corn and Oat Grower.....	Abstroth & Wiemer, Wright.....	.82	.70	10.00	17.26	1.00	5.94	9.00	11.32	1.00	1.59	15.68	20.67	92
Swift & Co., East St. Louis, Illinois															
Swift's Brands															
98	Red Steer Wheat and Corn Grower.....	Hickman & Sons, Golden City....	1.65	1.39	9.00	9.36	1.00	1.57	8.00	7.79	2.00	1.81	19.00	17.71	98
97	Red Steer Wheat and Corn Grower.....	Edw. T. Robbins, St. Charles....	1.65	1.25	9.00	9.47	1.00	1.83	8.00	7.64	2.00	1.57	19.00	16.78	97
235	Red Steer Wheat and Corn Grower.....	Frankford E. Co., Frankford....	1.65	1.50	9.00	8.51	1.00	2.18	8.00	6.33	2.00	1.82	19.00	16.65	235

⁵ Registered for 1914 but not for 1915.

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Swift & Co.,		Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	Per	
	Swift's Brands—Continued		ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	ct.	
232	Red Steer Wheat and Corn Grower.....	Farm Supply Co., Lebanon.....	1.65	1.48	9.00	9.43	1.00	1.91	8.00	7.52	2.00	1.97	\$19.00	\$18.06	232
105	Diamond K Grain Grower.....	G. P. Weber, Tipton.....	.82	.77	12.50	14.17	.50	1.12	12.00	13.05	1.00	.83	19.08	20.19	105
95	Diamond K. Grain Grower.....	C. W. Thurman, Jonesville.....	.82	.64	12.50	12.68	.50	1.03	12.00	11.65	1.00	1.10	19.08	18.27	95
242	Diamond K. Grain Grower.....	G. W. Farrell, Madison.....	.82	1.06	12.50	13.70	.50	1.39	12.00	12.31	1.00	.93	19.08	20.69	242
240	Diamond K. Grain Grower.....	Oscar Grannermann & Co., New Haven.....	.82	.77	12.50	14.42	.50	2.60	12.00	11.82	1.00	.82	19.08	19.28	240
239	Grain and Grass Grower.....	H. M. Brandt, Rosebud.....	1.65	1.51	13.00	13.35	1.00	1.21	12.00	12.14	1.00	1.94	22.60	23.42	239
403	Grain and Grass Grower.....	Asbury Elevator Co., Asbury....	1.65	1.86	13.00	13.63	1.00	2.73	12.00	10.90	1.00	1.18	22.60	23.03	403
404	Grain and Grass Grower.....	Webb Bros., Jasper.....	1.65	1.41	13.00	14.50	1.00	2.25	12.00	12.25	1.00	.94	22.60	22.37	404
122	Diamond M. Grain Grower.....	A. L. Yowell & Sons, Maryville...	1.65	1.61	12.00	11.12	1.00	.63	11.00	10.49	1.00	1.13	21.40	20.64	122
107	Diamond M. Grain Grower.....	I. A. Young, Arcola, Greenfield..	1.65	1.39	12.00	13.10	1.00	1.21	11.00	11.89	1.00	.97	21.40	21.47	107
106	Diamond M. Grain Grower.....	Hickman & Sons, Golden City..	1.65	1.19	12.00	14.14	1.00	3.58	11.00	10.56	1.00	.84	21.40	19.94	106
241	Diamond M. Grain Grower.....	Oscar Grannermann & Co., New Haven.....	1.65	1.40	12.00	14.44	1.00	1.83	11.00	12.61	1.00	.70	21.40	22.30	241
407	Diamond M. Grain Grower.....	Asbury Elevator Co., Asbury....	1.65	1.62	12.00	12.45	1.00	2.73	11.00	9.72	1.00	1.18	21.40	20.65	407
244	Diamond N. Grain Grower.....	Ben Strop, Meta.....	1.65	1.40	10.00	11.26	1.00	1.99	9.00	9.27	1.00	1.26	19.00	19.03	244
243	Diamond N. Grain Grower.....	O. Grannermann & Co., New Haven.....	1.65	1.46	10.00	11.15	1.00	1.93	9.00	9.22	1.00	1.25	19.00	19.17	243
408	Diamond N. Grain Grower.....	Edwin Tiede, Billings.....	1.65	1.57	10.00	10.61	1.00	2.37	9.00	8.24	1.00	1.26	19.00	18.63	408
111	Superphosphate.....	H. Gatzemeier, New Cambria....	1.65	1.44	9.00	8.85	1.00	1.57	8.00	7.28	2.00	1.91	19.00	17.42	111
94	Superphosphate.....	Eolia Elevator Co., Eolia.....	1.65	1.20	9.00	10.20	1.00	2.45	8.00	7.75	2.00	1.50	19.00	16.88	94
259	Superphosphate.....	Noel Bros., Stoutsville.....	1.65	1.56	9.00	10.26	1.00	2.33	8.00	7.93	2.00	1.47	19.00	18.45	259

115	Special Grain Fertilizer.....	C. S. Alexander, Clarksburg.....	1.65	1.37	11.00	11.41	1.00	2.47	10.00	8.94	2.00	1.92	\$21.40	\$19.50	115
114	Special Grain Fertilizer.....	Scrubby Bros., Chillicothe.....	1.65	1.54	11.00	9.41	1.00	.70	10.00	8.71	2.00	1.71	21.40	18.94	114
411	Special Grain Fertilizer.....	Edwin Tiede, Billings.....	1.65	1.54	11.00	12.80	1.00	2.29	10.00	10.51	2.00	1.09	21.40	21.00	411
121	Diamond A. Vegetable and Fruit Grower.....	A. L. Yowell & Sons, Maryville...	2.47	1.57	9.00	11.46	1.00	.61	8.00	10.85	3.00	1.43	23.48	21.26	121
245	Diamond A. Vegetable and Fruit Grower.....	Tucker Seed House, Carthage....	2.47	2.54	9.00	9.63	1.00	2.06	8.00	7.57	3.00	3.18	23.48	23.88	245
237	Diamond W. Tomato and Vege- table Grower.....	J. M. Wine & Co., Clarence.....	1.65	1.53	9.00	10.91	1.00	1.33	8.00	9.58	3.00	2.01	20.20	20.56	237
236	Diamond W. Tomato and Vege- table Grower.....	Tucker Seed Co., Carthage.....	1.65	1.55	9.00	8.58	1.00	1.24	8.00	7.34	3.00	3.26	20.20	19.42	236
410	Diamond W. Tomato and Vege- table Grower.....	Farmer's Elevator, Purdy.....	1.65	1.48	9.00	8.37	1.00	.91	8.00	7.46	3.00	2.65	20.20	18.41	410
409	Diamond W. Tomato and Vege- table Grower.....	J. B. Logan, Hurley.....	1.65	1.55	9.00	8.80	1.00	.89	8.00	7.91	3.00	3.27	20.20	19.97	409
110	Complete Fertilizer.....	C. W. Thurman, Jonesburg.....	.82	.32	8.50	6.44	.50	.47	8.00	5.97	1.00	.95	14.28	9.77	110
258	Complete Fertilizer.....	G. W. Farrell, Madison.....	.82	.80	8.50	9.23	.50	1.09	8.00	8.14	1.00	1.40	14.28	15.09	258
257	Complete Fertilizer.....	H. L. Pritchett, New London....	.82	.69	8.50	8.80	.50	1.19	8.00	7.61	1.00	1.03	14.28	13.61	257
414	Garden City Phosphate.....	Sarcoxie Supply Co., Sarcoxie....				14.21		1.04	14.00	13.17			16.80	16.22	414
413	Garden City Phosphate.....	O. M. Wilkerson, Carrington....				14.74		.91	14.00	13.83			16.80	16.96	413
256	High Grade Acid Phosphate.....	Oscar Grannermann, New Haven...				18.43		1.11	16.00	17.32			19.20	21.22	256
255	High Grade Acid Phosphate.....	W. H. Tenny, Shelbina.....				19.58		.50	16.00	19.08			19.20	23.10	255
399	High Grade Acid Phosphate.....	Newton Grain Co., Springfield....				18.30		1.32	16.00	16.98			19.20	20.91	399
476	12-1 Brand.....	Farmer Bros., Willard.....				13.00		1.32	12.00	11.68	1.00	1.56	15.60	16.42	476
238	12-1 Brand.....	L. Q. Brodney, Paris.....				13.04		.77	12.00	12.27	1.00	.99	15.60	16.22	238
412	Standard Grade Phosphate and Potash.....	Willis Wiley & Co., Crane.....				12.90		3.43	12.00	9.47	2.00	1.34	16.80	14.34	412
461	Standard Grade Phosphate and Potash.....	R. B. Rupard, Eldorado Springs..				12.94		.86	12.00	12.08	2.00	1.91	16.80	17.13	461
234	Beef Bone and Potash.....	Strehlman & Gerkin, Leslie.....	1.85	1.80	25.00	25.75					1.00	1.35	26.10	26.85	234
233	Beef Bone and Potash.....	Bray Supply Co., St. James.....	1.85	1.68	25.00	25.23					1.00	1.82	26.10	26.56	233
401	Beef Bone and Potash.....	C. L. Higginbotham, Seneca.....	1.85	2.12	25.00	27.83					1.00	1.12	26.10	29.30	401
113	Pure Bone Meal.....	C. S. Alexander, Clarksburg.....	2.47	2.73	24.00	22.94							26.68	26.98	113
112	Pure Bone Meal.....	A. L. Yowell & Sons, Maryville...	2.47	2.74	24.00	24.01							26.68	27.77	112
246	Pure Bone Meal.....	Smith Jones, Holiday.....	2.47	2.60	24.00	24.12							26.68	27.28	246
96	Ground Steamed Bone.....	F. W. Schulze, Moscow.....	1.65	1.49	20.00	22.25							20.60	21.54	96

