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Registration, Labeling, Inspection,  
and Sale of Commercial  
Fertilizers; 1929

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# Agricultural Experiment Station

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# Registration, Labeling, Inspection, and Sale of Commercial Fertilizers; 1929

## REPORT OF THE CHEMIST

L. D. HAIGH

The registration, labeling, inspection, and sale of commercial fertilizers in Missouri is by State law under the administration of the Director of the Agricultural Experiment Station, F. B. Mumford, Columbia, Missouri.

The Chemist of the Experiment Station is charged with the duty of analyzing the samples of fertilizer obtained in the work of inspection and reporting upon the same. The present report includes the results of analysis on the samples collected in the fall season of 1929, while the analysis of the spring collected samples are reported in Bulletin 276. This report also presents summaries of the entire year's analyses as regards valuations, deficiencies, legal violations, kinds and quantities of fertilizer used in the state by counties, etc.

This report aims to be a manual of instruction for fertilizer users of the state setting forth much interesting and valuable information as it pertains to the situation in Missouri. A careful reading of these reports is recommended to all who desire to know how to judge fertilizer on the basis of its composition which is the true index of its value.

## INSPECTION

Samples obtained in the work of inspection in the spring numbered 113. Twenty-seven towns in 18 counties were visited at this time. During the fall season 141 towns in 62 counties were visited and 367 samples were collected. Besides visiting dealers in the towns, stocks of fertilizers were inspected in cars on sidings and in the farmers' barns out in the country where it had been hauled after having been unloaded at the shipping point.

The work of inspection includes the listing of all brands found in order to determine if same are registered; the examination of all containers to see that same carry complete and legible labels setting forth the required information; also that each container carries the registration tag or label bearing the signature of the Director of the Agricultural Experiment Station as provided by the Missouri State Fertilizer Law. The inspector also obtains samples of all the different brands found in order that these may be analyzed and reported upon by the chemist. All discrepancies found are reported to the Director and are also published in this report as a guide to the fertilizer buyer.

**NEW ANALYSES RECOMMENDED**

The brands of fertilizer now being used in the State are practically all classed as high grade, carrying as they do more than 14 units of plant food. The Experiment Station is now recommending the use of brands carrying not less than 20 units of plant food as shown by the following list.

|                            |                          |
|----------------------------|--------------------------|
| Superphosphate.....        | 0-20-0                   |
| Ground Bone Fertilizer.... | Bone Meal (all analyses) |
| Mixed Fertilizer.....      | 4-12-4                   |
| Mixed Fertilizer.....      | 2-14-4                   |
| Mixed Fertilizer.....      | 2-12-6                   |
| Mixed Fertilizer.....      | 4-10-6                   |
| Mixed Fertilizer.....      | 0-14-6                   |
| Mixed Fertilizer.....      | 6-8-6                    |

Sixteen per cent superphosphate may be used in place of the 20 per cent superphosphate if more convenient to obtain. However the 20 per cent material is a more economical purchase, since the selling price represents a lower cost per unit of phosphoric acid.

It is interesting to note in this connection the rapid increase in the use of 20 per cent superphosphate. In 1924 samples of both 16 and 20 per cent superphosphate were collected by the inspectors. Samples of the 20 per cent material numbered only about 12 per cent of the total. However in the present year (1929) the samples of 20 per cent amount to between 53 and 54 of the total samples obtained. Some 18 per cent superphosphate is sold but the amount is small compared with the others. Some 24 per cent and 45 per cent superphosphate are now being offered for sale in the State. Thus the tendency continues toward the use of the brands of higher analyses.

**REGISTRATIONS**

The first step in meeting the requirements of the law in selling fertilizer in Missouri is to register all brands to be offered for sale with the Missouri Agricultural Experiment Station. Purchasers of fertilizers are urged to buy only registered fertilizers. For the guidance of buyers the names of all manufacturers who offer registered fertilizers for sale are listed in Table 7 pages 41 to 53.

It is becoming more nearly the rule year by year to list fertilizer brands by figure formulae instead of word names. As an example take the brands 4-12-4. The first figure stands for the percentages of nitrogen in the fertilizer, the second figure for the percentage of available phosphoric acid, and the third for the percentage of potash (water soluble). If word names are used in Table 7, the figure formula can easily be read from the guaranteed amount of plant food in the columns at the right.

The use of "ammonia" as a plant food unit has been discontinued. The former use of ammonia in the figure formula has been explained in the preceding report.\*

### LABELS AND TAGS

Besides registration, the Missouri Fertilizer Law requires (1) Labels to be placed on all packages showing brand name, guaranteed analysis and name and address of manufacturer, and (2) Registration tags or labels furnished by the Missouri Agricultural Experiment Station, which certify to the fact of registration, are to be placed and retained on all packages until sold to the consumer.

The cases in which violations of the law were found are reported by the inspectors as follows:

### VIOLATIONS OF THE MISSOURI FERTILIZER LAW

**Violations with respect to registration.**—Five sacks of Lecco Complete Grass Food manufactured by Lyman Carrier, Granger, Indiana, and 12 sacks of Sheep Manure from the Pacific Manure and Fertilizer Company, San Francisco, California, were found at the warehouse of Palmer Seed Company, St. Louis, Missouri. Neither of these brands had been registered prior to being offered for sale.

Nine sacks of Unleached Hardwood Ashes from George Stevens, Exporter, Petersborough, Ontario were stored in the warehouse of the St. Louis Seed Company, St. Louis. This material has not been registered for sale in Missouri.

A few sacks of Blood and Bone fertilizer from the Arkansas Fertilizer Company were delivered to J. H. H. Mote, Carthage. No registration was on hand for this brand.

Bone Meal Fertilizer (2-27) from Swift and Company on hand at the warehouse of the Springfield Seed Co., Springfield, had not been registered prior to sale by the manufacturer.

**Violation with respect to labeling.**—Five sacks of fertilizer labeled Apex Mixture from American Agricultural Chemical Company were sold to the Boone County Milling and Elevator Company of Columbia. This fertilizer proved to be 0-14-14 which indicates the label to be incorrect according to registration.

The M. F. B. F. brands of fertilizer registered and manufactured by the Floyd Plant Food Company and distributed through the State for the Missouri Farm Bureau Federation did not carry the name of the manufacturer on the label of the sacks as prescribed by law.

Anaconda Treble Superphosphate, Anaconda Copper Mining Company, Chicago, sold to the Farm Bureau Service, Moberly, regis-

\*Bul. 270, Mo. Agr. Expt. Stat. p. 4.

tered to contain 44 per cent available phosphoric acid were labeled as containing 46 per cent available phosphoric acid. The statements in registration and on the labels should read alike.

Half and Half fertilizer, one of the common brands put out by a number of manufacturers, is a mixed fertilizer consisting as it does of approximately equal parts of acid phosphate and bone fertilizer. As such the law requires that it be registered and labeled to show the percentage of available phosphoric Acid. Some of the manufacturers have ignored this requirement when labeling the sacks of this brand and have shown only the percentage of total phosphoric acid. We have repeatedly called attention to this violation in labeling. The following firms have this year put out Half and Half fertilizer labeled wrong in the manner indicated:

| Manufacturer            | Where found                         |
|-------------------------|-------------------------------------|
| Crocker Packing Company | Factory, Joplin                     |
| Cudahy Packing Company  | Farmers Coop. Assn., Beaufort       |
| Floyd Plant Food Co.    | Producers Exchange, California      |
| Floyd Plant Food Co.    | Farmers Produce Exchange, St. James |
| Floyd Plant Food Co.    | Farmers Coop. Assn., Beaufort       |

About 16 sacks of a 2-10-2 fertilizer from the American Agricultural Chemical Company at the warehouse of the Boone County Milling and Elevator Company, Columbia bore the brand name "Special Fertilizer." This is not the name as registered for this mixture by the manufacturer.

A shipment of Raw Bone Meal from Federal Chemical Co. found at the Fortuna Elevator, Fortuna bore a label for guaranteed analysis not in agreement with registration.

The name and address of the manufacturer was omitted from the labels of certain M. F. A. fertilizers from the Floyd Plant Food Company found at Farmers Coop, Assn., Union, Farmers Exchange, Lamonte, Fortuna Elevator, Fortuna, and Farmers Exchange, Cuba.

A shipment of M. F. A. 2-16-2 Fertilizer from Floyd Plant Food Company to Farmers Exchange, Branson bore labels in which the guaranteed analysis figures were so blurred as to be scarcely legible.

Sacks of bone meal fertilizer labeled Ground Steam Bone 1-29 from Floyd Plant Food Co. were found at the warehouse of the Farmers Coop. Assn., Eldon and at the Farmers Produce Exchange, St. James. This is not the correct label for this brand.

Small packages of Sheep Manure prepared by the Springfield Seed Company from the contents of larger sacks from the Pulverized Manure Company bore labels which were not in agreement for the registered composition of this brand.

A shipment of Darling and Company Half and Half brand made to Chas. H. Honold, Beaufort, bore labels that could not be read.

**Violations with Respect to the Use of Registration Tags.**—The sacks of Apex Mixture from the American Agricultural Chemical Company at the Boone County Milling and Elevator Company of Columbia, were without registration tags. Twenty-six sacks of A. A. Gilt Edge Fertilizer and 2 sacks of AA Tip Top fertilizer shipped to T. M. Renfrow, West Plains by the American Agricultural Chemical Company were without registration tags.

The Missouri Market Association of St. Joseph has on hand thirty sacks of Steam Bone Meal for which registration tags had been supplied by the manufacturer but which the dealer had failed to attach to the sacks.

One Carload of Big Crop Fertilizer to the Star Milling Company, Mountain Grove and another to L. C. Gregory, Norwood from Armour Fertilizer Works carried the 1928 Registration Tags. Also 4 sacks of N-P.K, 9-27-9 fertilizer from the same manufacturer to Graves-Pettigrew Company, Cabool, also carried 1928 Registration Tags.

Registration tags for a shipment of Interstate Brand fertilizer from Crocker Packing Company to C. L. Spencer, Reeds, had been supplied to Mr. Spencer separately from the shipment. These had not been attached to the sacks in the warehouse.

Ten and 25 pound bags of Floyd's Garden Fertilizer from the Floyd Plant Food Company were on sale at the Producers Exchange, Truesdale, and were without registration tags. Also a part of the sacks of a shipment of M. F. A. fertilizer from the Floyd Plant Food Company to the Farmers Exchange, Lebanon were provided with the 1928 registration tags instead of those for 1929.

The goods of the following three fertilizer manufacturers mentioned above as having failed to register before placing same on sale, were necessarily without the registration tags:

Lyman Carrier, Granger, Indiana

Pacific Manure and Fertilizer Company, San Francisco, Calif.

George Stevens, Exporter, Petersborough, Ontario.

Two dozen packages of Feedem Plant Food from the Nitragin Company, Milwaukee, were on sale at the Palmer Seed Co., St. Louis without registration labels.

Fifty sacks of Bone Meal fertilizer from Swift and Company at the warehouse of Tucker Seed House, Carthage, were without registration tags.

Shipments of Darling's 16 per cent and 20 per cent Superphosphate from Darling and Company to Phil Ratliff, Neosho, bore Arkansas fertilizer tags in place of Missouri tags.

A shipment of M. F. A. 2-16-2 fertilizer from Floyd Plant Food Co. was found at the Farmers Exchange, New Cambria, without registration tags.

A supply of Floyd's Garden Fertilizer in 10 lb. sacks purchased from the Missouri Farmers Association, Springfield, was found at the Farmers Exchange, Webb City without registration tags.

A shipment of Red Steer 4-16-4 fertilizer from Swift and Company to Farmers Warehouse and Supply Company, Tina, did not carry registration tags.

A shipment of Red W. Special Bone Meal from Wilson and Co. to Boone County Milling and Elevator Co., Columbia, did not carry any registration tags.

The following dealers had resacked some of their stock of fertilizer and had failed to transfer the registration tags to the new sacks:

|                               |             |
|-------------------------------|-------------|
| Fayette Mill and Elevator Co. | Fayette     |
| Farmers Exchange              | Chillicothe |
| Ozark Flour and Feed Co.      | Seymour     |
| Whiteside Grain Co.           | Whiteside   |
| Producers Exchange            | Versailles  |
| Farmers Exchange              | Kahoka      |



## VIOLATIONS TABULATED

The violations pointed out in the preceding paragraphs are here listed for convenience of reference. Violations for which the dealer is responsible are listed at the end of the table.

TABLE 1.—COMPANIES AND DEALERS VIOLATING MISSOURI FERTILIZER LAW

| Fertilizer Company                          | Brands Inspected | Number Violations Found |
|---|------------------|-------------------------|
| American Agricultural Chemical Company..... | 145              | 5                       |
| Anaconda Copper Mining Company .....        | 2                | 2                       |
| Arkansas Fertilizer Company .....           | 3                | 1                       |
| Armour Fertilizer Works .....               | 47               | 3                       |
| Crocker Packing Company .....               | 17               | 1                       |
| Cudahy Packing Company .....                | 4                | 1                       |
| Darling and Company .....                   | 34               | 3                       |
| Federal Chemical Company.....               | 22               | 1                       |
| Floyd Plant Food Company .....              | 81               | 15                      |
| Lyman Carrier.....                          | 1                | 2                       |
| Pacific Manure and Fertilizer Company.....  | 1                | 2                       |
| Swift and Company (Fertilizer Works).....   | 91               | 4                       |
| Wilson and Company.....                     | 2                | 1                       |
| Dealers                                     |                  |                         |
| Fayette Mill and Elevator Company.....      |                  | 1                       |
| Farmers Exchange, Chillicothe.....          |                  | 1                       |
| Farmers Exchange, Kahoka.....               |                  | 2                       |
| Missouri Marketing Association.....         |                  | 1                       |
| Ozark Flour and Feed Company .....          |                  | 1                       |
| Producers Exchange, Versailles.....         |                  | 1                       |
| Palmer Seed Company.....                    |                  | 3                       |
| St. Louis Seed Company .....                |                  | 1                       |
| Springfield Seed Company.....               |                  | 1                       |
| C. L. Skinner, Reeds.....                   |                  | 1                       |
| Whiteside Grain Company.....                |                  | 1                       |

- |  |                         |
|--|-------------------------|
| 1. Samples drawn from less than 5 sacks. | 6. Incorrect labels.    |
| 2. Package goods incorrectly labelled.   | 7. Old labels on sacks. |
| 3. No registration tags.                 | 8. Not registered.      |
| 4. Wrong registration tags.              | 9. Labels blurred.      |
| 5. Fertilizer resacked.                  |                         |

## SOME RULES FOR BUYING FERTILIZER

To avail himself of the protection of the State Fertilizer Law, the dealer, farmer, or other user of fertilizer should observe the following rules when buying:

(1) Purchase only from companies whose brands have been registered. On pages 41 to 53 in this report will be found these companies and their brands with guaranteed analysis.

Write to the Missouri Agricultural Experiment Station for information about other companies who may want to sell you fertilizer.

(2) When you receive your shipment examine same to see that each sack carries a label showing brand name, guaranteed analysis, and name and address of manufacturer. This label should agree with the corresponding information given in the registration.

(3) Examine each sack for a registration tag in the form of a shipping tag which is white in color and reads as follows:

|  |                           |
|--|---------------------------|
| 101 to 200 lbs.  |                           |
| Missouri Agricultural Experiment Station<br>Columbia, Missouri |                           |
| Registered<br>1930   | F. B. Mumford<br>Director |

The above tag is used on bags weighing more than 100 pounds. When the fertilizer is sold in smaller sized bags, the legends used at the top of the tags reads as follows:—

1 to 100 lbs.

Over 10 and not over 50 lbs.

10 lbs. and under.

Fertilizer sacks not provided with above registration tags, cannot be sold without violation of the Missouri Fertilizer Law. No dealer or farmer should accept any sack of fertilizer in a purchase without a registration tag attached.

#### A SPECIAL WORD TO THE DEALER

In addition to the above rules the following situations will require attention: Registration tags are sometimes sent separately instead of being attached to the sacks of your shipment. These tags must be placed upon the sacks immediately in order that they may be legally offered for sale.

Again it may be necessary to resack some of the fertilizer in your warehouse because of the sacks having fallen to pieces. New sacks for this purpose may be obtained from the manufacturer. Be sure to transfer the registration tag from the old sack to the new one when filled. Registration tags must accompany every package until same is emptied out of the container for use.

The Missouri Agricultural Experiment Station will be glad to furnish on request, information regarding any point in the handling and purchase of fertilizers.

**FERTILIZER IN SMALL PACKAGES**

In the last few years there has been a growing demand for fertilizer in small packages. The housewife, the home gardener and others are using this material for flowers, potted plants and vegetables. These packages are found on sale at the seed dealers and florists in many forms and in many sizes of packages. Attention is called to the fact that these materials like all other fertilizers require registration, labeling, and affixing of registration tags or labels. The size of the registration tag or label depends upon the size of the package as the following paragraph from the fertilizer law indicates.

*Section 12113—Every manufacturer, importer, or person shall pay to said Experiment Station for the labels or tags required by them under Section 12112 of the article, the sum of one-half cent for tags or labels to be attached to packages weighing ten pounds or less; the sum of one cent each for tags or labels to be attached to bags or packages weighing more than ten pounds and not more than fifty pounds; the sum of one and one-half cents for tags or labels to be attached to bags or packages weighing more than fifty pounds and not more than one hundred pounds; three cents each for tags or labels to be attached to bags or packages weighing more than one hundred pounds and not more than two hundred pounds.*

Any manufacturer who has duly registered his fertilizer according to law is permitted to sell this in any size of package he may desire to use, provided proper labels are used and the registration tags or labels of the proper size are attached. As stated elsewhere this list of manufacturers and their brands may be found in Table 7 pages 41 to 53.

No package fertilizer should be purchased which does not bear the name of one of these firms on the label. If the name does not appear here write to the Missouri Agricultural Experiment Station for information.

The gummed registration label used on fertilizer packages is a white square label printed in black, in appearance like the following:

|   |                                   |
|---|-----------------------------------|
| <b>10 lbs. and under</b>                            |                                   |
| <b>Missouri Agricultural<br/>Experiment Station</b> |                                   |
| <b>Columbia, Missouri</b>                           |                                   |
| <b>Registered<br/>1930</b>                          | <b>F. B. Mumford<br/>Director</b> |

The legends which appear at the top of these labels read according to the limits of the weights of the packages for which they are used as follows:

- 10 lbs. and under
- Over 10 and not over 50 lbs.
- Over 50 and not over 100 lbs.

The presence of these tags on each package must be assured before the dealer may offer these to his customers. In placing large orders for package fertilizer packed in larger cartons the dealer will do well to insist that the manufacturer provide the labels already attached to the packages so that they are ready to be placed on sale as soon as they are received.

### VALUATIONS OF PLANT FOODS

For the purpose of comparing the values of fertilizer brands as guaranteed by the manufacturer and as found on analysis, it has been customary to select a value in dollars and cents for each plant food unit. A plant food unit is one per cent per ton, or to quote from our previous report\* the valuation is defined thus: "the average cost including delivery of one per cent of the plant food contained on the average in one ton of the ordinary simple carriers of this constituent when sold in the state in carload lots."

The same values for the plant food units used last year are in use in this report. Their values are as follows:

|  |        |
|--|--------|
| Total nitrogen.....  | \$4.25 |
| Total phosphoric acid from bone.....   | 1.00   |
| Insoluble phosphoric acid from bone (when so guaranteed<br>in registration)..... | .80    |
| Available phosphoric acid (all sources).....                                     | 1.40   |
| Potash (water soluble).....  | 1.05   |

\*Bul. 260 Missouri Agr. Experiment Station p. 9.

## CALCULATION OF VALUES

The guaranteed and found values of each brand analyzed can now be found by multiplying these unit plant food values by the respective guaranteed and found percentages of these plant foods in the brand in question. For example, for sample 11-43 found in Table 5, page 25, the calculations are made thus:

|                          |                       |
|--------------------------|-----------------------|
| For the guaranteed value |                       |
| 2 times                  | \$4.25 equals \$ 8.50 |
| 12 times                 | 1.40 equals 16.80     |
| 2 times                  | 1.05 equals 2.10      |
| <hr/>                    |                       |
| Total guaranteed value   | equals \$27.40        |

|                     |                       |
|---------------------|-----------------------|
| For the found value |                       |
| 2.09 times          | \$4.25 equals \$ 8.88 |
| 12.16 times         | 1.40 equals 17.02     |
| 2.11 times          | 1.05 equals 2.22      |
| <hr/>               |                       |
| Total found value   | equals \$28.12        |

Thus the guaranteed value is found to be \$27.40 and the found value \$28.12 or \$0.72 in excess.

In like manner all samples analyzed and reported upon in Table 5 have been subjected to the same calculation. The results are found in the last two columns to the right. These values serve for comparison only and are not intended to indicate the actual selling price of the fertilizer. However, any buyer may decide which fertilizer brand is the most economical kind to buy considering its composition and its market price, by the following simple rule: The brand whose guaranteed and found value is closest to or exceeds the actual price asked per ton of the buyer, is the most economical one to purchase.

These values for each fertilizer company have been summarized in the following table showing what is the average loss on all samples which ran under the guarantee in value, and the gain or loss per ton on all the samples considered together. A study of these shows that when sufficient samples have been secured to obtain a representative average, the results nearly always indicate some excess value furnished. When all the samples of all the companies are averaged the result indicates a value of 89 cents per ton as an average excess value furnished in the state during the year 1929.

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

| Manufacturer   | Number of samples analyzed | Below Guarantee |          | Average Loss* per ton (deficient samples) | Average Gain† or loss per ton (all samples) |
|--|----------------------------|-----------------|----------|---|---|
|  |                            | Number          | Per cent |   |   |
| American Agricultural Chemical Company.....                  | 95                         | 26              | 27.4     | \$0.99                                    | \$0.70                                      |
| Anaconda Copper Mining Company .....                         | 2                          | 0               | 0.0      | 0.00                                      | 1.32  |
| Arkansas Fertilizer Company .....                            | 3                          | 2               | 66.7     | 1.62                                      | -0.71                                       |
| Armour Fertilizer Works .....                                | 47                         | 5               | 10.6     | 1.94                                      | 1.39  |
| Blood and Bone Fertilizer Company .....                      | 10                         | 5               | 50.0     | 2.48                                      | -0.48                                       |
| Crocker Packing Company.....                                 | 16                         | 5               | 31.3     | 1.52                                      | 0.09  |
| Cudahy Packing Company.....                                  | 4                          | 2               | 50.0     | 2.04                                      | 0.67  |
| Darling and Company.....                                     | 34                         | 1               | 2.9      | 0.50                                      | 0.89  |
| Federal Chemical Company.....                                | 22                         | 5               | 22.7     | 0.66                                      | 1.04  |
| Floyd Plant Food Company, Floyd's Money<br>Maker Brands..... | 4                          | 1               | 25.0     | 1.04                                      | 0.31  |
| Floyd Plant Food Company, M. F. A. Brands ..                 | 64                         | 29              | 45.3     | 2.11                                      | 0.20  |
| Floyd Plant Food Company, M. F. B. F. Brands                 | 10                         | 4               | 40.0     | 3.52                                      | -0.05                                       |
| Jax Plant Food Company.....                                  | 2                          | 0               | 0.0      | 0.00                                      | 3.15  |
| Memphis Fertilizer Factory.....                              | 6                          | 1               | 16.7     | 0.22                                      | 1.41  |
| Phosphated Manure Company .....                              | 2                          | 0               | 0.0      | 0.00                                      | 2.42  |
| Pulverized Manure Company .....                              | 4                          | 1               | 25.0     | 1.06                                      | 1.03  |
| Read Phosphate Company.....                                  | 33                         | 3               | 9.1      | 0.70                                      | 1.47  |
| Swift and Company (Fertilizer Works) .....                   | 91                         | 6               | 6.6      | 1.55                                      | 1.41  |
| Tennessee Chemical Company.....                              | 3                          | 1               | 33.3     | 0.24                                      | 0.55  |
| Virginia-Carolina Chemical Corporation.....                  | 8                          | 1               | 12.5     | 0.40                                      | 1.11  |
| Wilson and Company .....                                     | 2                          | 1               | 50.0     | 0.73                                      | 1.48  |
| Totals.....  | 462                        | 99              | 21.4     | 1.59                                      | 0.89  |

\*This average is only for those samples which have a found value less than the guaranteed value per ton.

†This is the average for all samples of each company and indicates the value in excess of the guarantee which each manufacturer furnished on the average in each ton sold.

### FERTILIZER SAMPLES ANALYZED

The samples collected by the inspectors during the fall season 1929, have been analyzed for the actual percentages of the plant food they are guaranteed to contain, and the results assembled in Table 5. They are arranged in the alphabetical order of the name of the manufacturer.

Certain of the figures found on analysis appearing in the table are printed in bold faced type. These figures are lower in value than the corresponding guaranteed figure, and the bold faced figure serves to call attention to a deficiency. The guaranteed analysis figure represents the minimum percentage of the plant food in question which may be expected to be present, therefore any found value below this may be considered a deficiency. The amount of the variation from the guarantee should be considered when surveying these figures. Some deviations are so small as to be negligible.

Farmers and dealers sometimes request that samples, collected by themselves and sent in, be analyzed. Unless great care be taken to obtain an average sample by taking portions from all parts of the lots, the results are not the most reliable. When samples are drawn by the regular sampling tools used by the inspector an average sample of the lot is obtained and the results are to be considered a reliable indication of the composition of the entire lot. All samples analyzed under the State Fertilizer Law must be accompanied by the following descriptive information; name and address of dealer, brand name and guaranteed analysis, name and address of manufacturer as they appear upon the label on the fertilizer sack.

### ACTIVITY OF NITROGEN IN FERTILIZERS

The Missouri fertilizer law requires that the minimum total nitrogen present in a fertilizer be guaranteed. In Table 5, the first column under "Nitrogen" gives the total amount guaranteed, the second column, the total amount found. Students of agriculture now recognize clearly that the important factor about nitrogen in a fertilizer or in the soil is not necessarily the total amount present but the amount which is readily absorbed by the plant. In other words, the amount available. It is therefore essential that tests be conducted to determine the amount of chemically active nitrogen present in the fertilizer, which is an index of its availability. Nitrogen which is soluble in water, and nitrogen insoluble in water which is readily acted upon by neutral and alkaline permanganate, are both considered active.

The rules for applying these tests have been explained in previous reports and need not be repeated here.\* The results of testing the fertilizers for water soluble nitrogen are given in Table 5 in the third column under Nitrogen. Most mixed fertilizers show that more than two-thirds of the nitrogen present in the fertilizer is in water soluble form. This is considered satisfactory.

As a result of testing all the samples carrying nitrogen for their quality or chemical activity, the following samples may be said to contain nitrogen of inferior quality. 11-173, 11-174, 11-175, 11-176, 11-177, 11-178, 11-179, 11-180, 11-181, 11-182, 11-217, 11-222, 11-249, 11-250, 11-251.

For careful study of all the data on nitrogen activity obtained in the work on the samples from the different manufacturers, consult Table 3.

\*Bul. 260, Missouri Agricultural Experiment Station p. 13.

TABLE 3.—SUMMARY OF DETERMINATIONS OF NITROGEN ACTIVITY (AVAILABILITY)

|                                      | Mixed Fertilizer |                  |                 |                  |                  |                  | Bone Fertilizer |                  |                 |                  |                  |                  |
|--------------------------------------|------------------|------------------|-----------------|------------------|------------------|------------------|-----------------|------------------|-----------------|------------------|------------------|------------------|
|                                      | Water Sol. N.    |                  | Neutral Perman. |                  | Alkaline Perman. |                  | Water Sol. N.   |                  | Neutral Perman. |                  | Alkaline Perman. |                  |
|                                      | No. Tested       | Average Activity | No. Tested      | Average Activity | No. Tested       | Average Activity | No. Tested      | Average Activity | No. Tested      | Average Activity | No. Tested       | Average Activity |
| American Agric. Chemical Company.    | 51               | 92.16            | --              | ----             | --               | ----             | 8               | 24.92            | 8               | 86.75            | --               | ----             |
| Arkansas Fertilizer Company.....     | 1                | 74.82            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Armour Fertilizer Works.....         | 30               | 94.02            | --              | ----             | --               | ----             | 5               | 11.96            | 5               | 81.00            | 2                | 69.49            |
| Blood and Bone Fertilizer Company..  | 6                | 82.80            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Crocker Packing Company.....         | 8                | 55.71            | 7               | 81.48            | 2                | 52.06            | 4               | 37.13            | 4               | 85.62            | --               | ----             |
| Cudahy Packing Company.....          | --               | ----             | --              | ----             | --               | ----             | 3               | 35.03            | 3               | 87.42            | --               | ----             |
| Darling and Company.....             | 16               | 87.77            | --              | ----             | --               | ----             | 1               | 52.63            | 1               | 75.55            | 1                | 53.32            |
| Federal Chemical Company.....        | 10               | 56.43            | 10              | 57.28            | 10               | 45.73            | 2               | 11.77            | 2               | 80.19            | 1                | 62.10            |
| Fertilspray Company.....             | 1                | 99.66            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Floyd Plant Food Company.....        | 39               | 82.51            | 2               | 59.76            | 2                | 45.32            | 6               | 24.18            | 6               | 88.38            | 1                | 67.42            |
| Grasselli Chemical Company.....      | 1                | 97.25            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Jax Plant Food Company.....          | 2                | 98.89            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Lyman Carrier.....                   | 1                | 45.93            | 1               | 88.57            | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Memphis Fertilizer Company.....      | 2                | 94.00            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Nitragin Company.....                | 1                | 99.50            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Pacific Manure and Feed Company*..   | 1                | 27.10            | 1               | 52.21            | 1                | 27.43            | --              | ----             | --              | ----             | --               | ----             |
| Phosphated Manure Company*.....      | 2                | 24.84            | 2               | 35.99            | 2                | 25.34            | --              | ----             | --              | ----             | --               | ----             |
| Pulverized Manure Company*.....      | 4                | 23.47            | 4               | 51.18            | 4                | 26.70            | --              | ----             | --              | ----             | --               | ----             |
| Read Phosphate Company.....          | 11               | 80.29            | 1               | 56.92            | 1                | 60.00            | 5               | 22.47            | 5               | 71.64            | 3                | 74.08            |
| S and S Plant Food Company.....      | 1                | 68.02            | 1               | 66.20            | 1                | 36.62            | --              | ----             | --              | ----             | --               | ----             |
| Stimuplant Laboratories, Inc.....    | 1                | 99.19            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Swift & Company, Fertilizer Works .. | 45               | 89.48            | --              | ----             | --               | ----             | 18              | 24.99            | 17              | 79.04            | 9                | 59.55            |
| Tennessee Chemical Company.....      | 1                | 92.21            | --              | ----             | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Virginia-Carolina Chemical Company   | 3                | 63.76            | 1               | 88.62            | --               | ----             | --              | ----             | --              | ----             | --               | ----             |
| Wilson and Company.....              | --               | ----             | --              | ----             | --               | ----             | 1               | 33.47            | 1               | 87.26            | --               | ----             |
| Total and Average of All Companies.. | 238              | 83.96            | 30              | 63.06            | 23               | 40.59            | 53              | 25.09            | 52              | 81.91            | 17               | 63.53            |

\*Source of the Nitrogen is Dried Manure.



