

UNIVERSITY OF MISSOURI      COLLEGE OF AGRICULTURE  
AGRICULTURAL EXPERIMENT STATION

M. F. MILLER, *Director*

# Registration, Labeling and Inspection of Commercial Fertilizers; 1938

M. F. MILLER, *Director*

L. D. HAIGH AND E. W. COWAN, *Chemists*

COLUMBIA, MISSOURI

UNIVERSITY OF MISSOURI COLLEGE OF AGRICULTURE  
**Agricultural Experiment Station**

EXECUTIVE BOARD OF CURATORS—EARL NELSON, St. Louis; J. A. POTTER,  
 Jefferson City; J. H. WOLFERS, Poplar Bluff.  
 STATION STAFF, MARCH, 1939

FREDERICK A. MIDDLEBUSH, Ph.D., President

M. F. MILLER, M.S.A., D. Agr., Director S. B. SHIRKY, A.M., Ass't to Director  
 MISS ELLA PAHMEIER, Secretary

**AGRICULTURAL CHEMISTRY**

A. G. HOGAN, Ph.D.  
 L. D. HAIGH, Ph.D.  
 E. W. COWAN, A. M.  
 LUTHER R. RICHARDSON, Ph.D.  
 DENNIS T. MAYER, A. M.\*  
 C. F. WINCHESTER, M. S.  
 L. L. WISEMAN, A.B.  
 R. A. RASMUSSEN, Ph.D.  
 EUGENE L. POWELL, A.B.  
 W. H. BOND, B.S.  
 J. G. LEE, M.S.

**AGRICULTURAL ECONOMICS**

O. R. JOHNSON, A.M.  
 BEN H. FRAME, A.M.  
 C. H. HAMMAR, Ph.D.  
 HERMAN HAAG, Ph.D.  
 DARRYL FRANCIS, B.S.  
 HOMER J. L'HOTE, B.S.

**BROWN RAWLINGS, B.S.**

**AGRICULTURAL ENGINEERING**

J. C. WOOLEY, M.S.  
 MACK M. JONES, M.S.  
 LLOYD HIGHTOWER, M.A.  
 ROBERT BEASLEY, B.S. in Agr.  
**ANIMAL HUSBANDRY**  
 E. A. TROWBRIDGE, B.S. in Agr.  
 L. A. WEAVER, B.S. in Agr.  
 A. G. HOGAN, Ph.D.  
 F. B. MUMFORD, M.S., D. Agr.  
 F. F. MCKENZIE, Ph.D.\*  
 J. E. COMFORT, A.M.  
 A. J. DYER, B.S.  
 D. T. MAYER, Ph.D.  
 ELMER GAHLEY, B.S.

**FREDERICK N. ANDREWS, M. S.\***

RALPH BOGART, M.S.  
 H. D. ELIJAH, B. S.  
 JOHN LASLEY, B.S.

**BOTANY AND PATHOLOGY**

C. M. TUCKER, Ph.D.  
 J. E. LIVINGSTON, M.A.  
 M. A. SMITH, A.M.\*  
 PAUL R. BURKEHOLDER, Ph.D.

**DAIRY HUSBANDRY**

A. C. RAGSDALE, M.S.  
 WM. H. E. REID, A.M.  
 SAMUEL BRODY, Ph.D.  
 C. W. TURNER, Ph.D.  
 H. A. HERMAN, Ph.D.  
 E. R. GARRISON, A.M.  
 WARREN C. HALL, A.M.  
 E. T. GOMEZ, Ph.D.  
 C. W. MCINTYRE, M.S.  
 E. P. REINEKE, A.M.  
 A. A. LEWIS, A.M.  
 W. S. ARBUCKLE, A.M.  
 NOEL P. RALSTON, B.S.  
 CLINTON W. DECKER, B.S.  
 JOHN P. MIXNER, M.S.

**ENTOMOLOGY**

LEONARD HASEMAN, Ph.D.  
 T. E. BIRKETT, A.M.  
 LEE JENKINS, M.S.  
 H. E. BROWN, B.S.  
 CURTIS W. WINGO, A.B.  
 WILLIAM WARD SMITH, A.M.  
 W. E. ROLAND, A.M.  
 A. G. PETERSON, B.S. in Agr.

**FIELD CROPS**

W. C. FOTHERIDGE, Ph.D.  
 C. A. HELM, A.M.  
 L. J. STADLER, Ph.D.\*  
 B. M. KING, A.M.\*  
 E. MARION BROWN, A.M.\*  
 G. F. SPRAGUE, Ph.D.\*  
 J. M. POEHLMAN, Ph.D.\*  
 MISS CLARA FUHR, M.S.\*  
 JOSEPH G. O'MARA, Ph.D.\*  
 ERNEST R. SEARS, Ph.D.\*  
 LUTHER SMITH, Ph.D.\*

**HOME ECONOMICS**

FLORENCE HARRISON, A.M.  
 BERTHA BISBEY, Ph.D.  
 JESSIE V. COLES, Ph.D.  
 JESSIE ALICE CLINE, A.M.  
 ADELIA WEIS, A.M.  
 ELIZABETH DYER, M.S.

**HORTICULTURE**

T. J. TALBERT, A.M.  
 CARL G. VINSON, Ph.D.  
 A. E. MURNEEK, Ph.D.  
 H. G. SWARTWOUT, A.M.  
 H. F. MAJOR, B.S.  
 R. A. SCHROEDER, Ph.D.  
 AUBREY D. HIBBARD, Ph.D.  
 R. H. PECK, M.F.  
 E. J. AIROLA, M.S.  
 W. H. GRIGGS, B.S.

**POULTRY HUSBANDRY**

H. L. KEMPSTER, M.S.  
 E. M. FUNK, A.M.  
 J. E. PARKER, M.A.

**RURAL SOCIOLOGY**

C. E. LIVELY, Ph.D.  
 RONALD B. ALMACK, M.A.  
 WM. A. ALBRECHT, Ph.D.

**SOILS**

M. F. MILLER, M.S.A., D. Agr.  
 H. H. KRUSEKOPF, A. M.  
 W. A. ALBRECHT, Ph.D.  
 C. E. MARSHALL, Ph.D.  
 GEORGE E. SMITH, Ph.D.  
 ELSWORTH SPRINGER, B.S.  
 W. D. SHRADER, B.S.  
 M. S. HALL, A.M.  
 C. M. WOODRUFF, B.S.  
 E. R. GRAHAM, Ph.D.  
 C. B. HARSTON, B.S.  
 NEWCOMB C. SMITH, B.S.  
 E. P. WHITESIDE, B.S.

**VETERINARY SCIENCE**

A. J. DURANT, A.M., D.V.M.  
 J. W. CONNAWAY, D.V.M., M.D.  
 CECIL ELDER, A.M., D.V.M.  
 O. S. CRISLER, D.V.M.  
 HAROLD C. McDUGGLE, A.M.  
 ELVIS R. DOLL, B.S.

**OTHER OFFICERS**

R. B. PRICE, B.L., Treasurer  
 LESLIE COWAN, B.S., Sec'y of University  
 A. A. JEFFREY, A.B., Agricultural Editor  
 L. R. GRINSTEAD, B.J., Asst. Agr. Editor  
 J. F. BARHAM, Photographer  
 LEON WAUGHTAL, Assistant Photographer  
 JANE FRODSHAM, Librarian

\*In cooperative service with the U. S.  
 Department of Agriculture.