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Swift & Co.,		Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	
	Swift's Brands—Continued														
251	Ground Steamed Bone.....	Frankford Elev. Co., Frankford..	1.65	1.90	20.00	21.46							\$20.60	\$22.62	251
250	Ground Steamed Bone.....	H. L. Pritchett, New London....	1.65	1.60	20.00	19.97							20.60	20.38	250
249	Ground Beef Bone.....	Thos. Egger Elevator, Lamar....	2.05	2.41	27.00	26.04							27.10	27.87	249
248	Ground Beef Bone.....	Farmers' G. E. Co., Owensville...	2.05	1.81	27.00	29.07							27.10	27.59	248
400	Ground Beef Bone.....	Tucker Seed House, Carthage....	2.05	2.04	27.00	25.37							27.10	25.88	400
104	Bone Meal and Blood.....	G. H. Schulze, Truesdall.....	3.75	3.63	23.00	25.38							31.10	32.29	104
103	Bone Meal and Blood.....	Archias Seed Co., Sedalia.....	3.75	4.13	23.00	22.76							31.10	32.45	103
405	Bone Meal and Blood.....	I. A. Young, Arcola, Lockwood..	3.75	2.73	23.00	26.35							31.10	29.37	405
416	Special Bone Meal.....	Beach Grain and Elevator Co., Appleton City.....	.82	1.55	29.00	30.51							23.58	27.56	416
454	Special Bone Meal.....	Sampled at Factory, St. Joseph..	.82	1.73	29.00	29.98							23.58	27.91	454
108	Raw Bone Meal.....	Engleman Greenhouse, Maryville	3.75	3.73	23.00	21.69							31.10	30.10	108
99	Raw Bone Meal.....	Joe Cassidine, Thompson.....	3.75	3.87	23.00	24.91							31.10	32.92	99
254	Raw Bone Meal.....	Noel Bros., Stoutsville.....	3.75	4.23	23.00	24.92							31.10	34.36	254
253	Raw Bone Meal.....	G. W. Farrell, Madison.....	3.75	3.97	23.00	24.48							31.10	33.02	253
100	Steam Bone and Potash.....	Edw. T. Robbins, St. Charles....	.82	1.33	18.00	17.69					1.00	1.15	17.08	19.08	100
252	Steam Bone and Potash.....	Farmers' Elev. Co., Owensville...	.82	1.06	18.00	20.50					1.00	.92	17.08	19.69	252
117	Pulverized Sheep Manure.....	C. W. Carter, Fortuna.....	1.65	1.47	1.00	2.50					1.50	1.86	9.10	9.86	117
116	Pulverized Sheep Manure.....	State Fair Floral Co., Sedalia...	1.65	1.82	1.00	2.54					1.50	1.50	9.10	10.86	116
402	Pulverized Sheep Manure.....	Newton Grain Co., Springfield..	1.65	2.05	1.00	1.48					1.50	1.84	9.10	11.45	402
456	No. 3 Manure Mixture.....	Sampled at Factory, St. Joseph..	1.65	1.75	11.00	10.79	1.00	4.16	10.00	6.63	2.00	2.25	21.40	19.32	456
415	Pulverized Cattle Manure.....	Sarcoxie Supply Co., Sarcoxie....	1.65	1.67	1.00	2.42					1.00	3.03	8.50	12.01	415
118	Shredded Cattle Manure.....	Englemann Gr'nhouse, Maryville	2.06	1.53	1.00	1.13					1.50	1.07	10.74	8.19	118

124	Champion Wheat and Corn Grower.....	C. S. Alexander, Clarksburg.....	1.65	1.60	13.00	13.33	1.00	1.09	12.00	12.24	2.00	2.22	\$23.80	\$24.19	124
125	Champion Wheat and Corn Grower.....	Scrubby Bros., Chillicothe.....	1.65	1.55	13.00	12.97	1.00	.46	12.00	12.46	2.00	2.39	23.80	24.20	125
126	Champion Wheat and Corn Grower.....	H. H. Burks, Hallsville.....	1.65	1.41	13.00	12.57	1.00	.73	12.00	11.84	2.00	2.25	23.80	22.84	126
109	Nitrate of Soda.....	State Fair Floral Co., Sedalia....	14.81	15.78	.....	.....	.....	.....	.....	.....	.....	.....	59.24	63.12	109
101	Bone Meal and Phosphate.....	Driver & Shank, Versailles.....	.82	1.18	20.00	21.18	7.00	8.74	13.00	12.44	.....	.....	21.68	23.15	101
247	Bone Meal and Phosphate.....	Crocker Hdw. Co., Crocker.....	.82	1.68	20.00	21.80	7.00	10.68	13.00	11.12	.....	.....	21.68	24.33	247
406	Bone Meal and Phosphate.....	Edwin Tiede, Billings.....	.82	1.37	20.00	21.31	7.00	8.58	13.00	12.73	.....	.....	21.68	24.19	406
120	Diamond L. Grain Grower.....	H. S. Neal, Fairfax.....	1.65	1.53	13.00	12.48	1.00	.98	12.00	11.50	1.00	.76	22.60	21.22	120
455	Diamond L. Grain Grower.....	Sampled at Factory, St. Joseph....	1.65	2.27	13.00	12.38	1.00	1.12	12.00	11.26	1.00	1.35	22.60	24.66	455
123	Special Bone Meal and Potash...	C. S. Alexander, Clarksburg.....	.82	1.10	18.00	20.31	.....	.....	.....	.....	4.00	2.98	20.68	22.20	123
Tennessee Chemical Co., Chicago, Illinois															
Ox Brands															
435	16% Acid Phosphate.....	Sampled at Factory, Kansas City	.....	.....	16.50	18.30	.50	1.87	16.00	16.43	.....	.....	19.40	20.47	435
418	1-12-1 Fertilizer.....	C. L. Hayzlett, Jasper.....	.82	.96	12.50	13.38	.50	.63	12.00	12.75	1.00	1.25	19.08	20.89	418
478	Wheat and Grass Fertilizer.....	Bitzer & Sons, Bolivar.....	1.65	1.60	8.50	8.82	.50	1.67	8.00	7.15	2.00	2.00	18.80	18.05	478
261	Wheat and Grass Fertilizer.....	Home Trading Co., Lebanon....	1.65	1.39	8.50	8.70	.50	.86	8.00	7.84	2.00	1.73	18.80	17.39	261
431	Ammoniated Phosphate and Potash.....	Sampled at Factory, Kansas City	1.65	1.55	10.50	11.44	.50	1.86	10.00	9.58	2.00	1.78	21.20	20.58	431
477	Ammoniated Phosphate and Potash.....	Bitzer & Sons, Bolivar.....	1.65	1.66	10.50	11.60	.50	1.59	10.00	10.01	2.00	2.05	21.20	21.75	477
479	Bone Meal.....	Bitzer & Sons, Bolivar.....	2.47	2.80	24.00	26.09	.....	.....	.....	.....	.....	.....	26.68	29.46	479
448	1-8-1 Fertilizer.....	Sampled at Factory, Kansas City	.82	.65	8.50	8.65	.50	.78	8.00	7.87	1.00	1.11	14.28	13.68	448
262	Phosphate & Potash.....	Strehlmann & Gerkin, Leslie....	.....	.....	12.50	10.01	.50	.43	12.00	9.58	2.00	1.55	17.00	13.53	262
444	1-10-2 Fertilizer.....	Sampled at Factory, Kansas City	.82	.89	10.50	11.76	.50	.98	10.00	10.78	2.00	2.54	17.88	19.94	444
450	Raw Bone Meal.....	Sampled at Factory, Kansas City	3.70	3.53	22.00	22.15	.....	.....	.....	.....	.....	.....	30.20	29.63	450
417	Bone Meal Phosphate and Potash.....	C. L. Hayzlett, Jasper.....	.82	1.05	18.00	18.92	.....	.....	.....	.....	2.00	1.67	18.28	19.44	417
440	1-8-3 Fertilizer.....	Sampled at Factory, Kansas City	.82	.82	8.50	9.83	.50	1.34	8.00	8.49	3.00	2.54	16.68	17.06	440
260	Special Grain Grower.....	Strehlmann & Gerkin, Leslie....	.82	.63	8.50	10.00	.50	1.39	8.00	8.61	2.00	1.71	15.48	15.46	260

