

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE  
AGRICULTURAL EXPERIMENT STATION  
BULLETIN 160

# INSPECTION OF COMMERCIAL FERTILIZERS: 1918



COLUMBIA, MISSOURI  
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## COLLEGE OF AGRICULTURE

# Agricultural Experiment Station

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# Inspection of Commercial Fertilizers: 1918

## Report of the Director

The sale and use of commercial fertilizers in Missouri is increasing from year to year. During the year 1918, largely as a result of the increased acreage of wheat planted in this State, there was a great increase in the tonnage of fertilizers sold in Missouri.

The larger use of fertilizers is probably also due, to some extent at least, to larger applications per acre by farmers who have learned to know the value of fertilizers in grain production.

The effect of the war upon the manufacture and use of fertilizers is indicated in the report of the Chemist. This report shows that the composition of fertilizers varies more than should be the case under normal conditions. This variation is undoubtedly due to the great difficulties experienced by the fertilizer manufacturers in securing basic materials for their fertilizers and to the greatly increased demand for their product. It is also probable that the fertilizer companies suffered to a certain extent from the loss of trained men in their organizations who were inducted into military service. We may anticipate a removal of all of these conditions during the coming year and a return to a normal basis.

It is interesting to note that in spite of all the handicaps mentioned that the average composition of all fertilizers offered for sale in this State is somewhat above the guarantees claimed by the fertilizer manufacturers. In other words, the inspection of commercial fertilizers in Missouri has insured honest goods to the farmer. It is entirely safe to purchase commercial fertilizers from the recognized and responsible manufacturers with the assurance that the composition guaranteed by these firms will be found in the fertilizing materials offered for sale.

F. B. MUMFORD,  
*Director of the Experiment Station.*

## Report of the Chemist

L. D. HAIGH

### INSPECTION

In 1918, inspectors visited 113 towns in 46 counties. A total of 553 fertilizer samples were collected, representing 158 different brands. On account of war needs for large crops the demands for fertilizers have been heavy, especially for acid phosphate. The supply of the latter has been wholly unequal to the demand and other kinds of fertilizers have had to be substituted. The manufacturers' stocks were sold out very early and these could not be replenished in time for the season's business. For the present at least it will be advantageous to the farmer to indicate at once to his dealer what will be his probable needs for fertilizers for the coming season so that these orders may be placed early, giving the manufacturer time to have sufficient supplies on hand. A dealer or farmer waiting until the last minute to place his order is likely to be disappointed in having his needs supplied only in part, if at all.

In the course of inspection this year, some cases were found in which the registration tags of the Agricultural Experiment Station had not been attached to the sacks before leaving the factory but were sent by mail later. Inasmuch as the sale of a fertilizer without these tags attached is illegal it is necessary for the dealer himself to attach the tags before selling the goods to his customers. Every farmer or dealer should insist that these tags be already attached to the sacks when received by him.

The inspectors also found samples on the market which had not been registered with the Station. In all cases but one this proved to be an oversight on the part of the manufacturer, and the brands were promptly registered. In the one case the manufacturer declared his intention to withdraw his goods from sale.

### REGISTRATION

During the present year 26 manufacturers registered 437 brands of fertilizer for sale in Missouri, while in 1917 there were 427 brands registered by 23 manufacturers.

The state inspectors found 158 brands of the 437 registered. Not all brands offered are actually sold and other brands if sold

were sold in such a few cases and in such small quantities that they were not found by the inspectors.

In Table 7 are listed the names of manufacturers and the brands of fertilizers registered for sale in 1919 which have been received in time for publication in this bulletin. All fertilizers must be registered in order that their sale may be legal. Every manufacturer is required to register each year, the brands he will offer for sale, before sales are made. By this registration the manufacturer guarantees that he will offer for sale only those brands registered and that each brand will have the composition guaranteed in the registration.

The fertilizer law states that every sack of fertilizer sold in the state must bear a plainly printed label showing its composition. This may be printed either on the sack or on a tag attached thereto. A tag issued by the Agricultural Experiment Station showing that the brand has been registered that year by the manufacturer must also be attached to the sack by the company before delivery. This tag issued by the Agricultural Experiment Station indicates that this brand of fertilizer has been registered and that its sale is permitted. It does not guarantee to the purchaser that the fertilizer contains the amount of plant food indicated on the manufacturer's tag or sack.

The law also provides for inspection of fertilizers in the market in order to observe if the provisions of the law have been met by the sellers. Inspectors are required to note if the label shows the guaranteed composition and if the tag of the Agricultural Experiment Station also is attached. Record is made of these findings and this is compared with the filed registrations at the Experiment Station. The inspector also takes a sample of the fertilizer for analysis in order to determine if the composition is in agreement with the guarantee. These results are published in the annual fertilizer bulletin and enable the farmer or dealer to decide how nearly he has obtained the plant food guaranteed to him by the manufacturer.

#### COMPARATIVE VALUATION

In conformity with advancing prices of all commodities during the past years, there has been some increase in prices in fertilizer constituents. In accordance with these higher prices the unit value for nitrogen has been raised 50 cents a ton, placing the value at \$8.50 a unit for 1918. Total phosphoric acid has been changed from 80 cents to \$1 a unit: insoluble phosphoric acid from 40 cents to 50 cents a unit and available phosphoric acid from \$1.40 to \$1.50 a

unit. The value for potash already high has not shown any great change during the year, hence its unit value, \$6, remains the same as last year.

As has been explained in previous bulletins, it is not possible to obtain a set of values that will represent the cost to the farmer of the different fertilizers delivered at his railroad station. By comparing the guaranteed values of high-grade fertilizers with those of low-grade fertilizers in Table 5, it will be seen that the agreement with the actual cost is fairly good with high-grade fertilizers but far too low in the case of the low-grade fertilizers. The explanation is that the cost of manufacturing a ton of low-grade fertilizer, aside from the raw materials used, is fully as much as the cost of manufacturing a ton of high-grade fertilizer. Cost of manufacturing would include labor, bags, repairs and depreciation, freight, etc., all of which is independent of the quality of goods handled.

To illustrate the use of values take Sample 48 in Table 5. The nitrogen guaranteed is 0.82 per cent or 16.4 lbs. to the ton, with a value of \$6.97 at \$8.50 a unit or 42½ cents a pound. The nitrogen found was 0.75 per cent, worth \$6.38 a ton. The loss to the purchasers on the nitrogen is therefore \$6.97 minus \$6.38 or \$0.59 a ton.

Of the total phosphoric acid in this fertilizer 0.50 per cent is guaranteed insoluble and 12 per cent available. The analysis shows 0.65 per cent insoluble and 12.39 per cent available. The guaranteed value of the insoluble is 25 cents and the found value 33 cents, or a gain of 8 cents. The guaranteed value of the available phosphoric acid is \$18, and the found value \$18.59, a gain in value of 59 cents a ton. At \$6 a unit the guaranteed 1 per cent potash is worth \$6, and the found 1.05 per cent is worth \$6.30, or a gain of 30 cents. The gain in plant-food value is therefore 8 cents for the insoluble phosphoric acid, 59 cents for the available phosphoric acid, and 30 cents for the potash, or a total of 97 cents. There was a loss of 59 cents in the value of the nitrogen, which leaves a net gain over the guarantee for the purchaser, of 38 cents a ton.

TABLE 1.—COMPARISON OF ACTUAL AND GUARANTEED VALUES IN FERTILIZER Sample 48

Plant Food	Guaranteed value	Found value
Nitrogen .....	\$ 6.97	\$ 6.38
Insoluble Phosphoric Acid .....	.25	.33
Available Phosphoric Acid .....	18.00	18.59
Potash .....	6.00	6.30
Total .....	\$31.22	\$31.60

Out of 222 samples analyzed, 68 show a valuation below the manufacturer's guarantee. This is 30.6 per cent of the samples analyzed, as compared with 24.4 per cent of the samples analyzed in 1917, 15 per cent of the samples analyzed in 1916, and 35.5 per cent of the samples analyzed in 1915.

The total samples analyzed for 1918 show an average valuation of \$1.07 a ton more than the manufacturer's guarantee. For 1917 the corresponding figure was \$1.58 a ton, for 1916 it was \$1.83 a ton and for 1915 it was \$0.53 a ton.

In 1918 the fertilizers from four manufacturers gave average valuations below the guarantee; in 1917 and in 1916 this result appeared for but one manufacturer. In 1915 the goods from three manufacturers gave average valuations below the guarantee.

The summary of valuations for the year is shown in Table 2.

TABLE 2.—VARIATIONS IN VALUE FROM MANUFACTURER'S GUARANTEE

Manufacturer	No. of samples analyzed	Below guarantee		Average loss <sup>1</sup> per ton	Average gain or loss per ton <sup>2</sup>
		No.	Per cent		
Arkansas Fertilizer Co. ....	8	6	75.0	\$2.12	—\$0.88
Armour Fertilizer Works, Armour Brands .....	31	4	12.9	0.36	1.99
Chicago Feed and Fertilizer Co. ....	9	2	22.2	1.78	3.22
Cochrane Packing Co. ....	12	8	66.6	5.00	—2.69
Commercial Fertilizer Co. ....	4	1	25.0	3.86	0.67
Darling & Co. ....	12	1	8.3	1.00	1.28
Empire Carbon Works, Boar's Head Brands .....	12	0	0.0	0.0	2.17
Empire Carbon Works, Bradley's Brands .....	5	0	0.0	0.0	2.30
Empire Carbon Works, Empire Brands .....	10	0	0.0	0.0	2.11
Empire Carbon Works, Horse Shoe Brands .....	7	0	0.0	0.0	1.72
Empire Guano Co. ....	4	1	25.0	2.21	0.27
Gate City Fertilizer Co. ....	7	7	100.0	2.98	—2.98
Morris & Co. ....	16	4	25.0	6.57	0.13
Read Phosphate Co. ....	9	2	22.2	.75	1.91
Southern Cotton Oil Co. ....	11	1	9.0	.08	2.30
Swift & Co., Swift's Brands.....	37	17	46.0	2.23	—0.34
Tennessee Chemical Co. ....	3	0	0.0	0.0	1.63
United Chemical and Organic Products Co. ....	3	1	33.3	3.91	2.87
Virginia-Carolina Chemical Co.....	15	1	6.6	3.63	4.07
Wilson & Co. ....	7	2	28.5	2.59	1.60
Total .....	222	68	30.6	\$2.40	+\$1.07

<sup>1</sup>This average is for those samples only which show losses.

<sup>2</sup>This is the average for all the samples of each company. When the — sign stands in front of the figure it means that this average valuation is below the guaranteed valuation per ton by the amount indicated.

It must be remembered that this table has no reference to the price paid to the manufacturer or dealer. On the higher grade fertilizer this guaranteed value approximates the selling price quite closely but on all other fertilizers it is distinctly lower than the selling price. For a correct judgment of the value of the fertilizer both the plant-food valuation and the selling price should be considered together.

### CHEMICAL ANALYSES

Table 5 reports in detail the results of the analyses of 253 samples of fertilizer. They are grouped under the manufacturer's name and these names are arranged alphabetically. Results below the guarantee are printed in bold-faced type.

At the end of Table 5, under "Miscellaneous Samples," will be found the report of the analyses of samples sent in by dealers and others. Most of the samples analyzed must and should be taken by the regular inspectors who are equipped to do this work in a manner which will give the best results. The Station is glad to accommodate dealers and farmers by analyzing samples free which they may desire to send in, provided the handling of these samples will not interfere with the work of the officially collected samples. When dealers or farmers send in a fertilizer for analysis, this information should be furnished: name and address of the sender, name and address of the manufacturer, and the brand name of the fertilizer in question. Without this information it will be necessary to make a charge for the analysis.

Table 6 gives the results of testing samples of Missouri limestones and related substances for their calcium carbonate equivalent. Limestone, properly speaking, is not a fertilizer but the great need for this material to correct the acidity of Missouri soils makes desirable the placing of this information before the farmers of the state. Missouri has an abundance of limestone deposits and they are quite generally distributed. Nearly every community is within reasonable distance of some natural source of this material. The Station has been testing all samples of limestone set in, free of charge, in order to determine their value in correcting soil acidity. When the sample shows a value of 100 per cent or more in calcium carbonate equivalent it shows that it contains an appreciable quantity of magnesium carbonate.