# Registration, Labeling and Inspection of Commercial Fertilizers; 1938

M. F. MILLER, *Director*

L. D. HAIGH AND E. W. COWAN, *Chemists*

The Missouri Fertilizer Law, sections 12588 to 12596, Revised Statutes of Missouri 1929, provides for registration by the manufacturer of all kind of material to be used as a fertilizer before sales are made. Every package must be fully labeled and properly tagged certifying to registration. The Missouri Agricultural Experiment Station is authorized to inspect fertilizer sold to dealers and consumers in the state, to collect samples from these stocks to be analyzed in the Experiment Station Laboratories as a check upon the composition declared upon the label. These results are published annually for the guidance of users of fertilizer. Copies of this report and of the Missouri Fertilizer Law may be obtained by addressing the Missouri Agricultural Experiment Station, Columbia, Missouri.

## INSPECTION

The work of inspection is conducted during the shipping seasons in the effort to examine and sample the stocks as received from the manufacturer. Stocks which have been lying in storage in warehouses of dealers are also examined to determine if same are in proper shape to be offered for sale. These stocks are sampled in order that representative lots of samples from the various brands of the different companies may be analyzed and presented in the written annual report.

The spring inspection in 1938 may be summarized as follows: Seventy-eight towns in 27 counties were visited and 216 samples were drawn for analysis. A total of 168 farmers, dealers and other distributors were visited, their stocks examined and any discrepancies found were explained and directions given for adjustment.

In the fall 117 towns in 33 counties were touched by the inspectors. The stocks of 216 dealers were examined and 192 samples obtained for analysis.

### SUGGESTIONS TO FERTILIZER DEALERS AND USERS

Those who purchase fertilizer for their own use or for resale to others may sometimes find themselves in doubt as to the quality of the goods they have purchased. The Missouri Fertilizer Law provides for labels showing the fertilizer value and for other conditions protecting the buyer, who therefore need not be uncertain about any prospective purchase. For guidance of buyers the following suggestions are appended:

(1) Make no purchases of fertilizer stocks of any manufacturer, salesman or person who cannot prove that his goods are registered that year at the Missouri Agricultural Experiment Station. See Table 4 for a list of those registered for 1939 for sale in the state. When goods are received see that every sack bears the registration tag reading "Registered 1939." Do not accept and pay for fertilizer which does not bear this tag.

(2) Do not accept any fertilizer that is not fully labelled showing the brand name, the guaranteed analysis and the name and address of the manufacturer. There is no way of fixing the responsibility for the quality of a fertilizer which bears no labels.

### VIOLATIONS OF THE MISSOURI FERTILIZER LAW

Following are the cases found by the inspectors during the calendar year 1938 in which violations of the law were noted.

**Violations with respect to registration.**—In the following cases manufacturers had failed to file a registration before sales are made,—Grogreen Fern Food, American Soda Products Co. sold to F. W. Woolworth and Co. and McGroary's, St. Louis; Special Florists Mixture, Armour Fertilizer Works sold to Kirk Keller, Creve Coeur, and to A. H. Hummert Seed Co., St. Louis; Rais-Mor 8-16-16, Fort Smith Cotton Oil Co. sold to Farmers Exchange, Seligman; Barco Lime Phosphate Fertilizer, J. Paul Bartz, sold to Geo. G. Newell, Rockville; Davco Granulated 4-16-4 Fertilizer, Davison Chemical Corporation, sold to Sedalia Trading Co., Sedalia; Red Star 2-16-2 and Red Star 4-12-4, Rauh and Sons Fertilizer Co., sold to Willems Oil Co., Rockville.

**Violations with respect to labeling.**—Statement of the guaranteed analysis was missing from the labels of the following stocks: Blood Bone and Sulphate of Potash, Armour Fertilizer Works, sold to A. H. Hummert Seed Co., St. Louis; Bone Meal for Home Use, Armour Fertilizer Works sold to Central Hardware Co., St. Louis; Red Star 0-14-6, 2-16-2, 4-12-4, E. Rauh and Sons Co. sold to Willems Oil Co., Rockville.

The guaranteed percentage of available phosphoric acid was not given on the labels in the following cases: Driconure, Atkins and Durbrow, Inc., New York, sold to F. W. Woolworth and Co., St. Louis; Bone Meal and Superphosphate, Armour Fertilizer Works, sold to H. F. Turner, Shelbyville.

Wrong figures for the guaranteed analysis were given on the labels of the following: Golf fertilizer, Swift and Co. Fertilizer Works, sold to Hugo Busch, Jefferson City, Special Tree Food, Armour Fertilizer Works sold to Hurst John, Columbia.

The following stocks were without labels:—Big Crop Steam Bone Meal, Armour Fertilizer Works, sold to H. F. Turner, Shelbyville; four sacks of Pure Ground Bone, Darling and Co., sold to Farmers Elevator Co., Butler, 48 sacks of Barco Lime Phosphate, J. Paul Bartz manufacturer, sold to Geo. G. Newell, Rockville.

**Violations with respect to registration tags:**—Registration tags or stickers were missing from the sacks or packages of the following stocks:—

Agrico for Truck, 4-10-6 sold to Marshfield Supply Co., resacked stock of A. A. 16 per cent Superphosphate at the warehouse of the Goodwin Co., Doniphan, Chilean Nitrate of Soda sold to Edmonston Hardware Co., Hornersville, and to Jules Peterson Seed Co., St. Louis, all from American Agricultural Chemical Co., National Stock Yards, Illinois.

Resacked stocks of Big Crop 16 per cent Superphosphate and 20 per cent Superphosphate at the warehouse of the Goodwin Co., Doniphan; Big Crop 16 per cent Superphosphate and 2-16-2 sold to Walker and Sons, Salem; Big Crop 2-12-2, 20 per cent Superphosphate and 0-14-4 sold to Curtis Smith, Collins, Dwight Martin, Walker, and to Economy Mills, Harrisonville; Lawn and Garden Fertilizer sold to St. Louis Seed Co., St. Louis; Bone Meal for Home Use sold to Central Hardware Co., St. Louis; Shredded Cattle Manure, Chilean Nitrate of Soda, Blood and Bone Tankage, and Florists Bone Meal sold to Kirk L. Keller, Creve Coeur; resacked stocks of Big Crop 2-12-6 at warehouse of C. F. Witter, Asbury, all from Armour Fertilizer Works, Chicago Heights, Illinois.

M. F. A. 4-8-7 sold to Producers Exchange, Marshfield; Darlings 20 per cent Superphosphate and Big Harvest 2-12-2, M. F. A. 20 per cent Superphosphate, sold to Producers Exchange Urich, Osceola Feed and Produce Co., Osceola, and Farmers Cooperative Elevator Association, Harrisonville; Darlings Half and Half sold to Producers Exchange, Stover, Darlings Pure Ground Bone sold to Producers Exchange, Cole Camp, and to Producers Grain Co., Montgomery, all from Darling and Company, East St. Louis, Illinois.

100 lb. sacks of Vigoro sold to Spence Hardware Co., Kennett, and to Lauenborg and Budger, Brandisville resacked stock of Swift's fertilizer stored at Barker Hardware Co., Fair Play, from Swift and Co. Fertilizer Works, National Stock Yards, Illinois.