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
			Guaranteed	Found	Total		Insoluble		Available		Guaranteed	Found	Guaranteed	Found	
					Guaranteed	Found	Guaranteed	Found	Guaranteed	Found					
			Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	
	Tuscarora Fertilizer Co., Chicago, Illinois														
	Tuscarora Brands														
436	16 Per cent Acid Phosphate.....	Sampled at Factory, Kansas City	16.50	18.55	0.50	1.76	16.00	16.79	.....	.....	\$19.40	\$20.85	436		
128	14 Per cent Acid Phosphate.....	E. K. Butts, Vandalia.....	14.50	14.67	.50	.32	14.00	14.35	.....	.....	17.00	17.35	128		
265	14 Per cent Acid Phosphate.....	Edw. A. Althage, Beaufort.....	14.50	13.77	.50	.68	14.00	13.09	.....	.....	17.00	15.98	265		
430	Bone Meal.....	Sampled at Factory, Kansas City	2.47	2.79	24.00	25.98	.....	.....	.....	.....	26.68	29.35	430		
463	Bone Meal.....	Walter Tough, Dederick.....	2.47	2.87	24.00	23.21	.....	.....	.....	.....	26.68	27.73	463		
462	Bone Meal.....	H. W. Evans & Son, Eldorado Springs.....	2.47	2.76	24.00	23.70	.....	.....	.....	.....	26.68	27.63	462		
263	Raw Bone Meal.....	B. M. Acree, Fulton.....	3.70	3.74	22.00	24.71	.....	.....	.....	.....	30.20	32.26	263		
131	1-9-1 Fertilizer.....	E. K. Butts, Vandalia.....	.82	.58	9.50	8.74	.50	.17	9.00	8.57	1.00	1.17	15.48	14.07	131
267	1-9-1 Fertilizer.....	Edw. A. Althage, Beaufort.....	.82	.64	9.50	10.63	.50	1.45	9.00	9.18	1.00	.91	15.48	15.25	267
439	1-12-1 Fertilizer.....	Sampled at Factory, Kansas City	.82	.94	12.50	14.24	.50	1.29	12.00	12.95	1.00	.73	19.08	20.70	439
468	1-12-1 Fertilizer.....	Walter Tough, Dederick.....	.82	.95	12.50	13.38	.50	.69	12.00	12.69	1.00	1.32	19.08	20.89	468
127	Standard Fertilizer.....	Eolia Elevator Co., Eolia.....	1.65	.80	8.50	8.87	.50	.50	8.00	8.37	2.00	1.38	18.80	15.10	127
266	Standard Fertilizer.....	Edw. A. Althage, Beaufort.....	1.65	1.39	8.50	8.82	.50	.84	8.00	7.98	2.00	1.75	18.80	17.58	266
464	Standard Fertilizer.....	J. B. Robinson, Nevada.....	1.65	1.70	8.50	8.87	.50	1.62	8.00	7.25	2.00	1.95	18.80	18.49	464
432	Wheat and Corn Grower.....	Sampled at Factory, Kansas City	1.65	1.55	10.50	11.76	.50	1.79	10.00	9.97	2.00	2.17	21.20	21.48	432
449	1-8-1 Fertilizer.....	Sampled at Factory, Kansas City	.82	.65	8.50	8.58	.50	.64	8.00	7.94	1.00	1.21	14.28	13.84	449
129	1-8-1 Fertilizer.....	E. K. Butts, Vandalia.....	.82	.70	8.50	9.23	.50	.47	8.00	8.76	1.00	.89	14.28	14.57	129
465	1-8-1 Fertilizer.....	H. W. Evans & Son, Eldorado Springs.....	.82	1.00	8.50	8.41	.50	1.00	8.00	7.41	1.00	1.08	14.28	14.59	465
441	Grain Special.....	Sampled at Factory, Kansas City	.82	.84	8.50	9.80	.50	1.32	8.00	8.48	3.00	2.84	16.68	17.48	441

467	1-8-2 Fertilizer.....	H. W. Evans & Son, Eldorado Springs.....	0.82	0.94	8.50	9.16	0.50	1.07	8.00	8.09	2.00	1.93	\$15.48	\$16.22	467
466	1-8-2 Fertilizer.....	Walter Tough, Dederick.....	.82	.96	8.50	7.64	.50	.61	8.00	7.03	2.00	1.90	15.48	14.80	466
445	1-10-2 Fertilizer.....	Sampled at Factory, Kansas City	.82	.83	10.50	11.72	.50	1.05	10.00	10.67	2.00	2.09	17.88	19.05	445
180	Bone Meal, Phosphate and Potash.....	E. K. Butts, Vandalia.....	.82	.88	18.00	20.08	.....	.....	.....	.....	2.00	1.73	18.28	19.66	180
264	Grain Grower.....	Edw. A. Althage, Beaufort.....	.82	.68	8.50	9.53	.50	1.28	8.00	8.25	2.00	1.80	15.48	15.29	264
Virginia-Carolina Chemical Co., Memphis, Tennessee															
481	Royal High Grade Guano.....	Patton Hardware Co., Cabool...	1.65	1.48	.....	11.24	.....	1.16	10.00	10.08	2.00	1.80	21.00	20.64	481
482	Beef Blood and Bone Guano.....	Patton Hardware Co., Cabool...	1.65	1.70	.....	9.16	.....	1.52	8.00	7.64	2.00	2.02	18.60	19.00	482
420	Victor Bone and Potash Compound.....	Adams Hdwe. Co., Lamar.....	.....	.....	.....	16.26	.....	1.01	15.00	15.25	3.00	3.19	21.60	22.53	420
483	V.-C. Superphosphate.....	Patton Hdwe. Co., Cabool.....	.....	.....	.....	16.94	.....	.40	16.00	16.54	.....	.....	19.20	20.01	483
419	Monarch Bone and Potash Compound.....	Webb Bros., Jasper.....	.....	.....	.....	17.62	.....	1.05	15.00	16.57	2.00	2.12	20.40	22.84	419
Miscellaneous Samples															
490	Commonwealth Wheat Grower (Arkansas Fertilizer Co.).....	Herman Elfrink, Leopold.....	.82	.94	9.00	13.78	1.00	6.24	8.00	7.54	1.00	.32	14.48	15.69	490
486	Commonwealth Wheat Grower (Arkansas Fertilizer Co.).....	W. F. Kuhlman, Hilderbrand.....	.82	.95	9.00	14.89	1.00	5.91	8.00	8.98	1.00	.53	14.48	17.58	486
428	0-14-2 Fertilizer (Armour).....	C. M. Long, Sedalia.....	.....	.....	14.50	14.12	.50	.46	14.00	13.66	2.00	1.77	19.40	18.69	428
426	Bat Guano.....	Wm. Igoe, St. Louis.....	.....	4.74	.....	9.38	.....	.39	.....	8.99	.....	.28	.....	30.25	426
143	Days' Flower Fertilizer (Days' Flower Fertilizer Co.).....	Days' Flower F. Co., Kansas City	.....	1.09	.....	.50	.....	.34	.....	.16	.....	.84	.....	5.70	143
487	H. G. Acid Phosphate (Read Phosphate Co.).....	Jno. M. Burlbow, Farmington...	.....	.....	16.00	19.60	2.00	5.68	14.00	13.92	.....	.....	17.60	18.97	487
421	Raw Bone Meal (Read Phosphate Co.).....	I. F. Gilmore, Palmyra.....	3.90	3.91	22.00	21.17	.....	.....	.....	.....	.....	.18	31.00	30.68	421
480	H. G. Acid Phosphate (Read Phosphate Co.).....	J. H. Yount, Sikeston.....	.....	.....	16.00	19.54	2.00	4.85	14.00	14.69	.....	.....	17.60	19.57	480