## AGRICULTURAL LIMESTONES AND OTHER MATERIALS

The practice of using crushed limestone, burnt lime and waste lime materials in agricultural practice is pretty well established in Missouri at the present time. Limestone ledges may be found in most counties in the State and it is therefore readily obtainable for use. Some of these ledges are worked on a commercial scale and can furnish carloads of crushed limestone to communities having railroad shipping points. Many groups of farmers find it more economical to quarry and crush their own stone from local ledges. It does not pay to crush stone of inferior quality hence the quality should be ascertained before labor is expended upon it.

The Experiment Station has tested stone from all parts of the state during the year 1929 and the report of these tests by counties is given in Table 6. If information is desired concerning the quality of stone found in any locality it may be obtained by addressing the Agricultural Experiment Station, Columbia, Missouri.

## USE OF FERTILIZERS IN MISSOURI, 1929

Statistics on the distribution of fertilizers in Missouri both as to kind and as to area where used, are of interest to agronomists and other state workers in connection with crop reports, also to fertilizer salesmen and manufacturers.

Table 8 indicates the tonnage used in the various counties of the State as grouped into the six general divisions. Table 9 gives the tons of nitrogen, phosphoric acid from bone, available phosphoric acid and of potash consumed as fertilizer in the State in 1929. Table 10 gives the tonnage of the principal brands used in the State, from all the companies. The meaning of the classifications used in Tables 8 and 9 are stated as follows:

**BONE:** Steamed Bone Meal, Raw Bone Meal.

**SUPERPHOSPHATE:** 16, 18, 20, 24, 45 per cent.

**HIGH GRADE MIXED:** 20 units (includes Half and Half brands)

**MEDIUM GRADE MIXED:** Less than 20 units but not less than 14 units.

**LOW GRADE MIXED:** Less than 14 units.

**MISCELLANEOUS:** Potash salts, dried manure, sulphate of ammonia, nitrate of soda, sewerage residues, etc.

The above classification represents a change in the past meaning of High, Medium and Low Grade Mixed Fertilizers. On account of the steadily increasing use of mixtures of higher plant food content, the classification of high grade mixtures has been raised to include brands which contain at least 20 units, instead of 14 as heretofore. Medium is advanced from mixtures below 14 units to mixtures above 14 units and low grade now includes all brands formerly classified as medium and low grade.

TABLE 4.—SUMMARY OF TOTAL AND DEFICIENT FERTILIZER CONSTITUENTS FROM TABLE 5

| Manufacturer   | Nitrogen |           |          | Total Phosphoric Acid |           |          | Available Phosphoric Acid |           |          | Potash |           |          | All Analyses |           |          |
|--|----------|-----------|----------|-----------------------|-----------|----------|---------------------------|-----------|----------|--------|-----------|----------|--------------|-----------|----------|
|  | Total    | Deficient |          | Total                 | Deficient |          | Total                     | Deficient |          | Total  | Deficient |          | Total        | Deficient |          |
|  | No.      | No.       | Per cent | No.                   | No.       | Per cent | No.                       | No.       | Per cent | No.    | No.       | Per cent | No.          | No.       | Per cent |
| American Agricultural Chemical Company-----          | 59       | 13        | 22.0     | 8                     | 1         | 12.5     | 87                        | 33        | 37.9     | 53     | 5         | 9.4      | 207          | 52        | 25.1     |
| Anaconda Copper Mining Company-----                  | 0        | 0         | ---      | 0                     | 0         | ---      | 2                         | 0         | 0.0      | 0      | 0         | ---      | 2            | 0         | 0.0      |
| Arkansas Fertilizer Company-----                     | 1        | 1         | 100.0    | 0                     | 0         | ---      | 3                         | 2         | 66.7     | 1      | 1         | 100.0    | 5            | 4         | 80.0     |
| Armour Fertilizer Works-----                         | 35       | 12        | 34.3     | 5                     | 0         | 0.0      | 42                        | 3         | 7.1      | 30     | 1         | 3.3      | 112          | 16        | 14.3     |
| Blood and Bone Fertilizer Company-----               | 6        | 6         | 100.0    | 0                     | 0         | ---      | 10                        | 5         | 50.0     | 7      | 1         | 14.3     | 23           | 12        | 52.2     |
| Crocker Packing Company-----                         | 11       | 7         | 63.6     | 2                     | 0         | 0.0      | 14                        | 3         | 21.4     | 8      | 2         | 25.0     | 35           | 12        | 34.3     |
| Cudahy Packing Company-----                          | 3        | 1         | 33.3     | 0                     | 0         | ---      | 4                         | 1         | 25.0     | 0      | 0         | ---      | 7            | 2         | 28.6     |
| Darling and Company-----                             | 17       | 6         | 35.3     | 0                     | 0         | ---      | 34                        | 1         | 2.9      | 17     | 0         | 0.0      | 68           | 7         | 10.3     |
| Federal Chemical Company-----                        | 12       | 5         | 41.7     | 2                     | 2         | 100.0    | 20                        | 0         | 0.0      | 10     | 6         | 60.0     | 44           | 13        | 29.5     |
| Fertilspray Company-----                             | 1        | 0         | 0.0      | 0                     | 0         | ---      | 1                         | 0         | 0.0      | 1      | 0         | 0.0      | 3            | 0         | 0.0      |
| Floyd Plant Food Company, Money<br>Maker Brands----- | 5        | 4         | 80.0     | 0                     | 0         | ---      | 4                         | 0         | 0.0      | 4      | 1         | 25.0     | 13           | 5         | 38.4     |
| Floyd Plant Food Company, M. F. A.<br>Brands-----    | 35       | 26        | 74.3     | 3                     | 1         | 33.3     | 61                        | 21        | 34.4     | 30     | 12        | 40.0     | 129          | 60        | 46.5     |
| Floyd Plant Food Company, M. F. B.<br>F. Brands----- | 5        | 4         | 80.0     | 0                     | 0         | ---      | 10                        | 3         | 30.0     | 5      | 1         | 20.0     | 20           | 8         | 40.0     |
| Ford Motor Company-----                              | 1        | 0         | 0.0      | 0                     | 0         | ---      | 0                         | 0         | ---      | 0      | 0         | ---      | 1            | 0         | 0.0      |
| Grasselli Chemical Company-----                      | 1        | 0         | 0.0      | 0                     | 0         | ---      | 0                         | 0         | ---      | 1      | 0         | 0.0      | 2            | 0         | 0.0      |

|   |     |     |       |    |   |       |     |    |       |     |    |       |      |     |      |
|---|-----|-----|-------|----|---|-------|-----|----|-------|-----|----|-------|------|-----|------|
| Jax Plant Food Company-----                         | 2   | 0   | 0.0   | 0  | 0 | ----  | 2   | 0  | 0.0   | 2   | 0  | 0.0   | 6    | 0   | 0.0  |
| Lyman Carrier-----                                  | 1   | 1   | 100.0 | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 1  | 100.0 | 3    | 2   | 66.7 |
| Memphis Fertilizer Factory-----                     | 2   | 1   | 50.0  | 0  | 0 | ----  | 6   | 0  | 0.0   | 3   | 1  | 33.3  | 11   | 2   | 18.2 |
| Nitragin Company-----                               | 1   | 0   | 0.0   | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 1  | 100.0 | 3    | 1   | 33.3 |
| Pacific Manure and Fertilizer Company               | 1   | 0   | 0.0   | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 0  | 0.0   | 3    | 0   | 0.0  |
| Phosphated Manure Company-----                      | 2   | 0   | 0.0   | 0  | 0 | ----  | 2   | 0  | 0.0   | 2   | 0  | 0.0   | 6    | 0   | 0.0  |
| Pulverized Manure Company-----                      | 4   | 3   | 75.0  | 0  | 0 | ----  | 4   | 1  | 25.0  | 4   | 0  | 0.0   | 12   | 4   | 33.3 |
| Read Phosphate Company-----                         | 16  | 6   | 37.5  | 2  | 0 | 0.0   | 31  | 6  | 19.4  | 11  | 1  | 9.1   | 60   | 13  | 21.7 |
| S and S Plant Food Company-----                     | 1   | 0   | 0.0   | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 1  | 100.0 | 3    | 1   | 33.3 |
| Stimuplant Laboratories-----                        | 1   | 0   | 0.0   | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 0  | 0.0   | 3    | 0   | 0.0  |
| Swift and Company, Fertilizer Works..               | 63  | 9   | 14.3  | 18 | 4 | 22.2  | 73  | 8  | 11.0  | 47  | 1  | 2.1   | 201  | 22  | 10.9 |
| Tennessee Chemical Company-----                     | 0   | 0   | ----  | 0  | 0 | ----  | 2   | 0  | 0.0   | 0   | 0  | ----  | 2    | 0   | 0.0  |
| Tennessee Copper and Chemical Corpora-<br>tion----- | 1   | 1   | 100.0 | 0  | 0 | ----  | 1   | 0  | 0.0   | 1   | 0  | 0.0   | 3    | 1   | 33.3 |
| Virginia-Carolina Chemical Corpora-<br>tion-----    | 3   | 0   | 0.0   | 1  | 0 | 0.0   | 7   | 2  | 28.6  | 4   | 1  | 25.0  | 15   | 3   | 20.0 |
| Wilson and Company-----                             | 1   | 0   | 0.0   | 1  | 1 | 100.0 | 1   | 1  | 100.0 | 0   | 0  | ----  | 3    | 2   | 66.7 |
| Totals-----   | 291 | 106 | 36.4  | 42 | 9 | 21.4  | 426 | 90 | 21.1  | 246 | 37 | 15.0  | 1005 | 242 | 24.1 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929

| Lab. No. | Manufacturer and Brands   | Dealer  | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |          | Value per Ton |       |       |
|----------|---|---|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|----------|---------------|-------|-------|
|          |   |   | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | 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  | Per Cent | Per Cent                              | Per Cent | Per Cent      | \$    | \$    |
|          | <b>American Agricultural Chemical Company,<br/>St. Louis, Missouri<br/>A. A. Brands</b> |   |            |            |                        |   |          |           |          |           |          |                                       |          |               |       |       |
| 11-1     | 16 per cent Superphosphate  | J. T. Ellsworth, Williamsburg                     |            |            |                        |   | 19.04    | 0.50      | 2.42     | 16.00     | 16.62    |                                       |          |               | 22.40 | 23.27 |
| 11-2     | 16 per cent Superphosphate  | Eolia Elevator Co., Eolia                         |            |            |                        |   | 18.78    | 0.50      | 2.75     | 16.00     | 16.03    |                                       |          |               | 22.40 | 22.42 |
| 11-3     | 16 per cent Superphosphate  | C. H. Tompkins, New London                        |            |            |                        |   | 19.12    | 0.50      | 2.60     | 16.00     | 16.52    |                                       |          |               | 22.40 | 23.13 |
| 11-4     | 16 per cent Superphosphate  | W. J. McPike, LaGrange                            |            |            |                        |   | 18.83    | 0.50      | 2.82     | 16.00     | 16.01    |                                       |          |               | 22.40 | 22.41 |
| 11-5     | 16 per cent Superphosphate  | Farmers Whse. & Supply Co., Tina                  |            |            |                        |   | 18.22    | 0.50      | 2.09     | 16.00     | 16.13    |                                       |          |               | 22.40 | 22.58 |
| 11-6     | 16 per cent Superphosphate  | Laclede Farmers Exchange, Laclede                 |            |            |                        |   | 18.68    | 0.50      | 2.85     | 16.00     | 15.83    |                                       |          |               | 22.40 | 22.16 |
| 11-7     | 16 per cent Superphosphate  | Producers Exchange 84, Lincoln                    |            |            |                        |   | 19.35    | 0.50      | 2.86     | 16.00     | 16.49    |                                       |          |               | 22.40 | 23.09 |
| 11-8     | 16 per cent Superphosphate  | W. V. Bonner, Preston                             |            |            |                        |   | 18.98    | 0.50      | 2.70     | 16.00     | 16.28    |                                       |          |               | 22.40 | 22.79 |
| 11-9     | 16 per cent Superphosphate  | E. B. Evans Feed & Seed Co.,<br>Springfield       |            |            |                        |   | 19.35    | 0.50      | 2.87     | 16.00     | 16.48    |                                       |          |               | 22.40 | 23.07 |
| 11-10    | 20 per cent Superphosphate  | Boone County Mill & Elevator<br>Co., Columbia     |            |            |                        |   | 23.45    | 0.50      | 2.85     | 20.00     | 20.60    |                                       |          |               | 28.00 | 28.84 |
| 11-11    | 20 per cent Superphosphate  | A. T. West, McCreddie                             |            |            |                        |   | 23.10    | 0.50      | 2.43     | 20.00     | 20.67    |                                       |          |               | 28.00 | 28.94 |
| 11-12    | 20 per cent Superphosphate  | Eolia Elevator Co., Eolia                         |            |            |                        |   | 24.40    | 0.50      | 2.70     | 20.00     | 21.70    |                                       |          |               | 28.00 | 30.38 |
| 11-13    | 20 per cent Superphosphate  | C. H. Tompkins, New London                        |            |            |                        |   | 23.78    | 0.50      | 2.95     | 20.00     | 20.83    |                                       |          |               | 28.00 | 29.16 |
| 11-14    | 20 per cent Superphosphate  | W. J. McPike, LaGrange                            |            |            |                        |   | 23.73    | 0.50      | 2.90     | 20.00     | 20.83    |                                       |          |               | 28.00 | 29.16 |
| 11-15    | 20 per cent Superphosphate  | Huntsville Flour & Feed Co.,<br>Huntsville        |            |            |                        |   | 24.05    | 0.50      | 2.68     | 20.00     | 21.37    |                                       |          |               | 28.00 | 29.92 |
| 11-16    | 20 per cent Superphosphate <sup>1 3 5</sup>   | Fayette Coop. Mill & Elevator<br>Company, Fayette |            |            |                        |   | 23.45    | 0.50      | 2.49     | 20.00     | 20.96    |                                       |          |               | 28.00 | 29.33 |

The following references are used throughout Table 5:

- |  |                             |                         |
|--|-----------------------------|-------------------------|
| 1. Samples drawn from less than 5 sacks. | 4. Wrong registration tags. | 7. Old labels on sacks. |
| 2. Package goods incorrectly labeled.    | 5. Fertilizer resacked.     | 8. Not Registered.      |
| 3. No registration tags.                 | 6. Incorrect labels.        | 9. Labels blurred.      |

|       |                                    |   |      |      |       |  |       |      |      |       |       |      |      |       |       |       |
|-------|------------------------------------|---|------|------|-------|--|-------|------|------|-------|-------|------|------|-------|-------|-------|
| 11-17 | 20 per cent Superphosphate         | Producers Exchange 84, Lincoln                    |      |      |       |  | 22.78 | 0.50 | 2.40 | 20.00 | 20.38 |      |      |       | 28.00 | 28.53 |
| 11-18 | 20 per cent Superphosphate         | E. B. Evans Feed & Seed Co.,<br>Springfield       |      |      |       |  | 23.50 | 0.50 | 3.10 | 20.00 | 20.40 |      |      |       | 28.00 | 28.56 |
| 11-19 | 20 per cent Superphosphate         | Farmers Exchange, Ava                             |      |      |       |  | 23.90 | 0.50 | 2.86 | 20.00 | 21.04 |      |      |       | 28.00 | 29.46 |
| 11-20 | 20 per cent Superphosphate         | Omer Webb, Jasper                                 |      |      |       |  | 23.05 | 0.50 | 2.04 | 20.00 | 21.01 |      |      |       | 28.00 | 29.41 |
| 11-21 | 20 per cent Superphosphate         | O. A. Heinlein, Butler                            |      |      |       |  | 23.48 | 0.50 | 2.51 | 20.00 | 20.97 |      |      |       | 28.00 | 29.36 |
| 11-22 | 20 per cent Superphosphate         | Farmers Cash Exchange, Sedalia                    |      |      |       |  | 23.90 | 0.50 | 2.75 | 20.00 | 21.15 |      |      |       | 28.00 | 29.61 |
| 11-23 | 20 per cent Superphosphate         | Producers Exchange, Syracuse                      |      |      |       |  | 24.30 | 0.50 | 2.86 | 20.00 | 21.44 |      |      |       | 28.00 | 30.01 |
| 11-24 | 20 per cent Superphosphate         | Farmers Elevator Co., Tipton                      |      |      |       |  | 23.80 | 0.50 | 2.89 | 20.00 | 20.91 |      |      |       | 28.00 | 29.27 |
| 11-25 | 20 per cent Superphosphate         | Farmers Elevator Co., Clarksburg                  |      |      |       |  | 22.80 | 0.50 | 1.77 | 20.00 | 21.03 |      |      |       | 28.00 | 29.44 |
| 11-26 | 20 per cent Superphosphate         | Farmers Elevator Co., Center-<br>town             |      |      |       |  | 23.78 | 0.50 | 2.66 | 20.00 | 21.12 |      |      |       | 28.00 | 29.57 |
| 11-27 | 20 per cent Superphosphate         | Mills & Waterall, Fredericktown                   |      |      |       |  | 23.55 | 0.50 | 2.75 | 20.00 | 20.80 |      |      |       | 28.00 | 29.12 |
| 11-28 | Farmers Favorite                   | Dahler Feed Store, California                     | 1.00 | 1.03 | 87.38 |  | 13.81 | 0.50 | 1.68 | 12.00 | 12.13 | 1.00 | 1.08 | 22.10 | 22.49 |       |
| 11-29 | Special Fertilizer <sup>6</sup>    | Boone County Mill & Elevator<br>Company, Columbia | 2.00 | 3.23 | 94.74 |  | 11.77 | 0.50 | 1.35 | 10.00 | 10.42 | 2.00 | 3.88 | 24.60 | 32.39 |       |
| 11-30 | Squirrel Brand                     | Farmers Elevator Co., Jonesburg                   | 2.00 | 1.93 | 92.23 |  | 11.26 | 0.50 | 1.37 | 10.00 | 9.89  | 2.00 | 2.03 | 24.60 | 24.18 |       |
| 11-31 | Red Dragon Fertilizer              | Boone County Mill & Elevator<br>Co., Columbia     | 2.00 | 2.28 | 92.54 |  | 13.54 | 0.50 | 1.54 | 12.00 | 12.00 | 2.00 | 2.31 | 27.40 | 28.92 |       |
| 11-32 | Red Dragon Fertilizer <sup>1</sup> | O. P. Craighead, Stephens                         | 2.00 | 1.98 | 90.40 |  | 13.48 | 0.50 | 1.68 | 12.00 | 11.80 | 2.00 | 2.04 | 27.40 | 27.08 |       |
| 11-33 | Red Dragon Fertilizer              | Farmers Elevator, Jonesburg                       | 2.00 | 2.07 | 91.30 |  | 13.08 | 0.50 | 1.59 | 12.00 | 11.49 | 2.00 | 1.93 | 27.40 | 26.92 |       |
| 11-34 | Red Dragon Fertilizer              | Vandalia Roller Mills, Vandalia                   | 2.00 | 2.04 | 91.67 |  | 13.44 | 0.50 | 1.47 | 12.00 | 11.97 | 2.00 | 2.01 | 27.40 | 27.54 |       |
| 11-35 | Red Dragon Fertilizer              | Whiteside Grain Co., Whiteside                    | 2.00 | 2.11 | 91.00 |  | 13.88 | 0.50 | 1.62 | 12.00 | 12.26 | 2.00 | 2.15 | 27.40 | 28.38 |       |
| 11-36 | Red Dragon Fertilizer              | Producers Exchange, Versailles                    | 2.00 | 2.04 | 95.59 |  | 13.21 | 0.50 | 1.69 | 12.00 | 11.52 | 2.00 | 2.15 | 27.40 | 27.05 |       |
| 11-37 | Red Dragon Fertilizer              | Versailles Milling Co., Versailles                | 2.00 | 2.00 | 88.50 |  | 13.31 | 0.50 | 1.84 | 12.00 | 11.47 | 2.00 | 2.13 | 27.40 | 26.80 |       |
| 11-38 | Red Dragon Fertilizer              | Cole Camp Producers Exchange,<br>Cole Camp        | 2.00 | 2.00 | 91.00 |  | 13.52 | 0.50 | 1.69 | 12.00 | 11.83 | 2.00 | 2.02 | 27.40 | 27.18 |       |
| 11-39 | Red Dragon Fertilizer <sup>1</sup> | Producers Exchange 84, Lincoln                    | 2.00 | 1.99 | 88.44 |  | 12.60 | 0.50 | 1.91 | 12.00 | 10.69 | 2.00 | 2.06 | 27.40 | 25.58 |       |
| 11-40 | Red Dragon Fertilizer              | P. A. Bliss, Cross Timbers                        | 2.00 | 2.00 | 90.00 |  | 13.56 | 0.50 | 1.73 | 12.00 | 11.83 | 2.00 | 2.22 | 27.40 | 27.39 |       |
| 11-41 | Red Dragon Fertilizer              | W. V. Bonner, Preston                             | 2.00 | 1.96 | 89.82 |  | 13.09 | 0.50 | 1.59 | 12.00 | 11.50 | 2.00 | 2.02 | 27.40 | 26.55 |       |
| 11-42 | Red Dragon Fertilizer              | Farmers Exchange, Ava                             | 2.00 | 2.16 | 89.81 |  | 13.43 | 0.50 | 1.92 | 12.00 | 11.51 | 2.00 | 2.01 | 27.40 | 27.40 |       |
| 11-43 | Red Dragon Fertilizer              | O. A. Heinlein, Butler                            | 2.00 | 2.09 | 91.39 |  | 13.70 | 0.50 | 1.54 | 12.00 | 12.16 | 2.00 | 2.11 | 27.40 | 28.12 |       |
| 11-44 | Red Dragon Fertilizer              | Farmers Cash Exchange, Sedalia                    | 2.00 | 2.20 | 91.82 |  | 13.30 | 0.50 | 1.65 | 12.00 | 11.65 | 2.00 | 2.07 | 27.40 | 27.83 |       |
| 11-45 | Red Dragon Fertilizer              | Farmers Elevator Co., Smithton                    | 2.00 | 2.22 | 90.99 |  | 13.37 | 0.50 | 2.20 | 12.00 | 11.17 | 2.00 | 2.07 | 27.40 | 27.24 |       |
| 11-46 | Red Dragon Fertilizer <sup>1</sup> | Producers Exchange, Syracuse                      | 2.00 | 2.06 | 90.78 |  | 13.82 | 0.50 | 1.55 | 12.00 | 12.27 | 2.00 | 2.00 | 27.40 | 28.03 |       |
| 11-47 | Red Dragon Fertilizer <sup>1</sup> | Farmers Elevator Co., Tipton                      | 2.00 | 1.99 | 89.95 |  | 12.98 | 0.50 | 1.50 | 12.00 | 11.48 | 2.00 | 2.11 | 27.40 | 26.73 |       |
| 11-48 | Red Dragon Fertilizer              | Farmers Elevator Co., Centertown                  | 2.00 | 2.02 | 89.60 |  | 12.82 | 0.50 | 2.02 | 12.00 | 10.80 | 2.00 | 2.01 | 27.40 | 25.81 |       |
| 11-49 | Red Dragon Fertilizer              | Banner Roller Mills, Salem                        | 2.00 | 1.99 | 90.45 |  | 12.78 | 0.50 | 2.01 | 12.00 | 10.77 | 2.00 | 1.98 | 27.40 | 25.62 |       |
| 11-50 | Red Dragon Fertilizer              | J. B. Boyer & Sons, Potosi                        | 2.00 | 2.03 | 89.16 |  | 12.98 | 0.50 | 1.97 | 12.00 | 11.01 | 2.00 | 2.02 | 27.40 | 26.16 |       |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands            | Dealer                                   | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |          | Value per Ton |      |
|----------|------------------------------------|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|----------|---------------|------|
|          |                                    |  | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | 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  | Per Cent | Per Cent                              | Per Cent | Per Cent      | \$   |
| 11-51    | "Agrico" for Grain                 | Farmers Elevator, Jonesburg              | 2.00       | 1.97       | 92.39                  | 12.43   | 0.50     | 1.52      | 12.00    | 10.91     | 4.00     | 3.94                                  | 29.50    | 27.78         |      |
| 11-52    | "Agrico" for Grain                 | Eolia Elevator Co., Eolia                | 2.00       | 2.00       | 92.50                  | 13.15   | 0.50     | 1.46      | 12.00    | 11.69     | 4.00     | 4.23                                  | 29.50    | 29.31         |      |
| 11-53    | "Agrico" for Grain                 | Whiteside Grain Co., Whiteside           | 2.00       | 2.00       | 93.00                  | 12.98   | 0.50     | 1.43      | 12.00    | 11.65     | 4.00     | 4.21                                  | 29.50    | 29.23         |      |
| 11-54    | "Agrico" for Grain                 | Ludwig Produce, Baring                   | 2.00       | 2.00       | 93.50                  | 13.74   | 0.50     | 1.72      | 12.00    | 12.02     | 4.00     | 4.27                                  | 29.50    | 29.81         |      |
| 11-55    | "Agrico" for Grain                 | Omer Webb, Jasper                        | 2.00       | 2.06       | 93.20                  | 13.00   | 0.50     | 1.54      | 12.00    | 11.46     | 4.00     | 4.21                                  | 29.50    | 29.22         |      |
| 11-56    | "Agrico" for Grain                 | Farmers Cash Exchange, Sedalia           | 2.00       | 2.03       | 92.12                  | 13.30   | 0.50     | 1.59      | 12.00    | 11.71     | 4.00     | 4.18                                  | 29.50    | 29.42         |      |
| 11-57    | "Agrico" for Grain                 | Farmers Elevator Co., Clarksburg         | 2.00       | 2.03       | 92.12                  | 13.16   | 0.50     | 1.50      | 12.00    | 11.66     | 4.00     | 4.10                                  | 29.50    | 29.26         |      |
| 11-58    | "Agrico" for Grain                 | Farmers Elevator Co., Centertown         | 2.00       | 2.01       | 93.53                  | 13.61   | 0.50     | 1.62      | 12.00    | 11.99     | 4.00     | 4.26                                  | 29.50    | 29.80         |      |
| 11-59    | "Agrico" for Grain                 | Banner Roller Mills, Salem               | 2.00       | 2.01       | 93.03                  | 12.98   | 0.50     | 1.66      | 12.00    | 11.32     | 4.00     | 4.04                                  | 29.50    | 28.63         |      |
| 11-60    | "Agrico" for Grain                 | Rosebud Feed Co., Rosebud                | 2.00       | 2.03       | 94.09                  | 13.04   | 0.50     | 1.54      | 12.00    | 11.50     | 4.00     | 4.18                                  | 29.50    | 29.12         |      |
| 11-61    | Gilt Edge Fertilizer               | W. C. Fimmel, Roanoke                    | 2.00       | 2.14       | 94.86                  | 17.96   | 0.50     | 2.27      | 16.00    | 15.69     | 2.00     | 2.38                                  | 33.00    | 34.56         |      |
| 11-62    | Paramount Fertilizer               | Mills & Waterall, Fredericktown          | 3.00       | 3.06       | 93.79                  | 8.70  | 0.50     | 0.83      | 8.00     | 7.87      | 6.00     | 6.34                                  | 30.25    | 30.67         |      |
| 11-63    | "Agrico" for Potatoes <sup>1</sup> | H. C. Dulle Milling Co., Jefferson City  | 4.00       | 3.34       | 95.21                  | 9.10  | 0.50     | 0.95      | 8.00     | 8.15      | 6.00     | 6.15                                  | 34.50    | 32.07         |      |
| 11-64    | "Agrico" for Potatoes              | Farmers Elevator Co., Centertown         | 4.00       | 3.47       | 94.81                  | 9.36  | 0.50     | 1.20      | 8.00     | 8.16      | 6.00     | 5.63                                  | 34.50    | 32.06         |      |
| 11-65    | Two in One Fertilizer <sup>1</sup> | E. B. Evans Feed & Seed Co., Springfield | 4.00       | 4.17       | 95.20                  | 17.03   | 0.50     | 1.22      | 16.00    | 15.81     | 4.00     | 4.05                                  | 43.60    | 44.10         |      |
| 11-66    | Two in One Fertilizer              | C. E. Lawrence, Appleton City            | 4.00       | 4.32       | 94.91                  | 16.90   | 0.50     | 1.50      | 16.00    | 15.40     | 4.00     | 4.23                                  | 43.60    | 44.36         |      |
| 11-67    | Pure Raw Bone                      | Whiteside Grain Co., Whiteside           | 3.29       | 3.45       | 28.98                  | 20.00   | 20.05    |           |          |           |          |                                       | 33.98    | 34.71         |      |
| 11-68    | Pure Raw Bone                      | Mills & Waterall, Fredericktown          | 3.29       | 3.56       | 26.96                  | 20.00   | 20.75    |           |          |           |          |                                       | 33.98    | 35.88         |      |
| 11-69    | Steam Bone Meal <sup>7</sup>       | Producers Exchange 84, Lincoln           | 1.03       | 1.14       | 20.18                  | 29.00   | 29.70    |           |          |           |          |                                       | 33.38    | 34.55         |      |
| 11-70    | Steam Bone Meal <sup>7</sup>       | Farmers Elevator Co., Tipton             | 1.03       | 0.84       | 23.81                  | 29.00   | 24.25    |           |          |           |          |                                       | 33.38    | 27.82         |      |
| 11-71    | Steam Bone Meal <sup>7</sup>       | Mills & Waterall, Fredericktown          | 1.03       | 1.03       | 24.27                  | 29.00   | 29.00    |           |          |           |          |                                       | 33.38    | 33.38         |      |
| 11-72    | Steam Bone Meal <sup>7</sup>       | J. B. Boyer & Sons, Potosi               | 1.03       | 0.98       | 21.43                  | 29.00   | 31.15    |           |          |           |          |                                       | 33.38    | 35.31         |      |