20 per cent Superphosphate and 4-16-4 fertilizer sold to Lewis County Farm Bureau, Monticello, to Randolph County Farm Bureau, Moberly, Sumner Elevator Co., Armstrong, W. L. Barrett, Boonville, and University of Missouri, Columbia, from Standard Wholesale Phosphate and Acid Works, Baltimore, Maryland.

Other cases of tags and stickers missing were stocks of Treble Superphosphate, Anaconda Copper Mining Co. sold to Thompson Hayward Chemical Co., Kansas City; Lime Phosphate Fertilizer, J. Paul Bartz sold to George Newell, Rockville; Driconure, from Atkins and Durbrow, New York, sold to Woolworth and Co., St. Louis; Floyd Money Maker 4-8-6, Federal Chemical Co. sold to Cope and Sons, Salem; Rais-Mor 8-16-16, Ft. Smith Cotton Oil Co. sold to Farmers Exchange, Seligman; Mak-it Grown Fertilizer, Gate City Fertilizer Co. sold to Wise Feed and Seed Co., Springfield; Natures Plant Food, Missouri Dahlia Farms sold to Griffin Flower Shop, Hannibal; Moo Cow Natural Fertilizer, Rynveld and Sons, New York, sold to Neisner's Store, St. Louis.

A stock of M. F. A. 4-8-7, Darling and Co., sold to Farmers Exchange, Pilot Grove, bore registration tags dated 1937, instead of 1938.

### CHEMICAL ANALYSIS OF THE FERTILIZER SAMPLES

Table 3 of this report gives in detail the results of the analysis on samples collected by the inspectors in the spring and fall inspection. The samples of each company are grouped together and when analyses have been made in any season of more than one sample of any one brand, the average analysis of this brand has been calculated. The guaranteed analysis is indicated for each brand just below the reported analyses of the sample for this brand. Samples collected in the spring are indicated by figure 5—at the extreme left of the page, samples collected in the fall, by the figure 11.

The analysis report on nitrogen gives two results—first column to the left giving the percentage found and the second column the percentage of the total nitrogen which is soluble in water. When more than 66.6 per cent of the total nitrogen is water soluble—which means readily available or active—the nitrogen in the fertilizer is considered of satisfactory quality. When less than 66.6

per cent of the total nitrogen is water soluble tests are applied to the water insoluble portion to determine its quality. The results of such testing point to the following fertilizers as containing nitrogen of inferior quality,—5-52, 5-125, 5-126, 5-129, 5-130, 5-139, 5-141, 5-142, 5-149, 5-175, 11-119, 11-120, 11-121, 11-122, 11-154.

Some of the analysis figures appear in bold faced type. These are the results which are lower in value than the guarantee figures and are printed in this manner in order that the deficient results may be readily found. Unless these results vary widely from the guarantee they do not condemn the fertilizer as such. However manufacturers aim at keeping the analysis figures about the guaranteed figures as an indication of care in manufacturing, and dependability of their product.

Samples of registered fertilizer are occasionally received from buyers and others with the request that same be analyzed. Since the results obtained on analysis of any mechanically mixed material will depend upon how the sample was taken, the analysis results may not have much value from the standpoint of dependability. As a guide to the real composition of the goods as sold, the analysis results obtained on the officially collected samples should be used. The report of results on all such unofficial samples appears at the end of Table 3.

### SUMMARY OF ANALYSIS RESULTS

With the large amount of figures presented for the different companies and the different kind of brands from each company it would not be easy to decide if one manufacturer were putting more value into his fertilizer than another. An attempt has been made to summarize these results so that each kind of fertilizer for each company will show a figure which will serve as an index. This figure is called a Ratio number and is the ratio of the average found value to the average guaranteed value.

Table 1 gives the ratio numbers for each kind of fertilizer and for each company. A final ratio number for each kind of fertilizer for all the companies has been figured also the final ratio number for each company for all kinds of fertilizer represented in the companies samples.

These ratio numbers are in direct relation to the money value of the fertilizer. Calling the lowest cash price of any brand the basic price or ratio number 100, the value for any company's goods will be this value multiplied by the ratio number.

Table 2 is a record of the deficient results for each company as far as their number is concerned. A slight increase in this number

over last year changes the figure from 10.3 to 11.3 for this year's report.

### **BUY ONLY REGISTERED FERTILIZER**

Attention was pointed out in a previous paragraph, that buyers should see that all fertilizer brands which they purchase have been registered. We publish in this report all goods which have been registered for sale during the year 1939 up to the time of going to press. See Table 4. If the company or the brand in which you are interested is not listed here write to the Missouri Agricultural Experiment Station for information. The act of registration is a statement of the manufacturer that he is responsible for the composition of the fertilizer. Therefore it is to the interest of every fertilizer user to buy only the brands which have been registered before sales are made as the law requires.

### **FERTILIZER SALES STATISTICS FOR MISSOURI**

For a number of years the Missouri Agricultural Experiment Station has been publishing statistics on fertilizer sales in this report based on the weekly shipment statements supplied by the companies. It has been known that these reports were not quite complete, giving totals somewhat low in value and they have therefore been marked approximate. An effort was made with the cooperation of the fertilizer companies to obtain a more accurate figure on the total tonnage by using a yearly summary report from each company. The results obtained for 1938 are exhibited in Tables 5, 6, 7, and 8.

Table 5 indicates the tonnage shipped into each county of the state in the spring and fall seasons respectively, based upon the usual weekly shipment statements furnished by the companies, which we have had reason to believe have not been completely reported in the past. The value of the data in this table, in spite of the incomplete figures, lies in the fact that they give fairly accurately the relative distribution of the fertilizer in the state by counties and seasons.

Table 6 gives this total tonnage for the entire state classified into the different divisions familiar to the trade. In the effort to get at the correct figure for the total tonnage sold in the state in 1938, the companies submitted a total summarized report for the entire year which is given in the last line of Table 6. We believe that this

figure for total tonnage is much closer to the true figure for Missouri sales in 1938 than the figure taken from the weekly reports. The data for Tables 7 and 8 are also derived from this summary report, showing the higher tonnage.

Following are the definitions of the classification terms used in these tables:

**Bone.**—Fertilizers sold under the names Raw Bone Meal, Steamed Bone Meal, Blood and Bone are included in this list. These fertilizers include only animal matter which has not been treated chemically to change any of its plant food into more soluble forms.

**Superphosphate.**—All grades of Acid Phosphate carrying quantities of Available Phosphoric Acid only, from 16 to 45 per cent.

**Mixed Fertilizer, High Grade.**—All brands having guaranteed percentages of either two or three fertilizer constituents, totaling 20 or more units. The bone and superphosphate mixture often called Half and Half is listed in this classification.

**Mixed Fertilizer, Medium Grade.**—Includes those brands containing two or three fertilizer constituents, who guarantee percentages that total less than 20 units, but not less than 14 units.

**Mixed Fertilizer, Low Grade.**—Includes all brands whose guaranteed percentages total less than 14 units.

**Miscellaneous.**—Unmixed fertilizer materials excepting bone and superphosphate. Nitrate of soda, sulphate of ammonia, cyanamid, dried manure, potash salts, rock phosphate, and sewerage residues are listed under this classification.