TABLE 6.—FERTILIZER ANALYSES AND GUARANTEES: 1915

Laboratory Number	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P ₂ O ₅						Potash (K ₂ O)		Value per ton		Laboratory Number
					Total		Insoluble		Available						
			Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	Guaranteed	Found	
	Miscellaneous Samples— Concluded		Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.	Per ct.		
489	H. G. Acid Phosphate (Read Phosphate Co.).....	Klein & Stallcup, Sikeston.....			16.00	20.94	2.00	5.44	14.00	15.50			\$17.60	\$20.77	489
102	Raw Bone Meal (Swift & Co.)...	Stark, Stark City.....	3.75	3.84	23.00	24.78							31.10	32.71	102
142	Sheep Guano No. 2 (Swift & Co.),	Stark Bros., Louisiana.....		1.75		1.09		.33		.76		1.87		10.28	142
226	Humus (Schisler-Cornell Seed Co.).....	Schisler-Cornell Seed Co., St. Louis.....		2.57		.35		.20		.15		.27		10.86	226
141	Ashes & Lime (Ash Grove Lime Co.).....	Thos. Egger Elevator, Lamar.....				.72		.66		.06		2.08		2.83	141
491	Ox Brand 1-8-3 (Tennessee Chem. Co.).....	John Daily, Rolla, Mo.....	.82	.75	8.50	10.44	.50	1.89	8.00	8.55	3.00	2.89	16.68	17.49	491

TABLE 7.—POWER OF LIMESTONE AND SIMILAR MATERIALS TO NEUTRALIZE SOIL ACIDITY

Expressed in Percentage of Calcium Carbonate			
Lab. No.	Sender	Material	Calcium Carbonate Equivalent
			Per cent
1-349	C. A. Niedert, High Gate.....	Limestone Number 1.....	95.50
1-350	C. A. Niedert, High Gate.....	Limestone Number 2.....	99.45
1-351	C. A. Niedert, High Gate.....	Limestone Number 3.....	97.41
1-352	Paul Shulz, Meta.....	Limestone.....	95.00
1-353	J. W. Cory, Lisle.....	Limestone Number 1.....	85.20
1-354	J. W. Cory, Lisle.....	Limestone Number 2.....	88.00
1-367	W. H. Smollinger, Iron Mountain....	Limestone.....	93.50
2- 24	Charles M. Pierce, Auxvasse.....	Limestone.....	95.59
2- 26	Wm. Carter, Piedmont.....	Limestone Number 1.....	96.17
2- 28	J. H. Coy, Jerico Springs.....	Limestone Number 1.....	96.02
2- 29	J. H. Coy, Jerico Springs.....	Limestone Number 2.....	96.43
2- 30	J. H. Coy, Jerico Springs.....	Limestone Number 3.....	96.71
2- 33	Wm. Carter, Piedmont.....	Limestone Number 2.....	98.69
2- 34	Wm. Carter, Piedmont.....	Limestone Number 3.....	95.54
2- 36	Bernard Meese, Kimmswick.....	Limestone.....	94.43
2- 37	Bernard Meese, Kimmswick.....	Calcite.....	98.61
2- 41	Frank Yahle, Tina.....	Limestone.....	96.80
2- 52	John F. Briscoe, Center.....	Limestone.....	95.40
2- 58	P. J. N. Curta, Cuba.....	Limestone Number 1.....	100.21
2- 59	P. J. N. Curta, Cuba.....	Limestone Number 2.....	91.69
3- 14	S. M. Jordan, Sedalia.....	Chert.....	96.65
3- 23	Bert L. France, Farmington.....	Limestone.....	73.53
3- 27	Jas. T. McMahan Constr. Co., St. Louis.....	Limestone dust.....	86.81
3- 31	R. L. Smith, Fulton.....	Limestone.....	97.77
3- 33	Wm. Dufner, Hermann.....	Limestone Number 1.....	80.09
3- 34	Wm. Dufner, Hermann.....	Limestone Number 2.....	94.93
3- 35	Wm. Dufner, Hermann.....	Limestone Number 3.....	74.59
3- 36	Wm. Dufner, Hermann.....	Limestone Number 4.....	96.68
3- 37	Wm. Dufner, Hermann.....	Limestone Number 5.....	97.16
3- 39	R. Egley, New Haven.....	Limestone Number 1.....	96.90
3- 40	R. Egley, New Haven.....	Limestone Number 2.....	98.47
3- 41	Wm. A. Beckman, Hermann.....	Limestone Number 1.....	94.43
3- 42	Wm. A. Beckman, Hermann.....	Limestone Number 2.....	94.64
3- 43	Wm. A. Beckman, Hermann.....	Limestone Number 3.....	98.19
3- 44	Wm. A. Beckman, Hermann.....	Limestone Number 4.....	94.64
3- 48	W. O. Proctor, Doniphan.....	Limestone Number 1.....	100.18
3- 49	W. O. Proctor, Doniphan.....	Limestone Number 2.....	98.07
3- 50	W. O. Proctor, Doniphan.....	Limestone Number 3.....	97.56
3- 51	W. O. Proctor, Doniphan.....	Limestone Number 4.....	101.82
3- 52	W. O. Proctor, Doniphan.....	Limestone Number 5.....	99.85
3- 53	W. O. Proctor, Doniphan.....	Limestone Number 6.....	96.54
3- 54	W. O. Proctor, Doniphan.....	Limestone Number 7.....	97.89
4- 2	E. J. Rodekohr, Greenfield.....	Limestone.....	96.32
4- 4	H. B. Derr, Sikeston.....	Chat from lead mines.....	80.53
4-162	E. J. Rodekohr, Greenfield.....	Limestone.....	99.55
4-163	G. B. Ellis, Columbia.....	Limestone.....	96.03
5- 3	W. D. Reynolds, Crusher at Gallatin.	Limestone (fine material).....	87.84
5- 4	W. D. Reynolds, Pattonsburg.....	Limestone.....	94.75
5- 17	Wm. Deppermann, Beaufort.....	Limestone.....	90.19
5- 18	W. B. Thayer, Kansas City.....	Limestone.....	98.50
5- 20	Bert L. France, Farmington.....	Limestone Number 1.....	83.77
5- 21	Bert L. France, Farmington.....	Limestone Number 2.....	82.81