The results of the fertilizer analyses for 1918 show a large increase in percentage of samples falling below the guarantee as compared with 1917 and 1916. This is especially true for nitrogen and



the total phosphoric acid from bone. As compared with 1915 this deficiency is marked for total phosphoric acid only, while on nitrogen and available phosphoric acid there is a distinct improvement. On potash the results compare closely with those obtained for 1917 and 1915. In all plant-food constituents there is an improvement over the results for 1915.

TABLE 3.—SUMMARY OF DEFICIENCIES IN PLANT FOOD

Plant Food	Samples analyzed 1918	Samples deficient				Improvement <sup>1</sup> 1918		
		1918 per cent	1917 per cent	1916 per cent	1915 per cent	Over 1917 per cent	Over 1916 per cent	Over 1915 per cent
Nitrogen .....	193	36.2	26.6	26.9	42.8	— 9.6	— 9.3	6.6
Total Phosphoric Acid	40	40.0	10.4	9.9	19.6	—29.6	—30.1	—20.4
Available Phosphoric Acid .....	181	28.1	26.1	25.5	52.2	— 2.0	— 2.6	24.1
Potash .....	110	51.8	53.3	37.9	54.0	1.5	—13.9	2.2
Total .....	524	37.0	25.4	23.0	40.7	—11.6	—14.0	3.7

<sup>1</sup>—indicates actual decrease as compared with the years 1915, 1916, and 1917.

TABLE 4.—SAMPLES ANALYZED GIVING RESULTS BELOW THE GUARANTEE

Manufacturer	Nitrogen			Total Phosphoric Acid			Available Phosphoric Acid			Potash			All Analyses		
	Total	Deficient	Per cent	Total	Deficient	Per cent	Total	Deficient	Per cent	Total	Deficient	Per cent	Total	Deficient	Per cent
Arkansas Fertilizer Co. ....	5	3	60.0	2	0	0.0	6	3	50.0	4	4	100.0	17	10	58.8
Armour Fertilizer Works, Armour Brands .....	27	8	29.6	5	1	20.0	26	5	19.2	12	2	16.6	70	16	22.8
Chicago Feed and Fertilizer Co. ....	9	1	11.1	3	2	66.6	6	5	83.3	6	1	16.6	24	9	37.5
Cochrane Packing Co. ....	12	4	33.3	4	2	50.0	8	6	75.0	9	6	66.6	33	18	54.5
Commercial Fertilizer Co. ....	3	2	66.6	1	1	100.0	3	1	33.3	1	0	0.0	8	4	50.0
Darling & Co. ....	12	1	8.3	2	1	50.0	9	5	55.5	6	4	66.6	29	11	37.9
Empire Carbon Works, Boar's Head Brands .....	11	3	27.3	2	0	0.0	10	0	0.0	4	4	100.0	27	7	25.8
Empire Carbon Works, Bradley's Brands .....	5	0	0.0	0	0	.....	5	0	0.0	2	2	100.0	12	2	16.6
Empire Carbon Works, Empire Brands .....	10	1	10.0	0	0	.....	10	0	0.0	5	2	40.0	25	3	12.0
Empire Carbon Works, Horse Shoe Brands .....	7	1	14.3	0	0	.....	7	0	0.0	3	3	100.0	17	4	23.5
Empire Guano Co. ....	3	1	33.3	1	0	0.0	3	2	66.6	2	1	50.0	69	4	44.4
Gate City Fertilizer Co. ....	6	4	66.6	1	0	0.0	6	5	83.3	4	3	60.0	17	12	70.6
Morris & Co. ....	16	5	31.2	6	4	66.6	10	7	70.0	4	0	0.0	36	16	44.4
Read Phosphate Co. ....	6	2	33.3	0	0	.....	9	1	11.1	7	2	28.5	22	5	22.7
Southern Cotton Oil Co. ....	9	4	44.4	0	0	.....	11	2	18.1	6	3	50.0	26	9	34.6
Swift & Co., Swift Brands .....	36	23	63.9	10	3	30.0	27	6	22.2	15	11	73.3	88	43	48.8
Tennessee Chemical Co. ....	3	0	0.0	0	0	.....	3	0	0.0	3	2	66.6	9	2	22.2
United Chemical and Organic Product Co. ....	2	0	0.0	0	0	.....	3	0	0.0	1	1	100.0	6	1	16.6
Virginia-Carolina Chemical Co. ....	6	4	66.6	1	1	100.0	14	1	7.1	11	4	36.3	32	10	31.2
Wilson & Co. ....	5	3	60.0	2	1	50.0	5	2	40.0	5	2	40.0	17	8	47.0
Total .....	193	70	36.2	40	16	40.0	181	51	28.1	110	57	51.8	524	194	37.0

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton	
					Total		Insoluble		Available					
			G'td #	F'nd †	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd
				Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent			
	Arkansas Fertilizer Co., Little Rock, Ark. White Diamond Brands													
1	Superphosphate .....	Schierbaum and Sons, Wentzville.....	.....	.....	.....	12.02	.....	2.10	10.00	9.92	2.00	1.50	\$27.00	\$24.93
2	Special Acid Phosphate .....	A. J. Buckingham, Oronogo .....	.....	.....	.....	18.88	.....	2.40	16.00	16.48	.....	.....	24.00	25.92
5	Special Acid Phosphate .....	Bertrand Merc. and Grain Co., Bertrand .....	.....	.....	.....	18.88	.....	0.60	16.00	18.28	.....	.....	24.00	27.72
3	Number 39 .....	A. J. Buckingham, Oronogo .....	.....	.....	.....	18.88	.....	0.60	16.00	18.28	.....	.....	24.00	27.72
4	Superphosphate with Ammonia.....	Newton Grain Co., Springfield.....	0.82	0.89	10.97	1.00	1.01	10.00	9.96	1.00	0.44	.....	28.47	25.66
11	Commonwealth Wheat Grower.....	T. M. Renfro, West Plains .....	0.82	0.84	12.61	1.00	1.08	12.00	11.53	.....	.....	.....	25.47	24.98
12	Special Raw Bone and Potash.....	Farmers Elev. Co., Purdy .....	0.82	0.74	.....	9.46	1.00	0.91	8.00	8.55	1.00	0.33	25.47	21.56
13	Raw Bone Meal Fertilizer.....	Beany & Son, Sheldon .....	1.65	1.62	18.00	18.80	.....	.....	.....	.....	1.00	0.71	38.03	36.83
	Armour Fertilizer Works, Chicago, Ill.		3.30	2.68	20.00	23.04	.....	.....	.....	.....	.....	.....	48.05	45.82
	Armour Brands													
23	Ammoniated Phosphate .....	E. B. Evans & Co., Mountain Grove....	1.65	1.58	.....	11.68	0.50	0.46	10.00	11.22	.....	.....	29.28	30.49
26	Ammoniated Phosphate .....	Knight Hardware Co., Weaubleau.....	1.65	1.61	.....	10.90	0.50	1.10	10.00	9.80	.....	.....	29.28	28.94
27	Ammoniated Phosphate .....	Hannibal Chamber of Commerce, Palmyra .....	1.65	1.49	.....	12.70	0.50	1.55	10.00	11.15	.....	.....	29.28	30.18
17	Ammoniated Phosphate Special .....	F. M. Shoffner, Bolivar.....	0.82	1.05	.....	13.84	0.50	1.86	12.00	11.98	.....	.....	25.22	27.83
19	Ammoniated Phosphate Special .....	Wm. Pollock, Mexico .....	0.82	0.86	.....	13.72	0.50	0.64	12.00	13.08	.....	.....	25.22	27.25
31	Ammoniated Phosphate Special.....	Farmer's Elev. Supply and Mfg. Co., Adrain .....	0.82	0.96	.....	13.20	0.50	0.44	12.00	12.76	.....	.....	25.22	27.52
34	Ammoniated Phosphate Special.....	F. Everett Hdw. Co., Wellsville.....	0.82	0.78	.....	13.04	0.50	0.59	12.00	12.45	.....	.....	25.22	25.61
35	Ammoniated Phosphate Special.....	R. B. Parnell, Diamond .....	0.82	0.86	.....	13.52	0.50	0.56	12.00	12.96	.....	.....	25.22	27.03
43	Star Phosphate .....	U. L. Coleman, Hdw. Co., Marionville .....	.....	.....	.....	14.39	0.50	0.55	14.00	13.84	.....	.....	21.25	21.04
44	1-12-1 Fertilizer .....	A. Davis, Flemington .....	0.82	0.91	.....	13.32	0.50	0.73	12.00	12.59	1.00	1.03	31.22	33.18
48	1-12-1 Fertilizer .....	F. M. Kessinger, Rogersville .....	0.82	0.75	.....	13.04	0.50	0.65	12.00	12.39	1.00	1.05	31.22	31.60
54	Bone Meal .....	Alexander & Hyde, Niangua .....	2.47	2.56	24.00	25.92	.....	.....	.....	.....	.....	.....	45.00	47.68
77	Bone Meal .....	Cassville Produce Co., Cassville .....	2.47	2.63	24.00	25.40	.....	.....	.....	.....	.....	.....	45.00	47.76

\*Guaranteed; †Found.

INSPECTION OF COMMERCIAL FERTILIZERS: 1918

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton	
					Total		Insoluble		Available					
			G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd
523	Bone Meal .....	Factory sample .....	2.47	2.88	24.00	25.57	.....	.....	.....	.....	.....	.....	45.00	50.05
82	Wheat, Corn and Oats Special.....	Widman Hdw. Co., Dixon .....	0.82	0.81	.....	9.08	0.50	0.80	8.00	8.28	1.00	1.02	25.22	25.83
84	Wheat, Corn and Oats Special.....	T. J. Higginbottom, Louisville .....	0.82	0.82	.....	8.71	0.50	0.70	8.00	8.01	1.00	0.92	25.22	24.86
521	Wheat, Corn and Oats Special.....	Factory sample .....	0.82	0.81	.....	8.50	0.50	0.40	8.00	8.10	1.00	1.16	25.22	26.20
105	Raw Bone Meal .....	Neosho Milling Co., Wheaton .....	3.70	3.97	22.00	22.39	.....	.....	.....	.....	.....	.....	53.45	56.14
106	Raw Bone Meal .....	Farmers Elev. Co., Purdy .....	3.70	3.99	22.00	21.94	.....	.....	.....	.....	.....	.....	53.45	55.86
107	16% Acid Phosphate .....	Farmers Supply Co., Lebanon .....	.....	.....	.....	19.28	0.50	2.10	16.00	17.18	.....	.....	24.25	26.82
108	16% Acid Phosphate .....	W. Pollock, Mexico .....	.....	.....	.....	20.12	0.50	2.22	16.00	17.90	.....	.....	24.25	27.96
524	16% Acid Phosphate .....	Factory sample .....	.....	.....	.....	18.58	0.50	0.63	16.00	17.95	.....	.....	24.25	27.25
115	Special Grain Grower .....	Widman Hwd. Co., Dixon .....	1.65	1.69	.....	8.94	0.50	0.39	8.00	8.55	1.00	1.26	32.28	34.96
116	Special Grain Grower .....	Frank Wheeler, Windsor .....	1.65	1.65	.....	7.73	0.50	0.72	8.00	7.01	1.00	1.14	32.28	31.75
119	Special Grain Grower .....	Hermann and Herbst, Farmington.....	1.65	1.76	.....	8.50	0.50	0.32	8.00	8.18	1.00	0.99	32.28	33.33
120	Special Grain Grower .....	Frank Everett, Wellsville .....	1.65	1.79	.....	9.84	0.50	1.74	8.00	8.10	1.00	1.70	32.28	38.44
121	New Record Brand .....	Knight Hdw. Co., Weaubleau .....	0.82	1.02	.....	11.24	0.50	0.53	10.00	10.71	1.00	1.03	28.22	31.19
122	New Record Brand .....	Newton Grain Co., Springfield .....	0.82	0.93	.....	11.16	0.50	0.33	10.00	10.83	1.00	1.15	28.22	31.23
125	1-10 Fertilizer .....	Hannibal Chamber of Commerce, Palmyra	0.82	0.87	.....	12.14	0.50	1.60	10.00	10.54	.....	.....	22.22	24.01
126	1-10 Fertilizer .....	Newton Grain Co., Springfield.....	0.82	0.81	.....	11.52	0.50	0.42	10.00	11.10	.....	.....	22.22	23.75
522	Grain Grower .....	Factory sample .....	1.65	1.71	.....	7.61	0.50	0.72	8.00	6.89	2.00	2.82	38.28	42.16
Armour Fertilizer Works, Tuscarora Brands														
475	New Ammoniated Phosphate .....	Wilmesherr & Co., Bourbon .....	0.82	0.86	.....	12.86	0.50	0.73	12.00	12.13	.....	.....	25.22	25.88
476	Wheat, Corn and Oats Special.....	Wilmesherr & Co., Bourbon .....	0.82	0.64	.....	8.80	0.50	0.44	8.00	8.36	1.00	0.95	25.22	23.90
Ash Grove Lime and Portland Cement Co., Kansas City, Mo.														
549	Limash .....	Logan Moore Lumber Co., Butler.....	.....	.....	.....	.....	0.09	0.38	.....	.....	0.91	1.01	5.51	6.25