### BASICITY TESTS—1938

Following the procedure of the last few years the Experiment Station Laboratories have continued to test the residual effects of fertilizer sold in Missouri during the year by the various companies. The results prove that there is little ground for criticism of many of the fertilizer brands sold in Missouri because of acid forming residues left in the soil. Where there seems any possibility that harm might result because of acid forming quality this has generally been corrected by the companies. Thus the condition in Missouri from the standpoint of acid forming quality may be considered satisfactory.

**HIGH GRADE FERTILIZERS IN MISSOURI**

The Missouri Agricultural Experiment Station has consistently recommended the purchase of high grade fertilizer mixtures (20 units or more) principally because of economical advantage to the purchaser. It is of interest to note that the percentage of high grade goods has increased steadily since the depression years. This is illustrated by the following figures:

Year	Mixed Fertilizer Total Tonnage	High Grade Total Tonnage	High Grade Per Cent
1932	13160	2293	17.42
1933	15207	2710	17.82
1934	20649	4264	20.65
1935	28341	6011	21.21
1936	39739	9063	22.80
1937	37026	8770	23.68
1938	32177	8701	27.04

TABLE 1.—SUMMARY OF AVERAGE VARIATIONS FROM MANUFACTURER'S GUARANTEE

Manufacturer	Superphosphate			Bone Fertilizer			Mixed Fertilizer			All Fertilizers	
	No. samples	Available P <sub>2</sub> O <sub>5</sub>	No. samples	Total Nitrogen	Total P <sub>2</sub> O <sub>5</sub>	No. samples	Total Nitrogen	Available P <sub>2</sub> O <sub>5</sub>	Potash	No. samples	All Constituents
		No. of found value		No. of found value	No. of found value		No. of found value	No. of found value	No. of found value		No. of found value
American Agricultural Chemical Co. ....	10	108.6	1	106.0	104.8	38	102.4	108.5	107.8	49	107.5
Arkansas Fertilizer Co. ....	2	107.9	0	....	....	4	100.1	104.7	110.7	6	106.2
Armour Fertilizer Corp. ....	4	109.8	5	105.2	109.5	23	105.6	111.1	107.2	32	109.2
Blood and Bone Fertilizer Corp. ....	0	....	2	139.2	95.6	0	....	....	....	2	101.1
Cloverset Flower Farm ....	0	....	1	94.2	110.0	1	112.0	104.3	114.0	2	107.5
Cudahy Packing Co. ....	1	107.3	2	127.0	94.8	2	151.3	112.6	161.0	5	106.0
Darling and Co., Darling's Brands ....	2	108.7	1	113.5	100.5	7	103.5	102.3	113.9	10	104.6
Darling and Co., M.F.A. Brands ....	14	104.2	4	100.5	105.0	36	105.1	107.0	109.4	54	106.1
Davison Chemical Corporation ....	5	105.2	0	....	....	12	101.1	106.1	112.7	17	106.2
Federal Chemical Co., Globe & Daybreak Brands	2	110.0	1	103.5	101.3	14	99.0	107.1	109.9	17	106.4
Federal Chemical Co., Floyd Money Maker Brands	6	105.3	0	....	....	11	97.2	103.5	108.3	17	104.4
Kansas City Fertilizer Co. ....	0	....	0	....	....	3	102.6	130.7	140.5	3	124.0
Milwaukee Sewerage Commission ....	0	....	0	....	....	1	98.3	131.0	....	1	106.5
Missouri Dahlia Farms ....	0	....	0	....	....	5	112.3	153.2	147.1	5	137.4
Newhouse Chemical & Supply Co. ....	2	109.3	0	....	....	1	111.0	107.3	98.0	3	108.4
Pearson Ferguson Chemical Co. ....	0	....	0	....	....	3	100.7	106.1	102.7	3	104.1
Pulverized Manure Co. ....	0	....	0	....	....	3	103.0	131.0	213.0	3	143.3
E. Rauh and Sons Co. ....	2	105.4	0	....	....	7	98.4	106.0	109.7	9	105.8
Standard Wholesale Phosphate & Acid Works ..	6	107.3	0	....	....	1	100.0	104.0	148.0	7	107.8
Swift & Co. Fertilizer Works ....	7	107.5	6	110.8	106.2	34	110.8	111.4	105.6	47	109.0
Virginia Carolina Chemical Corp. ....	13	109.7	2	106.2	106.8	43	101.0	106.0	109.4	58	107.0
Westover Nurseries ....	0	....	1	152.1	76.2	1	76.0	173.0	....	2	106.2
Totals .....	77	107.2	26	113.0	103.5	250	103.7	108.0	109.6	353	107.3

TABLE 2.—SUMMARY OF TOTAL AND DEFICIENT FERTILIZER CONSTITUENTS  
(1938 SAMPLES)

Manufacturer	Nitrogen			Total Phosphoric Acid (from bone)			Available Phosphoric Acid			Potash			All Analyses		
	Total	Deficient	%	Total	Deficient	%	Total	Deficient	%	Total	Deficient	%	Total	Deficient	%
	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%	No.	No.	%
American Agricultural Chemical Co. ....	39	6	..	1	0	..	48	0	..	37	1	..	125	7	5.6
American Soda Products Co. ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Arkansas Fertilizer Co. ....	4	1	..	0	0	..	6	0	..	4	0	..	14	1	7.1
Armout Fertilizer Works ....	29	11	..	4	0	..	27	0	..	23	2	..	83	13	15.6
Blood & Bone Fertilizer Corp. ....	2	0	..	2	1	..	0	0	..	0	0	..	4	1	25.0
Cloverset Flower Farm ....	2	1	..	1	0	..	1	0	..	1	0	..	5	1	20.0
Crocker Packing Co. ....	0	0	..	0	0	..	1	0	..	0	0	..	1	0	0.0
Cudahy Packing Co. ....	4	0	..	2	1	..	3	0	..	1	0	..	10	1	10.0
Darling & Co., Darling's Brands ....	8	1	..	1	0	..	9	1	..	6	0	..	24	2	8.3
Darling & Co., M.F.A. Brands ....	38	6	..	4	0	..	50	1	..	34	2	..	126	9	7.1
Davison Chemical Corp. ....	12	3	..	0	0	..	17	0	..	12	0	..	41	3	7.3
Federal Chemical Co., Globe and Daybreak Brands ...	15	3	..	1	0	..	16	0	..	14	0	..	46	3	6.5
Federal Chemical Co., Floyd Money Maker Brands ...	11	6	..	0	0	..	17	1	..	11	1	..	39	8	20.5
Fort Smith Cotton Oil Co. ....	2	1	..	0	0	..	2	0	..	2	0	..	6	1	16.6
Gate City Fertilizer Co. ....	1	1	..	0	0	..	1	0	..	1	0	..	3	1	33.3
A. H. Hoffman, Inc. ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Kansas City Fertilizer Co. ....	3	1	..	0	0	..	3	1	..	3	1	..	9	3	33.3
Milwaukee Sewerage Commission ....	2	2	..	0	0	..	2	1	..	0	0	..	4	3	75.0
Missouri Dahlia Farms ....	5	2	..	0	0	..	5	0	..	5	1	..	15	3	6.7
Newhouse Chemical & Supply Co. ....	1	0	..	0	0	..	3	0	..	1	1	..	5	1	20.0
Pearson Chemical Co. ....	2	1	..	0	0	..	3	1	..	3	0	..	8	2	25.0
Pulverized Manure Co. ....	3	0	..	0	0	..	3	0	..	3	0	..	9	0	0.0
E. Rauh & Sons Fertilizer Co. ....	6	4	..	0	0	..	9	0	..	7	0	..	22	4	17.0
Sears Roebuck & Co. ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Smith Agricultural Chemical Co. ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Standard Wholesale Phosphate & Acid Works, Inc. ...	1	0	..	0	0	..	7	0	..	1	0	..	9	0	0.0
Stockdale Fertilizer Co. ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Swift & Co. Fertilizer Works ....	40	12	..	6	0	..	42	1	..	36	2	..	124	15	12.1
Tennessee Corporation ....	1	0	..	0	0	..	1	0	..	1	0	..	3	0	0.0
Virginia Carolina Chemical Corp. ....	43	8	..	2	0	..	56	1	..	43	1	..	144	10	7.0
Westover Nurseries ....	2	1	..	1	1	..	1	0	..	0	0	..	4	2	50.0
Totals .....	281	71	25.3	25	3	12.0	338	8	2.4	254	12	4.7	898	94	10.5