TABLE 7.—POWER OF LIMESTONE AND SIMILAR MATERIALS TO NEUTRALIZE SOIL ACIDITY—Continued

Expressed in Percentage of Calcium Carbonate

Lab. No.	Sender	Material	Calcium Carbonate Equivalent
			Per cent
5-22	Bert L. France, Doe Run	Limestone Number 3 Chat.	74.76
5-23	Bert L. France, Doe Run	Limestone Number 4 Chat.	86.85
5-29	Bert L. France, Farmington	Limestone Number 5	76.47
5-30	Bert L. France, Farmington	Limestone Number 6	67.94
5-31	Bert L. France, Farmington	Limestone Number 7	94.61
5-33	S. S. Spangler, Milan	Limestone	92.47
5-34	Bert L. France, Farmington	Limestone Number 8	102.00
5-412	Bert L. France, Farmington	Limestone Number 9	91.82
5-413	Bert L. France, Farmington	Limestone Number 10	68.66
5-414	Bert L. France, Farmington	Limestone Number 11	34.57
5-415	Bert L. France, Farmington	Limestone Number 12	94.19
5-416	Bert L. France, Farmington	Limestone Number 13	95.67
5-417	Bert L. France, Farmington	Limestone Number 14	102.37
5-418	Omar Trendley, St. Charles	Limestone Number 1	99.75
5-419	Omar Trendley, St. Charles	Limestone Number 2	97.44
5-420	Omar Trendley, St. Charles	Limestone Number 2a	98.20
5-421	Omar Trendley, St. Charles	Limestone Number 3	98.47
5-422	Omar Trendley, St. Charles	Limestone Number 4	99.41
6-28	E. H. Quisenberry, Carrollton	Limestone	84.17
6-94	Bert L. France, Farmington	Limestone Number 15	93.93
7-1	L. V. Crandall, St. Joseph	Marl	78.99
7-3	J. W. Ballew, Hale	Limestone	93.36
7-5	R. M. Brashear, Eolia	Limestone Number 1	99.28
7-6	R. M. Brashear, Eolia	Limestone Number 2	99.07
7-7	R. M. Brashear, Eolia	Limestone Number 3	91.15
7-8	R. M. Brashear, Eolia	Limestone Number 4	94.64
7-9	R. M. Brashear, Eolia	Limestone Number 5	99.38
8-1	E. H. Bradbury, Kansas City	Limestone	69.18
8-5	Bert L. France, Farmington	Limestone	103.73
8-6	J. N. Fellows, Columbia	Limestone	97.80
8-208	W. J. Hahn, Olean	Limestone Number 1	95.80
8-209	W. J. Hahn, Olean	Limestone Number 2	99.16
8-210	W. J. Hahn, Olean	Limestone Number 3	61.99
8-211	W. J. Hahn, Olean	Limestone Number 4	99.61
8-212	Russell G. Briggs, Joplin	Chat from Joplin mines	8.87
8-213	G. D. Ferguson, Lincoln	Limestone	86.65
8-214	Jacob Schmidt, New Haven	Limestone Number 1	75.10
8-215	Jacob Schmidt, New Haven	Limestone Number 2	99.10
8-216	Jacob Schmidt, New Haven	Limestone Number 3	101.71
8-217	Jacob Schmidt, New Haven	Limestone Number 4	96.03
8-218	Jacob Schmidt, New Haven	Limestone Number 5	59.23
8-219	Jacob Schmidt, New Haven	Limestone Number 6	100.35
8-220	Jacob Schmidt, New Haven	Limestone Number 7	90.41
9-102	W. F. Heavner, Humansville	Limestone	98.76
9-103	I. L. Weirick, Rich Hill	Limestone	85.38
9-104	E. J. Rodekohr, Greenfield	Limestone	94.30
9-107	Robert Skinner, Jonesburg	Limestone	84.27
9-108	S. M. Jordan, Pettis County	Limestone	90.92
10-501	F. C. Hallgreuer, Gerald	Limestone Number 1	99.72
10-502	F. C. Hallgreuer, Gerald	Limestone Number 2	102.82
10-503	F. C. Hallgreuer, Gerald	Limestone Number 3	99.44
10-505	W. T. Baker, Leeton	Limestone A	97.25
10-506	W. T. Baker, Leeton	Limestone B	96.10
10-507	W. T. Baker, Leeton	Limestone C	96.58

TABLE 7.—POWER OF LIMESTONE AND SIMILAR MATERIALS TO NEUTRALIZE SOIL ACIDITY—Concluded
Expressed in Percentage of Calcium Carbonate

Lab. No.	Sender	Material	Calcium Carbonate Equivalent
			Per cent
10-508	W. T. Baker, Leeton.....	Limestone D.....	88.30
11- 1	R. F. Davis, Appleton City.....	Limestone.....	96.25
11- 2	W. D. Corbin, Kansas City.....	Dolomitic Limestone.....	96.00
12- 1	Southeast Missouri Quarries Co., St. Louis.....	Limestone Number 1.....	96.61
12- 2	Southeast Missouri Quarries Co., St. Louis.....	Limestone Number 2.....	98.07
12- 3	Southeast Missouri Quarries Co., St. Louis.....	Limestone Number 3.....	96.20
12- 9	W. W. Snellings, High Hill.....	Limestone Number 1.....	97.08
12-10	W. W. Snellings, High Hill.....	Limestone Number 2.....	94.48
12-12	John W. Lees, Versailles.....	Limestone B.....	101.10
12-13	John W. Lees, Versailles.....	Limestone H.....	90.61
12-14	John W. Lees, Versailles.....	Limestone R.....	98.65
12-15	John W. Lees, Versailles.....	Limestone X.....	97.05
12- 4	P. R. Grinstead, Hughesville.....	Limestone Number 1.....	97.96
12- 5	P. R. Grinstead, Hughesville.....	Limestone Number 2.....	97.86

TABLE 8.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitrogen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
	Per cent	Per cent	Per cent	Per cent	Per cent
Arkansas Fertilizer Co., Little Rock, Arkansas					
White Diamond Brands					
Acid Phosphate.....				14.00	.....
Ammoniated Bone Superphosphate.....	1.65	10.00	1.00	9.00	2.00
Blood, Bone and Potash.....	2.00	13.00	1.00	12.00	1.50
Corn Fertilizer.....	2.00	10.50	1.00	9.50	3.50
Corn Grower.....	1.65	9.00	1.00	8.00	3.00
Economy Corn and Wheat Fertilizer.....	.82	11.00	1.00	10.00	2.00
Early Potato and Truck Fertilizer.....	2.50	9.00	1.00	8.00	4.00
Gro-fast Fertilizer.....	1.65	9.00	1.00	8.00	2.00
Special Acid Phosphate.....				16.00	.....
Corn and Wheat Fertilizer.....	1.70	11.00	1.00	10.00	4.00
Potash Special.....	2.00	10.00	1.00	9.00	5.00
Kali Bone Meal.....	1.65	14.00	6.00	8.00	4.00
Kali Superphosphate.....		12.00	1.00	11.00	3.00
Number 39.....	.82	11.00	1.00	10.00	1.00
Phospho Kainit Mixture.....		12.50	1.00	11.50	4.00
Raw Bone and Potash.....	2.50	18.00			2.00
Raw Bone Meal Fertilizer.....	3.30	20.00			.....
Soluble Bone and Blood.....	1.65	9.00	1.00	8.00	2.00
Superphosphate.....				10.00	2.00
20th Century.....	1.65	10.00	1.00	9.00	2.00
Vegetable Fertilizer.....	2.00	8.00	.50	7.50	3.00
Farmers Choice.....	2.00	11.00	1.00	10.00	3.00
High Grade Grain Grower.....		15.00			2.00
Special Wheat Grower.....		15.00			2.00
H. G. Corn and Wheat Grower.....		15.00			4.00
Bone and Potash.....		15.00			3.00
Nitrate of Soda.....	15.60				.....
Commonwealth Wheat Grower.....	.82	9.00	1.00	8.00	1.00
Commonwealth Corn Grower.....	.82	9.00	1.00	8.00	2.00
Armour Fertilizer Works, Chicago, Illinois					
Shield Brands					
14 per cent Acid Phosphate.....			.50	14.00	.....
16 per cent Acid Phosphate.....			.50	16.00	.....
Ammoniated Phosphate.....	1.65		.50	10.00	.....
Wheat, Corn and Oat Special.....	.82		.50	8.00	1.00
New Record Brand.....	.82		.50	10.00	1.00
Special Grain Grower.....	1.65		.50	8.00	1.00
Bone Meal.....	2.47	24.00			.....
Raw Bone Meal.....	3.70	22.00			.....
Chicago Feed and Fertilizer Co., Chicago, Illinois					
Magic Brands					
4-6-1.....	3.29	6.00	1.00	5.00	1.00
4-3-1.....	3.29	3.00	1.00	2.00	1.00
3-50.....	2.47	23.00	5.00	18.00	.....
5-40.....	4.12	18.30	4.30	14.00	.....