|       |   |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------|---|---|------|------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
|       | <b>Anaconda Copper Mining Company,<br/>Chicago, Illinois</b>  |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-73 | Anaconda Treble Superphosphate <sup>1 6</sup> -----           | Holland Ferguson, Roanoke-----                              |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-74 | Anaconda Treble Superphosphate <sup>6</sup> -----             | Leonard McCaully, Roanoke-----                              |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|       | <b>Arkansas Fertilizer Company,<br/>Little Rock, Arkansas</b> |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|       | <b>White Diamond Brands</b>                                   |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-75 | Bove-All Superphosphate-----                                  | J. H. H. Mote, Oronogo-----                                 |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-76 | Eclipse Superphosphate-----                                   | J. H. H. Mote, Oronogo-----                                 |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-77 | Blood & Bone Fertilizer + <sup>8</sup> -----                  | J. H. H. Mote, Oronogo-----                                 | 2.00 | 1.39 | 74.82 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|       | <b>Armour Fertilizer Works,<br/>Chicago, Illinois</b>         |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|       | <b>Big Crop Brands</b>  |   |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-78 | 16 per cent Superphosphate <sup>1</sup> -----                 | Producers Exchange 84, Lincoln-----                         |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-79 | 16 per cent Superphosphate-----                               | Shoffner Hdwe. Co., Bolivar-----                            |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-80 | 16 per cent Superphosphate-----                               | E. B. Evans Feed and Seed Co.,<br>Springfield-----          |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-81 | 16 per cent Superphosphate-----                               | Ozark Flour & Feed Co., Seymour-----                        |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-82 | 20 per cent Superphosphate <sup>1</sup> -----                 | Farmers Produce Co., Meadville-----                         |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-83 | 20 per cent Superphosphate <sup>1 5</sup> -----               | Farmers Exchange, Chillicothe-----                          |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-84 | 20 per cent Superphosphate-----                               | Ozark Flour & Feed Co., Seymour-----                        |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-87 | 2-12-2 Fertilizer-----  | Farmers Elevator & Supply Co.,<br>Vandalia-----             |      |      |       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-88 | 2-12-2 Fertilizer-----  | Atlanta Grain Elevator, Atlanta-----                        | 2.00 | 2.03 | 93.10 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-89 | 2-12-2 Fertilizer-----  | Shoffner Hdwe. Co., Bolivar-----                            | 2.00 | 2.01 | 93.03 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-90 | 2-12-2 Fertilizer-----  | E. B. Evans Feed & Seed Co.,<br>Springfield-----            | 2.00 | 1.97 | 92.39 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-91 | 2-12-2 Fertilizer-----  | Ozark Flour & Feed Co., Seymour-----                        | 2.00 | 2.27 | 90.30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-92 | 2-12-2 Fertilizer-----  | Culp Elevator Mills, Warrensburg-----                       | 2.00 | 2.00 | 94.50 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-93 | 2-12-2 Fertilizer <sup>1</sup> -----                          | Knobnoster Elevator Co., Knob-<br>noster-----               | 2.00 | 2.18 | 93.58 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-94 | 2-12-2 Fertilizer-----  | Madison Co. Farmers Warehouse<br>Ass'n., Fredericktown----- | 2.00 | 2.00 | 92.00 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-95 | 2-12-2 Fertilizer-----  | C. E. Lawrence, Appleton City-----                          | 2.00 | 2.00 | 91.30 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 11-96 | 2-16-2 Fertilizer-----  | Farmers Elevator & Supply Co.,<br>Vandalia-----             | 2.00 | 2.06 | 91.26 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No.             | Manufacturer and Brands        | Dealer                                   | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |      |
|----------------------|--------------------------------|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|------|
|                      |                                |  | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | G'td                                  | F'nd  | G'td          | F'nd |
|                      |                                |  |            |            |                        | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent |                                       |       |               |      |
| 11-97                | 2-16-2 Fertilizer              | Atlanta Grain Elevator, Atlanta          | 2.00       | 2.01       | 94.53                  | 18.00   | 0.50     | 0.95      | 16.00    | 17.05     | 2.00     | 2.22                                  | 33.00 | 34.74         |      |
| 11-98                | 2-16-2 Fertilizer              | Knobnoster Elevator Co., Knobnoster      | 2.00       | 2.30       | 96.09                  | 18.15   | 0.50     | 1.34      | 16.00    | 16.81     | 2.00     | 2.66                                  | 33.00 | 36.10         |      |
| 11-99                | 2-16-2 Fertilizer <sup>1</sup> | C. E. Lawrence, Appleton City            | 2.00       | 2.00       | 95.50                  | 18.13   | 0.50     | 1.11      | 16.00    | 17.02     | 2.00     | 2.24                                  | 33.00 | 34.68         |      |
| 11-100               | 2-16-8 Fertilizer              | Knobnoster Elevator Co., Knobnoster      | 2.00       | 2.07       | 95.17                  | 17.67   | 0.50     | 0.96      | 16.00    | 16.71     | 8.00     | 9.20                                  | 39.30 | 41.86         |      |
| 11-101               | 2-16-8 Fertilizer              | Briscoe Elevator Co., Tipton             | 2.00       | 2.09       | 95.22                  | 17.58   | 0.50     | 1.04      | 16.00    | 16.54     | 8.00     | 9.10                                  | 39.30 | 41.59         |      |
| 11-102               | 4-16-4 Fertilizer              | Farmers Elevator & Supply Co., Vandalia  | 4.00       | 3.68       | 96.74                  | 17.00   | 0.50     | 0.71      | 16.00    | 16.29     | 4.00     | 4.01                                  | 43.60 | 42.66         |      |
| 11-103               | 4-16-4 Fertilizer              | Farmers Exchange, Chillicothe            | 4.00       | 4.02       | 95.02                  | 17.74   | 0.50     | 1.72      | 16.00    | 16.02     | 4.00     | 4.28                                  | 43.60 | 44.00         |      |
| 11-104               | 4-16-4 Fertilizer <sup>1</sup> | Producers Exchange 84, Lincoln           | 4.00       | 3.83       | 96.61                  | 17.88   | 0.50     | 0.92      | 16.00    | 16.96     | 4.00     | 4.02                                  | 43.60 | 44.23         |      |
| 11-105               | 4-16-4 Fertilizer <sup>1</sup> | E. B. Evans Feed & Seed Co., Springfield | 4.00       | 3.96       | 96.46                  | 17.22   | 0.50     | 0.99      | 16.00    | 16.23     | 4.00     | 4.59                                  | 43.60 | 44.37         |      |
| 11-106               | 4-16-4 Fertilizer              | Ozark Flour & Feed Co., Seymour          | 4.00       | 3.74       | 95.19                  | 17.90   | 0.50     | 1.20      | 16.00    | 16.70     | 4.00     | 4.22                                  | 43.60 | 43.70         |      |
| 11-107               | 4-16-4 Fertilizer              | Knobnoster Elevator Co., Knobnoster      | 4.00       | 4.04       | 96.53                  | 17.55   | 0.50     | 1.09      | 16.00    | 16.46     | 4.00     | 4.34                                  | 43.60 | 44.77         |      |
| 11-108               | Raw Bone Meal                  | E. B. Evans Feed & Seed Co., Springfield | 3.75       | 3.65       | 4.41                   | 22.00   | 22.15    |           |          |           |          |                                       | 37.94 | 37.66         |      |
| 11-109               | Raw Bone Meal                  | Knobnoster Elevator Co., Knobnoster      | 3.75       | 3.80       | 7.63                   | 22.00   | 23.30    |           |          |           |          |                                       | 37.94 | 39.45         |      |
| 11-110               | Bone Meal <sup>1</sup>         | Stover Milling Co., Stover               | 2.00       | 1.71       | 15.20                  | 24.00   | 30.65    |           |          |           |          |                                       | 32.50 | 38.00         |      |
| 11-111               | Bone Meal                      | Shoffner Hardware Co., Bolivar           | 2.00       | 2.10       | 13.81                  | 24.00   | 29.95    |           |          |           |          |                                       | 32.50 | 38.88         |      |
| 11-112               | Bone Meal <sup>1</sup>         | E. B. Evans Feed & Seed Co., Springfield | 2.00       | 2.08       | 18.75                  | 24.00   | 29.98    |           |          |           |          |                                       | 32.50 | 38.82         |      |
| <b>Armour Brands</b> |                                |  |            |            |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-85                | Multiphos <sup>3</sup>         | Farmers Exchange, Chillicothe            |            |            |                        | 44.90   | 0.50     | 2.80      | 45.00    | 42.10     |          |                                       | 63.00 | 58.94         |      |
| 11-86                | Multiphos                      | Briscoe Elevator Co., Tipton             |            |            |                        | 43.75   | 0.50     | 6.70      | 45.00    | 42.05     |          |                                       | 63.00 | 58.87         |      |



|   |  |   |      |      |       |       |       |      |      |       |        |      |      |  |  |  |       |       |  |  |
|---|--|---|------|------|-------|-------|-------|------|------|-------|--------|------|------|--|--|--|-------|-------|--|--|
| <b>Blood &amp; Bone Fertilizer Company,<br/>St. Louis, Missouri<br/>Steer Head Brands</b> |  |   |      |      |       |       |       |      |      |       |        |      |      |  |  |  |       |       |  |  |
| 11-113  | Soluble Bone Phosphate 18 per cent                 | A. D. Gollaher, Caledonia                   |      |      |       |       | 20.95 | 1.00 | 0.50 | 18.00 | 220.45 |      |      |  |  |  | 25.20 | 28.63 |  |  |
| 11-114  | Soluble Bone Phosphate 20 per cent                 | W. F. Yeager, Farmington                    |      |      |       |       | 21.40 | 1.00 | 0.49 | 20.00 | 20.91  |      |      |  |  |  | 28.00 | 29.27 |  |  |
| 11-115  | Soluble Bone Phosphate 24 per cent                 | Robt. H. Denton, Bismarck                   |      |      |       |       | 25.53 | 0.50 | 0.58 | 24.00 | 24.95  |      |      |  |  |  | 33.60 | 34.93 |  |  |
| 11-116  | Twelve-Four Fertilizer                             | A. D. Gollaher, Caledonia                   |      |      |       |       | 13.42 |      | 0.61 | 12.00 | 12.81  | 4.00 | 4.23 |  |  |  | 21.00 | 22.37 |  |  |
| 11-117  | Special Wheat Grower                               | Robt. H. Denton, Bismarck                   | 2.00 | 1.28 | 78.11 |       | 9.57  |      | 0.60 | 10.00 | 8.97   | 3.00 | 3.10 |  |  |  | 25.65 | 21.26 |  |  |
| 11-118  | Missouri Special Fertilizer <sup>1</sup>           | Robt. H. Denton, Bismarck                   | 2.00 | 1.70 | 82.94 |       | 12.12 |      | 0.56 | 12.00 | 11.56  | 2.00 | 2.07 |  |  |  | 27.40 | 25.59 |  |  |
| 11-119  | Missouri Special Fertilizer                        | W. F. Yeager, Farmington                    | 2.00 | 1.65 | 83.03 |       | 13.27 |      | 1.13 | 12.00 | 12.14  | 2.00 | 2.02 |  |  |  | 27.40 | 26.13 |  |  |
| 11-120  | Two-Twelve-Six Fertilizer <sup>1</sup>             | W. F. Yeager, Farmington                    | 2.00 | 1.91 | 83.24 |       | 12.50 |      | 0.58 | 12.00 | 11.92  | 6.00 | 6.62 |  |  |  | 31.60 | 31.80 |  |  |
| 11-121  | Two-Sixteen-Two Fertilizer                         | W. F. Yeager, Farmington                    | 2.00 | 1.75 | 82.85 |       | 15.58 |      | 0.51 | 16.00 | 15.07  | 2.00 | 2.19 |  |  |  | 33.00 | 30.83 |  |  |
| 11-122  | Two-Sixteen-Two Fertilizer                         | A. D. Gollaher, Caledonia                   | 2.00 | 1.94 | 86.60 |       | 15.35 |      | 1.11 | 16.00 | 14.24  | 2.00 | 1.95 |  |  |  | 33.00 | 30.24 |  |  |
| <b>Crocker Packing Company,<br/>Joplin, Missouri<br/>Interstate Brands</b>                |  |   |      |      |       |       |       |      |      |       |        |      |      |  |  |  |       |       |  |  |
| 11-123  | 16 per cent Superphosphate <sup>1</sup>            | Oakley-Pate Seed Co., Joplin                |      |      |       |       | 16.89 |      | 0.24 | 16.00 | 16.65  |      |      |  |  |  | 22.40 | 23.31 |  |  |
| 11-124  | 16 per cent Superphosphate                         | Factory Sample                              |      |      |       |       | 17.18 |      | 0.22 | 16.00 | 16.96  |      |      |  |  |  | 22.40 | 23.74 |  |  |
| 11-125  | 20 per cent Superphosphate                         | Factory Sample                              |      |      |       |       | 21.20 |      | 0.29 | 20.00 | 20.91  |      |      |  |  |  | 28.00 | 29.27 |  |  |
| 11-126  | 1-12-1 Fertilizer                                  | Factory Sample                              | 1.00 | 0.99 | 16.16 |       | 12.90 | 1.25 | 0.52 | 12.00 | 12.38  | 1.00 | 1.04 |  |  |  | 22.10 | 22.63 |  |  |
| 11-127  | Special 2-12-2 Fertilizer <sup>1</sup>             | E. B. Evans Feed & Seed Co.,<br>Springfield | 2.00 | 2.24 | 86.61 |       | 11.24 | 1.25 | 0.73 | 12.00 | 10.51  | 2.00 | 2.00 |  |  |  | 27.40 | 26.33 |  |  |
| 11-128  | Special 2-12-2 Fertilizer <sup>1</sup>             | Roy Nelson Packing Co., Elsey               | 2.00 | 2.17 | 46.55 |       | 11.53 | 1.25 | 0.70 | 12.00 | 10.83  | 2.00 | 2.17 |  |  |  | 27.40 | 26.66 |  |  |
| 11-129  | Special 2-12-2 Fertilizer                          | Factory Sample                              | 2.00 | 2.10 | 60.00 |       | 12.80 | 1.25 | 1.08 | 12.00 | 11.72  | 2.00 | 2.04 |  |  |  | 27.40 | 27.48 |  |  |
| 11-130  | 2-12-4 Fertilizer <sup>1</sup>                     | Factory Sample                              | 2.00 | 2.22 | 61.26 |       | 13.11 | 1.00 | 0.76 | 12.00 | 12.35  | 4.00 | 3.80 |  |  |  | 29.50 | 30.72 |  |  |
| 11-132  | Steam Bone & Phosphate <sup>e</sup>                | Factory Sample                              | 1.23 | 1.10 | 36.36 |       | 21.25 | 8.00 | 6.92 | 12.00 | 14.33  |      |      |  |  |  | 28.43 | 30.28 |  |  |
| 11-133  | Steam Bone Meal                                    | Factory Sample                              | 2.46 | 1.97 | 37.36 | 24.00 | 25.53 |      |      |       |        |      |      |  |  |  | 34.46 | 33.90 |  |  |
| 11-134  | Steam Bone Meal                                    | Farmers Exchange, Nevada                    | 2.46 | 2.04 | 37.30 | 24.00 | 25.15 |      |      |       |        |      |      |  |  |  | 34.46 | 33.82 |  |  |
| <b>Cudahy Packing Company,<br/>Chicago, Illinois<br/>Big Win Brands</b>                   |  |   |      |      |       |       |       |      |      |       |        |      |      |  |  |  |       |       |  |  |
| 11-136  | High Grade 20 per cent Superphosphate <sup>1</sup> | Good News Feed Stores, Inc.,<br>Knobnoster  |      |      |       |       | 22.35 | 1.00 | 0.48 | 20.00 | 21.87  |      |      |  |  |  | 28.00 | 30.62 |  |  |
| 11-135  | Half & Half Fertilizer                             | James Cunningham, Montgomery<br>City        | 1.23 | 1.62 | 32.72 |       | 18.98 | 7.00 | 9.66 | 13.00 | 9.32   |      |      |  |  |  | 29.03 | 25.53 |  |  |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands  | Dealer                                   | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |      |
|----------|--|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|------|
|          |  |  | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | G'td                                  | F'nd  | G'td          | F'nd |
|          |  |  |            |            |                        | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent |                                       |       |               |      |
| 11-137   | Half & Half Fertilizer <sup>5</sup>                                    | Farmers Coop Assn., Beaufort             | 1.23       | 1.03       | 31.07                  | 21.20   | 7.00     | 8.00      | 13.00    | 13.20     |          |                                       | 29.03 | 28.46         |      |
|          | <b>Darling and Company,<br/>Chicago, Illinois<br/>Darling's Brands</b> |  |            |            |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-138   | 16 per cent Superphosphate <sup>5</sup>                                | Whiteside Grain Co., Whiteside           |            |            |                        | 17.54   |          | 1.20      | 16.00    | 16.34     |          |                                       | 22.40 | 22.88         |      |
| 11-139   | 16 per cent Superphosphate   | C. A. Artz, Eldon                        |            |            |                        | 18.15   |          | 1.46      | 16.00    | 16.69     |          |                                       | 22.40 | 23.37         |      |
| 11-140   | 16 per cent Superphosphate <sup>4</sup>                                | Phil Ratliff, Neosho                     |            |            |                        | 18.05   |          | 1.38      | 16.00    | 16.67     |          |                                       | 22.40 | 23.34         |      |
| 11-141   | 16 per cent Superphosphate   | Hughes Supply Co., Salem                 |            |            |                        | 18.04   |          | 1.50      | 16.00    | 16.54     |          |                                       | 22.40 | 23.16         |      |
| 11-142   | 16 per cent Superphosphate   | Chas. Drew, Caledonia                    |            |            |                        | 18.09   |          | 1.39      | 16.00    | 16.70     |          |                                       | 22.40 | 23.38         |      |
| 11-143   | 20 per cent Superphosphate   | Farmers Warehouse & Exchange,<br>Tina    |            |            |                        | 22.25   |          | 1.49      | 20.00    | 20.76     |          |                                       | 28.00 | 29.06         |      |
| 11-144   | 20 per cent Superphosphate   | C. A. Artz, Eldon                        |            |            |                        | 21.98   |          | 1.61      | 20.00    | 20.37     |          |                                       | 28.00 | 28.52         |      |
| 11-145   | 20 per cent Superphosphate   | Sam Melike, Baring                       |            |            |                        | 21.95   |          | 1.54      | 20.00    | 20.41     |          |                                       | 28.00 | 28.57         |      |
| 11-146   | 20 per cent Superphosphate   | Producers Exchange 85, Warsaw            |            |            |                        | 22.35   |          | 1.57      | 20.00    | 20.78     |          |                                       | 28.00 | 29.09         |      |
| 11-147   | 20 per cent Superphosphate <sup>1 4</sup>                              | Phil Ratliff, Neosho                     |            |            |                        | 22.23   |          | 1.55      | 20.00    | 20.68     |          |                                       | 28.00 | 28.95         |      |
| 11-148   | 20 per cent Superphosphate <sup>1</sup>                                | Knobnoster Elevator Co., Knob-<br>noster |            |            |                        | 22.13   |          | 1.73      | 20.00    | 20.40     |          |                                       | 28.00 | 28.56         |      |
| 11-149   | 20 per cent Superphosphate   | Hughes Supply Co., Salem                 |            |            |                        | 22.20   |          | 1.51      | 20.00    | 20.69     |          |                                       | 28.00 | 28.97         |      |
| 11-150   | 20 per cent Superphosphate   | Chas. Drew, Caledonia                    |            |            |                        | 22.15   |          | 1.72      | 20.00    | 20.43     |          |                                       | 28.00 | 28.60         |      |
| 11-151   | Big Harvest  | Whiteside Grain Co., Whiteside           | 2.00       | 2.02       | 89.11                  | 13.60   | 0.50     | 1.93      | 12.00    | 11.67     | 2.00     | 2.47                                  | 27.40 | 27.51         |      |
| 11-152   | Big Harvest  | C. A. Artz, Eldon                        | 2.00       | 1.88       | 88.30                  | 13.70   | 0.50     | 1.65      | 12.00    | 12.05     | 2.00     | 2.67                                  | 27.40 | 27.66         |      |
| 11-153   | Big Harvest  | Producers Exchange 84, Lincoln           | 2.00       | 2.02       | 87.62                  | 13.84   | 0.50     | 0.94      | 12.00    | 12.90     | 2.00     | 2.01                                  | 27.40 | 28.75         |      |
| 11-154   | Big Harvest  | Producers Exchange 85, Warsaw            | 2.00       | 2.07       | 87.44                  | 13.56   | 0.50     | 1.18      | 12.00    | 12.38     | 2.00     | 2.15                                  | 27.40 | 28.39         |      |
| 11-155   | Big Harvest <sup>1</sup>   | Judson Davis, Cross Timbers              | 2.00       | 2.06       | 90.78                  | 13.66   | 0.50     | 1.22      | 12.00    | 12.44     | 2.00     | 2.63                                  | 27.40 | 28.94         |      |

|        |  |   |      |      |       |       |       |       |       |       |      |      |       |       |
|--------|--|---|------|------|-------|-------|-------|-------|-------|-------|------|------|-------|-------|
| 11-156 | Big Harvest  | Farmers Exchange, Crane                                   | 2.00 | 1.97 | 82.23 | 13.61 | 0.50  | 1.26  | 12.00 | 12.35 | 2.00 | 2.28 | 27.40 | 28.05 |
| 11-157 | Big Harvest <sup>4</sup>   | Phil Ratliff, Neosho                                      | 2.00 | 2.05 | 88.29 | 13.88 | 0.50  | 1.67  | 12.00 | 12.21 | 2.00 | 2.05 | 27.40 | 27.95 |
| 11-158 | Big Harvest  | Knobnoster Elevator Co., Knobnoster                       | 2.00 | 2.01 | 87.06 | 14.02 | 0.50  | 1.83  | 12.00 | 12.19 | 2.00 | 2.27 | 27.40 | 27.99 |
| 11-159 | Big Harvest  | St. Francois Co. Farm Bureau Pur. & Sales Assn., Bismarck | 2.00 | 2.05 | 88.78 | 13.93 | 0.50  | 1.34  | 12.00 | 12.59 | 2.00 | 2.38 | 27.40 | 28.83 |
| 11-160 | Big Harvest  | Farmers Exchange, Meta                                    | 2.00 | 2.16 | 87.96 | 13.40 | 0.50  | 1.25  | 12.00 | 12.15 | 2.00 | 2.37 | 27.40 | 28.68 |
| 11-161 | Half & Half <sup>9</sup>   | C. H. Honold, Beaufort                                    | 1.00 | 0.95 | 52.63 | 22.13 | 12.00 | 10.45 | 11.00 | 11.68 |      |      | 29.25 | 28.75 |
| 11-162 | Fourteen-Four  | Chas. Drew, Caledonia                                     |      |      |       | 15.64 |       | 1.53  | 14.00 | 14.11 | 4.00 | 4.40 | 23.80 | 24.37 |
| 11-163 | Grain Grower   | C. H. Honold, Beaufort                                    | 1.00 | 1.12 | 79.46 | 14.12 |       | 1.44  | 12.00 | 12.68 | 1.00 | 1.44 | 22.10 | 24.02 |
|        | <b>Federal Chemical Company,<br/>Louisville, Kentucky<br/>Federal Brands</b> |   |      |      |       |       |       |       |       |       |      |      |       |       |
| 11-164 | Globe 16 per cent Superphosphate   | H. H. Tampke, Stover                                      |      |      |       | 19.70 |       | 1.92  | 16.00 | 17.78 |      |      | 22.40 | 24.89 |
| 11-166 | Globe 16 per cent Superphosphate   | Thurman-Davis Grain Company, Neosho                       |      |      |       | 19.64 |       | 2.30  | 16.00 | 17.34 |      |      | 22.40 | 24.28 |
| 11-167 | Globe 16 per cent Superphosphate   | Tetley-Klein Lumber Co., Farmington                       |      |      |       | 19.85 |       | 2.50  | 16.00 | 17.35 |      |      | 22.40 | 24.29 |
| 11-170 | Globe 20 per cent Superphosphate   | T. F. Johnson, Rolla                                      |      |      |       | 21.50 |       | 1.32  | 20.00 | 20.18 |      |      | 28.00 | 28.25 |
| 11-171 | Globe 20 per cent Superphosphate   | L. H. Lewis, Cuba   |      |      |       | 21.60 |       | 0.56  | 20.00 | 21.04 |      |      | 28.00 | 29.46 |
| 11-172 | Globe 20 per cent Superphosphate   | Tetley-Klein Lumber Co., Farmington                       |      |      |       | 22.18 |       | 0.72  | 20.00 | 21.46 |      |      | 28.00 | 30.04 |
| 11-173 | Globe Braden Formula   | Schell Merc. Co., Eugene                                  | 1.00 | 1.31 | 54.20 | 15.02 |       | 3.09  | 11.00 | 11.93 | 3.00 | 2.98 | 22.80 | 25.40 |
| 11-174 | Globe Braden Formula   | Thurman-Davis Grain Company, Neosho                       | 1.00 | 1.42 | 56.34 | 14.66 |       | 2.93  | 11.00 | 11.73 | 3.00 | 2.85 | 22.80 | 25.45 |
| 11-175 | Globe Loam Land Fertilizer <sup>1</sup>                                      | Milton Garber, Versailles                                 | 2.00 | 2.18 | 51.83 | 14.86 |       | 2.71  | 12.00 | 12.15 | 2.00 | 1.87 | 27.40 | 28.24 |
| 11-176 | Globe Loam Land Fertilizer   | H. H. Tampke, Stover                                      | 2.00 | 1.94 | 58.76 | 15.18 |       | 3.01  | 12.00 | 12.17 | 2.00 | 1.71 | 27.40 | 27.08 |
| 11-178 | Globe Loam Land Fertilizer   | Thurman-Davis Grain Company, Neosho                       | 2.00 | 1.93 | 59.59 | 14.61 |       | 2.32  | 12.00 | 12.29 | 2.00 | 2.10 | 27.40 | 27.61 |
| 11-181 | Globe Loam Land Fertilizer   | Tetley-Klein Lumber Company, Farmington                   | 2.00 | 1.94 | 54.13 | 15.00 |       | 3.00  | 12.00 | 12.00 | 2.00 | 2.04 | 27.40 | 27.19 |
| 11-184 | Globe Raw Bone <sup>6</sup>  | Fortuna Elevator Co., Fortuna                             | 3.70 | 3.86 | 4.92  | 22.00 | 19.90 |       |       |       |      |      | 37.73 | 36.31 |
| 11-165 | Daybreak 16 per cent Superphosphate  | Yates Store, Mansfield                                    |      |      |       | 19.80 |       | 2.25  | 16.00 | 17.55 |      |      | 22.40 | 24.57 |
| 11-168 | Daybreak 20 per cent Superphosphate  | Schell Merc. Co., Eugene                                  |      |      |       | 22.20 |       | 0.71  | 20.00 | 21.49 |      |      | 28.00 | 30.09 |
| 11-169 | Daybreak 20 per cent Superphosphate  | Wyatt Elevator Co., Adrian                                |      |      |       | 22.83 |       | 0.64  | 20.00 | 22.19 |      |      | 28.00 | 31.07 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands   | Dealer                               | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |      |
|----------|---|--------------------------------------|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|------|
|          |   |                                      | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | G'td                                  | F'nd  | G'td          | F'nd |
|          |   |                                      |            |            |                        | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent |                                       |       |               |      |
| 11-177   | Daybreak Loam Land Fertilizer   | Yates Store, Mansfield               | 2.00       | 2.10       | 55.76                  | 14.82   |          | 2.67      | 12.00    | 12.15     | 2.00     | 2.00                                  | 27.40 | 28.04         |      |
| 11-179   | Daybreak Loam Land Fertilizer   | Wyatt Elevator Co., Adrian           | 2.00       | 2.10       | 56.67                  | 15.45   |          | 3.07      | 12.00    | 12.38     | 2.00     | 2.02                                  | 27.40 | 28.38         |      |
| 11-180   | Daybreak Loam Land Fertilizer   | L. H. Lewis, Cuba                    | 2.00       | 1.86       | 55.91                  | 15.67   |          | 3.23      | 12.00    | 12.44     | 2.00     | 1.85                                  | 27.40 | 27.26         |      |
| 11-182   | Daybreak Official Formula   | Yates Store, Mansfield               | 2.00       | 1.62       | 61.11                  | 14.57   |          | 1.62      | 12.00    | 12.95     | 6.00     | 5.14                                  | 31.60 | 30.41         |      |
| 11-183   | Fine Bone   | Wyatt Elevator Co., Adrian           | 3.29       | 3.76       | 18.62                  | 20.00   | 18.25    |           |          |           |          |                                       | 33.98 | 34.23         |      |
|          | <b>Floyd Plant Food Company,<br/>St. Louis, Missouri<br/>Money Maker Brands</b> |                                      |            |            |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-185   | 2-12-2 Goods  | Sparks Bros., Potosi                 | 2.00       | 1.88       | 82.98                  | 12.75   | 0.25     | 0.59      | 12.00    | 12.16     | 2.00     | 2.44                                  | 27.40 | 27.57         |      |
|          | <b>M. F. A. Brands</b>  |                                      |            |            |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-186   | 16 per cent Superphosphate <sup>1</sup>   | Producers Exchange 84, Lincoln       |            |            |                        | 17.78   | 0.25     | 0.31      | 16.00    | 17.47     |          |                                       | 22.40 | 24.46         |      |
| 11-187   | 16 per cent Superphosphate  | Farmers Assn., Seymour               |            |            |                        | 20.33   | 0.25     | 0.27      | 16.00    | 20.06     |          |                                       | 22.40 | 28.08         |      |
| 11-188   | 16 per cent Superphosphate <sup>1</sup>   | Farmers Exchange, Neosho             |            |            |                        | 17.74   | 0.25     | 0.28      | 16.00    | 17.46     |          |                                       | 22.40 | 24.44         |      |
| 11-189   | 16 per cent Superphosphate  | Farmers Exchange, Rolla              |            |            |                        | 19.65   | 0.25     | 2.50      | 16.00    | 17.15     |          |                                       | 22.40 | 24.01         |      |
| 11-190   | 16 per cent Superphosphate  | Farmers Produce Exchange, St. James  |            |            |                        | 19.62   | 0.25     | 2.31      | 16.00    | 17.31     |          |                                       | 22.40 | 24.23         |      |
| 11-191   | 16 per cent Superphosphate  | Cuba Farmers Exchange, Cuba          |            |            |                        | 19.79   | 0.25     | 2.74      | 16.00    | 17.05     |          |                                       | 22.40 | 23.87         |      |
| 11-192   | 16 per cent Superphosphate  | Farmers Grain & Produce Co., Rosebud |            |            |                        | 19.90   | 0.25     | 0.47      | 16.00    | 19.43     |          |                                       | 22.40 | 27.20         |      |
| 11-193   | 16 per cent Superphosphate <sup>6</sup>   | Farmers Coop. Assn., No. 27, Union   |            |            |                        | 19.73   | 0.25     | 2.17      | 16.00    | 17.56     |          |                                       | 22.40 | 24.58         |      |
| 11-194   | 18 per cent Superphosphate  | Producers Exchange 85, Warsaw        |            |            |                        | 21.00   | 0.25     | 0.91      | 18.00    | 20.09     |          |                                       | 25.20 | 28.13         |      |
| 11-195   | 18 per cent Superphosphate  | Farmers Exchange, Neosho             |            |            |                        | 19.60   | 0.25     | 0.35      | 18.00    | 19.25     |          |                                       | 25.20 | 26.95         |      |
| 11-196   | 18 per cent Superphosphate  | Fortuna Elevator Co., Fortuna        |            |            |                        | 20.70   | 0.25     | 0.39      | 18.00    | 20.31     |          |                                       | 25.20 | 28.43         |      |
| 11-197   | 18 per cent Superphosphate  | Farmers Coop. Assn., Beaufort        |            |            |                        | 20.75   | 0.25     | 0.55      | 18.00    | 20.20     |          |                                       | 25.20 | 28.28         |      |