Calumet Fertilizer Co., New Albany, Ind. Calumet Brands																		
564	Bone Phosphate and Potash Mixture...	J. George Deters, Bowling Green.....	0.40	0.50	.....	16.28	1.00	3.95	10.00	12.33	1.00	1.00	24.90	30.73				
565	Raw Bone Meal	Henry Purk, Bowling Green .....	3.70	3.70	20.00	<del>18.69</del>	.....	.....	.....	.....	.....	.....	51.45	<del>50.14</del>				
Chicago Feed and Fertilizer Co., Chicago, Ill.																		
130	Magic Steamed Bone Meal .....	Wilson Bros., Jonesburg .....	2.47	3.61	23.00	24.89	.....	.....	.....	.....	.....	.....	44.00	55.58				
133	Magic Steamed Bone Meal.....	Giard & Pfitzner, Aurora .....	2.05	2.06	20.00	<del>18.74</del>	.....	.....	.....	.....	.....	.....	37.42	<del>36.24</del>				
534	Magic Steamed Bone Meal.....	Ross De Ford, Altamont .....	2.05	2.77	20.00	<del>19.64</del>	.....	.....	.....	.....	.....	.....	37.43	43.19				
134	No. 6 High Grade Grain Grower.....	Passaic Elev. Co., Passaic .....	0.82	1.01	13.00	<del>12.60</del>	1.00	1.65	12.00	<del>10.95</del>	1.00	1.09	31.47	32.39				
136	No. 6 High Grade Grain Grower.....	Walter Barrett, Ellwood .....	0.82	1.02	13.00	<del>11.95</del>	1.00	1.02	12.00	<del>10.93</del>	1.00	1.04	31.47	31.82				
535	No. 6 High Grade Grain Grower.....	Ross De Ford, Altamont .....	0.82	1.19	13.00	<del>13.22</del>	1.00	1.24	12.00	<del>11.98</del>	1.00	1.27	31.47	36.33				
139	No. 8 Standard Grain Grower.....	Schierbaum & Son, Wentzville .....	0.82	0.86	9.00	<del>9.56</del>	1.00	1.07	8.00	<del>8.49</del>	1.00	1.79	25.47	31.33				
140	No. 8 Standard Grain Grower.....	Giard & Pfitzner, Aurora .....	0.82	<del>0.81</del>	9.00	<del>7.92</del>	1.00	<del>0.76</del>	8.00	<del>7.16</del>	1.00	<del>0.85</del>	25.47	<del>23.11</del>				
536	No. 8 Standard Grain Grower.....	Musselman Grain Co., Jamesport .....	0.82	1.09	9.00	<del>8.40</del>	1.00	1.18	8.00	<del>7.22</del>	1.00	1.33	25.47	28.67				
Cochrane Packing Co., Kansas City, Kas. Cochrane Brands																		
141	Available Bone .....	Farmers Co-operative Elev Co., Jasper....	0.75	0.07	30.10	<del>29.52</del>	0.75	1.64	29.35	<del>27.88</del>	.....	.....	50.78	43.24				
142	Available Bone .....	Carthage Cash Merc. Co., Carthage.....	0.75	0.06	30.10	<del>29.17</del>	0.75	4.20	29.35	<del>24.97</del>	.....	.....	50.78	40.07				
528	Available Bone .....	Factory sample .....	0.75	0.11	30.10	<del>31.44</del>	0.75	4.55	29.35	<del>26.89</del>	.....	.....	50.78	43.56				
143	Corn and Wheat Grower .....	Carthage Cash Merc. Co., Carthage.....	1.00	1.01	.....	<del>7.77</del>	1.00	0.72	8.00	<del>7.05</del>	1.25	0.97	28.50	<del>25.35</del>				
525	Corn and Wheat Grower .....	Factory sample .....	1.00	1.02	.....	<del>9.54</del>	1.00	1.26	8.00	<del>8.28</del>	1.25	1.34	28.50	29.76				
144	Special Pure Bone Meal Tankage and Potash.....	Graham & Schreck, Tipton .....	1.25	1.07	14.00	<del>13.46</del>	.....	.....	.....	.....	1.00	0.83	30.63	<del>27</del> <del>26.54</del>				
145	Special Pure Bone Meal Tankage and Potash.....	C. E. Johnson, Golden City .....	1.25	1.26	14.00	<del>14.21</del>	.....	.....	.....	.....	1.00	0.84	30.63	29.96				
147	Special Pure Bone Meal Tankage and Potash.....	A. E. Meyers, Carthage .....	1.25	1.31	14.00	<del>11.96</del>	.....	.....	.....	.....	1.00	0.54	30.63	26.34				
526	Special Pure Bone Meal Tankage and Potash.....	Factory sample .....	1.25	1.33	14.00	<del>14.09</del>	.....	.....	.....	.....	1.00	1.22	30.63	32.72				
149	Special Wheat Grower .....	Farmers Co-operative Elev Co., Jasper	0.41	1.17	.....	<del>9.14</del>	1.00	0.84	10.00	<del>8.30</del>	2.00	0.80	30.99	27.62				
150	Pulverized Sheep Guano .....	Springfield Seed Co., Springfield.....	2.00	2.34	.....	<del>3.10</del>	1.00	0.68	2.00	<del>2.42</del>	1.00	0.91	26.50	29.32				
527	Pulverized Sheep Guano .....	Factory sample .....	2.00	2.04	.....	<del>2.16</del>	1.00	0.80	2.00	<del>1.36</del>	1.00	1.52	26.50	28.10				

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>				Potash (K <sub>2</sub> O)		Value per ton			
					Total		Insoluble		Available					
			G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	pu <sub>d</sub>
	Commercial Fertilizer Co., St. Louis, Mo. Commercial Brands		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent				
151	Acid Phosphate .....	W. H. Livingston, Windsor .....	.....	.....	19.30	.....	2.02	16.00	17.28	.....	.....	24.00	26.93	
153	Farmers Friend .....	Robert Clark, Montgomery .....	0.82	0.95	.....	10.68	.....	1.30	10.00	9.38	.....	.....	21.97	22.80
154	Bone and Potash .....	W. C. Brattin, Wayne .....	1.00	0.99	.....	9.06	1.00	0.94	7.00	8.12	1.00	1.20	25.50	28.27
155	Raw Bone Meal .....	W. C. Brattin, Wayne .....	3.25	2.99	20.00	18.35	.....	.....	.....	.....	.....	.....	47.63	43.77
	Darling & Co., Chicago, Ill. Darling's Brands													
158	Sure Winner .....	J. W. Houchins, Stover .....	0.80	0.82	.....	14.29	2.06	4.06	10.00	10.23	0.50	0.37	25.80	26.57
160	Sure Winner .....	C. C. Shipper, Gilmore .....	0.80	0.79	.....	12.03	2.00	2.55	10.00	9.48	0.50	0.43	25.80	24.80
162	Grain Grower .....	Cartwright & Cunningham, Holliday.....	0.80	0.98	.....	11.74	2.00	3.41	9.00	8.33	1.00	0.81	27.30	27.60
164	Grain Grower .....	James Tellor, Jonesburg .....	0.80	1.00	.....	11.24	2.00	3.45	9.00	7.79	1.00	1.02	27.30	28.04
537	Grain Grower .....	Farmers Merc. Co., Winston .....	0.80	0.83	.....	12.24	2.00	2.83	9.60	9.41	1.00	0.91	27.30	28.06
165	General Crop .....	A. A. Jackson, Farber .....	1.60	1.96	.....	15.32	2.00	3.66	12.00	11.60	.....	.....	32.60	35.98
167	Little Giant .....	W. B. Noel, Stoutsville .....	0.80	1.05	.....	13.13	2.00	4.32	10.00	8.81	.....	.....	22.80	24.31
170	Little Giant .....	John Farnen, Montgomery .....	0.80	0.93	.....	13.39	2.00	3.27	10.00	10.12	.....	.....	22.80	24.73
172	Pure Ground Bone .....	Al Self, Laddonia .....	1.80	1.91	28.00	28.58	.....	.....	.....	.....	.....	.....	43.30	44.82
176	Pure Ground Bone .....	W. S. Cook, Fortuna .....	1.80	2.07	28.00	27.83	.....	.....	.....	.....	.....	.....	43.30	45.43
178	Sheep Manure .....	A. A. Jackson, Farber .....	2.10	2.15	.....	.....	.....	.....	.....	.....	1.00	1.22	23.85	25.60
180	Half and Half .....	A. A. Jackson, Farber .....	0.80	0.89	.....	23.20	11.00	10.45	12.00	12.75	.....	.....	30.30	31.93
	Empire Carbon Works, E. St. Louis, Ill. Boar's Head Brands													
190	Special Bone Meal .....	Thompson & Sutter, Springfield .....	1.65	1.54	20.00	22.19	.....	.....	.....	.....	.....	.....	34.03	35.28
193	Upland Special .....	Farmer's Supply Co., Lebanon .....	0.82	0.90	.....	12.13	0.50	1.45	10.00	10.68	.....	.....	22.22	24.40
197	Upland Special .....	Forsythe-Miller Grain Co., Fairview.....	0.82	0.88	.....	11.78	0.50	1.49	10.00	10.29	.....	.....	22.22	23.67
198	Ammoniated Bone and Potash.....	Young & Morgan Hdw. Co., Richland...	0.82	0.82	.....	12.57	0.50	1.38	10.00	11.19	1.00	0.70	28.22	28.65