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
The Cochrane Packing Co., Kansas City, Kansas	Per cent	Per cent	Per cent	Per cent	Per cent
Cochranes' Brands					
Ground Dried Blood.....	13.18				
Pure Lawn Fertilizer.....	3.75	23.00			
Bone Meal and Potash.....	2.50	23.50			
Champion Grain Grower.....	1.65	10.50	.50	10.00	1.00
Phosphotash.....	1.65	8.50	.50	8.00	1.00
Raw Bone Meal.....	3.75	23.00			
Blood and Bone.....	3.75	23.00			
Bone Meal.....	2.50	25.00			
Dry Pulverized Manure.....	1.65	2.00			1.00
1-8-1 Brand.....	.82	8.50	.50	8.00	1.00
Carnation Grower.....	1.65	3.00			1.00
Commercial Fertilizer Co., East St. Louis, Illinois					
Commercial Brands					
Special Wheat Grower, Grade A.....	1.00	12.00	2.00	10.00	3.00
Special Wheat Grower, Grade B.....	1.00	9.00	2.00	7.00	1.00
Special Corn Grower, Grade A.....	2.00	9.00	1.00	8.00	3.00
Special Corn Grower, Grade B.....	1.65	10.00	2.00	8.00	2.00
Special Grain Grower.....	1.65	12.00	2.00	10.00	2.00
Special Ten-Two.....		12.00	2.00	10.00	2.00
Special Berry and Fruit Grower.....	1.65	11.00	1.00	10.00	6.00
Complete Fertilizer.....	1.65	10.00	2.00	8.00	2.00
Special Truck Grower, Grade A.....	3.25	10.00	2.00	8.00	5.00
Special Truck Grower, Grade B.....	2.00	9.00	1.00	8.00	3.00
Available Bone Phosphate.....		15.00	1.00	14.00	
Available Bone Phosphate.....		17.00	1.00	16.00	
Odorless Lawn Fertilizer.....	1.65	10.00	2.00	8.00	2.00
Raw Bone Meal.....	3.50	21.00			
Raw Bone Meal and Potash.....	3.50	21.00			3.00
Commercial Bone Meal.....	3.00	18.00			
Steamed Bone Meal.....	.82	29.00			
Steamed Bone Meal and Potash.....	.82	29.00			1.00
Phosphate Bone Meal, Grade A.....	1.65	20.00			
Phosphate Bone Meal, Grade B.....	.82	25.00			
Muriate of Potash.....					50.00
Nitrate of Soda.....	15.00				
Tobacco Dust.....	.82	1.00		1.00	1.00
Bone and Potash.....	1.00	9.00	2.00	7.00	1.00
All Crop Fertilizer.....	.82	7.00		7.00	.50
Farmer's Friend.....	.82			10.00	
Square Deal.....	.82	10.00	2.00	8.00	
"Crop Getter".....	1.65	8.00		8.00	.50
Black Ammoniated Phosphate.....	2.00			8.00	
Continental Fertilizer Co., Chicago, Illinois					
Bear Brands					
14 per cent Acid Phosphate.....			.50	14.00	
16 per cent Acid Phosphate.....			.50	16.00	
Ammoniated Phosphate.....	1.65		.50	10.00	
Wheat, Corn and Oats.....	.82		.50	8.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Continental Fertilizer Co.,					
	Per cent	Per cent	Per cent	Per cent	Per cent
Bear Brands—Continued					
Ammoniated Phosphate and Potash.....	0.82	.....	0.50	10.00	1.00
New Grain Grower.....	1.65	.....	.50	8.00	1.00
Bone Meal.....	2.47	24.00	.....	.....	.....
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
Darling & Co.,					
Union Stock Yards, Chicago, Illinois					
Darling's Brands					
Farmers Favorite.....	2.4	10.00	2.00	8.00	1.00
Big Harvest.....	1.6	14.00	2.00	12.00	1.00
Sure Winner.....	.8	12.00	2.00	10.00	.50
Grain Grower.....	.8	11.00	2.00	9.00	1.00
Sure Crop.....	1.6	14.00	2.00	12.00	.....
16 Per Cent Acid Phosphate.....	.....	.....	.....	16.00	.....
Pure Ground Bone.....	1.8	28.00	.....	.....	.....
Ground Raw Bone.....	3.7	22.00	.....	.....	.....
Blood and Bone.....	4.94	12.00	.....	.....	.....
Nitrate of Soda.....	14.8	.....	.....	.....	.....
Sheep Manure.....	2.1	1.00	.....	.....	1.00
Empire Carbon Works,					
East St. Louis, Illinois					
Boar's Head Brands					
Gilt Edge Phosphate.....	.....	14.50	.50	14.00	.....
Tiptop Phosphate.....	.....	16.50	.50	16.00	.....
Upland Special.....	.82	10.50	.50	10.00	.....
Good as Bone.....	1.65	10.50	.50	10.00	.....
Ammoniated Phosphate.....	1.65	12.50	.50	12.00	.....
Faultless Grain Grower.....	.82	7.50	.50	7.00	1.00
World of Good Superphosphate No. 2.....	2.06	8.50	.50	8.00	.....
Seeding Down Guano 1916.....	.82	8.50	.50	8.00	1.00
Ammoniated Bone and Potash.....	.82	10.50	.50	10.00	1.00
Harvest King 1916.....	1.65	10.50	.50	10.00	1.00
World of Good Superphosphate 1916.....	2.06	8.50	.50	8.00	1.00
World of Good Corn and Wheat Grower 1916.....	1.65	8.50	.50	8.00	1.00
Special Bone Meal.....	1.65	20.00	.....	.....	.....
Pure Raw Bone Meal.....	3.29	20.00	.....	.....	.....
Bradley's Standard Brands					
Soluble Dissolved Bone.....	.....	14.50	.50	14.00	.....
High Grade Phosphate.....	.....	16.50	.50	16.00	.....
Farm Mixture.....	.82	10.50	.50	10.00	.....
Binfiller.....	1.65	10.50	.50	10.00	.....
Bradley's Special.....	1.65	12.50	.50	12.00	.....
Niagara Phosphate.....	.82	7.50	.50	7.00	1.00
B. D. Sea Fowl Guano No. 2.....	2.06	8.50	.50	8.00	.....
Corn and Wheat Phosphate 1916.....	.82	8.50	.50	8.00	1.00
Best Grain Grower.....	1.65	10.50	.50	10.00	1.00
B. D. Sea Fowl Guano 1916.....	2.06	8.50	.50	8.00	1.00
Old Reliable.....	1.65	8.50	.50	8.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Empire Carbon Works.					
Bradley's Standard Brands— Continued					
	Per cent	Per cent	Per cent	Per cent	Per cent
Special Bone Meal.....	1.65	20.00	.....	.....	.....
Pure Raw Bone Meal.....	3.29	20.00	.....	.....	.....
Empire Brands					
Dissolved Bone.....	.....	14.50	0.50	14.00	.....
16 per cent Phosphate.....	.....	16.50	.50	16.00	.....
Economy Mixture.....	.82	10.50	.50	10.00	.....
Steam Bone Substitute.....	1.65	10.50	.50	10.00	.....
Nitrophos.....	1.65	12.50	.50	12.00	.....
Complete Manure.....	.82	7.50	.50	7.00	1.00
Bone Black Fertilizer No. 2.....	2.06	8.50	.50	8.00	.....
Wheat and Clover 1916.....	.82	8.50	.50	8.00	1.00
Farmers Favorite.....	.82	10.50	.50	10.00	1.00
Middle West Grain Grower 1916.....	1.65	10.50	.50	10.00	1.00
Bone Black Fertilizer 1916.....	2.06	8.50	.50	8.00	1.00
Crop Grower 1916.....	1.65	8.50	.50	8.00	1.00
Special Bone Meal.....	1.65	20.00	.....	.....	.....
Pure Raw Bone Meal.....	3.29	20.00	.....	.....	.....
Horse Shoe Brands					
Square Deal Phosphate.....	.....	14.50	.50	14.00	.....
Economy Phosphate.....	.....	16.50	.50	16.00	.....
Thinland Special.....	.82	10.50	.50	10.00	.....
Soil Builder.....	1.65	10.50	.50	10.00	.....
War Brand.....	1.65	12.50	.50	12.00	.....
Animal Bone Manure.....	.82	7.50	.50	7.00	1.00
National Bone Dust No. 2.....	2.06	8.50	.50	8.00	.....
Reliable Wheat Grower 1916.....	.82	8.50	.50	8.00	1.00
Acidulated Bone and Potash.....	.82	10.50	.50	10.00	1.00
Pioneer Grain Grower 1916.....	1.65	10.50	.50	10.00	1.00
National Bone Dust 1916.....	2.06	8.50	.50	8.00	1.00
Corn and Wheat Grower 1916.....	1.65	8.50	.50	8.00	1.00
Special Bone Meal.....	1.65	20.00	.....	.....	.....
Pure Raw Bone Meal.....	3.29	20.00	.....	.....	.....
Empire Guano Co., Nashville, Tennessee					
Wheat, Oat and Corn Grower.....	.82	12.00	5.00	7.00	1.00
Red Banner Favorite.....	1.65	15.00	3.00	12.00	.....
Clover and Wheat Special.....	.82	17.00	5.00	12.00	1.00
H. G. Grain Grower.....	.82	17.00	4.00	13.00	.....
Climax Grain Formula.....	1.65	14.00	5.00	9.00	1.00
Melon and Vegetable Grower.....	2.47	11.00	4.00	7.00	1.00
Missouri Grain Grower.....	.41	17.00	5.00	12.00	1.00
Ammoniated Phosphate.....	1.65	15.00	5.00	10.00	.....
Special Cotton Grower.....	1.65	13.00	4.00	9.00	1.00
Climax Potash Mixture.....	.....	15.00	4.00	11.00	1.00
H. G. Acid Phosphate.....	.....	16.00	2.00	14.00	.....
Climax Acid Phosphate.....	.....	14.00	4.00	10.00	.....
Special Bone Meal Mixture.....	2.47	17.00	10.00	7.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Empire Guano Co.— Continued					