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
<b>American Agricultural Chemical Co.</b>								
<b>National Stock Yards, III.</b>								
<b>A. A. Brands</b>								
5-1	Superphosphate, 16% .....	Richards Bros., Pomona.	----	----	----	0.75	16.43	----
		Guaranteed Analysis	----	----	----	0.50	16.00	----
5-2	Superphosphate, 20% .....	Marshfield Supply Co.,	----	----	----	0.87	21.88	----
5-3	Superphosphate, 20% .....	Marshfield .....	----	----	----	0.66	20.94	----
		Certified Feed & Flour	----	----	----	0.50	21.41	----
		Co., Washington .....	----	----	----	0.50	20.00	----
		Average Analysis...	----	----	----	1.10	21.60	----
		Guaranteed Analysis	----	----	----	1.30	21.80	----
11-1	Superphosphate, 20% .....	Farmers Elevator, Archie	----	----	----	1.28	21.82	----
11-2	Superphosphate, 20% .....	Rockville Elevator Co.,	----	----	----	0.77	22.23	----
11-3	Superphosphate, 20% .....	Rockville .....	----	----	----	1.20	22.20	----
		A. E. Armstrong, Lowry	----	----	----	1.26	21.84	----
11-4	Superphosphate, 20% .....	City .....	----	----	----	1.06	22.19	----
11-5	Superphosphate, 20% .....	T. J. Canole, Rocheport..	----	----	----	0.50	21.95	----
		Summers Elevator Co.,	----	----	----	0.50	20.00	----
		Armstrong .....	----	----	----	1.20	22.20	----
11-6	Superphosphate, 20% .....	Noel Feed & Produce Co.,	----	----	----	1.26	21.84	----
11-7	Superphosphate, 20% .....	Moberly .....	----	----	----	1.06	22.19	----
		Farmers Elevator Co.,	----	----	----	0.50	21.95	----
		Pilot Grove .....	----	----	----	0.50	20.00	----
		Average Analysis...	----	----	----	1.26	22.20	----
		Guaranteed Analysis	----	----	----	1.26	21.84	----
5-4	Red Dragon .....	Keast Lumber Co.,	2.10	86.7	----	1.26	12.96	2.45
5-5	Red Dragon .....	Marionville .....	2.05	81.0	----	0.83	12.87	2.12
		Denman & Schell, Mar-	2.07	83.9	----	0.83	12.92	2.28
		quand .....	2.00	----	----	0.50	12.00	2.00
		Average Analysis...	----	----	----	0.50	12.00	2.00
		Guaranteed Analysis	----	----	----	0.50	12.00	2.00
11-8	Red Dragon Fertilizer .....	Farmers Elevator Co.,	2.10	87.1	----	1.08	13.14	2.52
11-9	Red Dragon Fertilizer .....	Pilot Grove .....	2.08	87.5	----	1.15	12.63	2.25
11-10	Red Dragon Fertilizer .....	Farmers Elevator Co.,	2.06	87.4	----	1.21	12.77	2.41
11-11	Red Dragon Fertilizer .....	Butler .....	2.17	88.5	----	0.85	12.93	2.41
		Lamar Mills, Lamar .....	2.14	88.3	----	1.03	13.05	2.37
11-12	Red Dragon Fertilizer .....	Purdin Farm Club, Pur-	2.11	87.8	----	0.50	12.90	2.39
		din .....	2.00	----	----	0.50	12.00	2.00
		Average Analysis...	----	----	----	0.50	12.00	2.00
		Guaranteed Analysis	----	----	----	0.50	12.00	2.00
11-14	Farmers Friend .....	Rockville Elevator Co.,	2.00	93.5	----	0.89	12.95	4.34
		Rockville .....	2.00	----	----	0.89	12.95	4.34
		Guaranteed Analysis	----	----	----	0.89	12.95	4.34
11-13	Agrico for Grain .....	City .....	2.06	94.2	----	0.89	12.91	4.62
11-15	Agrico for Grain .....	M. D. Grider, Appleton	2.02	94.6	----	0.78	13.04	4.22
11-16	Agrico for Grain .....	City .....	2.02	94.6	----	0.78	13.04	4.22
		Lamar Mills, Lamar .....	2.02	94.6	----	0.78	13.04	4.22
		Farmers Elevator & Ex-	2.02	92.1	----	0.80	13.04	4.33
		change, Ewing .....	2.05	91.7	----	0.73	13.07	4.47
11-17	Agrico for Grain .....	Silex Grain Co., Silex ..	2.09	94.7	----	0.71	12.89	4.16
11-18	Agrico for Grain .....	Fred M. Lange, Sedalia	2.05	93.5	----	0.50	12.99	4.36
		Average Analysis...	2.00	----	----	0.50	12.00	4.00
		Guaranteed Analysis	2.00	----	----	0.50	12.00	4.00
5-7	Antler Fertilizer .....	Wilkerson Bros., Conway	2.06	92.2	----	1.16	12.28	6.95
		Guaranteed Analysis	2.00	----	----	0.50	12.00	6.00
11-19	Antler Fertilizer .....	H. E. Stone, Centralia..	2.16	90.7	----	0.91	13.63	6.17
		Guaranteed Analysis	2.00	----	----	0.50	12.00	6.00
11-20	Challenge Fertilizer .....	Producers Exchange, Lin-	1.97	91.4	----	0.60	15.53	3.88
		coln .....	2.00	----	----	0.50	14.00	4.00
		Guaranteed Analysis	2.00	----	----	0.50	14.00	4.00
11-21	Gilt Edge Fertilizer .....	Harwood Elevator Co.,	2.15	92.6	----	0.48	18.07	2.27
		Harwood .....	2.00	----	----	0.50	16.00	2.00
		Guaranteed Analysis	2.00	----	----	0.50	16.00	2.00