201	Ammoniated Bone and Potash.....	Wilson Bros., Jonesburg .....	0.82	0.87	.....	12.64	0.50	1.39	10.00	11.25	1.00	0.91	28.22	30.43
225	Pure Raw Bone Meal.....	Long Hardware Co., Bourbon .....	3.29	3.64	20.00	20.88	.....	.....	.....	.....	.....	.....	47.97	51.82
235	16% Phosphate .....	L. F. Dreibelbis, Sarcoxie .....	.....	.....	.....	18.20	0.50	0.27	16.00	17.93	.....	.....	24.25	27.04
246	Seeding Down Guano 1916.....	Factory sample .....	0.82	0.91	.....	9.34	0.50	1.25	8.00	8.09	1.00	0.88	25.22	25.79
250	Good as Bone .....	C. D. Beillicr, Bois D'Arc .....	1.65	1.62	.....	12.28	0.50	1.88	10.00	10.40	.....	.....	29.28	30.31
251	World of Good Superphosphate 2.....	C. D. Beillicr, Bois D'Arc .....	2.06	2.24	.....	10.60	0.50	1.09	8.00	9.51	.....	.....	29.76	33.86
255	Ammoniated Phosphate .....	D. C. Stuckey, Carl Junction .....	1.65	1.55	.....	13.40	0.50	0.84	12.00	12.56	.....	.....	32.28	32.44
256	Faultless Grain Grower .....	Wm. Hoffarth, Mt. Grove .....	0.82	1.19	.....	10.42	0.50	1.30	7.00	9.12	1.00	0.89	23.72	29.79
	Empire Carbon Works, Bradley's Brands													
187	Binfiller .....	Factory sample .....	1.65	1.85	.....	12.66	0.50	0.87	10.00	11.79	.....	.....	29.28	33.86
188	Farm Mixture .....	Fred Roppel, Wellsville .....	0.82	0.86	.....	12.46	0.50	1.54	10.00	10.92	.....	.....	22.22	24.46
192	Niagara Phosphate .....	Factory sample .....	0.82	0.87	.....	9.69	0.50	1.20	7.00	8.49	1.00	0.88	23.72	26.02
220	Corn and Wheat Phosphate, 1916.....	Factory sample .....	0.82	0.95	.....	9.78	0.50	1.22	8.00	8.56	1.00	0.82	25.22	26.45
241	Bradley's Special .....	Factory sample .....	1.65	1.68	.....	13.70	0.50	1.41	12.00	12.29	.....	.....	32.28	33.43
	Empire Carbon Works, Empire Brands													
204	Complete Manure .....	Factory sample .....	0.82	0.94	.....	10.24	0.50	1.17	7.00	9.07	1.00	0.97	23.72	28.01
205	Complete Manure .....	Phil Ratliff, Neosho .....	0.82	0.91	.....	8.83	0.50	0.78	7.00	8.05	1.00	1.01	23.72	26.26
206	Steamed Bone Substitute .....	W. W. Butts, Vandalia .....	1.65	1.69	.....	12.34	0.50	1.24	10.00	11.10	.....	.....	29.28	31.64
208	Steamed Bone Substitute .....	Phil Ratliff, Neosho .....	1.65	1.66	.....	12.20	0.50	2.08	10.00	10.12	.....	.....	29.28	30.33
211	Wheat and Clover 1916.....	J. A. Dorf Hdw. Co., Cuba.....	0.82	0.95	.....	8.84	0.50	0.64	8.00	8.20	1.00	1.08	25.22	27.18
212	Wheat and Clover 1916.....	Factory sample .....	0.82	0.92	.....	9.62	0.50	1.32	8.00	8.30	1.00	0.88	25.22	26.21
215	Farmer's Favorite .....	Farmer's Co-operative Co., Windsor.....	0.82	1.00	.....	11.72	0.50	0.81	10.00	10.91	1.00	1.00	28.22	31.27
223	Nitrophos .....	Long & Morley, New Florence.....	1.65	1.60	.....	14.07	0.50	0.94	12.00	13.13	.....	.....	32.28	33.77
242	Economy Mixture .....	S. A. Evans, Bethany .....	0.82	0.90	.....	11.48	0.50	1.15	10.00	10.33	.....	.....	22.22	23.73
244	Economy Mixture .....	Jackson Lumber Co., Smithton .....	0.82	0.86	.....	12.18	0.50	1.54	10.00	10.64	.....	.....	22.22	24.04
	Empire Carbon Works, Horse Shoe Brands													
184	Thinland Special .....	Lesch & Hurt, Ewing .....	0.82	0.84	.....	11.72	0.50	1.35	10.00	10.37	.....	.....	22.22	23.38
228	War Brand .....	Hunter Merc. Co., Bismarck .....	1.65	1.99	.....	15.19	0.50	2.56	12.00	12.63	.....	.....	32.28	37.15
231	Reliable Wheat Grower 1916.....	Greene Bros., Passaic .....	0.82	0.87	.....	10.06	0.50	1.18	8.00	8.88	1.00	0.83	25.22	26.29
238	Acidulated Bone and Potash.....	Thompson & Sutter, Springfield .....	0.82	0.98	.....	11.82	0.50	1.59	10.00	10.23	1.00	0.96	28.22	30.24
252	Animal Bone Manure .....	Marshfield Canning Co., Marshfield.....	0.82	0.69	.....	8.15	0.50	0.88	7.00	7.27	1.00	0.91	23.72	22.68
257	Soil Builder .....	Hickey & Dixon, Madison .....	1.65	1.65	.....	12.74	0.50	1.87	10.00	10.87	.....	.....	29.28	31.28
259	Soil Builder .....	Graves & Pettigrew, Cabool .....	1.65	1.66	.....	12.78	0.50	2.02	10.00	10.76	.....	.....	29.28	31.26

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton	
					Total		Insoluble		Available					
			G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd
	Empire Guano Co., Nashville, Tenn.		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent				
261	Premium Phosphate .....	L. N. Moore, Willow Springs .....	.....	.....	18.00	21.46	2.00	4.93	16.00	16.53	.....	.....	25.00	27.27
263	Wheat, Oats and Corn Grower.....	Garoutte & Sons, Mt. View .....	.....	.....	17.00	16.16	10.00	9.20	7.00	6.96	1.00	0.98	28.47	28.66
264	Clover and Wheat Special .....	W. A. Holstein, Bolivar .....	.....	.....	15.00	14.67	3.00	2.69	12.00	11.98	1.00	1.03	32.47	33.32
266	Pure Raw Bone Meal .....	Garoutte & Sons, Mt. View .....	3.70	3.34	21.00	21.85	.....	.....	.....	.....	.....	.....	52.45	50.24
	Fay Fern Food Co., Kansas City, Kan.													
543	Fay Fern Food <sup>1</sup> .....	F. W. Woolworth & Co., Kansas City....	.....	1.27	.....	0.72	.....	0.19	.....	0.53	.....	1.15	.....	18.59
	Gate City Fertilizer Co., Texarkana, Ark. Red Ball Brands													
267	Phosphate and Potash .....	W. C. Brattin, Wayne .....	.....	.....	.....	12.61	.....	1.57	11.00	11.04	3.00	2.53	34.50	32.53
268	Diversified Croppers (non potassic)....	W. C. Brattin, Wayne .....	1.65	1.30	.....	12.52	1.00	1.47	12.00	11.05	.....	.....	32.53	28.37
269	Acidulated Bone .....	Giard & Pfiltzner, Aurora .....	0.82	0.95	.....	11.06	1.00	1.08	10.00	9.98	1.00	0.39	28.47	25.93
270	Standard Grade Soluble Bone Fertilizer	W. C. Brattin, Wayne .....	1.65	1.51	.....	11.94	1.00	3.27	10.00	8.67	.....	.....	29.53	27.48
271	National Wheat Grower.....	Giard & Pfiltzner, Aurora .....	0.82	0.84	.....	8.59	1.00	0.83	8.00	7.76	1.00	0.30	25.47	21.00
272	Raw Bone Fertilizer .....	W. C. Brattin, Wayne .....	3.30	2.76	20.00	20.31	.....	.....	.....	.....	.....	.....	48.05	43.77
273	Complete Fertilizer .....	W. C. Brattin, Wayne .....	1.65	1.54	.....	10.49	1.00	1.21	10.00	9.28	1.00	1.09	35.53	34.16
	Meridian Fertilizer Factory, Shreveport, La. Meridian Brands													
556	Western Special .....	Pittsburg Modern Milling Co., Asbury	0.82	1.01	.....	12.88	.....	0.67	12.00	12.21	1.00	0.95	30.97	32.95
557	Missouri Special .....	Farmers Supply Co., Purcell .....	0.82	1.19	.....	11.09	.....	0.85	8.00	10.24	1.00	1.12	24.97	32.63
	Morris & Company, Chicago, Ill. Big Brands													
274	Big One—Ground Raw Bone.....	J. Cunningham, Montgomery .....	3.30	3.12	24.00	26.88	.....	.....	.....	.....	.....	.....	52.05	53.40
529	Big One—Ground Raw Bone.....	Factory sample .....	3.30	3.33	24.00	25.32	.....	.....	.....	.....	.....	.....	52.05	53.63

<sup>1</sup>These goods have not yet been registered in Missouri.



276	Big Two—Pure Bone Meal.....	Green & Tooley, Monroe City .....	2.00	1.52	28.00	27.96	.....	.....	.....	.....	.....	.....	.....	45.00	40.88
278	Big Two—Pure Bone Meal.....	Tetley-Klein Lumber Co., Farmington...	2.00	1.08	28.00	21.57	.....	.....	.....	.....	.....	.....	.....	45.00	30.75
280	Big Four—Half and Half.....	Hannibal Chamber of Commerce, New London .....	0.41	0.53	.....	21.52	5.00	9.19	13.00	12.33	.....	.....	.....	25.49	27.61
282	Big Four—Half and Half.....	William Schultz, Bismarck .....	0.41	0.42	.....	18.87	5.00	7.82	13.00	11.05	.....	.....	.....	25.49	24.06
530	Big Four—Half and Half .....	Factory sample .....	0.41	0.68	.....	19.55	5.00	9.42	13.00	10.13	.....	.....	.....	25.49	25.69
284	Big Five—Bone Tankage and Potash...	T. C. Bassore, Rogersville .....	2.50	1.94	10.00	10.56	3.00	4.22	7.00	6.34	1.00	2.16	.....	39.25	41.07
285	Special Big Six—Bone Meal and Potash .....	J. Cunningham, Montgomery .....	0.41	0.60	16.00	15.34	.....	.....	.....	.....	1.00	1.07	.....	25.49	26.86
287	Special Big Seven—Bone Meal.....	William Schultz, Bismarck .....	0.82	0.38	22.00	19.24	.....	.....	.....	.....	.....	.....	.....	28.97	22.47
289	Big Eight—Phosphate and Potash.....	T. C. Bassore, Rogersville .....	0.82	0.75	8.00	9.34	1.00	2.13	7.00	7.21	1.00	1.49	.....	23.97	27.21
290	Special Big Nine—Manure and Potash	T. C. Bassore, Rogersville .....	0.41	0.56	13.00	14.46	2.00	4.46	11.00	10.00	1.00	1.48	.....	26.99	30.87
291	Special Big Eleven—Phosphated Manure	Green & Tooley, Monroe City .....	0.82	0.88	11.00	13.66	1.00	3.78	10.00	9.88	.....	.....	.....	22.47	24.19
292	Special Big Eleven—Phosphated Manure	Hannibal Chamber of Commerce, Palmyra .....	0.82	1.00	11.00	12.12	1.00	2.20	10.00	9.92	.....	.....	.....	22.47	24.48
297	Special Big Twelve—Phosphated Manure	Farmers Lumber Co., Adrain .....	1.65	1.84	14.00	17.06	2.00	4.37	12.00	12.69	.....	.....	.....	33.03	36.87
531	Special Big Twelve—Phosphated Manure	Factory sample .....	1.65	2.04	14.00	16.69	2.00	4.08	12.00	12.61	.....	.....	.....	33.03	38.30
	The Pulverized Manure Co., Chicago, Ill.														
300	Wizard Brand Phosphated Manure.....	Ray A. Stinson, Wentworth .....	0.82	0.98	.....	10.06	.....	0.40	9.00	9.66	1.00	1.62	.....	26.47	32.74
	Read Phosphate Co., Nashville, Tenn.														
301	High Grade Phosphate .....	T. R. Shoffer, Sullivan .....	.....	.....	18.00	19.65	4.00	4.69	14.00	14.96	.....	.....	.....	23.00	24.79
303	Special High Grade Phosphate.....	Thompson-Sutter Co., Springfield .....	.....	.....	18.00	20.60	2.00	4.49	16.00	16.11	.....	.....	.....	25.00	26.42
305	Standard Grain Manure .....	U. L. Coleman Hardware Co., Marion- ville .....	1.65	1.62	13.00	12.56	4.00	3.52	9.00	9.04	1.00	1.29	.....	35.53	36.83
306	Wheat and Clover Grower.....	W. W. Butts, Bowling Green .....	0.82	0.97	15.00	17.11	3.00	5.23	12.00	11.88	1.00	1.36	.....	32.47	36.85
312	Missouri Grain Special .....	Harnel Mfg. Co., De Soto .....	0.41	0.42	15.00	18.77	3.00	6.64	12.00	12.13	1.00	1.16	.....	28.99	32.05
313	Missouri Grain Special .....	Peoples Elevator, Reeds .....	0.41	0.46	15.00	17.16	3.00	5.07	12.00	12.09	1.00	1.09	.....	28.99	31.13
314	Standard Potash Acid .....	T. R. Shoffer, Sullivan .....	.....	.....	15.00	18.12	4.00	5.46	11.00	12.66	1.00	0.45	.....	24.50	24.42
316	Corn, Wheat and Oats Grower.....	W. W. Butts, Bowling Green .....	0.82	0.95	17.00	18.80	10.00	10.95	7.00	7.85	1.00	1.29	.....	28.47	33.08
317	Soluble Bone .....	T. W. Shultz, Moscow .....	0.82	0.74	12.00	16.04	4.00	5.16	8.00	10.88	2.00	1.06	.....	32.97	31.55