|       |  |  |      |      |       |  |       |      |      |       |       |      |      |       |       |
|-------|--|--|------|------|-------|--|-------|------|------|-------|-------|------|------|-------|-------|
| 11-19 | 820 per cent Superphosphate              | Farmers Coop. Assn., Eldon             |      |      |       |  | 22.45 | 0.10 | 0.54 | 20.00 | 21.91 |      |      | 28.00 | 30.67 |
| 11-19 | 920 per cent Superphosphate              | Farmers Exchange 49, New Cambria       |      |      |       |  | 20.50 | 0.10 | 0.43 | 20.00 | 20.07 |      |      | 28.00 | 28.10 |
| 11-20 | 020 per cent Superphosphate <sup>5</sup> | Producers Exchange 187, Versailles     |      |      |       |  | 21.40 | 0.10 | 1.28 | 20.00 | 20.12 |      |      | 28.00 | 28.17 |
| 11-20 | 120 per cent Superphosphate              | Farmers Exchange, Neosho               |      |      |       |  | 20.78 | 0.10 | 0.33 | 20.00 | 20.45 |      |      | 28.00 | 28.63 |
| 11-20 | 220 per cent Superphosphate <sup>6</sup> | Farmers Exchange, Lamonte              |      |      |       |  | 21.70 | 0.10 | 0.42 | 20.00 | 21.28 |      |      | 28.00 | 29.79 |
| 11-20 | 320 per cent Superphosphate              | Producers Exchange No. 148, California |      |      |       |  | 20.90 | 0.10 | 0.39 | 20.00 | 20.51 |      |      | 28.00 | 28.71 |
| 11-20 | 420 per cent Superphosphate              | Farmers Exchange, Rolla                |      |      |       |  | 21.18 | 0.10 | 0.31 | 20.00 | 20.87 |      |      | 28.00 | 29.22 |
| 11-20 | 520 per cent Superphosphate              | Farmers Produce Exchange, St. James    |      |      |       |  | 21.28 | 0.10 | 0.32 | 20.00 | 20.96 |      |      | 28.00 | 29.34 |
| 11-20 | 620 per cent Superphosphate              | Cuba Farmers Exchange, Cuba            |      |      |       |  | 22.48 | 0.10 | 0.37 | 20.00 | 22.11 |      |      | 28.00 | 30.95 |
| 11-20 | 720 per cent Superphosphate              | Farmers Grain & Produce Co., Rosebud   |      |      |       |  | 20.93 | 0.10 | 0.37 | 20.00 | 20.56 |      |      | 28.00 | 28.78 |
| 11-20 | 80-14-4 Goods <sup>1</sup>               | Fortuna Elevator Co., Fortuna          |      |      |       |  | 15.42 | 0.25 | 0.39 | 14.00 | 15.03 | 4.00 | 4.78 | 23.80 | 26.06 |
| 11-20 | 92-8-2 Goods                             | Farmers Elevator Co., Jonesburg        | 2.00 | 2.01 | 88.06 |  | 8.64  | 0.25 | 0.63 | 8.00  | 8.01  | 2.00 | 1.74 | 21.80 | 21.58 |
| 11-21 | 02-12-2 Goods                            | Farmers Elevator Co., Jonesburg        | 2.00 | 1.70 | 82.35 |  | 12.22 | 0.25 | 1.12 | 12.00 | 11.10 | 2.00 | 2.26 | 27.40 | 25.14 |
| 11-21 | 12-12-2 Goods <sup>5</sup>               | Farmers Exchange, Kahoka               | 2.00 | 1.66 | 83.73 |  | 13.10 | 0.25 | 1.54 | 12.00 | 11.56 | 2.00 | 2.11 | 27.40 | 25.45 |
| 11-21 | 22-12-2 Goods                            | Farmers Coop. Assn. No. 258, Granger   | 2.00 | 1.73 | 83.82 |  | 12.32 | 0.25 | 1.10 | 12.00 | 11.22 | 2.00 | 2.12 | 27.40 | 25.29 |
| 11-21 | 32-12-2 Goods                            | Farmers Exchange No. 49, New Cambria   | 2.00 | 1.87 | 83.96 |  | 12.34 | 0.25 | 0.66 | 12.00 | 11.68 | 2.00 | 2.13 | 27.40 | 26.54 |
| 11-21 | 41-12-2 Goods <sup>1</sup>               | Producers Exchange 84, Lincoln         | 2.00 | 1.79 | 86.59 |  | 12.32 | 0.25 | 1.20 | 12.00 | 11.12 | 2.00 | 2.00 | 27.40 | 25.28 |
| 11-21 | 52-12-2 Goods <sup>1</sup>               | Producers Exchange 85, Warsaw          | 2.00 | 1.57 | 79.61 |  | 11.15 | 0.25 | 0.66 | 12.00 | 10.49 | 2.00 | 2.13 | 27.40 | 23.60 |
| 11-21 | 62-12-2 Goods                            | Farmers Assn., Seymour                 | 2.00 | 2.01 | 82.09 |  | 10.88 | 0.25 | 0.69 | 12.00 | 10.19 | 2.00 | 2.39 | 27.40 | 25.32 |
| 11-21 | 72-12-2 Goods                            | Farmers Exchange, Lamonte              | 2.00 | 1.94 | 56.70 |  | 15.32 | 0.25 | 2.80 | 12.00 | 12.52 | 2.00 | 1.83 | 27.40 | 27.70 |
| 11-21 | 82-12-2 Goods <sup>1</sup>               | Fortuna Elevator Co., Fortuna          | 2.00 | 1.88 | 80.85 |  | 11.64 | 0.25 | 0.72 | 12.00 | 10.92 | 2.00 | 2.21 | 27.40 | 25.60 |
| 11-21 | 92-12-2 Goods                            | Producers Exchange No. 148, California | 2.00 | 1.83 | 73.22 |  | 11.80 | 0.25 | 0.96 | 12.00 | 10.84 | 2.00 | 1.75 | 27.40 | 24.80 |
| 11-22 | 02-12-2 Goods                            | Farmers Exchange, Rolla                | 2.00 | 1.90 | 77.89 |  | 12.10 | 0.25 | 0.75 | 12.00 | 11.35 | 2.00 | 2.33 | 27.40 | 26.42 |
| 11-22 | 12-12-2 Goods                            | Farmers Produce Exchange, St. James    | 2.00 | 1.77 | 79.10 |  | 11.86 | 0.25 | 1.05 | 12.00 | 10.81 | 2.00 | 2.20 | 27.40 | 24.96 |
| 11-22 | 22-12-2 Goods <sup>6</sup>               | Cuba Farmers Exchange, Cuba            | 2.00 | 2.24 | 57.59 |  | 15.15 | 0.25 | 3.29 | 12.00 | 11.86 | 2.00 | 1.94 | 27.40 | 28.16 |
| 11-22 | 32-12-2 Goods                            | Farmers Coop. Assn. No. 27, Union      | 2.00 | 1.85 | 81.08 |  | 12.08 | 0.25 | 0.80 | 12.00 | 11.28 | 2.00 | 2.19 | 27.40 | 25.95 |
| 11-22 | 42-12-4 Foods <sup>3</sup>               | Farmers Exchange, Kahoka               | 2.00 | 1.92 | 78.65 |  | 10.89 | 0.25 | 1.30 | 12.00 | 9.59  | 4.00 | 4.23 | 29.50 | 25.99 |
| 11-22 | 52-16-2 Goods <sup>9</sup>               | Farmers Exchange, Branson              | 2.00 | 1.03 | 82.52 |  | 17.00 | 0.25 | 1.30 | 16.00 | 15.70 | 2.00 | 1.86 | 33.00 | 28.31 |
| 11-22 | 63-12-4 Goods                            | Farmers Exchange, Branson              | 3.00 | 1.82 | 85.71 |  | 13.04 | 0.25 | 1.17 | 12.00 | 11.87 | 4.00 | 4.01 | 33.75 | 28.57 |
| 11-22 | 84-8-6 Goods <sup>13</sup>               | Farmers Exchange 49, New Cambria       | 4.00 | 3.37 | 89.61 |  | 9.72  | 0.25 | 0.38 | 8.00  | 9.34  | 6.00 | 5.91 | 34.50 | 33.61 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No.                  | Manufacturer and Brands   | Dealer                                 | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |      |
|---------------------------|---|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|------|
|                           |   |  | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | G'td                                  | F'nd  | G'td          | F'nd |
|                           |   |  |            |            |                        | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent |                                       |       |               |      |
| 11-229                    | 4-8-6 Goods   | Producers Exchange 84, Lincoln         | 4.00       | 3.31       | 90.63                  | 9.11  | 0.25     | 0.46      | 8.00     | 8.65      | 6.00     | 4.97                                  | 34.50 | 31.40         |      |
| 11-230                    | 4-8-6 Goods   | Farmers Exchange, Lamonte              | 4.00       | 3.38       | 89.05                  | 9.38  | 0.25     | 0.33      | 8.00     | 9.05      | 6.00     | 5.99                                  | 34.50 | 33.32         |      |
| 11-231                    | Ground Raw Bone   | Farmers Produce Exchange, St. James    | 3.28       | 3.63       | 14.60                  | 20.00   | 15.80    |           |          |           |          |                                       | 33.94 | 31.23         |      |
| 11-232                    | Steamed Bone Meal <sup>6</sup>  | Farmers Coop. Assn., Eldon             | 0.83       | 2.03       | 21.67                  | 29.00   | 29.55    |           |          |           |          |                                       | 32.53 | 38.18         |      |
| 11-233                    | Steamed Bone Meal <sup>6</sup>  | Farmers Produce Exchange, St. James    | 0.83       | 1.85       | 17.84                  | 29.00   | 29.50    |           |          |           |          |                                       | 32.53 | 37.36         |      |
| 11-234                    | Bone & Phosphate Mixture <sup>6</sup>   | Producers Exchange No. 148, California | 1.23       | 1.34       | 30.52                  | 20.20   | 8.00     | 9.16      | 12.00    | 11.04     |          |                                       | 28.43 | 27.56         |      |
| 11-235                    | Bone & Phosphate Mixture <sup>6</sup>   | Farmers Produce Exchange, St. James    | 1.23       | 1.02       | 30.39                  | 19.80   | 8.00     | 7.88      | 12.00    | 11.92     |          |                                       | 28.43 | 27.33         |      |
| 11-236                    | Bone & Phosphate Mixture <sup>9 6</sup>   | Farmers Coop. Assn., Beaufort          | 1.23       | 1.23       | 30.08                  | 20.65   | 8.00     | 8.69      | 12.00    | 11.96     |          |                                       | 28.43 | 28.37         |      |
| <b>M. F. B. F. Brands</b> |   |  |            |            |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-237                    | 20 per cent Superphosphate  | Farm Bureau Service, Moberly           |            |            |                        | 22.35   |          | 0.37      | 20.00    | 21.98     |          |                                       | 28.00 | 30.77         |      |
| 11-238                    | 20 per cent Superphosphate  | Sam Palmer, Thomas Hill                |            |            |                        | 22.45   |          | 0.38      | 20.00    | 22.07     |          |                                       | 28.00 | 30.90         |      |
| 11-239                    | 2-12-2  | Farm Bureau Service, Moberly           | 2.00       | 1.96       | 72.45                  | 10.62   |          | 1.15      | 12.00    | 9.47      | 2.00     | 2.11                                  | 27.40 | 23.79         |      |
| 11-240                    | 3-12-4  | Farm Bureau Service, Moberly           | 3.00       | 2.80       | 86.79                  | 10.83   |          | 0.68      | 12.00    | 10.15     | 4.00     | 4.01                                  | 33.75 | 30.32         |      |
| 11-241                    | Ford Motor Company,<br>Fordson, Michigan<br>Ford Ammonium Sulphate                                | Brede Orchard Co., Seymour             | 20.80      | 20.87      |                        |   |          |           |          |           |          |                                       |       |               |      |
| 11-242                    | Memphis Fertilizer Factory,<br>Memphis, Tennessee<br>Memphis Brands<br>Acid Phosphate 16 per cent | Whitlock-Lines, Monett                 |            |            |                        | 18.49   | 1.00     | 1.44      | 16.00    | 17.05     |          |                                       | 22.40 | 23.87         |      |

|        |   |   |      |      |       |  |  |       |      |      |       |       |      |      |  |       |       |
|--------|---|---|------|------|-------|--|--|-------|------|------|-------|-------|------|------|--|-------|-------|
| 11-243 | Acid Phosphate 20 per cent.....   | Whitlock-Lines, Monett.....                         |      |      |       |  |  | 23.50 | 1.00 | 1.54 | 20.00 | 21.96 |      |      |  | 28.00 | 30.74 |
| 11-244 | Acid Phosphate 20 per cent.....   | M. D. Grider, Appleton City.....                    |      |      |       |  |  | 21.95 | 1.00 | 1.89 | 20.00 | 20.06 |      |      |  | 28.00 | 28.08 |
| 11-245 | 0-14-4 Fertilizer.....  | M. D. Grider, Appleton City.....                    |      |      |       |  |  | 15.93 | 1.00 | 1.65 | 14.00 | 14.28 | 4.00 | 3.42 |  | 23.80 | 23.58 |
| 11-246 | 2-12-2 Fertilizer <sup>1</sup> .....  | Farmers Exchange, Monett.....                       | 2.00 | 1.98 | 93.94 |  |  | 15.28 | 1.00 | 1.54 | 12.00 | 13.74 | 2.00 | 2.15 |  | 27.40 | 29.92 |
| 11-247 | 2-12-2 Fertilizer.....  | M. D. Grider, Appleton City.....                    | 2.00 | 2.02 | 94.06 |  |  | 14.88 | 1.00 | 1.91 | 12.00 | 12.97 | 2.00 | 2.39 |  | 27.40 | 29.25 |
|        | <b>Merchants &amp; Planters Plant Food Company, North Little Rock, Arkansas</b> |   |      |      |       |  |  |       |      |      |       |       |      |      |  |       |       |
| 11-248 | M & P's 16 per cent Superphosphate.....   | Weaubleau Roller Mills, Weaubleau.....              |      |      |       |  |  | 17.37 |      | 1.25 | 16.00 | 16.12 |      |      |  | 22.40 | 22.57 |
|        | <b>Phosphated Manure Company, Kansas City, Missouri</b>                         |   |      |      |       |  |  |       |      |      |       |       |      |      |  |       |       |
| 11-249 | Wizard Brand Phosphated Manure.....   | Herman Hinck, Cole Camp.....                        | 0.82 | 1.08 | 14.81 |  |  | 9.56  |      | 0.38 | 9.00  | 9.18  | 1.00 | 1.70 |  | 17.13 | 19.22 |
|        | <b>Pulverized Manure Company, Kansas City, Missouri Wizard Brands</b>           |   |      |      |       |  |  |       |      |      |       |       |      |      |  |       |       |
| 11-250 | Sheep Manure.....   | Boone County Mill & Elevator Company, Columbia..... | 2.00 | 2.10 | 18.57 |  |  | 1.43  |      | 0.16 | 1.25  | 1.27  | 2.00 | 3.49 |  | 12.35 | 14.37 |
| 11-251 | Sheep Manure <sup>2</sup> .....   | Springfield Seed Company, Springfield.....          | 2.00 | 1.65 | 27.88 |  |  | 1.22  |      | 0.14 | 1.25  | 1.08  | 2.00 | 2.64 |  | 12.35 | 11.29 |
|        | <b>Read Phosphate Company, Nashville, Tennessee Red Diamond Brands</b>          |   |      |      |       |  |  |       |      |      |       |       |      |      |  |       |       |
| 11-252 | 16 per cent Superphosphate.....   | Morgan County Elevator Co., Versailles.....         |      |      |       |  |  | 20.04 | 2.00 | 3.18 | 16.00 | 16.86 |      |      |  | 22.40 | 23.60 |
| 11-253 | 16 per cent Superphosphate.....   | Farmers Produce & Exchange, Weaubleau.....          |      |      |       |  |  | 21.00 | 2.00 | 3.18 | 16.00 | 17.82 |      |      |  | 22.40 | 24.95 |
| 11-254 | 16 per cent Superphosphate.....   | Greene Co. Farmers Sales Assn., Springfield.....    |      |      |       |  |  | 20.92 | 2.00 | 3.44 | 16.00 | 17.48 |      |      |  | 22.40 | 24.47 |
| 11-255 | 16 per cent Superphosphate.....   | Rogersville Farmers Sales Assn., Rogersville.....   |      |      |       |  |  | 21.05 | 2.00 | 3.20 | 16.00 | 17.85 |      |      |  | 22.40 | 24.99 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands     | Dealer   | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |       |          |
|----------|-----------------------------|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|-------|----------|
|          |                             |  | Total G'td | Total F'nd | Water Soluble to Total | 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 |
| 11-256   | 16 per cent Superphosphate  | Farmers Exchange, Nevada                       |            |            |                        | 20.58   | 2.00     | 3.17      | 16.00    | 17.41     |          |                                       |       |               | 22.40 | 24.37    |
| 11-257   | 16 per cent Superphosphate  | Farmers Elevator, Warrensburg                  |            |            |                        | 20.45   | 2.00     | 3.09      | 16.00    | 17.36     |          |                                       |       |               | 22.40 | 24.30    |
| 11-258   | 16 per cent Superphosphate  | Farmers Grain & Feed Co., Meta                 |            |            |                        | 19.94   | 2.00     | 3.15      | 16.00    | 16.79     |          |                                       |       |               | 22.40 | 23.51    |
| 11-259   | 20 per cent Superphosphate  | Climax Mill & Elevator Co., Eugene             |            |            |                        | 22.85   |          | 2.22      | 20.00    | 20.63     |          |                                       |       |               | 28.00 | 28.88    |
| 11-260   | 20 per cent Superphosphate  | Morgan County Elevator Co., Versailles         |            |            |                        | 24.90   |          | 3.18      | 20.00    | 21.72     |          |                                       |       |               | 28.00 | 30.41    |
| 11-261   | 20 per cent Superphosphate  | Greene County Farmers Sales Assn., Springfield |            |            |                        | 23.05   |          | 2.19      | 20.00    | 21.86     |          |                                       |       |               | 28.00 | 30.60    |
| 11-262   | 20 per cent Superphosphate  | Rogersville Farmers Sales Assn., Rogersville   |            |            |                        | 22.60   |          | 1.94      | 20.00    | 20.66     |          |                                       |       |               | 28.00 | 28.92    |
| 11-263   | 20 per cent Superphosphate  | Whitlock-Lines, Monett                         |            |            |                        | 23.03   |          | 1.65      | 20.00    | 21.38     |          |                                       |       |               | 28.00 | 29.93    |
| 11-264   | 20 per cent Superphosphate  | O. A. Heinlein, Butler                         |            |            |                        | 23.08   |          | 1.33      | 20.00    | 21.75     |          |                                       |       |               | 28.00 | 30.45    |
| 11-265   | 20 per cent Superphosphate  | Adams Bros., Knobnoster                        |            |            |                        | 23.10   |          | 1.41      | 20.00    | 21.69     |          |                                       |       |               | 28.00 | 30.37    |
| 11-266   | 20 per cent Superphosphate  | Sedalia Milling Co., Sedalia                   |            |            |                        | 23.70   |          | 1.85      | 20.00    | 21.85     |          |                                       |       |               | 28.00 | 30.59    |
| 11-267   | 20 per cent Superphosphate  | Geo. R. Green, Smithton                        |            |            |                        | 23.30   |          | 1.86      | 20.00    | 21.44     |          |                                       |       |               | 28.00 | 30.02    |
| 11-268   | 20 per cent Superphosphate  | Farmers Grain & Feed Co., Meta                 |            |            |                        | 23.68   |          | 1.68      | 20.00    | 22.00     |          |                                       |       |               | 28.00 | 30.80    |
| 11-269   | 2-12-2 Premium Grain Grower | Climax Mill & Elevator Co., Eugene             | 2.00       | 1.86       | 78.49                  | 17.57   | 3.00     | 4.94      | 12.00    | 12.63     | 2.00     | 2.07                                  | 27.40 | 27.76         |       |          |
| 11-270   | 2-12-2 Premium Grain Grower | Greene County Farmers Sales Assn., Springfield | 2.00       | 2.21       | 78.55                  | 16.54   | 3.00     | 4.80      | 12.00    | 11.74     | 2.00     | 2.24                                  | 27.40 | 28.18         |       |          |
| 11-271   | 2-12-2 Premium Grain Grower | Rogersville Farmers Sales Assn., Rogersville   | 2.00       | 2.09       | 77.94                  | 17.03   | 3.00     | 5.31      | 12.00    | 11.72     | 2.00     | 2.22                                  | 27.40 | 27.62         |       |          |
| 11-272   | 2-12-2 Premium Grain Grower | Farmers Exchange, Nevada                       | 2.00       | 1.51       | 88.08                  | 20.23   | 3.00     | 7.63      | 12.00    | 12.60     | 2.00     | 1.68                                  | 27.40 | 25.82         |       |          |
| 11-273   | 2-12-2 Premium Grain Grower | Farmers Elevator, Warrensburg                  | 2.00       | 2.03       | 76.85                  | 17.80   | 3.00     | 6.06      | 12.00    | 11.74     | 2.00     | 2.00                                  | 27.40 | 27.17         |       |          |
| 11-274   | 2-12-2 Premium Grain Grower | Sedalia Milling Co., Sedalia                   | 2.00       | 2.12       | 76.42                  | 16.93   | 3.00     | 5.56      | 12.00    | 11.37     | 2.00     | 2.07                                  | 27.40 | 27.10         |       |          |



|        |   |  |      |      |       |       |       |      |       |       |      |      |       |       |
|--------|---|--|------|------|-------|-------|-------|------|-------|-------|------|------|-------|-------|
| 11-275 | 2-12-2 Premium Grain Grower   | Farmers Grain & Feed Co., Meta                 | 2.00 | 2.33 | 79.83 | 16.84 | 3.00  | 2.92 | 12.00 | 13.92 | 2.00 | 2.37 | 27.40 | 31.88 |
| 11-276 | 2-16-2  | Farmers Grain & Feed Co., Meta                 | 2.00 | 2.55 | 84.71 | 18.95 | 2.00  | 3.04 | 16.00 | 15.91 | 2.00 | 2.61 | 33.00 | 35.85 |
| 11-277 | 3-8-6 No. 6 Truck Grower  | Sedalia Milling Co., Sedalia                   | 3.00 | 2.87 | 80.14 | 16.49 | 5.00  | 7.75 | 8.00  | 8.74  | 6.00 | 6.03 | 30.25 | 30.77 |
| 11-278 | Pure Raw Bone Meal <sup>1</sup>   | Morgan County Elevator Company, Versailles     | 3.70 | 3.88 | 21.91 | 20.00 | 20.28 |      |       |       |      |      | 35.73 | 36.77 |
| 11-279 | Pure Raw Bone Meal <sup>1</sup>   | Farmers Grain & Feed Co., Meta                 | 3.70 | 3.67 | 20.98 | 20.00 | 21.98 |      |       |       |      |      | 35.73 | 37.58 |
| 11-280 | Raw Bone Meal & Superphosphate <sup>1</sup>   | C. L. Parks, Cole Camp                         | 1.00 | 1.03 | 33.21 | 22.40 | 6.00  | 8.23 | 14.00 | 14.17 |      |      | 28.65 | 29.01 |
| 11-281 | Raw Bone Meal & Superphosphate  | Greene County Farmers Sales Assn., Springfield | 1.00 | 0.92 | 19.56 | 22.50 | 6.00  | 7.85 | 14.00 | 14.65 |      |      | 28.65 | 29.22 |
| 11-282 | Raw Bone Meal & Superphosphate  | Farmers Grain & Feed Co., Meta                 | 1.00 | 1.26 | 16.67 | 21.63 | 6.00  | 7.96 | 14.00 | 13.67 |      |      | 28.65 | 29.29 |
|        | <b>Swift &amp; Co. Fertilizer Works,<br/>St. Louis, Missouri<br/>Swift's Brands</b> |  |      |      |       |       |       |      |       |       |      |      |       |       |
| 11-283 | Red Steer 16 per cent Superphosphate  | Farmers Elevator Co., Jonesburg                |      |      |       | 17.48 |       | 1.18 | 16.00 | 16.30 |      |      | 22.40 | 22.82 |
| 11-284 | Red Steer 16 per cent Superphosphate  | James Cunningham, Montgomery City              |      |      |       | 18.19 |       | 0.89 | 16.00 | 17.30 |      |      | 22.40 | 24.22 |
| 11-285 | Red Steer 16 per cent Superphosphate  | H. Zillig, Brazito                             |      |      |       | 17.11 |       | 0.73 | 16.00 | 16.38 |      |      | 22.40 | 22.93 |
| 11-286 | Red Steer 16 per cent Superphosphate  | Farmers Produce & Exchange, Weaubleau          |      |      |       | 17.19 |       | 0.76 | 16.00 | 16.43 |      |      | 22.40 | 23.00 |
| 11-287 | Red Steer 16 per cent Superphosphate  | Firestone Hardware Co., Collins                |      |      |       | 17.32 |       | 1.07 | 16.00 | 16.25 |      |      | 22.40 | 22.75 |
| 11-288 | Red Steer 16 per cent Superphosphate  | Farmers Exchange, Bolivar                      |      |      |       | 17.34 |       | 1.05 | 16.00 | 16.29 |      |      | 22.40 | 22.81 |
| 11-289 | Red Steer 16 per cent Superphosphate  | Greene County Farmers Sales Assn., Springfield |      |      |       | 17.48 |       | 1.01 | 16.00 | 16.47 |      |      | 22.40 | 23.06 |
| 11-290 | Red Steer 16 per cent Superphosphate  | S. H. Stokes & Co., Seymour                    |      |      |       | 17.09 |       | 0.66 | 16.00 | 16.43 |      |      | 22.40 | 23.00 |
| 11-291 | Red Steer 16 per cent Superphosphate  | Whitlock-Lines, Monett                         |      |      |       | 17.43 |       | 0.75 | 16.00 | 16.68 |      |      | 22.40 | 23.36 |
| 11-292 | Red Steer 20 per cent Superphosphate  | Vandalia Roller Mills, Vandalia                |      |      |       | 22.50 |       | 1.03 | 20.00 | 21.47 |      |      | 28.00 | 30.06 |
| 11-293 | Red Steer 20 per cent Superphosphate  | Farmers Warehouse & Supply Co., Tina           |      |      |       | 22.53 |       | 0.98 | 20.00 | 21.55 |      |      | 28.00 | 30.17 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands                           | Dealer   | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |          | Value per Ton |       |       |
|----------|---|--|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|----------|---------------|-------|-------|
|          |   |  | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insoluble |          | Available |          | G'td                                  | F'nd     | G'td          | F'nd  |       |
|          |   |  |            |            |                        | G'td  | F'nd     | G'td      | F'nd     | G'td      | F'nd     |                                       |          |               |       |       |
| 11-294   | Red Steer 20 per cent Superphosphate              | H. Zillig, Brazito                             | Per Cent   | Per Cent   | Per Cent               | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent | Per Cent                              | Per Cent | Per Cent      | \$    | \$    |
| 11-295   | Red Steer 20 per cent Superphosphate              | Ely Roller Mills, Edina                        |            |            |                        | 22.43   |          | 1.41      | 20.00    | 21.02     |          |                                       |          |               | 28.00 | 29.43 |
| 11-296   | Red Steer 20 per cent Superphosphate              | Swarthout Feed & Produce Co.,<br>La Plata      |            |            |                        | 22.00   |          | 1.35      | 20.00    | 20.65     |          |                                       |          |               | 28.00 | 28.91 |
| 11-297   | Red Steer 20 per cent Superphosphate              | Farmers Exchange, Bolivar                      |            |            |                        | 21.10   |          | 0.98      | 20.00    | 20.12     |          |                                       |          |               | 28.00 | 28.17 |
| 11-298   | Red Steer 20 per cent Superphosphate              | Greene Co. Farmers Sales Assn.,<br>Springfield |            |            |                        | 22.38   |          | 0.95      | 20.00    | 21.43     |          |                                       |          |               | 28.00 | 30.00 |
| 11-299   | Red Steer 20 per cent Superphosphate              | Whitlock-Lines, Monett                         |            |            |                        | 21.93   |          | 1.04      | 20.00    | 20.89     |          |                                       |          |               | 28.00 | 29.25 |
| 11-300   | Red Steer 20 per cent Superphosphate              | Ed. F. Buckner, Pierce City                    |            |            |                        | 21.88   |          | 0.65      | 20.00    | 21.23     |          |                                       |          |               | 28.00 | 29.72 |
| 11-301   | Red Steer 20 per cent Superphosphate <sup>1</sup> | Neosho Seed Co., Neosho                        |            |            |                        | 21.58   |          | 0.63      | 20.00    | 20.95     |          |                                       |          |               | 28.00 | 29.33 |
| 11-302   | Red Steer 20 per cent Superphosphate              | Cross-Holtzen Feed Co., Sedalia                |            |            |                        | 22.13   |          | 0.77      | 20.00    | 21.36     |          |                                       |          |               | 28.00 | 29.90 |
| 11-303   | Red Steer 20 per cent Superphosphate              | Banner Roller Mills, Salem                     |            |            |                        | 21.53   |          | 0.44      | 20.00    | 21.09     |          |                                       |          |               | 28.00 | 29.53 |
| 11-304   | Red Steer 20 per cent Superphosphate              | Farmers Elevator, Gerald                       |            |            |                        | 22.30   |          | 0.69      | 20.00    | 21.61     |          |                                       |          |               | 28.00 | 30.25 |
| 11-305   | Red Steer 0-14-6                                  | Ed. F. Buckner, Pierce City                    |            |            |                        | 22.28   |          | 0.87      | 20.00    | 21.41     |          |                                       |          |               | 28.00 | 29.97 |
| 11-306   | Red Steer 0-14-6                                  | Omer Webb, Jasper                              |            |            |                        | 14.77   |          | 0.55      | 14.00    | 14.22     | 6.00     | 6.58                                  |          |               | 25.90 | 26.82 |
|          |   |  |            |            |                        | 15.34   |          | 0.64      | 14.00    | 14.70     | 6.00     | 6.24                                  |          |               | 25.90 | 27.13 |