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
5-8	Paramount Fertilizer	Richards Bros., West Plains	2.80	97.1	---	0.83	9.81	6.48
		Guaranteed Analysis	3.00	---	---	0.50	8.00	6.00
5-9	Excelsior Fertilizer	Senath Gin Co., Senath	3.74	97.9	---	0.50	8.44	13.87
5-10	Excelsior Fertilizer	L. Edmonston Hdwe. Co., Hornersville	4.04	98.5	---	0.34	8.64	12.40
		Average Analysis	3.89	98.2	---	---	8.54	13.14
		Guaranteed Analysis	4.00	---	---	0.50	8.00	12.00
5-11	Agrico for Tomatoes	Wilkerson Bros., Conway	2.04	93.1	---	1.11	12.89	6.47
5-12	Agrico for Tomatoes	Marshfield Supply Co., Marshfield	2.02	92.6	---	1.10	12.58	6.14
5-13	Agrico for Tomatoes	Ozark Flour & Feed Co., Aurora	1.97	93.4	---	1.10	12.24	6.48
5-14	Agrico for Tomatoes	Julius Petersen Seed Co., St. Louis	2.10	93.3	---	1.15	12.77	6.81
		Average Analysis	2.03	93.1	---	---	12.50	6.85
		Guaranteed Analysis	2.00	---	---	0.50	12.00	6.00
5-15	Agrico for Corn	Keast Lumbar Co., Marionville	3.01	95.7	---	0.60	15.33	6.34
5-16	Agrico for Corn	Denman & Schell, Marquand	3.12	98.1	---	0.55	15.50	6.70
		Average Analysis	3.07	96.9	---	---	15.42	6.52
		Guaranteed Analysis	3.00	---	---	0.50	14.00	6.00
5-18	Agrico for Potatoes	Chesterfield Farmers Elevator & Supply Co., Chesterfield	4.00	97.3	---	0.37	8.37	6.00
5-19	Agrico for Potatoes	Senath Gin Co., Senath	4.05	97.5	---	0.33	8.39	6.40
		Average Analysis	4.03	97.4	---	---	8.63	6.20
		Guaranteed Analysis	4.00	---	---	0.50	8.00	6.00
11-22	Agrico for Potatoes	Rowland Ricketts, Fayette	3.86	97.9	---	0.18	9.06	6.21
		Guaranteed Analysis	4.00	---	---	0.50	8.00	6.00
5-20	Agrico for Truck <sup>1</sup>	Marshfield Supply Co., Marshfield	4.04	96.8	---	0.55	10.39	6.13
5-21	Agrico for Truck	Allhoff Bros., Wellston	4.19	96.2	---	0.62	10.82	6.63
5-22	Agrico for Truck	Ward & Sons, Campbell	4.07	95.6	---	0.62	11.12	6.19
		Average Analysis	4.10	96.2	---	---	10.78	6.82
		Guaranteed Analysis	4.00	---	---	0.50	10.00	6.00
11-23	Two in One Fertilizer	Producers Exchange, Lincoln	4.05	97.3	---	0.41	17.57	4.22
11-24	Two in One Fertilizer	Lemon Trucking Service, New London	3.98	97.0	---	0.11	17.92	4.34
		Average Analysis	4.02	97.2	---	---	17.75	4.28
		Guaranteed Analysis	4.00	---	---	0.50	16.00	4.00
5-23	Agrico for Lawns, Trees and Shrubs <sup>8</sup>	Jul. Petersen Seed Co., St. Louis	7.42	81.0	---	0.68	7.28	5.48
		Guaranteed Analysis	7.00	---	---	0.50	7.00	5.00
5-24	Agrico for Pastures	Ozarks Flour & Feed Co., Aurora	10.51	93.6	---	0.21	6.25	4.06
5-25	Agrico for Pastures	Jul. Petersen Seed Co., St. Louis	10.39	95.0	---	0.20	6.40	4.19
		Average Analysis	10.45	94.3	---	---	6.33	4.13
		Guaranteed Analysis	10.00	---	---	0.50	6.00	4.00
11-25	Half and Half	R. H. Ehlers, Stover	1.19	36.1	---	9.40	13.95	---
		Guaranteed Analysis	1.00	---	---	8.00	12.00	---
11-26	Steam Bone Meal	R. H. Ehlers, Stover	2.12	11.8	28.30	---	---	---
		Guaranteed Analysis	2.00	---	27.00	---	---	---
	American Cyanamid Co. 30 Rockefeller Plaza New York, New York							
5-26	21% Aero Cyanamid	Kirk L. Keller, Creve Coeur	21.11	98.2	---	---	---	---
		Guaranteed Analysis	21.00	---	---	---	---	---

1. Registration tags not attached.

8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
<b>American Soda Products Co.</b> Moorestown, New Jersey								
5-27	Grogreen Fern Food <sup>1</sup> .....	F. W. Woolworth Store, Kansas City .....	4.66	74.7	----	0.22	8.50	3.59
		Guaranteed Analysis	3.00	----	----	----	8.00	3.00
<b>Arkansas Fertilizer Co.</b> Little Rock, Arkansas White Diamond Brands								
5-28	20% Superphosphate .....	Wise Feed & Seed Co., Springfield .....	----	----	----	0.03	21.87	----
		Guaranteed Analysis	----	----	----	0.50	20.00	----
11-27	20% Superphosphate .....	Harwood Elevator Co., Harwood .....	----	----	----	0.61	21.29	----
		Guaranteed Analysis	----	----	----	0.50	20.00	----
11-28	Southern King .....	Harwood Elevator Co., Harwood .....	2.00	94.0	----	0.65	12.53	2.00
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-29	2-12-4 .....	R. J. Gisel, Purcell.....	2.14	94.9	----	0.63	12.53	4.94
		Guaranteed Analysis	2.00	----	----	----	12.00	4.00
11-30	Gro Fast <sup>8</sup> .....	Harwood Elevator Co., Harwood .....	1.82	94.5	----	0.72	12.64	6.30
		Guaranteed Analysis	2.00	----	----	----	12.00	6.00
11-31	Prize Wheat Grower .....	Harwood Elevator Co., Harwood .....	2.05	95.1	----	0.68	16.72	2.26
		Guaranteed Analysis	2.00	----	----	----	16.00	2.00
<b>Armour Fertilizer Works</b> Chicago Heights, Illinois Big Crop Brands								
5-31	16% Superphosphate <sup>1</sup> .....	Walker & Sons, Salem	----	----	----	0.53	17.25	----
		Guaranteed Analysis	----	----	----	----	16.00	----
11-32	16% Superphosphate .....	Missouri Feed & Produce Co., Sedalia .....	----	----	----	0.35	17.33	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-32	20% Superphosphate <sup>1 2</sup> .....	The Goodwin Co., Doni- phan .....	----	----	----	0.53	22.27	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-33	20% Superphosphate .....	Prairie Milling Co., Mont- gomery City .....	----	----	----	0.43	22.17	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-34	0-16-6 Fertilizer .....	Petefish & Smith, Alba	----	----	----	0.32	17.13	6.84
		Guaranteed Analysis	----	----	----	----	16.00	6.00
5-33	2-12-2 .....	Mill Creek Store, Mill Creek .....	2.12	80.1	----	1.28	12.62	2.11
5-34	2-12-2 .....	H. L. Williams, Mountain View .....	2.16	81.9	----	1.27	12.05	2.24
		Average Analysis...	2.14	81.0	----	----	12.84	2.18
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-35	2-12-2 Fertilizer <sup>1</sup> .....	Curtis Smith, Collins...	1.95	83.6	----	0.69	12.47	2.39
11-36	2-12-2 Fertilizer .....	Hunter Hulse, New Lon- don .....	2.04	83.9	----	0.42	13.26	2.25
11-37	2-12-2 Fertilizer .....	Missouri Feed & Produce Co., Sedalia .....	2.06	85.9	----	0.59	12.79	2.33
11-38	2-12-2 Fertilizer .....	Economy Feed Mills Co., Harrisonville .....	2.02	85.6	----	0.60	13.24	2.17
		Average Analysis...	2.02	84.8	----	----	12.84	2.30
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-39	2-12-6 Fertilizer .....	Missouri Feed & Produce Co., Sedalia .....	2.04	92.1	----	0.48	12.80	6.32
		Guaranteed Analysis	2.00	----	----	----	12.00	6.00
5-35	2-14-4 .....	Mill Creek Store, Mill Creek .....	2.16	84.7	----	0.35	15.78	4.39
		Guaranteed Analysis	2.00	----	----	----	14.00	4.00
5-36	2-16-2 <sup>1</sup> .....	Walker & Sons, Salem...	1.87	90.9	----	0.42	17.93	2.56
		Guaranteed Analysis	2.00	----	----	----	16.00	2.00