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton	
					Total		Insoluble		Available					
			G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd
	Southern Cotton Oil Co., Little Rock, Ark. Skoko Brands		Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent		
457	Special Mixture .....	Vogel Produce Co., Tipton .....	0.82	0.75	.....	8.80	.....	0.55	7.00	8.25	1.00	0.87	23.47	24.26
459	Special Mixture .....	Home trading Co., Lebanon .....	0.82	0.91	.....	9.00	.....	0.77	8.00	8.23	1.00	0.91	24.97	25.94
460	Special Mixture .....	Vogel Produce Co., Tipton .....	0.82	0.83	.....	8.35	.....	0.61	8.00	7.74	1.00	1.00	24.97	24.98
461	Special Mixture .....	Vogel Produce Co., Tipton .....	0.82	0.84	.....	10.80	.....	0.77	10.00	10.03	1.00	1.06	27.97	28.94
462	Special Mixture .....	T. M. Renfro, West Plains .....	0.82	0.76	.....	15.40	.....	0.79	12.00	14.61	1.00	1.55	30.97	38.08
463	Special Mixture .....	T. M. Renfro, West Plains .....	0.82	0.81	.....	13.91	.....	0.68	12.00	13.23	.....	.....	24.97	27.08
467	Special Mixture (White tag).....	J. Cunningham, Montgomery .....	0.82	1.32	.....	14.37	.....	1.86	13.00	12.51	.....	.....	26.47	30.92
468	Special Mixture (Red tag) .....	J. Cunningham, Montgomery .....	0.82	1.02	.....	14.46	.....	0.70	13.00	13.76	.....	.....	26.47	29.66
469	Special Mixture .....	Gus Gastler, Wellsville .....	1.65	1.48	.....	9.39	.....	0.60	8.00	8.79	1.00	0.98	32.03	31.95
470	Acid Phosphate .....	W. H. Hurley Grain Co., Clinton.....	.....	.....	.....	17.84	.....	0.28	16.00	17.56	.....	.....	24.00	26.48
473	Acid Phosphate .....	R. L. Clark, Montgomery.....	.....	.....	.....	18.37	.....	0.23	16.00	18.14	.....	.....	24.00	27.33
	Sterling Fertilizer Co., Chicago, Ill.													
319	Sterling Pure Bone Meal .....	McFarland Bros., Monroe City .....	1.80	1.91	28.00	28.48	.....	.....	.....	.....	.....	.....	43.30	44.72
	Swift & Company, E. St. Louis, Ill., Swift's Brands													
322	Ammoniated Bone Phosphate .....	Peoples Elev. Co., Butler .....	0.82	0.75	10.50	11.20	0.50	1.33	10.00	9.87	.....	.....	22.22	21.86
328	Ammoniated Bone Phosphate .....	August Smith, Verona .....	0.82	0.65	10.50	9.51	0.50	1.39	10.00	8.12	.....	.....	22.22	18.41
329	Special Grain and Grass Grower.....	C. S. Alexander, Clarksville .....	1.65	1.59	11.00	11.48	1.00	1.43	10.00	10.05	1.50	1.31	38.53	37.18
330	Special Grain and Grass Grower.....	C. N. Ellston, Exeter .....	1.65	1.30	11.00	10.81	1.00	1.85	10.00	8.96	1.50	1.18	38.53	32.50
332	Raw Bone Meal Fertilizer .....	Bremer Hdw. Co., Bourbon .....	3.75	3.77	23.00	23.98	.....	.....	.....	.....	.....	.....	54.88	56.03
338	Raw Bone Meal Fertilizer .....	C. N. Ellston, Exeter .....	3.75	3.77	23.00	23.00	.....	.....	.....	.....	.....	.....	54.88	55.05
339	Red Steer Grain Grower .....	H. B. Bridewell, Northview .....	1.65	1.67	10.00	10.52	1.00	1.32	9.00	9.20	1.00	1.01	34.03	34.72
340	Red Steer Grain Grower .....	L. H. Brabier, Syracuse .....	1.65	1.64	10.00	10.88	1.00	1.69	9.00	9.19	1.00	1.41	34.03	37.04
342	Red Steer Grain Grower .....	O. Hickman & Sons, Golden City.....	1.65	1.60	10.00	9.89	1.00	1.19	9.00	8.70	1.00	0.87	34.03	32.47

346	High Grade Acid Phosphate .....	Newton Grain Co., Springfield.....	.....	.....	.....	17.92	.....	1.48	16.00	16.44	.....	.....	24.00	25.40
349	Ground Beef Bone Fertilizer.....	W. R. Noel, Stoutsville .....	2.06	2.07	27.00	27.03	.....	.....	.....	.....	.....	.....	44.51	44.63
350	Ground Beef Bone Fertilizer.....	Stockton, R. M. Co., Fair Play.....	2.06	2.06	27.00	26.22	.....	.....	.....	.....	.....	.....	44.51	43.73
367	Ground Beef Bone Fertilizer.....	H. C. Mell, Farmington .....	2.06	2.05	27.00	27.96	.....	.....	.....	.....	.....	.....	44.51	45.39
371	Complete Fertilizer .....	J. T. Davis, Vista .....	0.82	0.84	8.50	9.50	0.50	1.03	8.00	8.47	1.00	0.89	25.22	25.71
382	Complete Fertilizer .....	Robert Skinner, Jonesburg .....	0.82	0.76	8.50	9.18	0.50	1.23	8.00	7.95	1.00	1.12	25.22	25.73
385	Complete Fertilizer .....	Donaldson & Orender, Norwood .....	0.82	0.81	8.50	10.32	0.50	1.29	8.00	9.03	1.00	0.97	25.22	26.91
538	Complete Fertilizer .....	Bartlett & Frank, Winston .....	0.82	1.27	8.50	9.47	0.50	0.66	8.00	8.81	1.00	0.56	25.22	27.71
388	Tankage and Bone Phosphate.....	I. A. Young, Arcola .....	0.82	0.78	12.50	13.15	0.50	0.99	12.00	12.16	.....	.....	25.22	25.37
454	Tankage and Bone Phosphate.....	Sam Weaver, Mt. View .....	0.82	0.84	12.50	14.28	1.50	2.13	12.00	12.15	.....	.....	25.22	26.44
391	Diamond L. Grain Grower.....	Richland Hdw. Co., Richland .....	1.65	1.22	10.00	11.67	1.00	1.32	9.00	10.35	.....	.....	28.03	26.56
401	Diamond M. Grain Grower .....	Beeny & Son, Sheldon .....	1.65	1.47	12.00	13.07	1.00	1.58	11.00	11.49	1.00	0.93	37.03	36.11
450	Diamond O. Tomato Grower.....	Marshfield Canning Co., Marshfield.....	1.65	1.64	10.00	11.39	1.00	1.41	9.00	9.98	.....	.....	28.03	29.62
403	Blood and Phosphate .....	R. Meyer, Cole Camp .....	1.65	1.46	13.00	14.12	1.00	1.65	12.00	12.47	.....	.....	32.53	31.95
407	Blood and Phosphate .....	G. H. Schulze, Truesdale .....	1.65	1.39	13.00	14.34	1.00	1.70	12.00	12.64	.....	.....	32.53	31.63
410	Blood and Phosphate .....	D. G. Evans, Carl Junction .....	1.65	1.30	13.00	10.88	1.00	1.32	12.00	9.56	.....	.....	32.53	26.05
411	Special Superphosphate .....	Graves & Pettigrew, Cabool .....	1.65	1.62	9.00	10.27	1.00	1.62	8.00	8.65	1.00	0.88	32.53	32.84
444	Special Superphosphate .....	Peer Bros., Lockwood .....	1.65	1.26	9.00	9.52	1.00	1.21	8.00	8.31	1.00	0.77	32.53	28.41
413	Corn and Oats Special .....	W. R. Noel, Stoutsville .....	1.65	1.79	11.00	12.88	1.00	2.42	10.00	10.46	.....	.....	29.53	32.12
416	Corn and Oats Special .....	C. B. Howard, Nevada .....	1.65	1.42	11.00	12.34	1.00	2.08	10.00	10.26	.....	.....	29.53	28.50
422	Ammoniated Bone Phosphate and Potash .....	P. J. Weber, Tipton .....	1.65	1.79	11.00	12.07	1.00	1.68	10.00	10.39	0.50	0.81	32.53	36.51
423	Ammoniated Bone Phosphate and Potash .....	Stockton, R. M. Co., Fair Play .....	1.65	1.45	11.00	12.55	1.00	1.50	10.00	11.05	0.50	0.48	32.53	32.54
430	Bone Meal Fertilizer .....	Webb Bros., Jasper .....	2.47	2.34	24.00	25.80	.....	.....	.....	.....	.....	.....	45.00	45.69
432	Bone Meal Fertilizer .....	D. G. Evans, Carl Junction.....	2.47	2.48	24.00	23.52	.....	.....	.....	.....	.....	.....	45.00	44.60
433	1½ - 20 Bone Meal Fertilizer.....	W. H. Livingston, Windsor .....	1.23	0.94	20.00	20.16	.....	.....	.....	.....	.....	.....	30.46	28.15
441	1½ - 30 Bone Meal Fertilizer.....	Farmers Equity Exchange, Bowling Green .....	1.23	1.58	30.00	28.15	.....	.....	.....	.....	.....	.....	40.46	41.58
446	Special Grain Fertilizer .....	W. L. Veasman, Dixon .....	1.65	1.75	11.00	12.67	1.00	1.57	10.00	11.10	2.00	0.81	41.53	37.18
447	Special Bone Meal Fertilizer.....	C. S. Alexander, Clarksburg.....	0.82	0.68	29.00	29.72	.....	.....	.....	.....	.....	.....	35.97	35.50
	Swift & Co., Pioneer Brands													
428	2-12-0 Brand .....	Farmers Supply Co., Lebanon .....	1.65	1.32	13.00	13.96	1.00	1.87	12.00	12.09	.....	.....	32.53	30.36
456	Bone Meal Fertilizer .....	O. W. Carter, Fortuna .....	2.47	2.79	24.00	23.64	.....	.....	.....	.....	.....	.....	45.00	47.36

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton		
			G'td	F'nd	Total		Insoluble		Available		G'td	F'nd	G'td	F'nd	
					Per cent	Per cent	Per cent	Per cent	Per cent	Per cent					Per cent
	Tennessee Chemical Co., Chicago, Ill. Ox Brands														
551	1-12-1 Fertilizer .....	C. R. Bandy, Dederick .....	0.82	1.00	.....	14.05	0.50	1.75	12.00	12.30	1.00	1.07	31.22	34.25	
552	Ammoniated Phosphate and Potash.....	C. R. Bandy, Dederick .....	0.82	0.86	.....	11.80	0.50	1.61	10.00	10.19	1.00	0.96	28.22	29.17	
553	Wheat, Corn and Oats Fertilizer.....	C. R. Bandy, Dederick .....	0.82	0.86	.....	9.41	0.50	1.22	8.00	8.19	1.00	0.99	25.22	26.15	
	The Thomas Ruddy Co., Kansas City, Kas. Ruddy Brands														
548	Ammoniated Bone Fertilizer .....	L. G. Thomas, Butler .....	0.82	1.36	23.00	14.90	.....	.....	.....	.....	.....	.....	29.97	26.46	
	United Chemical and Organic Pro- ducts Co., Chicago, Ill.														
477	Special Corn Fertilizer .....	R. E. Bohannon, Richland .....	0.60	0.89	.....	13.30	1.00	2.91	8.00	10.39	.....	.....	17.60	24.61	
478	Acid Phosphate .....	R. E. Bohannon, Richland .....	.....	.....	.....	24.65	1.00	9.98	14.00	14.67	.....	.....	21.50	27.00	
479	Calumet Onion and Truck Grower.....	R. E. Bohannon, Richland .....	0.41	0.43	.....	9.92	1.00	1.73	8.00	8.19	3.00	2.21	33.99	30.08	
	Virginia-Carolina Chemical Co., Memphis, Tenn.														
480	Superphosphate .....	D. W. Robertson Lumber Co., Niangua	.....	.....	.....	18.48	.....	0.49	16.00	17.99	.....	.....	24.00	27.24	
483	Superphosphate .....	L. F. Dreibelbis, Sarcocixie	.....	.....	.....	18.07	.....	1.34	16.00	16.73	.....	.....	24.00	25.77	
485	Champion Superphosphate .....	Mt. Vernon Milling Co., Mt. Vernon	.....	.....	.....	20.91	.....	1.17	18.00	19.74	.....	.....	27.00	30.20	
487	Grain Grower .....	R. A. Stinson, Wentworth .....	.....	.....	.....	19.72	.....	8.53	10.00	11.19	2.00	1.80	27.00	31.86	
489	Scotts Potasso Phospho .....	Mt. Vernon Milling Co., Mt. Vernon	.....	.....	.....	16.23	.....	2.77	12.00	13.46	2.00	1.71	30.00	31.84	
490	Good Luck Guano .....	James Tompkins, Windsor .....	0.82	1.73	.....	17.61	.....	7.43	8.00	10.18	1.00	1.11	24.97	31.86	
495	Good Luck Guano .....	Cassville Produce Co., Cassville .....	0.82	0.70	.....	17.13	.....	5.69	8.00	11.44	1.00	1.49	24.97	34.90	
497	Scotts State Standard Guano.....	D. W. Robertson Lumber Co., Marsh- field .....	.....	.....	.....	16.61	.....	6.96	9.00	9.65	1.00	1.28	33.53	40.35	
498	Good as Gold Standard Guano.....	Cassville Produce Co., Cassville .....	0.82	0.83	.....	17.51	.....	3.49	12.00	14.02	1.00	1.06	30.97	36.20	
499	Ground Animal Bone .....	D. W. Robertson Lumber Co., Marsh- field .....	3.30	2.91	20.00	19.68	.....	.....	.....	.....	.....	.....	48.05	44.42	