|        |                               |  |      |      |       |       |      |       |       |       |      |       |       |       |
|--------|-------------------------------|--|------|------|-------|-------|------|-------|-------|-------|------|-------|-------|-------|
| 11-307 | Red Steer 1-12-4              | Omer Webb, Jasper                                  | 1.00 | 1.05 | 92.38 | 12.86 | 0.50 | 0.81  | 12.00 | 12.05 | 4.00 | 4.12  | 25.25 | 25.66 |
| 11-308 | Red Steer 2-12-2              | James Cunningham, Montgomery City                  | 2.00 | 2.01 | 93.53 | 13.46 | 1.00 | 0.85  | 12.00 | 12.61 | 2.00 | 2.21  | 27.40 | 28.51 |
| 11-309 | Red Steer 2-12-2              | Vandalia Roller Mills, Vandalia                    | 2.00 | 2.22 | 91.89 | 13.00 | 1.00 | 0.89  | 12.00 | 12.11 | 2.00 | 2.14  | 27.40 | 28.64 |
| 11-310 | Red Steer 2-12-2              | Farmers Elevator & Exchange, Palmyra               | 2.00 | 2.07 | 92.27 | 13.65 | 1.00 | 1.04  | 12.00 | 12.61 | 2.00 | 2.10  | 27.40 | 28.65 |
| 11-311 | Red Steer 2-12-2              | H. Zillig, Brazito                                 | 2.00 | 2.00 | 93.50 | 13.11 | 1.00 | 2.00  | 12.00 | 11.11 | 2.00 | 2.13  | 27.40 | 26.29 |
| 11-312 | Red Steer 2-12-2              | Ely Roller Mills, Edina                            | 2.00 | 2.12 | 82.08 | 13.15 | 1.00 | 1.13  | 12.00 | 12.02 | 2.00 | 2.40  | 27.40 | 28.36 |
| 11-313 | Red Steer 2-12-2 <sup>1</sup> | Swarthout Feed & Produce Co., LaPlata              | 2.00 | 1.94 | 92.27 | 14.20 | 1.00 | 1.01  | 12.00 | 13.19 | 2.00 | 2.02  | 27.40 | 28.83 |
| 11-314 | Red Steer 2-12-2 <sup>1</sup> | Atlanta Grain Elevator, Atlanta                    | 2.00 | 2.11 | 92.89 | 12.76 | 1.00 | 0.81  | 12.00 | 11.95 | 2.00 | 2.31  | 27.40 | 28.13 |
| 11-315 | Red Steer 2-12-2 <sup>1</sup> | Producers Exchange 84, Lincoln                     | 2.00 | 2.29 | 78.60 | 12.40 | 1.00 | 0.88  | 12.00 | 11.52 | 2.00 | 3.13  | 27.40 | 29.15 |
| 11-316 | Red Steer 2-12-2              | Firestone Hardware Co., Collins                    | 2.00 | 2.08 | 91.83 | 13.16 | 1.00 | 0.99  | 12.00 | 12.17 | 2.00 | 2.18  | 27.40 | 28.17 |
| 11-317 | Red Steer 2-12-2              | Crow & Barker, Fair Play                           | 2.00 | 2.00 | 91.50 | 13.18 | 1.00 | 0.97  | 12.00 | 12.21 | 2.00 | 2.50  | 27.40 | 28.21 |
| 11-318 | Red Steer 2-12-2              | Farmers Exchange, Bolivar                          | 2.00 | 2.04 | 91.67 | 13.08 | 1.00 | 0.88  | 12.00 | 12.20 | 2.00 | 2.24  | 27.40 | 28.10 |
| 11-319 | Red Steer 2-12-2              | S. H. Stokes & Co., Seymour                        | 2.00 | 2.06 | 90.29 | 13.23 | 1.00 | 1.24  | 12.00 | 11.99 | 2.00 | 2.16  | 27.40 | 27.81 |
| 11-320 | Red Steer 2-12-2              | Whitlock-Lines, Monett                             | 2.00 | 2.10 | 90.48 | 13.23 | 1.00 | 0.88  | 12.00 | 12.35 | 2.00 | 2.16  | 27.40 | 28.49 |
| 11-321 | Red Steer 2-12-2              | Omer Webb, Jasper                                  | 2.00 | 2.03 | 90.15 | 13.11 | 1.00 | 1.10  | 12.00 | 12.01 | 2.00 | 2.12  | 27.40 | 27.67 |
| 11-322 | Red Steer 2-12-2              | Madison Co. Farmers Warehouse Assn., Fredericktown | 2.00 | 1.76 | 90.91 | 14.05 | 1.00 | 1.90  | 12.00 | 12.15 | 2.00 | 2.05  | 27.40 | 26.64 |
| 11-323 | Red Steer 2-12-2              | Farmers Elevator, Gerald                           | 2.00 | 2.04 | 75.00 | 13.15 | 1.00 | 2.37  | 12.00 | 10.78 | 2.00 | 2.13  | 27.40 | 26.00 |
| 11-324 | Red Steer 2-12-2              | Mat Kliethermes, Meta                              | 2.00 | 2.04 | 83.33 | 13.74 | 1.00 | 1.37  | 12.00 | 12.37 | 2.00 | 2.20  | 27.40 | 28.30 |
| 11-325 | Red Steer 2-16-2              | Firestone Hardware Co., Collins                    | 2.00 | 2.15 | 92.09 | 17.59 | 1.00 | 1.43  | 16.00 | 16.16 | 2.00 | 2.08  | 33.00 | 33.94 |
| 11-326 | Red Steer 2-16-2              | Greene County Farmers Sales Assn., Springfield     | 2.00 | 2.12 | 93.40 | 17.28 | 1.00 | 1.38  | 16.00 | 15.90 | 2.00 | 2.31  | 33.00 | 33.70 |
| 11-327 | Red Steer 2-16-2              | Ed. F. Buckner, Pierce City                        | 2.00 | 2.11 | 92.89 | 17.68 | 1.00 | 1.45  | 16.00 | 16.23 | 2.00 | 2.20  | 33.00 | 34.00 |
| 11-328 | Red Steer 2-16-2              | Omer Webb, Jasper                                  | 2.00 | 2.05 | 91.71 | 17.90 | 1.00 | 1.22  | 16.00 | 16.68 | 2.00 | 2.21  | 33.00 | 34.38 |
| 11-329 | Red Steer 2-16-2              | M. D. Grider, Appleton City                        | 2.00 | 2.34 | 95.73 | 17.43 | 1.00 | 1.11  | 16.00 | 16.32 | 2.00 | 2.68  | 33.00 | 35.61 |
| 11-330 | Red Steer 3-8-6               | Crow & Barker, Fair Play                           | 3.00 | 2.89 | 82.01 | 9.02  | 1.00 | 0.43  | 8.00  | 8.59  | 6.00 | 5.90  | 30.25 | 30.51 |
| 11-331 | Red Steer 3-12-4              | S. H. Stokes & Co., Seymour                        | 3.00 | 2.79 | 86.74 | 12.68 | 1.00 | 0.23  | 12.00 | 12.45 | 4.00 | 4.44  | 33.75 | 33.95 |
| 11-332 | Red Steer 3-12-4 <sup>1</sup> | Cuba Farmers Exchange, Cuba                        | 3.00 | 2.59 | 86.10 | 12.70 | 1.00 | 0.32  | 12.00 | 12.38 | 4.00 | 4.34  | 33.75 | 32.90 |
| 11-333 | Vigoro <sup>1</sup>           | H. C. Zillig, Brazito                              | 4.00 | 3.99 | 90.48 | 12.55 | 0.57 | 12.00 | 11.98 | 4.00  | 4.65 | 38.00 | 38.61 |       |
| 11-334 | Vigoro <sup>1</sup>           | Springfield Seed Co., Springfield                  | 4.00 | 3.22 | 89.44 | 12.80 | 0.71 | 12.00 | 12.09 | 4.00  | 4.26 | 38.00 | 35.08 |       |
| 11-335 | Vigoro <sup>1</sup>           | Archias Floral Co., Sedalia                        | 4.00 | 4.12 | 90.29 | 13.16 | 0.82 | 12.00 | 12.34 | 4.00  | 4.83 | 38.00 | 39.86 |       |
| 11-336 | Red Steer 4-16-4 <sup>1</sup> | Farmers Warehouse & Supply Co. Tina                | 4.00 | 4.12 | 95.39 | 17.15 | 1.00 | 1.39  | 16.00 | 15.76 | 4.00 | 4.19  | 43.60 | 43.97 |
| 11-337 | Red Steer 4-16-4              | Atlanta Grain Elevator, Atlanta                    | 4.00 | 4.08 | 95.83 | 17.77 | 1.00 | 1.53  | 16.00 | 16.24 | 4.00 | 4.58  | 43.60 | 44.89 |
| 11-338 | Red Steer 4-16-4              | Farmers Exchange, Bolivar                          | 4.00 | 3.85 | 95.58 | 17.13 | 1.00 | 1.08  | 16.00 | 16.05 | 4.00 | 4.32  | 43.60 | 41.37 |
| 11-339 | Red Steer 4-16-4              | Greene County Farmers Sales Assn., Springfield     | 4.00 | 4.02 | 95.52 | 17.16 | 1.00 | 1.04  | 16.00 | 16.12 | 4.00 | 4.16  | 43.60 | 44.02 |

TABLE 5.—FERTILIZER ANALYSES AND GUARANTEES; 1929 (Continued)

| Lab. No. | Manufacturer and Brands                    | Dealer  | Nitrogen   |            |                        | Phosphoric Acid P <sub>2</sub> O <sub>5</sub> |          |           |          |           |          | Water Soluble Potash K <sub>2</sub> O |       | Value per Ton |      |
|----------|--|---|------------|------------|------------------------|---|----------|-----------|----------|-----------|----------|---------------------------------------|-------|---------------|------|
|          |  |   | Total G'td | Total F'nd | Water Soluble to Total | Total   |          | Insojuble |          | Available |          | G'td                                  | F'nd  | G'td          | F'nd |
|          |  |   |            |            |                        | Per Cent                                      | Per Cent | Per Cent  | Per Cent | Per Cent  | Per Cent |                                       |       |               |      |
| 11-340   | Red Steer 4-16-4.....                      | M. D. Grider, Appleton City.....  | 4.00       | 4.34       | 97.00                  | 17.12   | 1.00     | 1.02      | 16.00    | 16.10     | 4.00     | 4.52                                  | 43.60 | 45.74         |      |
| 11-341   | Steamed Bone Fertilizer .....              | James Cunningham, Montgomery City.....  | 1.00       | 1.31       | 31.30                  | 29.00   | 28.95    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 34.52         |      |
| 11-342   | Steamed Bone Fertilizer .....              | Vandalia Roller Mills, Vandalia .....   | 1.00       | 1.17       | 29.06                  | 29.00   | 31.25    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 36.22         |      |
| 11-343   | Steamed Bone Fertilizer .....              | Farmers Elevator & Exchange, Palmyra .....  | 1.00       | 1.40       | 34.29                  | 29.00   | 31.90    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 37.85         |      |
| 11-344   | Steamed Bone Fertilizer .....              | H. Zillig, Brazito.....   | 1.00       | 1.51       | 25.17                  | 29.00   | 30.70    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 37.12         |      |
| 11-345   | Steamed Bone Fertilizer <sup>1</sup> ..... | A. W. Rouner, Brashear .....  | 1.00       | 1.49       | 30.86                  | 29.00   | 29.13    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 35.46         |      |
| 11-346   | Steamed Bone Fertilizer .....              | Crow & Barker, Fair Play.....   | 1.00       | 1.43       | 30.87                  | 29.00   | 31.50    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 37.58         |      |
| 11-347   | Steamed Bone Fertilizer .....              | Whitlock-Lines, Monett .....  | 1.00       | 1.69       | 32.17                  | 29.00   | 30.30    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 37.48         |      |
| 11-348   | Steamed Bone Fertilizer .....              | Ed. F. Buckner, Pierce City.....  | 1.00       | 1.35       | 26.04                  | 29.00   | 29.23    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 34.97         |      |
| 11-349   | Steamed Bone Fertilizer .....              | Omer Webb, Jasper .....   | 1.00       | 1.47       | 31.85                  | 29.00   | 29.41    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 35.66         |      |
| 11-350   | Steamed Bone Fertilizer .....              | Madison County Farmers Warehouse Assn., Fredericktown .....                                     | 1.00       | 1.47       | 32.65                  | 29.00   | 31.90    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 38.15         |      |
| 11-351   | Steamed Bone Fertilizer .....              | J. B. Boyer & Sons, Potosi.....   | 1.00       | 1.36       | 31.62                  | 29.00   | 28.95    | -----     | -----    | -----     | -----    | -----                                 | 33.25 | 34.73         |      |
| 11-352   | Steamed Bone Fertilizer 1 3/4-29 .....     | Whitlock-Lines, Monett .....  | 1.03       | 1.90       | 22.11                  | 29.00   | 30.08    | -----     | -----    | -----     | -----    | -----                                 | 33.38 | 38.15         |      |
| 11-353   | Steamed Bone Fertilizer 1 3/4-29 .....     | Ed. F. Buckner, Pierce City.....  | 1.03       | 1.76       | 22.16                  | 29.00   | 29.25    | -----     | -----    | -----     | -----    | -----                                 | 33.38 | 36.73         |      |
| 11-354   | Bone Meal Fertilizer 2-27 1/2 * .....      | Springfield Seed Co., Springfield .....   | 1.65       | 2.88       | 7.99                   | 27.00   | 26.78    | -----     | -----    | -----     | -----    | -----                                 | 34.01 | 39.02         |      |
| 11-355   | Raw Bone Fertilizer <sup>1</sup> .....     | Rock Island Elevator Co., Eldon .....   | 3.70       | 3.75       | 11.47                  | 23.00   | 23.35    | -----     | -----    | -----     | -----    | -----                                 | 38.73 | 39.29         |      |
| 11-356   | Raw Bone Fertilizer.....                   | Greene County Farmers Sales Assn., Springfield.....   | 3.70       | 3.78       | 11.64                  | 23.00   | 22.80    | -----     | -----    | -----     | -----    | -----                                 | 38.73 | 38.87         |      |
| 11-357   | 16 per cent Superphosphate .....           | Tennessee Chemical Company, Nashville, Tennessee Ox Brands<br>Strehlmann & Gerken, Leslie ..... | -----      | -----      | -----                  | 18.10   | 0.50     | 0.75      | 16.00    | 17.35     | -----    | -----                                 | 22.40 | 24.29         |      |

|        |  |   |       |       |       |       |       |      |      |       |       |      |      |       |       |
|--------|--|---|-------|-------|-------|-------|-------|------|------|-------|-------|------|------|-------|-------|
| 11-358 | 20 per cent Superphosphate   | Strehlmann & Gerken, Leslie                   |       |       |       |       | 21.42 | 0.50 | 1.42 | 20.00 | 20.00 |      |      | 28.00 | 28.00 |
|        | <b>Virginia-Carolina Chemical Corporation,<br/>V-C Brands</b>      |   |       |       |       |       |       |      |      |       |       |      |      |       |       |
| 11-359 | 16 per cent Superphosphate   | N. Johannes & Sons, Lamar                     |       |       |       |       | 17.38 |      | 0.90 | 16.00 | 16.48 |      |      | 22.40 | 23.07 |
| 11-360 | 20 per cent Superphosphate   | Martin Kluck, Pierce City                     |       |       |       |       | 21.45 |      | 0.54 | 20.00 | 20.91 |      |      | 28.00 | 29.27 |
| 11-361 | 20 per cent Superphosphate   | N. Johannes & Sons, Lamar                     |       |       |       |       | 21.13 |      | 0.48 | 20.00 | 20.65 |      |      | 28.00 | 28.91 |
| 11-363 | Fertilizer 0-20-3  | Martin Kluck Pierce City                      |       |       |       |       | 20.35 |      | 0.78 | 20.00 | 19.57 | 3.00 | 3.19 | 31.15 | 30.75 |
| 11-364 | Fertilizer 0-14-6  | N. Johannes & Sons, Lamar                     |       |       |       |       | 16.38 |      | 1.10 | 14.00 | 15.28 | 6.00 | 5.89 | 25.90 | 27.57 |
| 11-365 | Fertilizer 1-12-4  | N. Johannes & Sons, Lamar                     | 1.00  | 1.12  | 81.25 |       | 12.88 |      | 0.97 | 12.00 | 11.91 | 4.00 | 4.26 | 25.25 | 25.90 |
| 11-366 | Fertilizer 2-12-2  | N. Johannes & Sons, Lamar                     | 2.00  | 2.01  | 84.58 |       | 13.35 |      | 1.34 | 12.00 | 12.01 | 2.00 | 2.41 | 27.40 | 27.88 |
|        | <b>Wilson and Company,<br/>Kansas City, Kansas<br/>Red W Brand</b> |   |       |       |       |       |       |      |      |       |       |      |      |       |       |
| 11-362 | 20 per cent Superphosphate   | Moudy Grain Company, Audrain                  |       |       |       |       | 20.40 | 1.00 | 0.92 | 20.00 | 19.48 |      |      | 28.00 | 27.27 |
| 11-367 | Special Steam Bone Meal <sup>1</sup>                               | Boone County Mill & Elevator<br>Co., Columbia | 0.82  | 2.36  | 33.47 | 30.00 | 27.15 |      |      |       |       |      |      | 33.49 | 37.18 |
|        | <b>Miscellaneous Samples*</b>                                      |   |       |       |       |       |       |      |      |       |       |      |      |       |       |
| 6-232  | 20 per cent Superphosphate, Swift<br>& Co., St. Louis              | J. S. Barnes, Raymore                         |       |       |       |       | 22.75 |      | 0.91 | 20.00 | 21.84 |      |      | 28.00 | 30.58 |
| 7-44   | Kalosecta, Reed & Son, Carthage                                    | W. H. Reed, Carthage                          |       | 1.45  |       |       | 3.78  |      | 1.25 |       | 2.53  |      | 1.40 |       | 11.17 |
| 11-418 | Loam Land Fertilizer, Federal<br>Chemical Co.                      | Frank H. Jahn, California                     | 1.60  | 1.52  |       |       | 15.72 |      | 2.92 | 12.00 | 12.80 | 2.00 | 2.03 | 25.70 | 26.51 |
| 11-419 | Steamed Bone Fertilizer, No 2 Swift<br>& Co., St. Louis            | W. C. Bute, Licking                           | 1.00  | 3.04  |       | 29.00 | 19.25 |      |      |       |       |      |      |       | 32.17 |
| 11-420 | Steamed Bone Meal, No 2 Swift &<br>Co., St. Louis                  | W. C. Bute, Licking                           | 1.00  | 3.78  |       | 29.00 | 23.65 |      |      |       |       |      |      |       | 39.71 |
| 11-465 | Ammonium Sulphate, Ford Motor<br>Co., Detroit                      | J. S. Woodall, Campbell                       | 20.80 | 20.90 |       |       |       |      |      |       |       |      |      |       |       |
| 11-468 | Interstate Steam Bone, Crocker<br>Packing Co., Joplin              | O. E. Boucher, Pierce City                    | 1.00  | 0.65  |       | 29.00 | 28.10 |      |      |       |       |      |      | 33.25 | 30.86 |

\*Not official samples. Obtained and sent in by purchasers.

TABLE 6.—LIMESTONES AND OTHER MATERIALS TESTED FOR ACID  
NEUTRALIZING POWER  
(Expressed in Percentage of Calcium Carbonate)

| County              | Material        | Number of samples tested | Calcium carbonate equivalent |        |         |
|---------------------|-----------------|--------------------------|------------------------------|--------|---------|
|                     |                 |                          | Highest                      | Lowest | Average |
| Adair.....          | Limestone.....  | 1                        | -----                        | -----  | 82.19   |
| Audrain.....        | Limestone.....  | 1                        | -----                        | -----  | 99.41   |
| Barry.....          | Limestone.....  | 10                       | 104.41                       | 89.63  | 98.63   |
| Bates.....          | Limestone.....  | 32                       | 101.78                       | 80.42  | 92.77   |
|                     | Rock.....       | 1                        | -----                        | -----  | 64.63   |
| Benton.....         | Limestone.....  | 8                        | 102.25                       | 91.90  | 96.30   |
|                     | Rock.....       | 1                        | -----                        | -----  | 3.93    |
| Bollinger.....      | Limestone.....  | 53                       | 106.67                       | 73.18  | 97.26   |
|                     | Rock.....       | 2                        | 59.85                        | 49.90  | 54.88   |
| Boone.....          | Limestone.....  | 8                        | 100.93                       | 95.03  | 98.23   |
|                     | Lime Waste..... | 2                        | 47.30                        | 34.88  | 41.09   |
| Buchanan.....       | Limestone.....  | 2                        | 116.51                       | 81.79  | 99.15   |
| Callaway.....       | Limestone.....  | 11                       | 99.63                        | 82.66  | 96.88   |
|                     | Rock.....       | 1                        | -----                        | -----  | 42.29   |
| Camden.....         | Limestone.....  | 16                       | 106.12                       | 90.81  | 100.12  |
| Cape Girardeau..... | Limestone.....  | 99                       | 105.76                       | 72.88  | 94.59   |
|                     | Rock.....       | 3                        | 67.99                        | 32.83  | 56.11   |
| Carroll.....        | Limestone.....  | 5                        | 93.10                        | 88.53  | 90.90   |
|                     | Rock.....       | 1                        | -----                        | -----  | 1.99    |
| Cass.....           | Limestone.....  | 6                        | 98.00                        | 77.92  | 91.70   |
| Cedar.....          | Limestone.....  | 4                        | 99.64                        | 99.05  | 99.26   |
| Chariton.....       | Limestone.....  | 9                        | 96.81                        | 77.18  | 87.61   |
| Christian.....      | Limestone.....  | 5                        | 101.80                       | 98.65  | 99.37   |
| Clay.....           | Limestone.....  | 4                        | 90.06                        | 80.82  | 85.22   |
|                     | Rock.....       | 1                        | -----                        | -----  | 68.25   |
| Clinton.....        | Limestone.....  | 1                        | -----                        | -----  | 86.34   |
| Cole.....           | Limestone.....  | 45                       | 102.90                       | 78.26  | 97.27   |
|                     | Rock.....       | 1                        | -----                        | -----  | 6.85    |
| Cooper.....         | Limestone.....  | 15                       | 99.87                        | 87.67  | 95.26   |
|                     | Rock.....       | 2                        | 22.58                        | 19.91  | 21.25   |
| Crawford.....       | Limestone.....  | 13                       | 100.31                       | 82.21  | 96.52   |
| Dade.....           | Limestone.....  | 3                        | 97.31                        | 95.04  | 96.18   |
| Dallas.....         | Limestone.....  | 19                       | 105.65                       | 84.50  | 97.55   |
|                     | Rock.....       | 1                        | -----                        | -----  | 50.42   |
| Daviess.....        | Limestone.....  | 2                        | 92.10                        | 85.13  | 88.62   |
| Douglas.....        | Limestone.....  | 19                       | 101.38                       | 76.35  | 94.05   |
| Franklin.....       | Limestone.....  | 221                      | 105.59                       | 71.50  | 93.33   |
|                     | Rock.....       | 5                        | 65.82                        | 1.70   | 39.88   |
| Gasconade.....      | Limestone.....  | 88                       | 102.76                       | 71.36  | 91.52   |
|                     | Rock.....       | 2                        | 57.09                        | 30.90  | 44.00   |
| Gentry.....         | Rock.....       | 4                        | 3.66                         | 3.41   | 3.56    |
| Greene.....         | Limestone.....  | 5                        | 102.66                       | 89.43  | 97.08   |
| Grundy.....         | Limestone.....  | 4                        | 92.04                        | 86.53  | 89.97   |
|                     | Rock.....       | 1                        | -----                        | -----  | 6.01    |
| Harrison.....       | Limestone.....  | 2                        | 93.89                        | 84.41  | 89.15   |
| Henry.....          | Limestone.....  | 13                       | 96.69                        | 72.51  | 88.63   |
|                     | Rock.....       | 1                        | -----                        | -----  | 69.00   |
| Howard.....         | Limestone.....  | 4                        | 97.68                        | 89.63  | 94.24   |
| Howell.....         | Limestone.....  | 24                       | 102.24                       | 72.47  | 94.31   |
| Jackson.....        | Limestone.....  | 10                       | 91.96                        | 84.92  | 88.88   |
|                     | Burnt Lime..... | 1                        | -----                        | -----  | 122.38  |
| Jasper.....         | Rock.....       | 1                        | -----                        | -----  | 29.93   |
| Jefferson.....      | Limestone.....  | 62                       | 105.64                       | 74.85  | 94.52   |
|                     | Rock.....       | 5                        | 63.94                        | 2.31   | 33.05   |
| Johnson.....        | Rock.....       | 1                        | -----                        | -----  | 51.49   |
| Laclede.....        | Limestone.....  | 19                       | 104.22                       | 88.75  | 98.89   |