1. Registration tags not attached. 2. Resacked. 8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
5-37	3-18-3	Mill Creek Store, Mill Creek	3.01	89.0	----	0.93	19.77	3.14
		Guaranteed Analysis	3.00	----	----	----	18.00	3.00
5-38	4-8-6	Hart & Vancil, Holcomb	3.98	92.0	----	0.39	9.29	6.39
		Guaranteed Analysis	4.00	----	----	----	8.00	6.00
5-39	4-8-12	Hart & Vancil, Holcomb	4.27	98.4	----	0.37	9.27	11.44
		Guaranteed Analysis	4.00	----	----	----	8.00	12.00
5-40	4-12-4 <sup>1 2 8</sup>	Clarkton Feed Store, Clarkton	3.97	95.7	----	0.46	13.04	5.08
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
5-41	Armour's Garden and Lawn Fertilizer <sup>1</sup>	St. Louis Seed Co., St. Louis	4.08	95.8	----	2.00	9.68	6.42
		Guaranteed Analysis	4.00	----	----	----	8.00	6.00
11-40	Armour's Garden and Lawn Fertilizer	C. C. Wonneman & Sons, Mexico	4.03	96.1	----	0.30	9.38	6.10
		Guaranteed Analysis	4.00	----	----	----	8.00	6.00
11-41	4-12-4 Fertilizer	Missouri Feed & Produce Co., Sedalia	4.05	94.3	----	0.26	13.20	4.31
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
5-42	Armour's Bone, Blood, Sulphate of Potash <sup>3</sup>	A. H. Hummert Seed Co., St. Louis	4.97	49.1	9.40	----	----	7.63
		Guaranteed Analysis	5.00	----	8.00	----	----	7.00
5-43	Armour's Special Florist Mixture <sup>4</sup>	Kirk L. Keller, Creve Coeur	4.82	99.2	----	0.48	16.47	4.96
5-44	Armour's Special Florist Mixture <sup>4</sup>	A. H. Hummert Seed Co., St. Louis	4.91	95.9	----	0.33	16.10	5.41
		Average Analysis...	4.87	97.6	----	----	16.29	5.19
		Guaranteed Analysis	5.00	----	----	----	15.00	5.00
5-45	Armour's Special Tree Food	Kirk L. Keller, Creve Coeur	9.28	95.9	----	0.12	8.94	6.80
		Guaranteed Analysis	10.00	----	----	----	8.00	6.00
11-42	Special Tree Food 10-8-6 <sup>8</sup>	Hurst John, Columbia	10.14	97.9	----	0.14	8.84	6.20
		Guaranteed Analysis	10.00	----	----	----	8.00	6.00
5-46	Armour's Special Turf Fertilizer	Kirk L. Keller, Creve Coeur	9.64	98.0	----	0.16	8.98	6.14
		Guaranteed Analysis	10.00	----	----	----	8.00	6.00
11-43	Bone Meal and Superphosphate <sup>3</sup>	H. F. Turner, Shelbyville	0.98	49.0	----	7.32	18.43	----
		Guaranteed Analysis	1.00	----	----	6.00	14.00	----
5-47	Armour's Bone Meal for Home Use <sup>1 3</sup>	Central Hdwe. Co., St. Louis	2.61	22.2	28.35	----	----	----
		Guaranteed Analysis	2.00	----	27.00	----	----	----
11-44	Bone Meal	P. J. Otten, Cole Camp	1.97	38.2	31.55	----	----	----
11-45	Bone Meal <sup>7</sup>	H. F. Turner, Shelbyville	2.06	16.0	28.20	----	----	----
11-46	Bone Meal	Missouri Feed & Produce Co., Sedalia	2.07	15.9	29.55	----	----	----
		Average Analysis...	2.03	23.4	29.77	----	----	----
		Guaranteed Analysis	2.00	----	27.00	----	----	----
5-48	Armour's Sulphate of Ammonia <sup>1</sup>	Thompson Hayward Chemical Co., Kansas City	20.93	100.0 <sup>5</sup>	----	----	----	----
5-49	Armour's Sulphate of Ammonia	Kirk L. Keller, Creve Coeur	20.92	100.0 <sup>5</sup>	----	----	----	----
		Average Analysis...	20.93	100.0 <sup>5</sup>	----	----	----	----
		Guaranteed Analysis	20.50	----	----	----	----	----