502	Royal Bone and Potash Compound.....	D. W. Robertson Lumber Co., Marshfield .....				17.08			3.42	12.00	13.66	1.00	1.08	24.00	28.68
505	Capital Bone and Potash Compound.....	E. C. Cherrington, Lowry City.....				20.53			8.99	10.00	11.54	2.00	2.15	27.00	34.71
509	Monarch Bone and Potash Compound	Laverne & Woody, Golden City .....				21.84			6.34	15.00	15.50	2.00	1.86	34.50	37.58
511	Monarch Bone and Potash Compound	D. C. Stuckey, Carl Junction.....				21.49			7.71	15.00	13.78	2.00	1.80	34.50	35.33
512	Champion Corn and Wheat Grower Wilson & Company, Kansas City, Kas. Wilson's Brands	Archias Seed Co., Sedalia .....	0.82	0.63		18.04			7.64	9.00	10.40	1.00	1.06	26.47	31.14
514	Kali-Phosphate .....	Schooler Grain Co., Jasper .....				13.12			0.56	12.00	12.56	1.00	1.04	24.00	25.36
555	Kali-Phosphate .....	C. R. Bandy, Dederick .....				13.01			1.69	12.00	11.32	1.00	0.43	24.00	20.41
516	Special Bone Meal .....	Schooler Grain Co., Jasper .....	0.82	1.70	30.00	28.28								36.97	42.73
517	Bone Meal and Acid Phosphate.....	Monroe Smith, Montgomery .....	0.82	0.62	23.00	24.71	10.50	12.96	12.50	11.75				30.97	29.38
519	Special Grain Fertilizer .....	Schooler Grain Co., Jasper .....	0.82	1.27		14.20	1.00	6.18	8.00	8.02		1.00	1.03	25.47	32.10
550	Special Grain Fertilizer .....	Cannon Bros., Butler .....	0.82	0.65		12.33	1.00	1.88	8.00	10.45		1.00	0.80	25.47	26.95
520	Bone Grain Grower .....	Monroe Smith, Montgomery .....	1.65	1.52	10.00	11.50						1.00	1.13	30.03	31.20
Miscellaneous Samples															
66	Grain Grower (Cochrane Packing Co.)	C. M. Wagy, Kearney .....	0.82	0.84		12.54	1.00	1.74	12.00	10.80		1.00	0.98	31.47	30.09
67	Grain Grower (Cochrane Packing Co.)	C. M. Wagy, Kearney .....	0.82	1.03		11.74	1.00	1.40	12.00	10.34		1.00	0.99	31.47	31.91
68	16% Acid Phosphate (Cochrane Packing Co.) .....	C. M. Wagy, Kearney .....				14.96		1.33	16.00	13.63				24.00	21.11
7	Ground Animal Bone (Virginia- Carolina Chemical Co.) .....	Ed. Melton, Ozark .....	3.30	3.06	20.00	20.88								48.05	46.89
28	Bone Meal (Armour Fertilizer Works)	John Stuhner, Mora .....	2.47	2.17	24.00	30.40								45.00	48.85
2	Lime Kiln Ashes (Centaur Lime Co.)	D. H. Doane, St. Louis .....											0.16		0.96
532	16% Acid Phosphate (Chicago Feed and Fertilizer Co.) .....	John W. Nicholson, Ash Grove .....				18.75		0.30	16.00	18.45				24.00	27.82
533	Skoko Special Mixture (Southern Cotton Oil Co.) .....	Frank Mumford, Lebanon .....	0.82	0.91		9.46		0.51	8.00	8.95	1.00	0.93		24.97	27.00
558	No. 6. H. G. Grain Grower (Chi- cago Feed and Fertilizer Co.).....	C. M. Wagy, Kearney .....	0.82	0.98		13.35	1.00	1.82	12.00	11.53	1.00	1.13		31.47	33.32
559	Grain Grower (Cochrane Packing Co.)	C. M. Wagy, Kearney .....	0.82	0.97		11.81	1.00	1.41	12.00	10.40	1.00	1.06		31.47	30.91
560	No. 8. Grain Grower (Chicago Feed and Fertilizer Co.) .....	Hurley Grain Co., Green Ridge.....	0.82	1.71		10.51	1.00	1.74	8.00	8.77	1.00	1.39		25.47	36.90
561	Crescent Wheat Grower (Virginia- Carolina Chemical Co.) .....	A. J. Tucker, Mt. Grove.....	1.65	1.94		15.31		1.84	12.00	13.47				32.03	38.07

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES: 1918 (Continued)

Lab. No.	Manufacturer and brands	Dealer	Nitrogen		Phosphoric Acid P <sub>2</sub> O <sub>5</sub>						Potash (K <sub>2</sub> O)		Value per ton	
					Total		Insoluble		Available					
			G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd	G'td	F'nd
562	Good as Gold Standard Guano, (Virginia-Carolina Chemical Co.).....	A. J. Tucker, Mt. Grove.....	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	Per cent	30.97	33.95
			0.82	0.85	.....	14.56	.....	2.14	12.00	12.42	1.00	1.17		
563	National Ammoniated Super-Phosphate, (Virginia-Carolina Chemical Co.) .....	A. J. Tucker, Mt. Grove.....	0.82	1.40	.....	15.21	.....	5.08	10.00	10.13	.....	.....	21.97	29.64
566	Ground Beef Bone (Sw'ft & Co.).....	Tucker Seed Co., Carthage .....	2.06	1.92	27.00	30.30	.....	.....	.....	.....	.....	.....	44.51	46.62
567	Economy Mixture (Empire Carbon Works) .....	J. L. Butterworth & Son, Sedalia.....	0.82	0.87	.....	12.76	0.50	1.39	10.00	11.37	.....	.....	22.22	25.15
568	Sludge from Septic Tank .....	A. Z. Hunter, Cameron .....	.....	0.96	.....	0.39	.....	0.30	.....	0.09	.....	0.12	.....	9.17
569	Skoko Special Mixture (Southern Cotton Oil Co.) .....	W. A. Holstein, Bolivar .....	0.82	1.08	.....	7.65	.....	0.36	7.00	7.29	1.00	1.23	23.47	27.68

TABLE 6.—POWER OF LIMESTONE AND SIMILAR MATERIALS TO NEUTRALIZE SOIL ACIDITY

Expressed in Percentage of Calcium Carbonate

Lab. No	Sender	Material	Calcium Carbonate Equivalent
1-45	W. W. Lewelling, Kirksville.....	Limestone .....	77.10
2-52	G. J. Elwanger, St. Charles.....	Limestone No. S. ....	95.60
2-53	G. J. Elwanger, St. Charles.....	Limestone No. R. ....	96.70
2-54	J. Robert Hall, Harrisonville.....	Limestone No. 3 .....	94.45
2-55	W. S. Coleman, Burnham .....	Limestone .....	93.20
2-60	H. C. Crosby, Gilliam .....	Lime Kiln Refuse .....	97.35
3- 8	Mrs. L. C. Woodrow, Irondale.....	Limestone .....	100.30
4- 3	J. Robert Hall, Harrisonville.....	Limestone .....	96.15
4- 4	W. J. Stevens, St. Louis .....	Crushed Limestone .....	83.25
4- 6	Southern White Lime Co., Greene Co.	Limestone .....	98.20
4- 7	W. W. Lewelling, Kirksville .....	Limestone .....	94.53
4-12	E. H. Anderson, Montgomery.....	Limestone .....	98.00
4-17	Ezra Bacon, Leora .....	Lime tone .....	98.93
5- 2	John Kugler, Fristoe .....	Limestone .....	89.90
5- 3	J. C. Wells, Bowling Green.....	Limestone .....	97.15
5- 4	E. M. Harrison, Springfield.....	Limestone .....	101.10
5- 8	A. A. Kelley, Old Monroe.....	Limestone No. 1 .....	97.00
5- 9	A. A. Kelley, Old Monroe .....	Limestone No. 2 .....	70.45
5-10	W. J. Stevens, St. Louis.....	Limestone .....	89.50
6-39	Wm. Graf, Moselle .....	Limestone No. 1 .....	94.95
6-40	Wm. Graf, Moselle .....	Limestone No. 2 .....	92.85
6-41	Wm. Graf, Moselle .....	Limestone No. 3 .....	99.85
6-49	Alfred Rant, Piedmont .....	Limestone .....	105.40
6-50	Emile Buchner, Edina .....	Limestone .....	78.40
7-17	J. A. Stewart, Columbia .....	Ground Limestone No. 1 .....	91.98
7-18	J. A. Stewart, Columbia .....	Ground Limestone No. 2 .....	82.78
7-30	J. Robert Hall, Harrisonville.....	Limestone .....	75.26
7-31	A. J. Windler, St. Louis.....	Boiler furnace deposit .....	2.55
8- 1	Jas. M. Boston, Gerald .....	Limestone .....	86.55
8- 3	E. L. Griggs, Altamont .....	Crushed Limestone .....	66.14
9- 1	W. W. Langston, Poplar Bluff.....	Limestone .....	81.00
11- 5	F. A. Gougler, Warrensburg .....	Limestone .....	86.73
11- 6	Rena Jenkins, Montgomery.....	Limestone 1 .....	98.48
11- 7	Rena Jenkins, Montgomery .....	Limestone 2 .....	96.23
11-11	B. W. Tillman, Soils Department....	Crushed Limestone .....	81.21
12- 1	J. W. Duello, O'Fallon .....	Limestone B. ....	96.43
12- 2	J. W. Duello, O'Fallon .....	Limestone K. ....	99.03
12- 3	J. W. Duello, O'Fallon .....	Limestone M. ....	98.21
12- 4	T. N. Forter, Moselle .....	Limestone 1 .....	100.81
12- 5	T. N. Porter, Moselle .....	Limestone 2 .....	100.44
12- 6	S. C. McLeod, Taylor .....	Limestone 1 .....	97.76
12- 7	S. C. McLeod, Taylor .....	Limestone 2 .....	96.43