Tankage and BoneSpecial.....	1.65	17.00	10.00	7.00	.....
Climax Half and Half.....	1.65	17.00	10.00	7.00	1.00
Pure Raw Bone Meal.....	3.90	22.00	.....	.....	.....
Gate City Fertilizer Co., Texarkana, Arkansas					
Red Ball Brands					
Raw Bone Fertilizer.....	3.30	20.00	.....	.....	.....
Raw Bone and Potash.....	2.50	18.00	.....	.....	2.00
Extra Acid Phosphate.....	.....	16.50	.50	16.00	.....
Corn Fertilizer.....	2.00	11.00	1.00	10.00	3.00
Early Trucker.....	2.50	9.00	1.00	8.00	4.00
Potash Acid.....	.....	12.50	1.00	11.50	4.00
Acid Phosphate.....	.....	14.50	.50	14.00	.....
Complete Fertilizer.....	1.65	11.00	1.00	10.00	1.00
Four States' Standard.....	1.65	9.50	1.00	8.50	2.50
"Old Time" Vegetable Grower.....	2.00	8.00	.50	7.50	3.00
Phosphate and Potash.....	.....	12.00	1.00	11.00	3.00
Southern Corn Grower.....	1.65	9.00	1.00	8.00	3.00
Acidulated Bone.....	.82	11.00	1.00	10.00	1.00
Soluble Bone Fertilizer.....	1.65	9.00	1.00	8.00	2.00
Wheat Grower.....	.82	11.00	1.00	10.00	2.00
Diversified Croppers.....	1.65	11.00	1.00	10.00	2.00
National Wheat Grower.....	.82	9.00	1.00	8.00	1.00
National Corn Grower.....	.82	9.00	1.00	8.00	2.00
Morris & Co., Chicago, East St. Louis, Illinois, and Kansas City, Kansas					
Big One—Ground Raw Bone.....	3.30	24.00	.....	.....	.....
Big Two—Pure Bone Meal.....	2.00	28.00	.....	.....	.....
Big Five.....	2.50	10.00	3.00	7.00	1.00
Special Big Six—Bone Meal and Potash.....	.41	16.00	.....	.....	1.00
Special Big Seven—Bone Meal.....	.82	22.00	.....	.....	.....
Big Eight—Phosphate and Potash.....	.82	8.00	1.00	7.00	1.00
Special Big Nine—Manure and Potash.....	.41	11.00	1.00	10.00	1.00
Special Big Ten—Manure and Potash.....	1.65	11.00	1.00	10.00	1.00
Special Big Eleven—Phosphated Manure.....	.82	11.00	1.00	10.00	.....
Special Big Twelve—Phosphated Manure.....	1.65	14.00	2.00	12.00	.....
Pulverized Manure Co., Chicago, Illinois					
Wizard Brand Manure.....	1.8	.....	.....	1.00	1.00
Read Phosphate Co., Nashville, Tennessee					
Melon and Truck Grower.....	2.47	11.00	4.00	7.00	1.00
Standard Cotton Grower.....	1.65	13.00	4.00	9.00	1.00
H. G. Grain Special.....	.82	17.00	4.00	13.00	.....
Corn, Wheat and Oat Grower.....	.82	12.00	5.00	7.00	1.00
Wheat and Clover Grower.....	.82	17.00	5.00	12.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitrogen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insoluble	Available	
Read Phosphate Co.—					
Continued					
	Per cent	Per cent	Per cent	Per cent	Per cent
Standard Grain Manure.....	1.65	13.00	4.00	9.00	1.00
Ammoniated Superphosphate.....	1.65	15.00	5.00	10.00	.....
Missouri Grain Special.....	.41	17.00	5.00	12.00	1.00
Read's Special Formula.....	1.65	15.00	3.00	12.00	.....
H. G. Potash Mixture.....	.....	18.00	4.00	14.00	1.00
Standard Potash Acid.....	.....	15.00	4.00	11.00	1.00
H. G. Acid Phosphate.....	.....	16.00	2.00	14.00	.....
Quick Acid Phosphate.....	.....	14.00	4.00	10.00	.....
Bone Meal Mixture.....	2.47	17.00	10.00	7.00	1.00
Pure Raw Bone Meal.....	3.90	22.00	.....	.....	.....
Half and Half.....	1.65	17.00	10.00	7.00	1.00
Bone Tankage Mixture.....	1.65	17.00	10.00	7.00	1.00
Ruhm Phosphate Mining Co.,					
Mt. Pleasant, Tennessee					
Ground Phosphate Rock (untreated).....	.....	30.00	30.00	.....	.....
Sterling Fertilizer Co.,					
Union Stock Yards, Chicago, Illinois					
Sterling Brands					
Harvest King.....	2.4	10.00	2.00	8.00	1.00
Harvest Queen.....	1.6	14.00	2.00	12.00	1.00
Special Grain Grower.....	.8	11.00	2.00	9.00	1.00
Universal.....	1.6	14.00	2.00	12.00	.....
Golden Harvest.....	.8	12.00	2.00	10.00	.50
16 per cent Acid Phosphate.....	.....	.....	.....	16.00	.....
Pure Bone Meal.....	1.8	28.00	.....	.....	.....
Raw Bone Meal.....	3.7	22.00	.....	.....	.....
Sulzberger & Sons Co.,					
Kansas City, Kansas					
S. and S. Brands					
Raw Bone Meal.....	3.75	23.00	.....	.....	.....
Pure Bone Meal.....	2.47	24.00	.....	.....	.....
Popular Bone Meal.....	1.65	20.00	.....	.....	.....
Special Bone Meal.....	1.23	28.00	.....	.....	.....
Raw Bone Meal and Plant Potash.....	1.65	14.00	.....	.....	1.00
Blood and Bone.....	4.94	13.50	.....	.....	.....
Bone Grain Grower.....	1.65	10.00	.....	.....	1.00
Corn and Wheat Special.....	1.65	10.00	2.00	8.00	1.00
Corn and Oat Grower.....	.82	10.00	1.00	9.00	1.00
Acid Phosphate.....	.....	.....	.....	14.00	.....
Swift & Co.,					
East St. Louis, Illinois					
"Swift's" Brands					
Diamond "L" Grain Grower.....	1.65	9.00	1.00	8.00	.....
Diamond "K" Grain Grower.....	.82	12.50	.50	12.00	1.00
Diamond "M" Grain Grower.....	1.65	12.00	1.00	11.00	1.00
Tankage and Bone Phosphate.....	.82	12.50	.50	12.00	.....
Truck Grower.....	2.47	9.00	1.00	8.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insol- uble	Avail- able	
Swift & Co.,					
	Per cent	Per cent	Per cent	Per cent	Per cent
Swift's Brands—Continued					
Special Superphosphate.....	1.65	9.00	1.00	8.00	1.00
Complete Fertilizer.....	.82	8.50	.50	8.00	1.00
Tomato and Vegetable Fertilizer.....	2.47	9.00	1.00	8.00	.50
Ammoniated Bone Phosphate and Potash...	1.65	11.00	1.00	10.00	.50
Ammoniated Bone Phosphate.....	.82	10.50	.50	10.00	.....
Red Steer Grain Grower.....	1.65	10.00	1.00	9.00	1.00
Bone Meal and Phosphate.....	.82	20.00	7.00	13.00	.....
Tomato Grower.....	1.65	9.00	1.00	8.00	1.00
Blood and Phosphate.....	1.65	13.00	1.00	12.00	.....
High Grade Acid Phosphate.....	.....	.....	.....	16.00	.....
Garden City Phosphate.....	.....	.....	.....	14.00	.....
Nitrate of Soda.....	15.22	.....	.....	.....	.....
Ground Dried Blood.....	13.18	.....	.....	.....	.....
Pulverized Sheep Manure.....	1.65	2.00	.....	.....	2.00
Pulverized Cattle Manure.....	1.65	2.00	.....	.....	2.00
Pure Bone Meal.....	2.47	24.00	.....	.....	.....
Ground Beef Bone.....	2.06	27.00	.....	.....	.....
Ground Steamed Bone.....	1.65	20.00	.....	.....	.....
Pure Raw Bone Meal.....	3.70	23.00	.....	.....	.....
Bone Meal and Blood.....	3.70	23.00	.....	.....	.....
From South St. Joseph Plant					
Pulverized Sheep Manure.....	1.65	1.00	.....	.....	1.50
Pulverized Cattle Manure.....	1.65	1.00	.....	.....	1.00
Shredded Cattle Manure.....	1.65	1.00	.....	.....	1.00
Pioneer Brands					
No. 1 Grain Grower.....	1.65	10.00	1.00	9.00	1.00
No. 2 Grain Grower.....	.82	12.50	.50	12.00	1.00
No. 3 Grain Grower.....	1.65	12.00	1.00	11.00	1.00
Special Crop Grower.....	1.65	9.00	1.00	8.00	1.00
3-8-1 Brand.....	2.47	9.00	1.00	8.00	1.00
1-12-0 Brand.....	.82	12.50	.50	12.00	.....
1-10-0 Brand.....	.82	10.50	.50	10.00	.....
2-12-0 Brand.....	1.65	13.00	1.00	12.00	.....
Bone Meal and Phosphate.....	.82	20.00	7.00	13.00	.....
No. 4 Grain Grower.....	1.65	9.00	1.00	8.00	.....
Garden City Phosphate.....	.....	.....	.....	14.00	.....
High Grade Acid Phosphate.....	.....	.....	.....	16.00	.....
3-24 Bone Meal.....	2.47	24.00	.....	.....	.....
2½-27 Bone Meal.....	2.06	27.00	.....	.....	.....
2-20 Bone Meal.....	1.65	20.00	.....	.....	.....
Bone and Blood.....	3.70	23.00	.....	.....	.....
Raw Bone Meal.....	3.70	23.00	.....	.....	.....
Tennessee Chemical Co., Chicago, Illinois					
Ox Brands					
14 per cent Acid Phosphate.....	.....	14.50	.50	14.00	.....
16 per cent Acid Phosphate.....	.....	16.50	.50	16.00	.....
Ammoniated Phosphate.....	1.65	10.50	.50	10.00	1.00
Wheat, Corn and Oats.....	.82	8.50	.50	8.00	1.00