TABLE 6.—LIMESTONES AND OTHER MATERIALS TESTED FOR ACID  
NEUTRALIZING POWER (Continued)  
(Expressed in Percentage of Calcium Carbonate)

| County         | Material   | Number of samples tested | Calcium carbonate equivalent |        |         |
|----------------|------------|--------------------------|------------------------------|--------|---------|
|                |            |                          | Highest                      | Lowest | Average |
| Lafayette      | Limestone  | 2                        | 85.63                        | 82.85  | 84.24   |
| Lawrence       | Limestone  | 2                        | 98.75                        | 70.16  | 89.46   |
| Lewis          | Limestone  | 2                        | 83.82                        | 71.18  | 77.50   |
| Lincoln        | Limestone  | 46                       | 101.06                       | 78.71  | 96.09   |
|                | Rock       | 2                        | 47.98                        | 14.42  | 31.20   |
| Linn           | Limestone  | 2                        | 91.61                        | 89.11  | 90.36   |
| Livingston     | Limestone  | 10                       | 99.23                        | 84.49  | 93.56   |
| McDonald       | Limestone  | 2                        | 98.25                        | 93.35  | 95.80   |
| Macon          | Limestone  | 4                        | 80.47                        | 77.64  | 79.19   |
| Madison        | Limestone  | 1                        | ---                          | ---    | 74.35   |
|                | Rock       | 3                        | 59.64                        | 50.31  | 55.67   |
| Maries         | Limestone  | 8                        | 103.84                       | 96.27  | 100.67  |
| Marion         | Limestone  | 16                       | 105.38                       | 75.47  | 94.60   |
|                | Rock       | 1                        | ---                          | ---    | 9.26    |
| Mercer         | Limestone  | 2                        | 94.44                        | 93.78  | 94.11   |
| Miller         | Limestone  | 7                        | 102.37                       | 94.40  | 99.06   |
|                | Rock       | 2                        | 1.08                         | 0.90   | 0.99    |
| Monroe         | Limestone  | 6                        | 94.67                        | 86.03  | 92.53   |
| Montgomery     | Limestone  | 7                        | 100.09                       | 99.33  | 99.33   |
| Morgan         | Limestone  | 5                        | 103.34                       | 97.39  | 100.74  |
| Newton         | Limestone  | 2                        | 99.12                        | 95.14  | 97.13   |
|                | Rock       | 1                        | ---                          | ---    | 2.58    |
| Osage          | Limestone  | 15                       | 100.44                       | 82.44  | 95.54   |
| Ozark          | Limestone  | 50                       | 117.91                       | 84.60  | 97.50   |
|                | Rock       | 1                        | ---                          | ---    | 27.29   |
| Perry          | Limestone  | 155                      | 108.60                       | 71.30  | 94.91   |
|                | Rock       | 9                        | 69.14                        | 14.31  | 37.59   |
| Pettis         | Limestone  | 10                       | 102.53                       | 73.98  | 94.48   |
| Phelps         | Limestone  | 17                       | 105.08                       | 86.80  | 99.09   |
| Pike           | Limestone  | 45                       | 100.97                       | 72.02  | 94.68   |
|                | Rock       | 2                        | 70.48                        | 4.00   | 37.24   |
| Polk           | Limestone  | 21                       | 105.29                       | 88.13  | 98.20   |
|                | Rock       | 1                        | ---                          | ---    | 38.10   |
| Pulaski        | Limestone  | 2                        | 100.56                       | 94.65  | 97.61   |
| Putnam         | Limestone  | 1                        | ---                          | ---    | 83.04   |
| Ralls          | Limestone  | 4                        | 96.34                        | 92.28  | 94.49   |
| Randolph       | Limestone  | 3                        | 99.39                        | 88.28  | 94.59   |
| Ray            | Limestone  | 8                        | 99.43                        | 83.29  | 92.49   |
| St. Charles    | Limestone  | 38                       | 102.05                       | 72.93  | 93.72   |
|                | Rock       | 3                        | 60.87                        | 1.50   | 21.42   |
| St. Clair      | Burnt Lime | 1                        | ---                          | ---    | 104.52  |
| Ste. Genevieve | Limestone  | 54                       | 103.13                       | 72.37  | 94.04   |
|                | Rock       | 2                        | 66.81                        | 43.18  | 55.00   |
|                | Rock       | 2                        | 89.74                        | 73.29  | 84.50   |
| St. Francois   | Chats      | 2                        | 66.10                        | 59.17  | 62.64   |
| St. Louis      | Limestone  | 22                       | 101.66                       | 83.83  | 93.86   |
| Saline         | Limestone  | 3                        | 98.71                        | 89.53  | 95.45   |
| Shelby         | Limestone  | 4                        | 97.66                        | 95.53  | 96.45   |
| Sullivan       | Limestone  | 1                        | ---                          | ---    | 75.88   |
| Taney          | Limestone  | 10                       | 106.01                       | 83.16  | 92.54   |
|                | Rock       | 1                        | ---                          | ---    | 58.97   |
| Texas          | Limestone  | 10                       | 103.42                       | 96.05  | 99.71   |
| Vernon         | Limestone  | 4                        | 96.63                        | 90.69  | 94.74   |
| Warren         | Limestone  | 43                       | 102.66                       | 76.56  | 93.49   |
|                | Rock       | 2                        | 57.97                        | 41.29  | 49.63   |

TABLE 6.—LIMESTONE AND OTHER MATERIALS TESTED FOR ACID  
NEUTRALIZING POWER (CONTINUED)

(Expressed in Percentage of Calcium Carbonate).

| County          | Material       | Number of<br>samples<br>tested | Calcium carbonate equivalent |        |         |
|-----------------|----------------|--------------------------------|------------------------------|--------|---------|
|                 |                |                                | Highest                      | Lowest | Average |
| Washington..... | Rock.....      | 1                              | -----                        | -----  | 2.14    |
| Wayne.....      | Limestone..... | 8                              | 106.29                       | 99.03  | 102.89  |
| Webster.....    | Limestone..... | 4                              | 102.73                       | 91.50  | 95.25   |
| Worth.....      | Limestone..... | 4                              | 95.88                        | 86.16  | 90.52   |
| Wright.....     | Limestone..... | 18                             | 118.94                       | 85.82  | 96.50   |



TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930

| Fertilizer   | Nitrogen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|--|----------|---|----------------|----------------|------------------------------|
|  |          | Total<br>frombone                                   | Avail-<br>able | Insol-<br>uble |                              |
|  | Per cent | Per cent  | Per cent       | Per cent       | Per cent                     |
| <b>The American Agricultural Chemical Company,<br/>St. Louis, Missouri</b> |          |   |                |                |                              |
| AA 16 per cent Superphosphate .....  | ----     | ----  | 16.00          | 0.50           | ----                         |
| AA 20 per cent Superphosphate .....  | ----     | ----  | 20.00          | 0.50           | ----                         |
| AA Monitor Mixture .....   | ----     | ----  | 14.00          | 0.50           | 6.00                         |
| AA Harrow Mixture .....  | ----     | ----  | 20.00          | 0.50           | 4.00                         |
| AA Farmers Favorite Fertilizer .....                                       | 1.00     | ----  | 12.00          | 0.50           | 1.00                         |
| AA Red Dog Fertilizer .....  | 2.00     | ----  | 9.00           | 0.50           | 5.00                         |
| AA Homestead Fertilizer .....  | 2.00     | ----  | 10.00          | 0.50           | 2.00                         |
| AA Red Dragon Fertilizer .....   | 2.00     | ----  | 12.00          | 0.50           | 2.00                         |
| AA Big Boll Fertilizer .....   | 2.00     | ----  | 12.00          | 0.50           | 2.00                         |
| AA Farmers Friend Fertilizer .....   | 2.00     | ----  | 12.00          | 0.50           | 4.00                         |
| AA Antler Fertilizer .....   | 2.00     | ----  | 12.00          | 0.50           | 6.00                         |
| AA Gilt Edge Fertilizer .....  | 2.00     | ----  | 16.00          | 0.50           | 2.00                         |
| AA Paramount Fertilizer .....  | 3.00     | ----  | 8.00           | 0.50           | 6.00                         |
| AA Harvest Moon Fertilizer .....   | 4.00     | ----  | 8.00           | 0.50           | 6.00                         |
| AA Triumph Fertilizer .....  | 4.00     | ----  | 12.00          | 0.50           | 4.00                         |
| AA Two in One Fertilizer .....   | 4.00     | ----  | 16.00          | 0.50           | 4.00                         |
| AA Top Dresser Fertilizer .....  | 8.00     | ----  | 8.00           | 0.50           | 6.00                         |
| AGRICO for Grain .....   | 2.00     | ----  | 12.00          | 0.50           | 4.00                         |
| AGRICO for Tomatoes .....  | 2.00     | ----  | 12.00          | 0.50           | 6.00                         |
| AGRICO for Corn .....  | 3.00     | ----  | 14.00          | 0.50           | 6.00                         |
| AGRICO for Potatoes .....  | 4.00     | ----  | 8.00           | 0.50           | 6.00                         |
| AGRICO for Cotton .....  | 4.00     | ----  | 12.00          | 0.50           | 4.00                         |
| AGRICO for Truck .....   | 5.00     | ----  | 10.00          | 0.50           | 5.00                         |
| AA Steam Bone Meal .....   | 1.00     | 29.00   | ----           | ----           | ----                         |
| AA Half and Half Bone and Phosphate .....                                  | 1.00     | ----  | 12.00          | 8.00*          | ----                         |
| AA Pure Raw Bone .....   | 3.29     | 20.00   | ----           | ----           | ----                         |
| Ammonium Sulphate .....  | 20.16    | ----  | ----           | ----           | ----                         |
| Kainit .....   | ----     | ----  | ----           | ----           | 12.40                        |
| Muriate of Potash .....  | ----     | ----  | ----           | ----           | 50.00                        |
| Nitrate of Soda .....  | 15.00    | ----  | ----           | ----           | ----                         |
| AGRICO .....   | 5.00     | ----  | 9.00           | 0.50           | 6.00                         |
|  |          |   |                | *From Bone     |                              |
| <b>American Cyanamid Company,<br/>New York, New York</b>                   |          |   |                |                |                              |
| Ammo-Phos B .....  | 16.50    | ----  | 20.00          | ----           | ----                         |
| Ammo-Phos-Ko No. 1 .....   | 12.00    | ----  | 24.00          | ----           | 12.00                        |
| Ammo-Phos-Ko No. 2 .....   | 10.00    | ----  | 20.00          | ----           | 15.00                        |
| Ammo-Phos-Ko No. 3 .....   | 10.00    | ----  | 30.00          | ----           | 10.00                        |
| Aero Brand Cyanamid .....  | 21.00    | ----  | ----           | ----           | ----                         |
| <b>Anglo-Chilean Nitrate Sales Corp.,<br/>New York City, New York</b>      |          |   |                |                |                              |
| Nitrate of Soda .....  | 15.50    | ----  | ----           | ----           | ----                         |
| <b>Arkansas Fertilizer Company<br/>Little Rock, Arkansas</b>               |          |   |                |                |                              |
| <b>White Diamond Brands</b>  |          |   |                |                |                              |
| 16 per cent Superphosphate .....   | ----     | ----  | 16.00          | 0.50           | ----                         |
| 18 per cent Superphosphate .....   | ----     | ----  | 18.00          | 0.50           | ----                         |
| 20 per cent Superphosphate .....   | ----     | ----  | 20.00          | 0.50           | ----                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer  | Nitrogen | Phosphoric acid (P <sub>2</sub> O <sub>5</sub> ) |           |           | Potash (K <sub>2</sub> O) |
|---|----------|--|-----------|-----------|---------------------------|
|   |          | Total frombone                                   | Available | Insoluble |                           |
|   | Per cent | Per cent   | Per cent  | Per cent  | Per cent                  |
| Kali Superphosphate.....                              | ----     | ----   | 12.00     | ----      | 4.00                      |
| 0-14-4.....   | ----     | ----   | 14.00     | ----      | 4.00                      |
| Southwest Wheat Grower.....                           | 1.00     | ----   | 15.00     | ----      | 1.00                      |
| 2-10-1.....   | 2.00     | ----   | 10.00     | ----      | 1.00                      |
| 20th Century.....                                     | 2.00     | ----   | 10.00     | ----      | 2.00                      |
| Southern King.....                                    | 2.00     | ----   | 12.00     | ----      | 2.00                      |
| 2-12-4.....   | 2.00     | ----   | 12.00     | ----      | 4.00                      |
| Tomato Grower.....                                    | 2.00     | ----   | 12.00     | ----      | 6.00                      |
| Prize Wheat Grower.....                               | 2.00     | ----   | 16.00     | ----      | 2.00                      |
| Southern Special.....                                 | 3.00     | ----   | 9.00      | ----      | 3.00                      |
| 3-12-4.....   | 3.00     | ----   | 12.00     | ----      | 4.00                      |
| 3-8-6.....  | 3.00     | ----   | 8.00      | ----      | 6.00                      |
| Gro-Fast.....   | 4.00     | ----   | 12.00     | ----      | ----                      |
| Moore's Special Mixture.....                          | 4.00     | ----   | 10.00     | ----      | 2.00                      |
| Old Reliable.....                                     | 4.00     | ----   | 8.00      | ----      | 4.00                      |
| Farmers Choice.....                                   | 4.00     | ----   | 10.00     | ----      | 4.00                      |
| Crop Getter.....                                      | 4.00     | ----   | 12.00     | ----      | 4.00                      |
| Jack Rabbit.....                                      | 4.00     | ----   | 8.00      | ----      | 6.00                      |
| Economy.....  | 5.00     | ----   | 10.00     | ----      | 3.00                      |
| Prize Winner.....                                     | 6.00     | ----   | 10.00     | ----      | 4.00                      |
| Muriate of Potash.....                                | ----     | ----   | ----      | ----      | 50.00                     |
| Kainit.....   | ----     | ----   | ----      | ----      | 14.00                     |
| Nitrate of Soda.....                                  | 15.00    | ----   | ----      | ----      | ----                      |
| Extra Dry Sulphate of Ammonia.....                    | 20.50    | ----   | ----      | ----      | ----                      |
| <b>Armour Fertilizer Works,<br/>Chicago, Illinois</b> |          |  |           |           |                           |
| <b>Big Crop Brands</b>                                |          |  |           |           |                           |
| 6-15-9 Fertilizer.....                                | 6.00     | ----   | 15.00     | ----      | 9.00                      |
| 5-15-5 Fertilizer.....                                | 5.00     | ----   | 15.00     | ----      | 5.00                      |
| 4-16-8 Fertilizer.....                                | 4.00     | ----   | 16.00     | ----      | 8.00                      |
| 4-16-4 Fertilizer.....                                | 4.00     | ----   | 16.00     | ----      | 4.00                      |
| 3-18-9 Fertilizer.....                                | 3.00     | ----   | 18.00     | ----      | 9.00                      |
| 3-18-3 Fertilizer.....                                | 3.00     | ----   | 18.00     | ----      | 3.00                      |
| 2-16-8 Fertilizer.....                                | 2.00     | ----   | 16.00     | ----      | 8.00                      |
| 2-12-6 Fertilizer.....                                | 2.00     | ----   | 12.00     | ----      | 6.00                      |
| 2-12-2 Fertilizer.....                                | 2.00     | ----   | 12.00     | ----      | 2.00                      |
| 2-16-2 Fertilizer.....                                | 2.00     | ----   | 16.00     | ----      | 2.00                      |
| 0-21-9 Fertilizer.....                                | ----     | ----   | 21.00     | ----      | 9.00                      |
| 24 per cent Superphosphate.....                       | ----     | ----   | 24.00     | ----      | ----                      |
| 20 per cent Superphosphate.....                       | ----     | ----   | 20.00     | ----      | ----                      |
| 16 per cent Superphosphate.....                       | ----     | ----   | 16.00     | ----      | ----                      |
| Bone Meal, 2-24t.....                                 | 2.00     | 24.00  | ----      | ----      | ----                      |
| Raw Bone Meal, 3 3/4-22t.....                         | 3.75     | 22.00  | ----      | ----      | ----                      |
| 4-8-6 Fertilizer.....                                 | 4.00     | ----   | 8.00      | ----      | 6.00                      |
| <b>Armour Brands</b>                                  |          |  |           |           |                           |
| NPK 9-27-9 Fertilizer.....                            | 9.00     | ----   | 27.00     | ----      | 9.00                      |
| NPK 9-18-18 Fertilizer.....                           | 9.00     | ----   | 18.00     | ----      | 18.00                     |
| Multiphos, 44 per cent.....                           | ----     | ----   | 44.00     | ----      | ----                      |
| Lawn and Garden Grower.....                           | 5.00     | ----   | 8.00      | ----      | 6.00                      |
| Vert.....   | 5.00     | ----   | 8.00      | ----      | 6.00                      |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer  | Nitro-<br>gen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|---|---------------|---|----------------|----------------|------------------------------|
|   |               | Total<br>frombone                                   | Avail-<br>able | Insolu-<br>ble |                              |
|   | Per cent      | Per cent  | Per cent       | Per cent       | Per cent                     |
| <b>Barada and Page, Inc.,<br/>Kansas City, Missouri</b>           |               |   |                |                |                              |
| Ammonia Sulphate .....  | 20.20         | ----  | ----           | ----           | ----                         |
| <b>The Barrett Company,<br/>New York City, New York</b>           |               |   |                |                |                              |
| Arcadian Nitrate of Soda .....                                    | 16.25         | ----  | ----           | ----           | ----                         |
| Sulphate of Ammonia .....   | 20.56         | ----  | ----           | ----           | ----                         |
| Arcadian Sulphate of Ammonia.....                                 | 20.56         | ----  | ----           | ----           | ----                         |
| <b>Blood and Bone Fertilizer Company,<br/>St. Louis, Missouri</b> |               |   |                |                |                              |
| <b>Steer Head Brands</b>  |               |   |                |                |                              |
| Special Truck Grower.....   | 4.00          | ----  | 8.00           | ----           | 5.00                         |
| Two-Sixteen-Two Fertilizer.....                                   | 2.00          | ----  | 16.00          | ----           | 2.00                         |
| Two-Twelve-Six Fertilizer .....                                   | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| Missouri Special Fertilizer .....                                 | 2.00          | ----  | 12.00          | ----           | 2.00                         |
| Special Crop Grower.....  | 2.00          | ----  | 8.00           | ----           | 2.00                         |
| Special Wheat Grower.....   | 2.00          | ----  | 10.00          | ----           | 3.00                         |
| Ammoniated Bone Phosphate.....                                    | 2.00          | ----  | 12.00          | ----           | ----                         |
| Twelve Four Fertilizer .....                                      | ----          | ----  | 12.00          | ----           | 4.00                         |
| Soluble Bone Phosphate, 16 per cent .....                         | ----          | ----  | 16.00          | 1.00           | ----                         |
| Soluble Bone Phosphate, 18 per cent.....                          | ----          | ----  | 18.00          | 1.00           | ----                         |
| Soluble Bone Phosphate, 20 per cent.....                          | ----          | ----  | 20.00          | 1.00           | ----                         |
| Raw Bone Meal.....  | 3.28          | 20.00   | ----           | ----           | ----                         |
| St. Louis Bone Meal.....  | 2.50          | 24.00   | ----           | ----           | ----                         |
| Steam Bone Meal.....  | 1.00          | 30.00   | ----           | ----           | ----                         |
| <b>Calumet Fertilizer Corporation,<br/>New Albany, Indiana</b>    |               |   |                |                |                              |
| Four Twenty-Four Twelve.....                                      | 4.00          | ----  | 24.00          | 1.00           | 12.00                        |
| Four Ten Six.....   | 4.00          | ----  | 10.00          | 1.00           | 6.00                         |
| Two Twelve Six.....   | 2.00          | ----  | 12.00          | 1.00           | 6.00                         |
| Two Twelve Two.....   | 2.00          | ----  | 12.00          | 1.00           | 2.00                         |
| Two Fourteen Four.....  | 2.00          | ----  | 14.00          | 1.00           | 4.00                         |
| Two Eight Two .....   | 2.00          | ----  | 8.00           | 1.00           | 2.00                         |
| One Eight Three .....   | 1.00          | ----  | 8.00           | 1.00           | 3.00                         |
| One Eight One .....   | 1.00          | ----  | 8.00           | 1.00           | 1.00                         |
| Twenty-Four Twenty-Four .....                                     | ----          | ----  | 24.00          | 1.00           | 24.00                        |
| Fourteen Six.....   | ----          | ----  | 14.00          | 1.00           | 6.00                         |
| Twelve Twelve.....  | ----          | ----  | 12.00          | 1.00           | 12.00                        |
| 20 Per Cent Superphosphate .....                                  | ----          | ----  | 20.00          | 1.00           | ----                         |
| 16 Per Cent Superphosphate.....                                   | ----          | ----  | 16.00          | 1.00           | ----                         |
| <b>Lyman Carrier,<br/>Granger, Indiana</b>                        |               |   |                |                |                              |
| LECCO.....  | 7.00          | ----  | 7.00           | 2.00           | 2.00                         |
| <b>Crocker Packing Company,<br/>Joplin, Missouri</b>              |               |   |                |                |                              |
| <b>Interstate Brands</b>  |               |   |                |                |                              |
| 2-10-2.....   | 2.00          | ----  | 10.00          | 0.50           | 2.00                         |
| 2-8-2.....  | 2.00          | ----  | 8.00           | 0.50           | 2.00                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer   | Nitrogen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|--|----------|---|----------------|----------------|------------------------------|
|  |          | Total<br>frombone                                   | Avail-<br>able | Insolu-<br>ble |                              |
|  | Per cent | Per cent  | Per cent       | Per cent       | Per cent                     |
| 2-12-2.....  | 2.00     | ----  | 12.00          | 0.75           | 2.00                         |
| 2-12-6.....  | 2.00     | ----  | 12.00          | 0.75           | 6.00                         |
| 1-12-1.....  | 1.00     | ----  | 12.00          | 0.75           | 1.00                         |
| "Potato Special" 2-8-10.....   | 2.00     | ----  | 8.00           | 0.50           | 10.00                        |
| Steam Bone Sheep Manure and Potash.....                                | 2.00     | ----  | 6.00           | 8.00*          | 2.00                         |
| Steam Bone and Phosphate.....  | 1.23     | ----  | 12.00          | 8.00*          | ----                         |
| Superphosphate 20 per cent.....  | ----     | ----  | 20.00          | ----           | ----                         |
| Steam Bone Meal.....   | 2.46     | 24.00   | ----           | ----           | ----                         |
| Superphosphate 16 per cent.....  | ----     | ----  | 16.00          | ----           | ----                         |
| Raw Bone.....  | 3.70     | 22.00   | ----           | ----           | ----                         |
| 2-8-5.....   | 2.00     | ----  | 8.00           | 0.50           | 5.00                         |
| 2-12-4.....  | 2.00     | ----  | 12.00          | 0.75           | 4.00                         |
| 2-16-2.....  | 2.00     | ----  | 16.00          | 1.00           | 2.00                         |
| Lawn, Vegetable and Flower Grower 6-8-4.....                           | 6.00     | ----  | 8.00           | 0.50           | 4.00                         |
| ½-15-2.....  | 0.50     | ----  | 15.00          | 1.00           | 2.00                         |
|  |          |   |                | *From<br>Bone  |                              |
| <b>Cudahy Packing Company,</b><br>Chicago, Illinois<br>"Bigwin" Brands |          |   |                |                |                              |
| Steamed Bone Meal.....   | 2.47     | 24.00   | ----           | ----           | ----                         |
| Half and Half.....   | 1.00     | ----  | 13.00          | 7.00*          | ----                         |
| High Grade 16 per cent Superphosphate.....                             | ----     | ----  | 16.00          | 1.00           | ----                         |
| High Grade 18 per cent Superphosphate.....                             | ----     | ----  | 18.00          | 1.00           | ----                         |
| High Grade Fertilizer 2-12-2.....                                      | 2.00     | ----  | 12.00          | ----           | 2.00                         |
| High Grade Fertilizer 2-16-2.....                                      | 2.00     | ----  | 16.00          | ----           | 2.00                         |
| High Grade Fertilizer 2-12-6.....                                      | 2.00     | ----  | 12.00          | ----           | 6.00                         |
| High Grade Fertilizer 3-8-6.....                                       | 3.00     | ----  | 8.00           | ----           | 6.00                         |
| High Grade Fertilizer 4-8-6.....                                       | 4.00     | ----  | 8.00           | ----           | 6.00                         |
| High Grade 20 per cent Superphosphate.....                             | ----     | ----  | 20.00          | 1.00           | ----                         |
| Raw Bone Meal.....   | 3.70     | 22.00   | ----           | ----           | ----                         |
| Nitrate of Soda.....   | 15.00    | ----  | ----           | ----           | ----                         |
| Muriate of Potash.....   | ----     | ----  | ----           | ----           | 58.00                        |
| Sulphate of Ammonia.....   | 21.00    | ----  | ----           | ----           | ----                         |
| High Grade Fertilizer 4-16-4.....                                      | 4.00     | ----  | 16.00          | ----           | 4.00                         |
| High Grade Fertilizer 4-12-4.....                                      | 4.00     | ----  | 12.00          | ----           | 4.00                         |
| High Grade Fertilizer 4-10-6.....                                      | 4.00     | ----  | 10.00          | ----           | 6.00                         |
| High Grade Fertilizer 0-14-6.....                                      | ----     | ----  | 14.00          | ----           | 6.00                         |
| High Grade Fertilizer 6-8-6.....                                       | 6.00     | ----  | 8.00           | ----           | 6.00                         |
| High Grade Fertilizer 2-12-4.....                                      | 2.00     | ----  | 12.00          | ----           | 4.00                         |
|  |          |   |                | *From<br>Bone  |                              |
| <b>Darling and Company,</b><br>Chicago, Illinois<br>Darling's Brands   |          |   |                |                |                              |
| All Crop.....  | 4.00     | ----  | 16.00          | ----           | 4.00                         |
| Special Lawn Grower.....   | 4.00     | ----  | 8.00           | ----           | 7.00                         |
| Cotton Special.....  | 4.00     | ----  | 12.00          | ----           | 4.00                         |
| Potato Brand.....  | 4.00     | ----  | 8.00           | ----           | 6.00                         |
| Truck Grower.....  | 3.00     | ----  | 12.00          | ----           | 12.00                        |
| Vegetable Grower.....  | 3.00     | ----  | 12.00          | ----           | 4.00                         |
| Farmers Favorite.....  | 3.00     | ----  | 8.00           | ----           | 6.00                         |
| General Crop.....  | 2.00     | ----  | 16.00          | ----           | 6.00                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer   | Nitro-<br>gen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|--|---------------|---|----------------|----------------|------------------------------|
|  |               | Total<br>frombone                                   | Avail-<br>able | Insolu-<br>ble |                              |
|  | Per cent      | Per cent  | Per cent       | Per cent       | Per cent                     |
| Bumper Crop .....  | 2.00          | ----  | 16.00          | ----           | 2.00                         |
| Two Fourteen Four.....   | 2.00          | ----  | 14.00          | ----           | 4.00                         |
| Crop King.....   | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| Tomato Grower .....  | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| Big Harvest.....   | 2.00          | ----  | 12.00          | ----           | 2.00                         |
| Two Twelve Four .....  | 2.00          | ----  | 12.00          | ----           | 4.00                         |
| Chicago Brand .....  | 2.00          | ----  | 8.00           | ----           | 2.00                         |
| Grain Grower .....   | 1.00          | ----  | 12.00          | ----           | 1.00                         |
| Naught Fourteen Four .....   | ----          | ----  | 14.00          | ----           | 4.00                         |
| Naught Eight Twenty-four.....  | ----          | ----  | 8.00           | ----           | 24.00                        |
| Naught Ten Ten.....  | ----          | ----  | 10.00          | ----           | 10.00                        |
| 16 per cent Superphosphate.....  | ----          | ----  | 16.00          | ----           | ----                         |
| 20 per cent Superphosphate.....  | ----          | ----  | 20.00          | ----           | ----                         |
| Foreign Muriate of Potash.....   | ----          | ----  | ----           | ----           | 50.00                        |
| Kemfert Potash.....  | ----          | ----  | ----           | ----           | 60.00                        |
| Nitrate of Soda.....   | 15.50         | ----  | ----           | ----           | ----                         |
| Sulphate of Ammonia.....   | 20.56         | ----  | ----           | ----           | ----                         |
| Pure Ground Bone.....  | 1.85          | 28.00   | ----           | ----           | ----                         |
| Blood and Bone.....  | 4.50          | 7.00  | ----           | ----           | ----                         |
| Bone and Superphosphate, Half and Half.....                                | 0.82          | ----  | 11.00          | 12.00*         | ----                         |
| *Insoluble P <sub>2</sub> O <sub>5</sub> is from Bone.                     |               |   |                |                |                              |
| <b>E. I. duPont de Nemours and Company,</b><br><b>Wilmington, Delaware</b> |               |   |                |                |                              |
| Nitrate of Soda.....   | 15.25         | ----  | ----           | ----           | ----                         |
| <b>The Excell Laboratories,</b><br><b>Chicago, Illinois</b>                |               |   |                |                |                              |
| Zenkes, "New Plant Life" (Liquid) (Full Strength)....                      | 2.80          | 2.20  | 2.14           | ----           | 1.08                         |
| Zenkes, "New Plant Life" (Liquid) (Domestic<br>Strength).....              | 1.40          | 1.10  | 1.07           | ----           | 0.54                         |
| <b>Federal Chemical Company, Inc.,</b><br><b>Louisville, Kentucky</b>      |               |   |                |                |                              |
| <b>Globe Brands</b>  |               |   |                |                |                              |
| Globe Formula 1-12-3.....  | 1.00          | ----  | 12.00          | ----           | 3.00                         |
| Eagle Corn and Wheat Grower.....   | 2.00          | ----  | 10.00          | ----           | 2.00                         |
| Loam Land Fertilizer.....  | 2.00          | ----  | 12.00          | ----           | 2.00                         |
| Official Formula 2-12-6.....   | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| Official Formula 2-14-4.....   | 2.00          | ----  | 14.00          | ----           | 4.00                         |
| Double Duty.....   | 4.00          | ----  | 12.00          | ----           | 4.00                         |
| Phosphate and Potash.....  | ----          | ----  | 12.00          | ----           | 4.00                         |
| Official Formula 0-12-6.....   | ----          | ----  | 12.00          | ----           | 6.00                         |
| 16 per cent Superphosphate.....  | ----          | ----  | 16.00          | ----           | ----                         |
| 20 per cent Superphosphate.....  | ----          | ----  | 20.00          | ----           | ----                         |
| Fine Bone .....  | 3.30          | 20.00   | ----           | ----           | ----                         |
| <b>Daybreak Brands</b>   |               |   |                |                |                              |
| Daybreak Formula 1-12-3.....   | 1.00          | ----  | 12.00          | ----           | 3.00                         |
| Standard Corn and Wheat Grower.....  | 2.00          | ----  | 10.00          | ----           | 2.00                         |
| Loam Land Fertilizer .....   | 2.00          | ----  | 12.00          | ----           | 2.00                         |
| Official Formula 2-12-6.....   | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| Official Formula 2-14-4.....   | 2.00          | ----  | 14.00          | ----           | 4.00                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer   | Nitrogen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|--|----------|---|----------------|----------------|------------------------------|
|  |          | Total<br>from bone                                  | Avail-<br>able | Insol-<br>uble |                              |
|  | Per cent | Per cent  | Per cent       | Per cent       | Per cent                     |
| Double Duty.....   | 4.00     | ----  | 12.00          | ----           | 4.00                         |
| Phosphate and Potash.....  | ----     | ----  | 12.00          | ----           | 4.00                         |
| Official Formula 0-12-6.....   | ----     | ----  | 12.00          | ----           | 6.00                         |
| 16 per cent Superphosphate.....  | ----     | ----  | 16.00          | ----           | ----                         |
| 20 per cent Superphosphate.....  | ----     | ----  | 20.00          | ----           | ----                         |
| Fine Bone .....  | 3.30     | 20.00   | ----           | ----           | ----                         |
| <b>The Flower City Plant Food Company, Inc.,<br/>Rochester, New York</b> |          |   |                |                |                              |
| WONDERGRO.....   | 10.00    | ----  | 12.00          | ----           | 11.00                        |
| Walker's Excelsior Plant Food .....                                      | 5.00     | ----  | 7.00           | ----           | 3.00                         |
| Japanese Fern and Palm Food .....  | 5.00     | ----  | 6.00           | ----           | 1.00                         |
| <b>Floyd Plant Food Company,<br/>St. Louis, Missouri</b>                 |          |   |                |                |                              |
| <b>Floyd's Money-Maker Brands</b>  |          |   |                |                |                              |
| 4-8-6 Goods.....   | 4.00     | ----  | 8.00           | 0.25           | 6.00                         |
| 3-10-4 Goods.....  | 3.00     | ----  | 10.00          | 0.25           | 4.00                         |
| 3-12-4 Goods.....  | 3.00     | ----  | 12.00          | 0.25           | 4.00                         |
| 3-8-6 Goods.....   | 3.00     | ----  | 8.00           | 0.25           | 6.00                         |
| 2-16-2 Goods.....  | 2.00     | ----  | 16.00          | 0.25           | 2.00                         |
| 2-12-6 Goods.....  | 2.00     | ----  | 12.00          | 0.25           | 6.00                         |
| 2-12-4 Goods.....  | 2.00     | ----  | 12.00          | 0.25           | 4.00                         |
| 2-12-2 Goods.....  | 2.00     | ----  | 12.00          | 0.25           | 2.00                         |
| 4-16-4 Goods.....  | 4.00     | ----  | 16.00          | 0.25           | 4.00                         |
| 2-8-2 Goods.....   | 2.00     | ----  | 8.00           | 0.25           | 2.00                         |
| 1-12-1 Goods.....  | 1.00     | ----  | 12.00          | 0.25           | 1.00                         |
| 4-12-2 Goods.....  | 4.00     | ----  | 12.00          | 0.25           | 2.00                         |
| 4-12-4 Goods.....  | 4.00     | ----  | 12.00          | 0.25           | 4.00                         |
| 4-8-8 Goods.....   | 4.00     | ----  | 8.00           | 0.25           | 8.00                         |
| 4-12-0 Goods.....  | 4.00     | ----  | 12.00          | 0.25           | ----                         |
| 2-12-0 Goods.....  | 2.00     | ----  | 12.00          | 0.25           | ----                         |
| 4-8-0 Goods.....   | 4.00     | ----  | 8.00           | 0.25           | ----                         |
| 4-8-4 Goods.....   | 4.00     | ----  | 8.00           | 0.25           | 4.00                         |
| 0-12-6 Goods.....  | ----     | ----  | 12.00          | 0.25           | 6.00                         |
| 0-12-4 Goods.....  | ----     | ----  | 12.00          | 0.25           | 4.00                         |
| 0-10-10 Goods.....   | ----     | ----  | 10.00          | 0.25           | 10.00                        |
| 0-14-14 Goods.....   | ----     | ----  | 14.00          | 0.25           | 14.00                        |
| 0-14-4 Goods.....  | ----     | ----  | 14.00          | 0.25           | 4.00                         |
| 0-16-8 Goods.....  | ----     | ----  | 16.00          | 0.25           | 8.00                         |
| 1-16-1 Goods.....  | 1.00     | ----  | 16.00          | 0.25           | 1.00                         |
| 2-14-4.....  | 2.00     | ----  | 14.00          | 0.25           | 4.00                         |
| 6-8-6.....   | 6.00     | ----  | 8.00           | 0.25           | 6.00                         |
| Garden Fertilizer 4-4-1.....   | 4.00     | ----  | 4.00           | 0.10           | 1.00                         |
| Garden Fertilizer 4-6-2.....   | 4.00     | ----  | 6.00           | 0.10           | 2.00                         |
| Ground Raw Bone.....   | 3.28     | 20.00t  | ----           | ----           | ----                         |
| Ground Steam Bone .....  | 2.51     | 24.00t  | ----           | ----           | ----                         |
| Steam Bone Meal.....   | 0.83     | 29.00t  | ----           | ----           | ----                         |
| Ground Bone (Steamed).....   | 1.66     | 27.00t  | ----           | ----           | ----                         |
| Bone and Phosphate Mixture .....   | 1.00     | ----  | 12.00          | 8.00*          | ----                         |
| 16 per cent Super Phosphate.....   | ----     | ----  | 16.00          | 0.30           | ----                         |
| 18 per cent Super Phosphate.....   | ----     | ----  | 18.00          | 0.40           | ----                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer                                    | Nitro-<br>gen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|---|---------------|---|----------------|----------------|------------------------------|
|   |               | Total<br>frombone                                   | Avail-<br>able | Insolu-<br>ble |                              |
|   | Per cent      | Per cent  | Per cent       | Per cent       | Per cent                     |
| 20 Per cent Super Phosphate.....              | ----          | ----  | 20.00          | 0.10           | ----                         |
| Nitrated Gypsum (for lawns) .....             | 2.51          | ----  | ----           | ----           | ----                         |
| Nitrate of Soda.....                          | 15.00         | ----  | ----           | ----           | ----                         |
| Sulphate of Ammonia .....                     | 20.50         | ----  | ----           | ----           | ----                         |
| Muriate of Potash .....                       | ----          | ----  | ----           | ----           | 50.00                        |
| Sulphate of Potash.....                       | ----          | ----  | ----           | ----           | 50.00                        |
| Kainit.....                                   | ----          | ----  | ----           | ----           | 14.00                        |
| Calcium Nitrate (Nitrate of Lime).....        | 15.00         | ----  | ----           | ----           | ----                         |
| Nitrophoska .....                             | 15.00         | ----  | 30.00          | ----           | 15.00                        |
| Arcadian Nitrate of Soda.....                 | 16.25         | ----  | ----           | ----           | ----                         |
|   |               |   |                | *From<br>Bone  |                              |
| <b>Floyd Plant Food Company,</b>              |               |   |                |                |                              |
| <b>St. Louis, Missouri</b>                    |               |   |                |                |                              |
| <b>M. F. A. Brands</b>                        |               |   |                |                |                              |
| Money Maker, 16 per cent Superphosphate ..... | ----          | ----  | 16.00          | 0.25           | ----                         |
| Money Maker, 18 per cent Superphosphate.....  | ----          | ----  | 18.00          | 0.25           | ----                         |
| Money Maker, 20 per cent Superphosphate.....  | ----          | ----  | 20.00          | 0.10           | ----                         |
| Money Maker 2-12-2.....                       | 2.00          | ----  | 12.00          | 0.25           | 2.00                         |
| Money Maker 2-16-2.....                       | 2.00          | ----  | 16.00          | 0.25           | 2.00                         |
| Money Maker 2-8-2.....                        | 2.00          | ----  | 8.00           | 0.25           | 2.00                         |
| Money Maker 3-8-6.....                        | 3.00          | ----  | 8.00           | 0.25           | 6.00                         |
| Money Maker 3-10-4.....                       | 3.00          | ----  | 10.00          | 0.25           | 4.00                         |
| Money Maker 2-12-4.....                       | 2.00          | ----  | 12.00          | 0.25           | 4.00                         |
| Money Maker 4-8-6.....                        | 4.00          | ----  | 8.00           | 0.25           | 6.00                         |
| Money Maker 3-12-4.....                       | 3.00          | ----  | 12.00          | 0.25           | 4.00                         |
| Money Maker 2-12-6.....                       | 2.00          | ----  | 12.00          | 0.25           | 6.00                         |
| Money Maker 2-12-0.....                       | 2.00          | ----  | 12.00          | 0.25           | ----                         |
| Money Maker 4-12-0.....                       | 4.00          | ----  | 12.00          | 0.25           | ----                         |
| Money Maker 0-12-4.....                       | ----          | ----  | 12.00          | 0.25           | 4.00                         |
| Money Maker 0-12-6.....                       | ----          | ----  | 12.00          | 0.25           | 6.00                         |
| Money Maker 0-14-4.....                       | ----          | ----  | 14.00          | 0.25           | 4.00                         |
| Money Maker 0-10-10.....                      | ----          | ----  | 10.00          | 0.25           | 10.00                        |
| Money Maker 6-8-6.....                        | 6.00          | ----  | 8.00           | 0.25           | 6.00                         |
| Money Maker 2-14-4.....                       | 2.00          | ----  | 14.00          | 0.25           | 4.00                         |
| Money Maker 4-12-4.....                       | 4.00          | ----  | 12.00          | 0.25           | 4.00                         |
| Money Maker 4-16-4.....                       | 4.00          | ----  | 16.00          | 0.25           | 4.00                         |
| Money Maker Ground Raw Bone.....              | 3.28          | 20.00   | ----           | ----           | ----                         |
| Money Maker Ground Steam Bone.....            | 2.51          | 24.00   | ----           | ----           | ----                         |
| Money Maker Steam Bone Meal.....              | .83           | 29.00   | ----           | ----           | ----                         |
| Money Maker Ground Bone (Steamed).....        | 1.66          | 27.00   | ----           | ----           | ----                         |
| Money Maker Bone and Phosphate Mixture.....   | 1.00          | ----  | 12.00          | 8.00*          | ----                         |
| Money Maker Nitrate of Soda .....             | 15.00         | ----  | ----           | ----           | ----                         |
| Money Maker Sulphate of Potash .....          | ----          | ----  | ----           | ----           | 50.00                        |
| Money Maker Sulphate of Ammonia.....          | 20.50         | ----  | ----           | ----           | ----                         |
| Money Maker Muriate of Potash.....            | ----          | ----  | ----           | ----           | 50.00                        |
| Money Maker Arcadian Nitrate of Soda.....     | 16.25         | ----  | ----           | ----           | ----                         |
| Money Maker 4-6-2.....                        | 4.00          | ----  | 6.00           | 0.25           | 2.00                         |
|   |               |   |                | *From<br>Bone  |                              |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer                                   | Nitrogen | Phosphoric acid (P <sub>2</sub> O <sub>5</sub> ) |            |            | Potash (K <sub>2</sub> O) |
|--|----------|--|------------|------------|---------------------------|
|  |          | Total frombone                                   | Avail-able | Insolu-ble |                           |
|  | Per cent | Per cent   | Per cent   | Per cent   | Per cent                  |
| <b>Floyd Plant Food Company, (Continued)</b> |          |  |            |            |                           |
| St. Louis, Missouri                          |          |  |            |            |                           |
| Floyd's Money Maker Brands                   |          |  |            |            |                           |
| M. F. B. F. Brands                           |          |  |            |            |                           |
| 4-12-4.....                                  | 4.00     | ----   | 12.00      | ----       | 4.00                      |
| 2-14-4.....                                  | 2.00     | ----   | 14.00      | ----       | 4.00                      |
| 2-12-6.....                                  | 2.00     | ----   | 12.00      | ----       | 6.00                      |
| 4-10-6.....                                  | 4.00     | ----   | 10.00      | ----       | 6.00                      |
| 0-14-6.....                                  | 0.00     | ----   | 14.00      | ----       | 6.00                      |
| 6-8-6.....                                   | 6.00     | ----   | 8.00       | ----       | 6.00                      |
| 2-12-2.....                                  | 2.00     | ----   | 12.00      | ----       | 2.00                      |
| Super Phosphate,                             | ----     | ----   | 20.00      | ----       | ----                      |
| Ford Motor Company,                          |          |  |            |            |                           |
| Dearborn, Michigan                           |          |  |            |            |                           |
| Ford Ammonium Sulphate.....                  | 20.8     | ----   | ----       | ----       | ----                      |
| Fort Smith Cotton Oil Company,               |          |  |            |            |                           |
| Fort Smith, Arkansas                         |          |  |            |            |                           |
| 2-12-2 Goods.....                            | 2.00     | ----   | 12.00      | 0.25       | 2.00                      |
| 4-8-6 Goods.....                             | 4.00     | ----   | 8.00       | 0.25       | 6.00                      |
| 20 per cent Superphosphate.....              | ----     | ----   | 20.00      | 0.10       | ----                      |
| 18 per cent Superphosphate.....              | ----     | ----   | 18.00      | ----       | ----                      |
| 16 per cent Superphosphate.....              | ----     | ----   | 16.00      | ----       | ----                      |
| Sulphate of Ammonia.....                     | 20.50    | ----   | ----       | ----       | ----                      |
| Nitrate of Soda.....                         | 15.00    | ----   | ----       | ----       | ----                      |
| 4-12-4 Goods.....                            | 4.00     | ----   | 12.00      | ----       | 4.00                      |
| 2-10-2 Goods.....                            | 2.00     | ----   | 10.00      | ----       | 2.00                      |
| 5-15-5 Goods.....                            | 5.00     | ----   | 15.00      | ----       | 5.00                      |
| 4-8-8 Goods.....                             | 4.00     | ----   | 8.00       | ----       | 8.00                      |
| 4-8-4 Goods.....                             | 4.00     | ----   | 8.00       | ----       | 4.00                      |
| 30 per cent Superphosphate.....              | ----     | ----   | 30.00      | ----       | ----                      |
| 45 per cent Superphosphate.....              | ----     | ----   | 45.00      | ----       | ----                      |
| Muriate of Potash.....                       | ----     | ----   | ----       | ----       | 50.00                     |
| Gate City Fertilizer Company,                |          |  |            |            |                           |
| Little Rock, Arkansas                        |          |  |            |            |                           |
| Red Ball Brands                              |          |  |            |            |                           |
| 4-10-2.....                                  | 4.00     | ----   | 10.00      | ----       | 2.00                      |
| 4-10-4.....                                  | 4.00     | ----   | 10.00      | ----       | 4.00                      |
| 4-12-4.....                                  | 4.00     | ----   | 12.00      | ----       | 4.00                      |
| 4-8-4.....                                   | 4.00     | ----   | 8.00       | ----       | 4.00                      |
| 4-8-6.....                                   | 4.00     | ----   | 8.00       | ----       | 6.00                      |
| 5-10-3.....                                  | 5.00     | ----   | 10.00      | ----       | 3.00                      |
| 6-10-4.....                                  | 6.00     | ----   | 10.00      | ----       | 4.00                      |
| Muriate of Potash.....                       | ----     | ----   | ----       | ----       | 50.00                     |
| Kainit.....                                  | ----     | ----   | ----       | ----       | 14.00                     |
| Nitrate of Soda.....                         | 15.00    | ----   | ----       | ----       | ----                      |
| Extra Dry Sul. Ammonia.....                  | 20.50    | ----   | ----       | ----       | ----                      |
| 16 per cent Superphosphate.....              | ----     | ----   | 16.00      | 0.50       | ----                      |
| 18 per cent Superphosphate.....              | ----     | ----   | 18.00      | 0.50       | ----                      |
| 0-12-4.....                                  | ----     | ----   | 12.00      | ----       | 4.00                      |
| 0-14-4.....                                  | ----     | ----   | 14.00      | ----       | 4.00                      |
| 1-15-1.....                                  | 1.00     | ----   | 15.00      | ----       | 1.00                      |
| 2-10-2.....                                  | 2.00     | ----   | 10.00      | ----       | 2.00                      |



TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer   | Nitro-<br>gen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|--|---------------|---|----------------|----------------|------------------------------|
|  |               | Total<br>frombone                                   | Avail-<br>able | Insolu-<br>ble |                              |
|  | Per cent      | Per cent  | Per cent       | Per cent       | Per cent                     |
| 2-12-2.....  | 2.00          | ----  | 12.00          | ----           | 2.00                         |
| 2-12-4.....  | 2.00          | ----  | 12.00          | ----           | 4.00                         |
| 2-12-6.....  | 2.00          | ----  | 12.00          | ----           | 6.00                         |
| 2-16-2.....  | 2.00          | ----  | 16.00          | ----           | 2.00                         |
| 3-9-3.....   | 3.00          | ----  | 9.00           | ----           | 3.00                         |
| 3-12-4.....  | 3.00          | ----  | 12.00          | ----           | 4.00                         |
| 4-12-0.....  | 4.00          | ----  | 12.00          | ----           | ----                         |
| <b>The Grasselli Chemical Company, Inc.,<br/>Cleveland, Ohio</b> |               |   |                |                |                              |
| DUGRO (GRASSELLI PLANT FOOD).....                                | 4.00          | ----  | 13.00          | 2.00           | 4.00                         |
| <b>Leonard Haefele,<br/>St. Louis, Missouri</b>                  |               |   |                |                |                              |
| <b>Star Brands</b>   |               |   |                |                |                              |
| Ground Steamed Bone.....   | 2.00          | 20.00   | ----           | ----           | ----                         |
| Bone Fertilizer.....   | 4.00          | 15.00   | ----           | ----           | ----                         |
| <b>Jax Plant Food Company,<br/>Birmingham, Alabama</b>           |               |   |                |                |                              |
| Jax Triple Strength Plant Food.....                              | 17.00         | ----  | 33.00          | ----           | 17.00                        |
| <b>Koppers Products Company,<br/>Pittsburgh, Pennsylvania</b>    |               |   |                |                |                              |
| Koppers Velvet Lawn.....   | 20.75         | ----  | ----           | ----           | ----                         |
| <b>Memphis Fertilizer Factory,<br/>Memphis, Tennessee</b>        |               |   |                |                |                              |
| <b>Memphis Brands</b>  |               |   |                |                |                              |
| Acid Phosphate 16 per cent.....                                  | ----          | ----  | 16.00          | 1.00           | ----                         |
| Acid Phosphate 18 per cent.....                                  | ----          | ----  | 18.00          | 1.00           | ----                         |
| Acid Phosphate 20 per cent.....                                  | ----          | ----  | 20.00          | 1.00           | ----                         |
| Complete Fertilizer 2-16-2.....                                  | 2.00          | ----  | 16.00          | 1.00           | 2.00                         |
| Complete Fertilizer 2-14-2.....                                  | 2.00          | ----  | 14.00          | 1.00           | 2.00                         |
| Complete Fertilizer 2-12-4.....                                  | 2.00          | ----  | 12.00          | 1.00           | 4.00                         |
| Complete Fertilizer 2-12-2.....                                  | 2.00          | ----  | 12.00          | 1.00           | 2.00                         |
| Complete Fertilizer 2-12-6.....                                  | 2.00          | ----  | 12.00          | 1.00           | 6.00                         |
| Complete Fertilizer 3-12-4.....                                  | 3.00          | ----  | 12.00          | 1.00           | 4.00                         |
| Complete Fertilizer 3-8-6.....                                   | 3.00          | ----  | 8.00           | 1.00           | 6.00                         |
| Complete Fertilizer 2-10-4.....                                  | 2.00          | ----  | 10.00          | 1.00           | 4.00                         |
| Complete Fertilizer 4-16-4.....                                  | 4.00          | ----  | 16.00          | 1.00           | 4.00                         |
| Fertilizer 4-12-0.....   | 4.00          | ----  | 12.00          | 1.00           | ----                         |
| Fertilizer 4-14-0.....   | 4.00          | ----  | 14.00          | 1.00           | ----                         |
| Fertilizer 0-12-4.....   | ----          | ----  | 12.00          | 1.00           | 4.00                         |
| Fertilizer 0-14-4.....   | ----          | ----  | 14.00          | 1.00           | 4.00                         |
| Fertilizer 0-14-14.....  | ----          | ----  | 14.00          | 1.00           | 14.00                        |
| Muriate of Potash.....   | ----          | ----  | ----           | ----           | 48.00                        |
| Sulphate of Potash.....  | ----          | ----  | ----           | ----           | 46.00                        |
| Manure Salts.....  | ----          | ----  | ----           | ----           | 20.00                        |
| Kainit.....  | ----          | ----  | ----           | ----           | 12.40                        |
| Sulphate of Ammonia.....   | 20.50         | ----  | ----           | ----           | ----                         |
| Nitrate of Soda.....   | 15.00         | ----  | ----           | ----           | ----                         |
| Raw Bone Meal.....   | 2.47          | 20.00   | ----           | ----           | ----                         |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (Continued)

| Fertilizer   | Nitrogen | Phosphoric acid (P <sub>2</sub> O <sub>5</sub> ) |           |           | Potash (K <sub>2</sub> O) |
|--|----------|--|-----------|-----------|---------------------------|
|  |          | Total from bone                                  | Available | Insoluble |                           |
|  | Per cent | Per cent   | Per cent  | Per cent  | Per cent                  |
| <b>Merchants and Planters Plant Food Company,<br/>North Little Rock, Arkansas<br/>M. and P's. Brands</b> |          |  |           |           |                           |
| 16 per cent Superphosphate.....  | ----     | ----   | 16.00     | ----      | ----                      |
| 20 per cent Superphosphate.....  | ----     | ----   | 20.00     | ----      | ----                      |
| 4-16-4.....  | 4.00     | ----   | 16.00     | ----      | 4.00                      |
| Money Maker.....   | 4.00     | ----   | 12.00     | ----      | 4.00                      |
| 3-12-5.....  | 3.00     | ----   | 12.00     | ----      | 5.00                      |
| 2-12-6.....  | 2.00     | ----   | 12.00     | ----      | 6.00                      |
| Leader.....  | 2.00     | ----   | 12.00     | ----      | 2.00                      |
| 3-8-6.....   | 3.00     | ----   | 8.00      | ----      | 6.00                      |
| 0-14-4.....  | ----     | ----   | 14.00     | ----      | 4.00                      |
| 2-16-2.....  | 2.00     | ----   | 16.00     | ----      | 2.00                      |
| <b>Natural Guano Company,<br/>Aurora, Illinois<br/>"Sheep's Head" Pulverized Sheep Manure.....</b>       |          |  |           |           |                           |
|  | 2.00     | ----   | 1.00      | 0.25      | 1.50                      |
| <b>The Nitrogen Company, Inc.,<br/>Milwaukee, Wisconsin<br/>Feedem.....</b>                              |          |  |           |           |                           |
|  | 14.00    | ----   | 10.00     | ----      | 12.00                     |
| <b>The Old Gardener Company,<br/>Pittsburgh, Pennsylvania<br/>Old Gardener High Grade Odorless.....</b>  |          |  |           |           |                           |
|  | 2.00     | ----   | 10.00     | 0.50      | 4.00                      |
| Old Gardener Special Greenhouse Mixture.....   | 3.00     | ----   | 12.00     | 1.00      | 4.00                      |
| <b>Plantabbs Corporation,<br/>Baltimore, Maryland<br/>Fulton's Plantabbs.....</b>                        |          |  |           |           |                           |
|  | 11.00    | ----   | 15.00     | 2.00      | 20.00                     |
| <b>The Pulverized Manure Company,<br/>Chicago, Illinois<br/>Wizard Brands</b>                            |          |  |           |           |                           |
| Pulverized Sheep Manure.....   | 2.00     | ----   | 1.00      | ----      | 2.00                      |
| Cattle Manure.....   | 2.00     | ----   | 1.00      | ----      | 1.00                      |
| <b>Read Phosphate Company,<br/>Nashville, Tennessee<br/>Red Diamond Brands</b>                           |          |  |           |           |                           |
| 16 per cent Superphosphate.....  | ----     | ----   | 16.00     | 2.00      | ----                      |
| 20 per cent Superphosphate.....  | ----     | ----   | 20.00     | ----      | ----                      |
| 1-12-4 Missouri Grain Grower.....  | 1.00     | ----   | 12.00     | 3.00      | 4.00                      |
| 2-12-6.....  | 2.00     | ----   | 12.00     | 3.00      | 6.00                      |
| 2-12-2 Premium Grain Grower.....   | 2.00     | ----   | 12.00     | 3.00      | 2.00                      |
| 2-12-2 Quick Cotton Grower.....  | 2.00     | ----   | 12.00     | 3.00      | 2.00                      |
| 2-12-4 Complete Grain Special.....   | 2.00     | ----   | 12.00     | 3.00      | 4.00                      |
| 2-16-2.....  | 2.00     | ----   | 16.00     | 2.00      | 2.00                      |
| 3-8-6 No. 6 Truck Grower.....  | 3.00     | ----   | 8.00      | 5.00      | 6.00                      |
| 0-14-4 Special Potash Mixture.....   | ----     | ----   | 14.00     | 3.00      | 4.00                      |
| Pure Raw Bone Meal.....  | 3.70     | 20.00  | ----      | ----      | ----                      |
| Raw Bone Meal and Superphosphate.....  | 1.00     | ----   | 14.00     | 6.00*     | ----                      |
| 4-16-4.....  | 4.00     | ----   | 16.00     | 2.00      | 4.00                      |