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919

Fertilizer	Nitrogen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Available	Insoluble	
Arkansas Fertilizer Co., Little Rock, Ark.					
White Diamond Brands					
Acid Phosphate .....			16.00		
Raw Bone Meal Fertilizer .....	3.29	20.00			
Special Raw Bone and Potash .....	1.65	18.00			1.00
Blood, Bone and Potash.....	2.00		12.00	1.00	1.50
Steamed Bone Meal .....	0.82	29.00			
Arkansas Standard Fertilizer .....	1.65		10.00	1.00	1.00
Kali Superphosphate .....			11.00	1.00	3.00
Queen of the South .....	1.65		12.00	1.00	
Twentieth Century Fertilizer .....	1.65		9.00	1.00	2.00
Southwest Wheat Grower .....	0.82	15.00		1.00	
Soluble Bone and Blood (Without Potash).....	1.65		10.00	1.00	
Soluble Bone and Blood Fertilizer.....	1.65		8.00	1.00	2.00
Number 39 .....	0.82		10.00	1.00	1.00
Commonwealth Wheat Grower .....	0.82		8.00	1.00	1.00
Commonwealth Corn Grower .....	0.82		8.00	1.00	2.00
Superphosphate, With Potash .....			10.00	1.00	2.00
Superphosphate, With Ammonia .....	0.82		12.00	1.00	
Armour Fertilizer Works, Chicago, Illinois					
Armour Brands					
Special Grain Grower .....	1.65		8.00	0.50	1.00
Ammoniated Phosphate .....	1.65		10.00	0.50	
Ammoniated Phosphate Special .....	0.82		12.00	0.50	
1-12-1 Fertilizer .....	0.82		12.00	0.50	1.00
New Record Brand .....	0.82		10.00	0.50	1.00
Wheat, Corn and Oats Special .....	0.82		8.00	0.50	1.00
Armour's 1-10 Fertilizer .....	0.82		10.00	0.50	
16% Acid Phosphate .....			16.00	0.50	
Star Phosphate .....			14.00	0.50	
Cereal Phosphate .....			10.00	0.50	
Bone Meal .....	2.47	24.00			
Special Phosphate and Potash .....			10.00	0.50	1.00
Tuscarora Brands					
New Standard .....	1.65		8.00	0.50	1.00
Ammoniated Phosphate .....	1.65		10.00	0.50	
New Ammoniated Phosphate .....	0.82		12.00	0.50	
1-12-1 Fertilizer .....	0.82		12.00	0.50	1.00
Grain Grower .....	0.82		10.00	0.50	1.00
Wheat, Corn and Oats Special .....	0.82		8.00	0.50	1.00
1-10 Fertilizer .....	0.82		10.00	0.50	
16% Acid Phosphate .....			16.00	0.50	
Star Phosphate .....			14.00	0.50	
Bone Meal .....	2.47	24.00			
Special Phosphate and Potash .....			10.00	0.50	1.00
The Chicago Feed and Fertilizer Co., Chicago, Illinois.					
Magic Bone Meal .....	2.05	20.00	15.00	5.00	
Magic No. 6 High Grade Grain Grower.....	0.82		12.00		1.00



TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Available	Insoluble	
Magic No. 7 High Grade Corn and Wheat Grower	1.64	-----	12.00	-----	2.00
Magic No. 8 Standard Grain Grower .....	0.82	-----	8.00	-----	1.00
Magic No. 9 High Grade Corn and Oats Grower	1.64	-----	12.00	-----	-----
Commercial Fertilizer Co., Little Rock, Arkansas.					
Commercial Brands					
Acid Phosphate .....	-----	-----	16.00	-----	-----
Raw Bone Meal .....	3.29	20.00	-----	-----	-----
Bone and Potash .....	1.03	-----	7.00	2.00	1.00
Phosphate Bone Meal, Grade "A" .....	1.65	20.00	-----	-----	-----
Steamed Bone Meal .....	0.82	29.00	-----	-----	-----
"1916 Special Complete Fertilizer".....	1.65	-----	10.00	1.00	1.00
Special Grain Grower .....	1.65	-----	10.00	2.00	2.00
Southwest Complete Fertilizer .....	0.82	15.00	-----	-----	1.00
"1916 Fertilizer, Without Potash" .....	1.65	-----	10.00	1.00	-----
Complete Fertilizer .....	1.65	-----	8.00	1.00	2.00
Farmer's Friend .....	0.82	-----	10.00	-----	-----
Square Deal Fertilizer .....	0.82	-----	8.00	2.00	-----
All-crop Fertilizer .....	0.82	-----	7.00	-----	0.50
Crop Getter .....	1.65	-----	8.00	-----	0.50
The Cudahy Packing Co., Chicago, Illinois.					
Cudahy's Blue Ribbon Steamed Bone Meal.....	2.47	24.00	-----	-----	-----
Darling & Company, Chicago, Illinois.					
Darling's Farmer's Favorite .....	2.40	-----	8.00	2.00	1.00
Darling's Big Harvest .....	1.60	-----	10.00	2.00	3.00
Darling's Sure Winner .....	0.80	-----	10.00	2.00	0.50
Darling's Grain Grower .....	0.80	-----	9.00	2.00	1.00
Darling's General Crop .....	1.60	-----	12.00	2.00	-----
Darling's Half and Half .....	0.80	-----	12.00	11.00	-----
Darling's Little Giant .....	0.80	-----	10.00	2.00	-----
Darling's 16% Acid Phosphate.....	-----	-----	-----	16.00	-----
Darling's Pure Ground Bone .....	1.80	28.00	-----	-----	-----
Darling's Ground Raw Bone .....	3.70	22.00	-----	-----	-----
Darling's Blood and Bone .....	4.94	12.00	-----	-----	-----
Darling's Nitrate of Soda .....	14.80	-----	-----	-----	-----
Darling's Pulverized Sheep Manure .....	1.85	-----	1.00	-----	1.00
The American Agricultural Chemical Co., Empire Carbon Works, East St. Louis, Ill.					
Boar's Head Brands					
Gilt Edge Phosphate .....	-----	-----	14.00	0.50	-----
16% Phosphate .....	-----	-----	16.00	0.50	-----
Upland Special .....	0.82	-----	10.00	0.50	-----
Good As Bone .....	1.65	-----	10.00	0.50	-----
Ammoniated Phosphate .....	1.65	-----	12.00	0.50	-----
World of Good Superphosphate No. 2 .....	2.06	-----	8.00	0.50	-----
Faultless Grain Grower .....	0.82	-----	7.00	0.50	1.00

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitro- gen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Avail- able	Insol- uble	
Seeding Down Guano 1916 .....	0.82	.....	8.00	0.50	1.00
Ammoniated Bone and Potash .....	0.82	.....	10.00	0.50	1.00
Harvest King 1916 .....	1.65	.....	10.00	0.50	1.00
World of Good Superphosphate 1916 .....	2.06	.....	8.00	0.50	1.00
World of Good Corn and Wheat Grower 1916 .....	1.65	.....	8.00	0.50	1.00
Special Tomato Grower 1918 .....	1.65	.....	8.00	0.50	1.00
Pure Raw Bone Meal .....	3.29	20.00	.....	.....	.....
Special Bone Meal .....	1.65	20.00	.....	.....	.....
<b>Bradley's Brands</b>					
Soluble Dissolved Bone .....	.....	.....	14.00	0.50	.....
High Grade Phosphate .....	.....	.....	16.00	0.50	.....
Farm Mixture .....	0.82	.....	10.00	0.50	.....
Binfiller .....	1.65	.....	10.00	0.50	.....
Bradley's Special .....	1.65	.....	12.00	0.50	.....
B. D. Sea Fowl Guano No. 2 .....	2.06	.....	8.00	0.50	.....
Niagara Phosphate .....	0.82	.....	7.00	0.50	1.00
Corn and Wheat Phosphate 1916 .....	0.82	.....	8.00	0.50	1.00
Wheat and Clover Fertilizer .....	0.82	.....	10.00	0.50	1.00
Best Grain Grower 1916 .....	1.65	.....	10.00	0.50	1.00
B. D. Sea Fowl Guano 1916 .....	2.06	.....	8.00	0.50	1.00
Old Reliable 1916 .....	1.65	.....	8.00	0.50	1.00
Pure Raw Bone Meal .....	3.29	20.00	.....	.....	.....
Special Bone Meal .....	1.65	20.00	.....	.....	.....
<b>Empire Brands</b>					
Dissolved Bone .....	.....	.....	14.00	0.50	.....
16% Phosphate .....	.....	.....	16.00	0.50	.....
Economy Mixture .....	0.82	.....	10.00	0.50	.....
Steam Bone Substitute .....	1.65	.....	10.00	0.50	.....
Nitrophos .....	1.65	.....	12.00	0.50	.....
Complete Manure .....	0.82	.....	7.00	0.50	1.00
Bone Black Fertilizer No. 2 .....	2.06	.....	8.00	0.50	.....
Wheat and Clover 1916 .....	0.82	.....	8.00	0.50	1.00
Farmers' Favorite .....	0.82	.....	10.00	0.50	1.00
Middle West Grain Grower 1916 .....	1.65	.....	10.00	0.50	1.00
Bone Black Fertilizer 1916 .....	2.06	.....	8.00	0.50	1.00
Crop Grower 1916 .....	1.65	.....	8.00	0.50	1.00
Pure Raw Bone Meal .....	3.29	20.00	.....	.....	.....
Special Bone Meal .....	1.65	20.00	.....	.....	.....
<b>Horse Shoe Brands</b>					
Square Deal Phosphate .....	.....	.....	14.00	0.50	.....
Economy Phosphate .....	.....	.....	16.00	0.50	.....
Thinland Special .....	0.82	.....	10.00	0.50	.....
Soil Builder .....	1.65	.....	10.00	0.50	.....
War Brand .....	1.65	.....	12.00	0.50	.....
National Bone Dust No. 2 .....	2.06	.....	8.00	0.50	.....
Animal Bone Manure .....	0.82	.....	7.00	0.50	1.00
Reliable Wheat Grower 1916 .....	0.82	.....	8.00	0.50	1.00
Acidulated Bone and Potash .....	0.82	.....	10.00	0.50	1.00
Pioneer Grain Grower 1916 .....	1.65	.....	10.00	0.50	1.00
National Bone Dust 1916 .....	2.06	.....	8.00	0.50	1.00
Corn and Wheat Grower 1916 .....	1.65	.....	8.00	0.50	1.00
Special Tomato Grower 1918 .....	1.65	.....	8.00	0.50	1.00
Pure Raw Bone Meal .....	3.29	20.00	.....	.....	.....
Special Bone Meal .....	1.65	20.00	.....	.....	.....

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitro- gen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Avail- able	Insol- uble	
The Empire Guano Co., Nashville, Tenn.					
Blood Bone and Potash .....	1.65	13.00	8.00	5.00	2.00
Premium Formula .....	0.41	18.00	13.00	5.00	.....
Red Banner Favorite .....	1.65	16.00	12.00	4.00	.....
Wheat, Oat and Corn Grower .....	0.82	17.00	7.00	10.00	1.00
Clover and Wheat Special .....	0.82	15.00	12.00	3.00	1.00
Missouri Grain Grower .....	0.41	15.00	12.00	3.00	1.00
Climax Grain Grower .....	1.65	13.00	9.00	4.00	1.00
Soluble Bone Guano .....	0.82	12.00	8.00	4.00	2.00
Climax Potash Mixture .....	.....	15.00	11.00	4.00	1.00
Climax Phosphate .....	.....	20.00	10.00	10.00	.....
H. G. Phosphate .....	.....	18.00	14.00	4.00	.....
Premium Phosphate .....	.....	18.00	16.00	2.00	.....
Climax Bone Meal Mixture .....	1.65	17.00	7.00	10.00	.....
Fertile Chemical Co., Cleveland, Ohio.					
Nitro-Fertile .....	2.00	.....	3.00	.....	3.00
Lime-Fertile .....	.....	.....	.....	3.00	.....
Gate City Fertilizer Co., Little Rock, Ark.					
Red Ball Brands					
Extra Acid Phosphate .....	.....	.....	16.00	.....	.....
Raw Bone Fertilizer .....	3.29	20.00	.....	.....	.....
Raw Bone and Potash .....	1.65	18.00	.....	.....	1.00
Steamed Bone Meal .....	0.82	29.00	.....	.....	.....
Complete Fertilizer .....	1.65	.....	10.00	1.00	1.00
Phosphate and Potash .....	.....	.....	11.00	1.00	3.00
Diversified Croppers' (Non-Potassic) .....	1.65	.....	12.00	1.00	.....
Soluble Bone Fertilizer .....	1.65	.....	9.00	1.00	2.00
Western Complete Fertilizer .....	0.82	15.00	.....	.....	1.00
Standard Grade "Soluble Bone Fertilizer".....	1.65	.....	10.00	1.00	.....
"Old Reliable" Fertilizer .....	1.65	.....	8.00	1.00	2.00
Acidulated Bone Fertilizer .....	0.82	.....	10.00	1.00	1.00
National Wheat Grower .....	0.82	.....	8.00	1.00	1.00
National Corn Grower .....	0.82	.....	8.00	1.00	2.00
Phospho-Potash Mixture .....	.....	.....	10.00	1.00	2.00
Ammoniated Phosphate .....	0.82	.....	12.00	1.00	.....
Morris and Co., Chicago, Ill.					
Big One—Ground Raw Bone.....	3.30	24.00	.....	.....	.....
Big Two—Pure Bone Meal .....	2.00	28.00	.....	.....	.....
Special Big Three .....	.41	.....	11.00	2.00	3.00
Special Big Four—Half and Half .....	.41	.....	13.00	5.00	.....
Big Five—Bone, Tankage and Potash.....	2.50	10.00	7.00	3.00	1.00
Special Big Seven—Bone Meal .....	.82	22.00	.....	.....	.....
Big Eight—Phosphate and Potash .....	.82	8.00	7.00	1.00	1.00
Special Big Nine—Manure and Potash .....	.41	13.00	11.00	2.00	1.00
Big Ten—Manure and Potash .....	1.65	.....	8.00	2.00	2.00
Special Big Eleven—Phosphated Manure.....	.82	11.00	10.00	1.00	.....
Special Big Twelve—Phosphated Manure.....	1.65	14.00	12.00	2.00	.....