TABLE 8.—BRANDS AND GUARANTEED ANALYSIS OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1916

Fertilizer	Nitro- gen	Phosphoric Acid (P ₂ O ₅)			Potash (K ₂ O)
		Total	Insolu- ble	Avail- able	
Tennessee Chemical Co.,					
Ox Brands—Continued	Per cent	Per cent	Per cent	Per cent	Per cent
Ammoniated Phosphate and Potash.....	.82	10.50	.50	10.00	1.00
New Grain Grower.....	1.65	8.50	.50	8.00	1.00
Bone Meal.....	2.47	24.00	.....	.....	.....
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
Tuscarora Fertilizer Co., Chicago, Illinois					
Tuscarora Brands					
Raw Bone Meal.....	3.70	22.00	.....	.....	.....
Bone Meal.....	2.47	24.00	.....	.....	.....
New Standard.....	1.65	8.50	.50	8.00	1.00
Grain Grower.....	.82	10.50	.50	10.00	1.00
Wheat, Corn and Oats Special.....	.82	8.50	.50	8.00	1.00
Ammoniated Phosphate.....	1.65	10.50	.50	10.00	.....
14 per cent Acid Phosphate.....	.....	14.50	.50	14.00	.....
16 per cent Acid Phosphate.....	.....	16.50	.50	16.00	.....
Virginia-Carolina Chemical Co., Memphis, Tennessee					
Royal High Grade Guano.....	1.65	.....	.....	11.00	1.00
Beef Blood and Bone Fertilizer BBB.....	1.65	.....	.....	9.00	1.00
Scott's State Standard Guano.....	1.65	.....	.....	9.00	1.00
Champion Corn and Wheat Grower.....	.82	.....	.....	9.00	1.00
Memphis Truck Special.....	3.30	.....	.....	10.00	2.00
Progressive Farmer Compound.....	4.94	.....	.....	7.00	1.00
Crescent Complete Fertilizer.....	1.65	.....	.....	12.00	.....
Victor Ammoniated Superphosphate.....	1.65	.....	.....	11.00	.....
Capital Ammoniated Superphosphate.....	1.65	.....	.....	10.00	.....
Virginia-Carolina Superphosphate.....	.....	.....	.....	16.00	.....
Victor High Grade Acid Phosphate.....	.....	.....	.....	14.00	.....
IXL Acid Phosphate.....	.....	.....	.....	12.00	.....
Ground Animal Bone.....	3.30	20.00	.....	.....	.....

FINANCIAL STATEMENT

MISSOURI AGRICULTURAL EXPERIMENT STATION

In account with

Fertilizer Control Fund

For Year 1915	Dr.	Cr.
RECEIPTS		
Jan. 1 Balance on hand.....	\$19,107.77	
Receipts from sales of tags in 1915..	25,468.96	
EXPENDITURES		
Salaries.....		\$11,383.23
Labor.....		6,263.43
Publications.....		2,890.99
Postage and stationery.....		1,837.20
Freight and express.....		255.94
Heat, light and water.....		26.89
Chemicals and laboratory supplies.....		1,089.31
Seeds, plants and sundry supplies.....		1,391.97
Fertilizers.....		35.50
Feeding stuffs.....		4,542.29
Library.....		4.83
Tools, machines, and appliances.....		466.07
Furniture and fixtures.....		567.31
Scientific appliances and specimens.....		235.03
Live stock.....		2,960.73
Traveling expenses.....		833.52
Contingent expenses.....		34.40
Buildings and land.....		1,205.07
Total.....		\$36,023.71
Balance on hand.....		8,553.02
	\$44,576.73	\$44,576.73