\*From bone

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (CONTINUED)

| Fertilizer   | Nitrogen | Phosphoric acid (P <sub>2</sub> O <sub>5</sub> ) |           |           | Potash (K <sub>2</sub> O) |
|--|----------|--|-----------|-----------|---------------------------|
|  |          | Total from bone                                  | Available | Insoluble |                           |
|  | Percent  | Percent  | Percent   | Per cent  | Percent                   |
| 4-12-4.....  | 4.00     | ----   | 12.00     | 3.00      | 4.00                      |
| <b>F. Rynveld and Sons,<br/>New York City, New York<br/>Rynveld's Brands</b>           |          |  |           |           |                           |
| Bone Meal Fertilizer.....  | 1.85     | 22.88  | ----      | ----      | ----                      |
| <b>Sewerage Commission,<br/>Milwaukee, Wisconsin</b>                                   |          |  |           |           |                           |
| Milorganite.....   | 5.00     | ----   | 2.00      | 0.75      | ----                      |
| <b>Smith Agricultural Chemical Company,<br/>Columbus, Ohio</b>                         |          |  |           |           |                           |
| SACCO Plant Food.....  | 4.00     | ----   | 12.00     | ----      | 4.00                      |
| Wedo.....  | 8.00     | ----   | 5.00      | ----      | 3.00                      |
| <b>S. and S. Plant Food Company,<br/>Evansville, Indiana</b>                           |          |  |           |           |                           |
| Reliable Lawn and Floral Food.....   | 2.00     | ----   | 4.00      | ----      | 3.00                      |
| <b>Stimulant Laboratories, Inc.,<br/>Long Island City, New York</b>                    |          |  |           |           |                           |
| Stim-U-Plant.....  | 11.00    | ----   | 12.00     | 0.40      | 15.00                     |
| <b>Swift and Company, Fertilizer Works,<br/>St. Louis, Missouri<br/>Swift's Brands</b> |          |  |           |           |                           |
| Red Steer 4-16-4.....  | 4.00     | ----   | 16.00     | 1.00      | 4.00                      |
| Red Steer 4-8-8.....   | 4.00     | ----   | 8.00      | 1.00      | 8.00                      |
| Red Steer 3-12-4.....  | 3.00     | ----   | 12.00     | 1.00      | 4.00                      |
| Red Steer 3-8-6.....   | 3.00     | ----   | 8.00      | 1.00      | 6.00                      |
| Red Steer 2-16-2.....  | 2.00     | ----   | 16.00     | 1.00      | 2.00                      |
| Red Steer 2-12-6.....  | 2.00     | ----   | 12.00     | 1.00      | 6.00                      |
| Red Steer 2-12-2.....  | 2.00     | ----   | 12.00     | 1.00      | 2.00                      |
| Red Steer 1-12-4.....  | 1.00     | ----   | 12.00     | 0.50      | 4.00                      |
| Red Steer 1-12-1.....  | 1.00     | ----   | 12.00     | 0.50      | 1.00                      |
| Bone Meal and Phosphate Fertilizer.....  | 1.00     | ----   | 15.00     | 5.00*     | ----                      |
| Red Steer 8-24-8.....  | 8.00     | ----   | 24.00     | 1.00      | 8.00                      |
| Red Steer 8-16-16.....   | 8.00     | ----   | 16.00     | 1.00      | 16.00                     |
| Red Steer 0-14-6.....  | ----     | ----   | 14.00     | ----      | 6.00                      |
| Red Steer 16 per cent Superphosphate (Acid Phosphate) Fertilizer.....                  | ----     | ----   | 16.00     | ----      | ----                      |
| Red Steer 20 per cent Superphosphate (Acid Phosphate) Fertilizer.....                  | ----     | ----   | 20.00     | ----      | ----                      |
| Raw Bone Fertilizer.....   | 3.70     | 23.00  | ----      | ----      | ----                      |
| Steamed Bone Fertilizer.....   | 1.00     | 29.00  | ----      | ----      | ----                      |
| Sulphate of Ammonia.....   | 20.75    | ----   | ----      | ----      | ----                      |
| Nitrate of Soda.....   | 14.76    | ----   | ----      | ----      | ----                      |
| Kemfert Potash Salts.....  | ----     | ----   | ----      | ----      | 58.00                     |
| Vigoro.....  | 4.00     | ----   | 12.00     | ----      | 4.00                      |
| Blood Meal.....  | 12.00    | ----   | ----      | ----      | ----                      |
| Raw Bone Fertilizer 3.7-22.....  | 3.70     | 22.00  | ----      | ----      | ----                      |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (CONTINUED)

| Fertilizer  | Nitrogen | Phosphoric acid (P <sub>2</sub> O <sub>5</sub> )      |                     |              | Potash (K <sub>2</sub> O) |
|---|----------|---|---------------------|--------------|---------------------------|
|   |          | Total from bone                                       | Available           | Insoluble    |                           |
|   | Percent  | Percent   | Percent             | Percent      | Percent                   |
| <b>Synthetic Nitrogen Products Corporation,<br/>New York City, New York</b> |          |   |                     |              |                           |
| NITROPHOSKA NO. 1.....  | 15.00    | ----  | 30.00               | ----         | 15.00                     |
| CALCIUM NITRATE (Nitrate of Lime).....                                      | 15.00    | ----  | ----                | ----         | ----                      |
| CAL-NITRO.....  | 20.50    | ----  | ----                | ----         | ----                      |
| UREA (FLORANID-Urea).....   | 46.00    | ----  | ----                | ----         | ----                      |
| <b>The Tennessee Copper and Chemical Corp.,<br/>Lockland, Ohio</b>          |          |   |                     |              |                           |
| Loma.....   | 5.00     | ----  | 10.00               | 0.65         | 4.00                      |
| <b>United States Gypsum Company,<br/>Chicago, Illinois</b>                  |          |   |                     |              |                           |
| Ben Franklin Agricultural Gypsum.....                                       | Powder   | d crystalline calcium carbonate; Magnesium carbonate; | Minimum 90 per cent | 0-5 per cent | Trace                     |
| <b>Virginia-Carolina Chemical Corp.,<br/>Richmond, Virginia</b>             |          |   |                     |              |                           |
| Bloom Aid, Tablet Form.....   | 10.00    | ----  | 14.00               | ----         | 6.00                      |
| Bloom Aid.....  | 5.00     | ----  | 10.00               | ----         | 4.00                      |
| V-C Fairway Fertilizer.....   | 6.00     | ----  | 6.00                | ----         | 5.00                      |
| V-C Super "30" Fertilizer.....  | 6.00     | ----  | 18.00               | ----         | 6.00                      |
| V-C Super "25" Fertilizer.....  | 5.00     | ----  | 15.00               | ----         | 5.00                      |
| V-C Super "24" Fertilizer.....  | 4.00     | ----  | 16.00               | ----         | 4.00                      |
| V-C Champion Grain Grower.....  | 2.00     | ----  | 16.00               | ----         | 6.00                      |
| V-C Double Strength Money Saver.....  | 2.00     | ----  | 16.00               | ----         | 2.00                      |
| V-C Fertilizers, 2-14-4.....  | 2.00     | ----  | 14.00               | ----         | 4.00                      |
| V-C Fertilizers, 2-14-2.....  | 2.00     | ----  | 14.00               | ----         | 2.00                      |
| V-C Big Giant Crop Grower.....  | 6.00     | ----  | 12.00               | ----         | 6.00                      |
| V-C Star Brand Fertilizer.....  | 4.00     | ----  | 12.00               | ----         | 4.00                      |
| V-C Grain Special.....  | 2.00     | ----  | 12.00               | ----         | 6.00                      |
| V-C Fertilizers, 3-12-4.....  | 3.00     | ----  | 12.00               | ----         | 4.00                      |
| V-C Fertilizers, 3-12-2.....  | 3.00     | ----  | 12.00               | ----         | 2.00                      |
| V-C Royal Tomato Fertilizer.....  | 2.00     | ----  | 12.00               | ----         | 2.00                      |
| V-C Fertilizers, 1-12-4.....  | 1.00     | ----  | 12.00               | ----         | 4.00                      |
| V-C Fertilizers, 1-12-1.....  | 1.00     | ----  | 12.00               | ----         | 1.00                      |
| V-C Fertilizers, 4-10-6.....  | 4.00     | ----  | 10.00               | ----         | 6.00                      |
| V-C Plow Brand Fertilizer.....  | 4.00     | ----  | 10.00               | ----         | 4.00                      |
| V-C Prolific Cotton Grower.....   | 3.00     | ----  | 10.00               | ----         | 3.00                      |
| V-C Owl Brand Fertilizer.....   | 2.00     | ----  | 10.00               | ----         | 2.00                      |
| V-C Fertilizers, 3-9-3.....   | 3.00     | ----  | 9.00                | ----         | 3.00                      |
| V-C Fertilizers, 6-8-6.....   | 6.00     | ----  | 8.00                | ----         | 6.00                      |
| V-C Good Luck Fertilizer.....   | 4.00     | ----  | 8.00                | ----         | 4.00                      |
| V-C Early Trucker.....  | 4.00     | ----  | 8.00                | ----         | 4.00                      |
| V-C Truck Special.....  | 3.00     | ----  | 8.00                | ----         | 6.00                      |
| V-C Fertilizers, 3-8-3.....   | 3.00     | ----  | 8.00                | ----         | 3.00                      |
| V-C Fertilizers, 2-8-2.....   | 2.00     | ----  | 8.00                | ----         | 2.00                      |
| V-C Champion Ammoniated Superphosphate.....                                 | 4.00     | ----  | 12.00               | ----         | 0.00                      |
| V-C Crescent Wheat Grower.....  | 2.00     | ----  | 12.00               | ----         | 0.00                      |

TABLE 7.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1930 (CONTINUED)

| Fertilizer  | Nitro-<br>gen | Phosphoric acid<br>(P <sub>2</sub> O <sub>5</sub> ) |                |                | Potash<br>(K <sub>2</sub> O) |
|---|---------------|---|----------------|----------------|------------------------------|
|   |               | Total<br>from<br>bone                               | Avail-<br>able | Insolu-<br>ble |                              |
|   | Per cent      | Per cent  | Per cent       | Per cent       | Per cent                     |
| V-C Fertilizers, 0-20-3.....                                  | ----          | ----  | 20.00          | ----           | 3.00                         |
| V-C Champion Bone and Potash Compound.....                    | ----          | ----  | 15.00          | ----           | 7.50                         |
| V-C Prolific Grain Grower.....                                | ----          | ----  | 15.00          | ----           | 3.00                         |
| V-C Victor Bone and Potash Compound.....                      | ----          | ----  | 15.00          | ----           | 3.00                         |
| V-C Monarch Grain Grower.....                                 | ----          | ----  | 15.00          | ----           | 2.00                         |
| V-C Fertilizers, 0-14-6.....                                  | ----          | ----  | 14.00          | ----           | 6.00                         |
| V-C Fertilizers, 0-14-4.....                                  | ----          | ----  | 14.00          | ----           | 4.00                         |
| V-C Grain Grower, 0-12-2.....                                 | ----          | ----  | 12.00          | ----           | 2.00                         |
| V-C Indian Brand Grower.....                                  | ----          | ----  | 12.00          | ----           | 2.00                         |
| V-C Phosphate and Potash.....                                 | ----          | ----  | 10.00          | ----           | 4.00                         |
| V-C 20 per cent Superphosphate.....                           | ----          | ----  | 20.00          | ----           | ----                         |
| V-C 18 per cent Superphosphate.....                           | ----          | ----  | 18.00          | ----           | ----                         |
| V-C 16 per cent Superphosphate.....                           | ----          | ----  | 16.00          | ----           | ----                         |
| Steamed Bone Meal 2.50-22.....                                | 2.50          | 22.00   | ----           | ----           | ----                         |
| Steamed Bone Meal 1.00-29.....                                | 1.00          | 29.00   | ----           | ----           | ----                         |
| Raw Bone Meal.....  | 3.70          | 23.00   | ----           | ----           | ----                         |
| Muriate of Potash.....  | ----          | ----  | ----           | ----           | 48.00                        |
| Genuine Imported Kainit.....                                  | ----          | ----  | ----           | ----           | 12.00                        |
| Nitrate of Soda.....  | 15.00         | ----  | ----           | ----           | ----                         |
| Sulphate of Ammonia.....                                      | 20.00         | ----  | ----           | ----           | ----                         |
| <b>Wessel, Duval and Company,<br/>New York City, New York</b> |               |   |                |                |                              |
| Chilean Nitrate of Soda.....                                  | 15.25         | ----  | ----           | ----           | ----                         |

TABLE 8.—APPROXIMATE SALE OF FERTILIZER IN THE STATE OF MISSOURI, BY COUNTIES, BASED UPON REPORT OF SHIPMENTS BY THE FERTILIZER COMPANIES

| County              | Sales in 1929 |      |       | Fertilizer classified for 1929 |                 |            |            |           |       |
|---------------------|---------------|------|-------|--------------------------------|-----------------|------------|------------|-----------|-------|
|                     | Spring        | Fall | Total | Bone                           | Super phosphate | High grade | Med. grade | Low grade | Misc. |
| Adair.....          | 67            | 78   | 145   | 7                              | 35              | 8          | 95         | 0         | 0     |
| Andrew.....         | 1             | 1    | 2     | 0                              | 2               | 0          | 0          | 0         | 0     |
| Atchison.....       | 46            | 0    | 46    | 0                              | 18              | 27         | 1          | 0         | 0     |
| Audrain.....        | 406           | 490  | 896   | 57                             | 227             | 90         | 521        | 1         | 0     |
| Barry.....          | 587           | 572  | 1159  | 148                            | 334             | 154        | 516        | 0         | 7     |
| Barton.....         | 357           | 1663 | 2020  | 76                             | 674             | 285        | 963        | 16        | 6     |
| Bates.....          | 107           | 1057 | 1204  | 33                             | 769             | 140        | 262        | 0         | 0     |
| Benton.....         | 242           | 243  | 350   | 26                             | 138             | 19         | 149        | 18        | 0     |
| Bollinger.....      | 109           | 186  | 428   | 11                             | 259             | 24         | 133        | 0         | 1     |
| Boone.....          | 107           | 213  | 322   | 3                              | 178             | 31         | 102        | 0         | 8     |
| Buchanan.....       | 262           | 44   | 306   | 4                              | 99              | 40         | 160        | 0         | 3     |
| Butler.....         | 37            | 18   | 55    | 3                              | 11              | 6          | 34         | 0         | 1     |
| Caldwell.....       | 169           | 107  | 276   | 4                              | 209             | 31         | 32         | 0         | 0     |
| Callaway.....       | 87            | 224  | 311   | 16                             | 125             | 44         | 126        | 0         | 0     |
| Camden.....         | 20            | 38   | 58    | 2                              | 24              | 3          | 29         | 0         | 0     |
| Cape Girardeau..... | 84            | 127  | 211   | 1                              | 65              | 32         | 109        | 0         | 4     |
| Carroll.....        | 168           | 160  | 328   | 2                              | 269             | 45         | 11         | 0         | 1     |
| Carter.....         | 15            | 15   | 30    | 0                              | 0               | 0          | 30         | 0         | 0     |
| Cass.....           | 240           | 742  | 982   | 10                             | 650             | 21         | 301        | 0         | 0     |
| Cedar.....          | 113           | 501  | 614   | 26                             | 496             | 18         | 74         | 0         | 0     |
| Chariton.....       | 85            | 153  | 238   | 4                              | 162             | 9          | 59         | 0         | 4     |
| Christian.....      | 210           | 261  | 471   | 7                              | 260             | 73         | 131        | 0         | 0     |
| Clark.....          | 29            | 54   | 83    | 0                              | 46              | 2          | 35         | 0         | 0     |
| Clay.....           | 43            | 27   | 70    | 0                              | 39              | 9          | 22         | 0         | 0     |
| Clinton.....        | 90            | 39   | 129   | 2                              | 115             | 4          | 8          | 0         | 0     |
| Cole.....           | 42            | 469  | 511   | 7                              | 284             | 38         | 179        | 2         | 1     |
| Cooper.....         | 50            | 302  | 352   | 16                             | 146             | 35         | 154        | 1         | 0     |
| Crawford.....       | 55            | 151  | 206   | 17                             | 108             | 8          | 73         | 0         | 0     |
| Dade.....           | 49            | 854  | 903   | 30                             | 417             | 282        | 174        | 0         | 0     |
| Dallas.....         | 90            | 60   | 150   | 0                              | 118             | 5          | 27         | 0         | 0     |
| Davies.....         | 41            | 97   | 138   | 0                              | 99              | 7          | 32         | 0         | 0     |
| DeKalb.....         | 48            | 40   | 88    | 1                              | 86              | 1          | 0          | 0         | 0     |
| Dent.....           | 92            | 51   | 143   | 0                              | 30              | 3          | 110        | 0         | 0     |
| Douglas.....        | 96            | 30   | 126   | 3                              | 60              | 0          | 63         | 0         | 0     |
| Dunklin.....        | 176           | 27   | 203   | 0                              | 21              | 53         | 100        | 0         | 29    |
| Franklin.....       | 93            | 854  | 947   | 28                             | 502             | 139        | 277        | 1         | 0     |
| Gasconade.....      | 21            | 451  | 472   | 6                              | 268             | 25         | 170        | 3         | 0     |
| Gentry.....         | 32            | 15   | 47    | 0                              | 29              | 10         | 8          | 0         | 0     |
| Greene.....         | 759           | 863  | 1622  | 62                             | 957             | 100        | 499        | 0         | 4     |
| Grundy.....         | 104           | 92   | 196   | 0                              | 61              | 1          | 133        | 1         | 0     |
| Harrison.....       | 126           | 129  | 255   | 0                              | 225             | 15         | 15         | 0         | 0     |
| Henry.....          | 230           | 357  | 587   | 0                              | 291             | 35         | 261        | 0         | 0     |
| Hickory.....        | 208           | 240  | 448   | 0                              | 265             | 9          | 174        | 0         | 0     |
| Holt.....           | 20            | 15   | 35    | 0                              | 20              | 0          | 15         | 0         | 0     |
| Howard.....         | 16            | 21   | 37    | 0                              | 24              | 4          | 9          | 0         | 0     |
| Howell.....         | 438           | 200  | 638   | 0                              | 299             | 194        | 142        | 0         | 3     |
| Iron.....           | 56            | 71   | 127   | 0                              | 39              | 30         | 57         | 0         | 1     |
| Jackson.....        | 622           | 225  | 847   | 156                            | 260             | 122        | 90         | 0         | 219   |
| Jasper.....         | 259           | 3012 | 3271  | 133                            | 1222            | 487        | 1426       | 0         | 3     |
| Jefferson.....      | 32            | 169  | 201   | 4                              | 84              | 45         | 65         | 0         | 3     |
| Johnson.....        | 140           | 358  | 498   | 5                              | 306             | 68         | 118        | 1         | 0     |
| Knox.....           | 104           | 85   | 189   | 7                              | 92              | 42         | 48         | 0         | 0     |
| Laclede.....        | 354           | 264  | 618   | 3                              | 282             | 32         | 289        | 12        | 0     |

TABLE 8.—APPROXIMATE SALE OF FERTILIZER IN THE STATE OF MISSOURI, BY COUNTIES, BASED UPON REPORT OF SHIPMENTS BY THE FERTILIZER COMPANIES (Continued)

| County              | Sales in 1929 |      |       | Fertilizer classified for 1929 |                 |            |            |           |       |
|---------------------|---------------|------|-------|--------------------------------|-----------------|------------|------------|-----------|-------|
|                     | Spring        | Fall | Total | Bone                           | Super phosphate | High grade | Med. grade | Low grade | Misc. |
| Lafayette.....      | 44            | 254  | 298   | 2                              | 231             | 10         | 55         | 0         | 0     |
| Lawrence.....       | 501           | 1261 | 1762  | 79                             | 1029            | 224        | 415        | 0         | 15    |
| Lewis.....          | 100           | 378  | 478   | 17                             | 263             | 52         | 146        | 0         | 0     |
| Lincoln.....        | 315           | 1120 | 1435  | 28                             | 349             | 191        | 867        | 0         | 0     |
| Linn.....           | 625           | 102  | 727   | 0                              | 592             | 9          | 126        | 0         | 0     |
| Livingston.....     | 82            | 105  | 187   | 1                              | 146             | 17         | 23         | 0         | 0     |
| McDonald.....       | 77            | 0    | 77    | 0                              | 24              | 48         | 3          | 0         | 2     |
| Macon.....          | 166           | 258  | 424   | 3                              | 71              | 39         | 300        | 11        | 0     |
| Madison.....        | 172           | 179  | 351   | 14                             | 124             | 26         | 187        | 0         | 0     |
| Maries.....         | 20            | 47   | 67    | 0                              | 37              | 0          | 30         | 0         | 0     |
| Marion.....         | 156           | 647  | 803   | 15                             | 328             | 85         | 350        | 3         | 22    |
| Mercer.....         | 86            | 42   | 128   | 5                              | 65              | 21         | 37         | 0         | 0     |
| Miller.....         | 66            | 276  | 342   | 7                              | 130             | 15         | 190        | 0         | 0     |
| Mississippi.....    | 51            | 18   | 69    | 0                              | 3               | 7          | 58         | 0         | 1     |
| Moniteau.....       | 24            | 391  | 415   | 35                             | 187             | 63         | 130        | 0         | 0     |
| Monroe.....         | 398           | 455  | 853   | 48                             | 390             | 55         | 360        | 0         | 0     |
| Montgomery.....     | 297           | 463  | 760   | 57                             | 170             | 104        | 342        | 85        | 2     |
| Morgan.....         | 61            | 359  | 420   | 24                             | 174             | 35         | 187        | 0         | 0     |
| New Madrid.....     | 33            | 6    | 39    | 0                              | 20              | 2          | 17         | 0         | 0     |
| Newton.....         | 415           | 852  | 1267  | 6                              | 684             | 81         | 519        | 0         | 7     |
| Nodaway.....        | 65            | 99   | 164   | 0                              | 113             | 7          | 44         | 0         | 0     |
| Oregon.....         | 20            | 36   | 56    | 0                              | 23              | 7          | 25         | 0         | 1     |
| Osage.....          | 55            | 300  | 355   | 4                              | 165             | 21         | 164        | 0         | 1     |
| Ozark.....          | 61            | 15   | 76    | 0                              | 23              | 45         | 8          | 0         | 0     |
| Pemiscott.....      | 0             | 0    | 0     | 0                              | 0               | 0          | 0          | 0         | 0     |
| Perry.....          | 60            | 93   | 153   | 4                              | 73              | 12         | 61         | 0         | 3     |
| Pettis.....         | 219           | 404  | 623   | 18                             | 388             | 60         | 157        | 0         | 0     |
| Phelps.....         | 122           | 325  | 447   | 30                             | 246             | 25         | 146        | 0         | 0     |
| Pike.....           | 389           | 829  | 1218  | 17                             | 413             | 270        | 495        | 12        | 11    |
| Platte.....         | 113           | 20   | 133   | 0                              | 56              | 36         | 38         | 0         | 3     |
| Polk.....           | 377           | 779  | 1156  | 19                             | 681             | 28         | 378        | 0         | 0     |
| Pulaski.....        | 104           | 187  | 291   | 4                              | 107             | 38         | 141        | 0         | 1     |
| Putnam.....         | 317           | 92   | 409   | 0                              | 37              | 18         | 354        | 0         | 0     |
| Ralls.....          | 19            | 207  | 226   | 12                             | 152             | 25         | 37         | 0         | 0     |
| Randolph.....       | 151           | 140  | 291   | 10                             | 118             | 24         | 139        | 0         | 0     |
| Ray.....            | 54            | 115  | 169   | 2                              | 71              | 34         | 62         | 0         | 0     |
| Reynolds.....       | 30            | 18   | 48    | 0                              | 17              | 16         | 4          | 0         | 11    |
| Ripley.....         | 299           | 36   | 335   | 0                              | 134             | 8          | 189        | 0         | 4     |
| St. Charles.....    | 52            | 731  | 783   | 37                             | 445             | 34         | 254        | 10        | 3     |
| St. Clair.....      | 200           | 265  | 465   | 2                              | 86              | 60         | 317        | 0         | 0     |
| St. Francois.....   | 320           | 410  | 730   | 8                              | 303             | 44         | 372        | 2         | 1     |
| Ste. Genevieve..... | 0             | 52   | 52    | 0                              | 28              | 0          | 24         | 0         | 0     |
| St. Louis.....      | 926           | 394  | 1320  | 74                             | 149             | 316        | 393        | 2         | 386   |
| Saline.....         | 31            | 75   | 106   | 0                              | 92              | 4          | 10         | 0         | 0     |
| Schuyler.....       | 40            | 124  | 164   | 5                              | 45              | 22         | 92         | 0         | 0     |
| Scotland.....       | 40            | 36   | 76    | 4                              | 17              | 6          | 49         | 0         | 0     |
| Scott.....          | 43            | 23   | 66    | 0                              | 21              | 16         | 21         | 0         | 8     |
| Shannon.....        | 46            | 0    | 46    | 0                              | 35              | 8          | 3          | 0         | 0     |
| Shelby.....         | 280           | 353  | 633   | 101                            | 247             | 74         | 201        | 0         | 0     |
| Stoddard.....       | 41            | 50   | 91    | 2                              | 13              | 5          | 71         | 0         | 0     |
| Stone.....          | 152           | 15   | 167   | 0                              | 6               | 17         | 144        | 0         | 0     |
| Sullivan.....       | 297           | 68   | 365   | 2                              | 160             | 25         | 177        | 1         | 0     |
| Taney.....          | 35            | 0    | 35    | 0                              | 2               | 3          | 30         | 0         | 0     |

TABLE 8.—APPROXIMATE SALE OF FERTILIZER IN THE STATE OF MISSOURI, BY COUNTIES, BASED UPON REPORT OF SHIPMENTS BY THE FERTILIZER COMPANIES (Continued)

| County                    | Sales in 1929 |        |        | Fertilizer classified for 1929 |                 |            |            |           |       |
|---------------------------|---------------|--------|--------|--------------------------------|-----------------|------------|------------|-----------|-------|
|                           | Spring        | Fall   | Total  | Bone                           | Super phosphate | High grade | Med. grade | Low grade | Misc. |
| Texas.....                | 542           | 290    | 832    | 14                             | 507             | 11         | 300        | 0         | 0     |
| Vernon.....               | 228           | 678    | 906    | 28                             | 563             | 113        | 202        | 0         | 0     |
| Warren.....               | 41            | 362    | 403    | 4                              | 152             | 53         | 166        | 26        | 1     |
| Washington.....           | 36            | 186    | 222    | 39                             | 40              | 11         | 132        | 0         | 0     |
| Wayne.....                | 95            | 40     | 135    | 0                              | 87              | 1          | 47         | 0         | 0     |
| Webster.....              | 760           | 307    | 1067   | 15                             | 317             | 166        | 538        | 11        | 0     |
| Worth.....                | 16            | 36     | 52     | 16                             | 0               | 36         | 0          | 0         | 0     |
| Wright.....               | 501           | 155    | 656    | 0                              | 350             | 6          | 299        | 0         | 1     |
| Totals for Spring.....    | 18,040        | -----  | -----  | 274                            | 7,877           | 2,118      | 8,014      | 83        | 674   |
| Totals for Fall.....      | -----         | 32,073 | -----  | 1,442                          | 15,537          | 3,190      | 11,639     | 137       | 128   |
| Totals for 1929.....      | -----         | -----  | 51,113 | 1,716                          | 23,414          | 5,308      | 19,653     | 220       | 802   |
| Percentage of totals..... | 37.2          | 62.8   | 100.0  | 3.4                            | 45.8            | 10.4       | 38.4       | 0.4       | 1.6   |



TABLE 9.—TONNAGE OF THE PLANT FOOD CONSTITUENTS SOLD IN MISSOURI, 1929. (APPROXIMATE)

| Kind of fertilizer                        | Fertilizer tonnage | Plant Food Tonnage |                           |                           |                           |        |
|---|--------------------|--------------------|---------------------------|---------------------------|---------------------------|--------|
|   |                    | Nitrogen           | Phosphoric acid from bone | Available phosphoric acid | Insoluble phosphoric acid | Potash |
| Bone.....                                 | 1710.48            | 29.77              | 458.28                    | -----                     | ----                      | -----  |
| Half and Half.....                        | 492.71             | 5.25               | 57.26                     | 43.01                     | ----                      | -----  |
| Superphosphate.....                       | 23,446.93          | -----              | -----                     | 4288.25                   | -----                     | -----  |
| High Grade.....                           | 4866.76            | 122.19             | -----                     | 699.66                    | ----                      | 210.75 |
| Medium Grade.....                         | 19,637.45          | 389.02             | -----                     | 2328.83                   | ----                      | 507.77 |
| Low Grade.....                            | 180.75             | 3.80               | -----                     | 14.24                     | ----                      | 3.58   |
| Ammonium Sulphate and Sodium Nitrate..... | 473.80             | 76.43              | -----                     | -----                     | ----                      | -----  |
| Dried Blood.....                          | 0.40               | 0.05               | -----                     | -----                     | ----                      | -----  |
| Dried Manure and Sewerage Residue.....    | 269.63             | 6.86               | -----                     | 3.70                      | ----                      | 4.21   |
| Potash Salts.....                         | 38.47              | -----              | -----                     | -----                     | ----                      | 8.39   |
| Rock Phosphate.....                       | 1.35               | -----              | -----                     | -----                     | 0.43                      | -----  |
| Synthetic Nitrogen Products.....          | .30                | 0.05               | -----                     | -----                     | ----                      | -----  |
| Totals.....                               | 51,119.03          | 634.42             | 515.54                    | 7377.69                   | 0.43                      | 734.70 |

TABLE 10.—TONNAGE OF THE LEADING FERTILIZER BRANDS SOLD IN MISSOURI IN 1929. (APPROXIMATE)

| Brand  | Fertilizer Tonnage | Brand   | Fertilizer Tonnage |
|--------|--------------------|---------|--------------------|
| 2-12-2 | 14,208.09          | 1-11-3  | 82.69              |
| 0-20-0 | 12,745.91          | 4-10-4  | 76.62              |
| 0-16-0 | 10,011.13          | 0-24-0  | 71.69              |
| 2-12-4 | 2,758.80           | 2-10-2  | 54.75              |
| 2-16-2 | 1,542.06           | 10-6-4  | 54.30              |
| 2-12-6 | 1,063.43           | 5-10-5  | 35.70              |
| 4-16-4 | 807.97             | 2-8-5   | 34.75              |
| 0-18-0 | 585.60             | 4-10-6  | 34.68              |
| 4-12-4 | 463.96             | 0-45-0  | 32.60              |
| 1-12-4 | 396.15             | ¾-15-2  | 31.00              |
| 3-8-6  | 350.67             | 0-16-8  | 30.63              |
| 0-14-6 | 342.79             | 0-10-16 | 22.96              |
| 0-14-4 | 304.60             | 2-14-2  | 22.25              |
| 3-12-4 | 254.39             | 2-14-4  | 20.81              |
| 1-12-1 | 236.04             | 1-10-3  | 18.94              |
| 3-10-6 | 217.38             | 2-10-10 | 15.50              |
| 2-16-6 | 203.84             | 0-12-2  | 15.19              |
| 4-8-6  | 194.60             | 5-15-5  | 14.75              |
| 2-8-2  | 170.76             | 2-12-0  | 14.41              |
| 2-16-8 | 125.74             | 0-20-4  | 13.50              |
| 0-12-4 | 103.77             | 3-8-5   | 12.50              |
| 0-12-6 | 99.89              | 4-8-8   | 12.20              |
| 2-9-5  | 91.43              | 4-12-0  | 10.81              |

## FINANCIAL STATEMENT

### Fertilizer Control Fund Of the Missouri Agricultural Experiment Station For the year ending December 31, 1929

#### Receipts

|  |             |             |
|--|-------------|-------------|
| Balance January 1, 1929 .....          | \$12,076.79 |             |
| Receipts from sale of tags, 1929 ..... | 27,899.75   |             |
|  |             | \$39,976.54 |

#### Expenditures

|  |          |             |
|--|----------|-------------|
| Salaries .....                                 | 8,814.95 |             |
| Labor .....                                    | 4,638.44 |             |
| Stationery and office supplies .....           | 1,134.61 |             |
| Scientific supplies consumable .....           | 1,373.43 |             |
| Feeding stuffs .....                           | 1,955.62 |             |
| Sundry supplies .....                          | 2,277.11 |             |
| Fertilizers .....                              | 25.55    |             |
| Postage, telegraph, and telephone .....        | 379.98   |             |
| Travel Expenses .....                          | 1,032.32 |             |
| Freight, express, and dray .....               | 202.31   |             |
| Publications .....                             | 3,845.70 |             |
| Heat, light, water and power .....             | 506.71   |             |
| Furniture and fixtures .....                   | 1,117.16 |             |
| Library .....                                  | 255.31   |             |
| Scientific equipment .....                     | 450.93   |             |
| Livestock .....                                | 147.32   |             |
| Tools, machinery, and appliances .....         | 903.19   |             |
| Buildings and lands .....                      | 274.62   |             |
| Contingent expenses .....                      | 176.08   |             |
|  |          | \$29,511.34 |
| Balance, cash on hand, December 31, 1929 ..... |          | \$10,465.20 |