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitro- gen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Avail- able	Insol- uble	
The Pulverized Manure Co., Chicago, Illinois.					
Wizard Brand Manure .....	1.8	.....	1.00	.....	1.00
Wizard Brand Phosphate Manure .....	0.82	.....	9.00	.....	1.00
Read Phosphate Co., Nashville, Tenn.					
Challenge-Formula .....	0.41	18.00	13.00	5.00	.....
Corn, Wheat and Oat Grower .....	0.82	17.00	7.00	10.00	1.00
Wheat and Clover Grower .....	0.82	15.00	12.00	3.00	1.00
Missouri Grain Special .....	0.41	15.00	12.00	3.00	1.00
Soluble Bone .....	0.82	12.00	8.00	4.00	2.00
Standard Grain Manure .....	1.65	13.00	9.00	4.00	1.00
Read's Special Formula .....	1.65	16.00	12.00	4.00	.....
Standard Potash Acid .....	.....	15.00	11.00	4.00	1.00
50-50 Phosphate .....	.....	20.00	10.00	10.00	.....
High Grade Phosphate .....	.....	18.00	14.00	4.00	.....
Special High Grade Phosphate .....	.....	18.00	16.00	2.00	.....
Blood and Bone No. 1 .....	1.65	13.00	8.00	5.00	2.00
Bone Meal Mixture .....	1.65	17.00	7.00	10.00	.....
The Southern Cotton Oil Co., Little Rock, Ark.					
Skoko Bre'r Rabbit Standard .....	1.65	.....	10.00	.....	2.00
Skoko Bre'r Rabbit Guano .....	1.65	.....	10.00	.....	1.25
Skoko Grain Hustler .....	1.65	.....	10.00	.....	1.00
Skoko Missouri Mixture .....	0.82	.....	10.00	.....	1.00
Skoko Quick Step .....	1.65	.....	9.00	.....	2.00
Skoko Truck Mixture .....	2.47	.....	8.00	.....	2.00
Skoko Raccoon Guano .....	1.65	.....	11.00	.....	.....
Skoko Pure Gold .....	1.65	.....	11.00	.....	.33
Skoko Missouri Special .....	0.82	.....	13.00	.....	.....
Skoko Acid Phosphate .....	.....	.....	16.00	.....	.....
The Sterling Fertilizer Co., Chicago, Illinois.					
Sterling Harvest King .....	2.40	.....	8.00	2.00	1.00
Sterling Special Wonder Yield .....	1.60	.....	10.00	2.00	3.00
Sterling Special Grain Grower .....	0.80	.....	9.00	2.00	1.00
Sterling Universal .....	1.60	.....	12.00	2.00	.....
Sterling Golden Harvest .....	0.80	.....	10.00	2.00	0.50
Sterling 16% Acid Phosphate .....	.....	.....	16.00	.....	.....
Sterling Pure Bone Meal .....	1.80	28.00	.....	.....	.....
Sterling Raw Bone Meal .....	3.70	22.00	.....	.....	.....
Sterling Half and Half .....	0.80	.....	12.00	11.00	.....
Sterling Little Giant .....	0.80	.....	10.00	2.00	.....
Swift & Co., E. St. Louis, Ill.					
Swift's Brands					
Diamond "W" Tomato and Veg. Grower.....	1.65	9.00	8.00	1.00	3.00
Champion Wheat and Corn Grower .....	1.65	13.00	12.00	1.00	2.00
Special Grain Fertilizer .....	1.65	11.00	10.00	1.00	2.00

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total	Available	Insoluble	
Superphosphate .....	1.65	9.00	8.00	1.00	2.00
Special Grain and Grass Grower .....	1.65	11.00	10.00	1.00	1.50
Truck Fertilizer .....	2.47	9.00	8.00	1.00	1.00
Diamond "M" Grain Grower .....	1.65	12.00	11.00	1.00	1.00
Tomato and Vegetable Fertilizer .....	2.47	9.00	8.00	1.00	0.50
D'amond "N" Grain Grower .....	1.65	10.00	9.00	1.00	1.00
Tomato Grower .....	1.65	9.00	8.00	1.00	1.00
Special Superphosphate .....	1.65	9.00	8.00	1.00	1.00
Ammoniated Bone Phos. and Potash .....	1.65	11.00	10.00	1.00	0.50
Diamond "K" Grain Grower .....	0.82	12.50	12.00	0.50	1.00
Blood and Phosphate .....	1.65	13.00	12.00	1.00	.....
Complete Fertilizer .....	0.82	8.50	8.00	0.59	1.00
Diamond "L" Grain Grower .....	1.65	10.00	9.00	1.00	.....
Corn and Oats Special .....	1.65	11.00	10.00	1.00	.....
Diamond "O" Tomato Grower .....	1.65	10.00	9.00	1.00	.....
Top Dressing Fertilizer .....	2.47	9.00	8.00	1.00	.....
Pulverized Sheep Manure .....	1.65	1.00	.....	.....	1.00
High Grade Acid Phosphate .....	.....	.....	16.00	.....	.....
Ground Beef Bone Fertilizer .....	2.06	27.00	.....	.....	.....
1½-20 Bone Meal Fertilizer.....	1.23	20.00	.....	.....	.....
Bone Meal and Phosphate .....	0.82	20.00	13.00	.....	.....
Raw Bone Meal Fertilizer.....	3.75	23.00	.....	.....	.....
Bone Meal Fertilizer .....	2.47	24.00	.....	.....	.....
1½-30 Bone Meal Fertilizer.....	1.23	30.00	.....	.....	.....
Tennessee Chemical Co., Chicago, Ill., Ox Brands					
New Grain Grower .....	1.65	.....	8.00	0.50	1.00
Ammoniated Phosphate .....	1.65	.....	10.00	0.50	.....
New Ammoniated Phosphate .....	.82	.....	12.00	0.50	.....
1-12-1 Fertilizer .....	.82	.....	12.00	0.50	1.00
Ammoniated Phosphate and Potash .....	.82	.....	10.00	0.50	1.00
Wheat, Corn and Oats Fertilizer .....	.82	.....	8.00	0.50	1.00
1-10 Fertilizer .....	.82	.....	10.00	0.50	.....
16% Acid Phosphate .....	.....	.....	16.00	0.50	.....
14% Acid Phosphate .....	.....	.....	14.00	0.50	.....
12% Acid Phosphate .....	.....	.....	12.00	0.50	.....
10% Acid Phosphate .....	.....	.....	10.00	0.50	.....
Bone Meal .....	2.47	24.00	.....	.....	.....
New Phosphate and Potash .....	.....	.....	10.00	0.50	1.00
Thomas Ruddy Co., Kansas City, Kans.					
Ruddy's Corn and Wheat Special .....	0.82	.....	12.00	0.50	1.00
Ruddy's Standard Grain Grower .....	0.82	.....	10.00	0.50	1.00
Ruddy's 2-10-½ Fertilizer .....	1.65	.....	10.00	0.50	0.50
Ruddy's 1-8-1 Fertilizer .....	0.82	.....	8.00	0.50	1.00
Ruddy's 1-12 Crop Grower .....	0.82	.....	12.00	0.50	.....
Ruddy's 1-10 Grain Grower .....	0.82	.....	10.00	0.50	.....
Ruddy's 2-10 Top-Dressing Fertilizer .....	1.65	.....	10.00	0.50	.....
Ruddy's Ammoniated Bone Fertilizer .....	0.82	23.00	.....	.....	.....
Ruddy's Steamed Bone Fertilizer .....	2.47	24.00	.....	.....	.....

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI: 1919 (Continued)

Fertilizer	Nitro- gen	Phosphoric Acid ( $P_2O_5$ )			Potash ( $K_2O$ )
		Total	Avail- able	Insol- uble	
Virginia-Carolina Chemical Co., Memphis, Tenn.					
V-C Plant Food for Vegetables, Lawn and Flowers .....	4.92	.....	8.00	.....	2.00
Progressive Farmer Compound .....	4.94	.....	7.00	.....	1.00
Memphis Truck Special .....	3.30	.....	8.00	.....	3.00
Eureka High Grade Guano .....	2.47	.....	9.00	.....	3.00
Royal High Grade Guano .....	1.65	.....	10.00	.....	2.00
Beef Blood and Bone Fertilizer BBB .....	1.65	.....	8.00	.....	2.00
Game Cock High Grade Guano .....	1.65	.....	10.00	.....	1.00
Scotts State Standard Guano .....	1.65	.....	9.00	.....	1.00
Good as Gold Standard Guano .....	0.82	.....	12.00	.....	1.00
Owl Brand Ammoniated Bone .....	0.82	.....	10.00	.....	1.00
Champion Corn and Wheat Grower .....	0.82	.....	9.00	.....	1.00
Good Luck Guano .....	0.82	.....	8.00	.....	1.00
Crescent Ammoniated Superphosphate .....	1.65	.....	12.00	.....	.....
Crescent Wheat Grower .....	1.65	.....	12.00	.....	.....
Victor Ammoniated Superphosphate .....	1.65	.....	11.00	.....	.....
Capital Ammoniated Phosphate .....	0.82	.....	10.00	.....	.....
National Ammoniated Phosphate .....	0.82	.....	10.00	.....	.....
Monarch Grain Grower .....	.....	.....	15.00	.....	2.00
Monarch Bone and Potash Compound .....	.....	.....	15.00	.....	2.00
Scott's Potasso-Phospho .....	.....	.....	12.00	.....	2.00
Capital Bone and Potash Compound .....	.....	.....	10.00	.....	2.00
V-C Grain Grower .....	.....	.....	10.00	.....	2.00
Royal Bone and Potash Compound .....	.....	.....	12.00	.....	1.00
Black Diamond Bone and Potash .....	.....	.....	10.00	.....	1.00
V-C Champion Super-phosphate .....	.....	.....	18.00	.....	.....
Virginia-Carolina Super-phosphate .....	.....	.....	16.00	.....	.....
Victor High Grade Super-phosphate .....	.....	.....	16.00	.....	.....
Victor High Grade Acid Phosphate .....	.....	.....	14.00	.....	.....
I X L Acid Phosphate .....	.....	.....	12.00	.....	.....
Ground Animal Bone .....	3.30	20.00	.....	.....	.....
Victor Bone and Potash Compound .....	.....	.....	15.00	.....	3.00

## FINANCIAL STATEMENT

MISSOURI AGRICULTURAL EXPERIMENT STATION

in account with

FERTILIZER CONTROL FUND

For Year 1918	Dr.	Cr.
<b>RECEIPTS</b>		
January 1, 1918, Balance on hand.....	\$15,215.51	.....
Receipts from sales of tags .....	37,825.63	.....
<b>EXPENDITURES</b>		
Salaries .....	.....	\$14,697.01
Labor .....	.....	4,915.54
Publications .....	.....	1,051.65
Postage and stationery .....	.....	2,850.90
Freight and express .....	.....	212.61
Heat, light, water and power .....	.....	421.77
Chemical supplies .....	.....	983.89
Seeds, plants and sundry supplies .....	.....	657.24
Fertilizers .....	.....	12.75
Library .....	.....	1.00
Feeding stuffs .....	.....	1,152.97
Tools, implements and machinery .....	.....	422.42
Furniture and fixtures .....	.....	541.62
Scientific apparatus .....	.....	432.18
Live stock .....	.....	58.02
Contingent expense .....	.....	135.00
Traveling expenses .....	.....	531.06
Buildings and repairs .....	.....	425.92
Total Expenditures .....	.....	\$29,503.55
Balance on hand Dec. 31, 1918.....	.....	23,537.59
	\$53,041.14	\$53,041.14