1. Registration tags not attached. 2. Resacked. 3. Incomplete labels. 4. Not registered. 5. Not actually determined. 6. Wrong or indefinite labels. 7. Labels missing. 8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
5-50	Armour's Muriate of Potash	Kirk L. Keller, Creve Coeur	---	---	---	---	---	46.68
		Guaranteed Analysis	---	---	---	---	---	50.00
5-51	Anaconda Copper Mining Co. Anaconda, Montana 45% Treble Superphosphate <sup>1</sup>	Thompson Hayward Chemical Co., Kansas City	---	---	---	2.14	46.36	---
		Guaranteed Analysis	---	---	---	3.00	43.00	---
5-52	Atkins & Durbrow, Inc. 165 John Street New York City, N. Y. Driconure <sup>2 4</sup>	F. W. Woolworth & Co., St. Louis	1.82	26.4	---	0.16	0.83	2.01
		Guaranteed Analysis	1.00	---	---	---	1.00	1.00
5-53	Barada & Page, Inc. Kansas City, Missouri Ammonia Sulphate	Warehouse, Kansas City	20.55	100.0 <sup>5</sup>	---	---	---	---
		Guaranteed Analysis	20.50	---	---	---	---	---
5-54	The Barrett Company 40 Rector Street New York, New York Arcadian, The American Nitrate of Soda <sup>1</sup>	Abner Hood Chemical Co., Kansas City	16.14	100.0 <sup>5</sup>	---	---	---	---
5-56	Arcadian, The American Nitrate of Soda <sup>1</sup>	Jul. Petersen Seed Co., St. Louis	16.13	100.0 <sup>5</sup>	---	---	---	---
		Average Analysis	16.14	100.0 <sup>5</sup>	---	---	---	---
		Guaranteed Analysis	16.00	---	---	---	---	---
5-57	Arcadian Sulphate of Ammonia <sup>1</sup>	Pearson Ferguson Chemical Co., Kansas City	20.63	100.0 <sup>5</sup>	---	---	---	---
		Guaranteed Analysis	20.56	---	---	---	---	---
11-47	John Paul Bartz Rockville, Missouri Barco XX Lime Manure Phosphate <sup>1 4 7 *</sup>	Geo. S. Newell, Rockville	---	---	---	19.30	2.65	---
		Guaranteed Analysis	---	---	---	20.00	0.50	---
5-58	Blood & Bone Fertilizer Corporation St. Louis, Missouri Steer Head Raw Bone Meal	Westover Nursery Co., Clayton	4.34	8.1	22.75	---	---	---
		Guaranteed Analysis	3.28	---	20.00	---	---	---
5-59	Steer Head Blood and Bone Tankage	Westover Nursery Co., Clayton	4.82	18.0	20.25	---	---	---
		Guaranteed Analysis	3.30	---	25.00	---	---	---
5-60	Bone Products Co. Washington, Missouri Raw Bone Meal	Factory, Washington	3.69	5.1	27.70	---	---	---
		Guaranteed Analysis	3.25	---	26.50	---	---	---
5-61	Chilean Nitrate Sales Corp. 120 Broadway New York, New York Champion Brand Chilean Nitrate of Soda <sup>1</sup>	L. Edmonston Hdwe. Co., Hornersville	16.06	100.0 <sup>5</sup>	---	---	---	---
5-62	Champion Brand Chilean Nitrate of Soda <sup>1</sup>	Jul. Petersen Seed Co., St. Louis	16.04	100.0 <sup>5</sup>	---	---	---	---
		Average Analysis	16.05	100.0 <sup>5</sup>	---	---	---	---
		Guaranteed Analysis	16.00	---	---	---	---	---

1. Registration tags not attached. 3. Incomplete labels. 4. Not registered. 5. Not actually determined. 7. Labels missing.  
\*A few sacks incorrectly labeled "20 per cent Acid Phosphate."

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
Cloverset Flower Farms Kansas City, Missouri								
5-63	Cloverset Rose Grower <sup>1 8</sup>	Cloverset Flower Farm, Kansas City .....	4.48	91.3	----	0.74	12.52	4.46
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
5-64	Cloverset Blood & Bone <sup>1 8</sup>	Cloverset Flower Farm, Kansas City .....	4.36	12.8	24.65	----	----	----
		Guaranteed Analysis	4.63	----	22.40	----	----	----
Crocker Packing Co. Joplin, Missouri								
11-48	Interstate 16% Superphosphate .....	Brookshire Hardware Co., Diamond .....	----	----	----	0.30	16.60	----
		Guaranteed Analysis	----	----	----	----	16.00	----
Cudahy Packing Company Kansas City, Kansas								
11-49	Bigwin 16% Superphosphate .....	Stover Milling Co., Stover Guaranteed Analysis	----	----	----	1.18	17.17	----
			----	----	----	1.00	16.00	----
11-50	Bigwin High Grade 2-12-2 Fertilizer .....	Stover Milling Co., Stover Guaranteed Analysis	2.56	50.0	----	2.95	12.20	3.22
			2.00	----	----	----	12.00	2.00
11-51	Bigwin Half & Half Fertilizer .....	Stover Milling Co., Stover Guaranteed Analysis	1.98	17.7	----	5.44	15.96	----
			1.00	----	----	7.00	13.00	----
5-65	Bigwin Steamed Bone Meal .....	Pearson Ferguson Co., Kansas City .....	3.16	22.2	23.50	----	----	----
		Guaranteed Analysis	2.50	----	24.00	----	----	----
11-52	Bigwin Steamed Bone Meal .....	Stover Milling Co., Stover Guaranteed Analysis	3.19	5.3	22.00	----	----	----
			2.50	----	24.00	----	----	----
Darling & Company 4201 South Ashland Ave. Chicago, Illinois								
Darling Brands								
11-53	20% Superphosphate .....	J. W. Henry, Clinton...	----	----	----	0.45	20.70	----
11-54	20% Superphosphate <sup>1</sup> .....	Urich Producers Ex- change, Urich .....	----	----	----	0.55	22.80	----
		Average Analysis...	----	----	----	----	21.75	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-55	Big Harvest .....	Farmers Exchange, Mont- rose .....	2.20	82.7	----	0.82	12.22	3.14
11-56	Big Harvest .....	Summers Elevator Co., Armstrong .....	2.05	81.9	----	0.58	12.70	2.23
11-57	Big Harvest .....	Farmers Elevator & Ex- change, Ewing .....	2.18	83.5	----	0.54	12.74	2.18
11-58	Big Harvest .....	Farmers Coop. Exchange, Windsor .....	2.15	85.6	----	0.63	12.51	2.15
		Average Analysis...	2.15	83.4	----	----	12.54	2.43
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-59	Two Twelve Four .....	Farmers Coop. Exchange, Windsor .....	1.85	80.0	----	0.64	12.24	4.08
		Guaranteed Analysis	2.00	----	----	----	12.00	4.00
11-60	Field Marshall 4-12-4 .....	Osceola Feed & Produce Co., Osceola .....	4.02	92.5	----	0.92	12.54	4.45
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
11-61	Bone and Superphosphate, Half & Half .....	Farmers Exchange, Ian- tha .....	1.10	18.2	----	6.66	13.04	----
		Guaranteed Analysis	1.00	----	----	6.00	14.00	----
11-62	Pure Ground Bone <sup>7</sup> .....	Farmers Elevator Co., Butler, .....	2.10	6.7	28.15	----	----	----
		Guaranteed Analysis	1.85	----	28.00	----	----	----

1. Registration tags not attached.      7. Labels missing.      8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
<b>M. F. A. Brands</b>								
5-67	16% Superphosphate	Farmers Coop. Assn. No. 27, Union	----	----	----	1.13	16.37	----
5-68	16% Superphosphate	Farmers Exchange, West Plains	----	----	----	0.86	17.14	----
		Average Analysis...	----	----	----	----	16.75	----
		Guaranteed Analysis	----	----	----	----	16.00	----
11-63	16% Superphosphate	Farmers Exchange, Buffalo	----	----	----	0.70	17.00	----
11-64	16% Superphosphate	Farmers Coop. Exchange, Calhoun	----	----	----	0.79	16.38	----
		Average Analysis...	----	----	----	----	16.68	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-69	20% Superphosphate	Farmers Exchange, Lebanon	----	----	----	0.35	21.25	----
5-70	20% Superphosphate	Greene County Farmers Sales Assn., Springfield	----	----	----	0.56	21.69	----
		Average Analysis...	----	----	----	----	21.47	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-65	20% Superphosphate	Farmers Exchange, Humansville	----	----	----	0.30	20.60	----
11-66	20% Superphosphate	Farmers Exchange, Callao	----	----	----	0.48	20.77	----
11-67	20% Superphosphate	Farmers Exchange No. 68, Milan	----	----	----	0.61	21.14	----
11-68	20% Superphosphate	Farmers Coop. Assn. No. 76, Novinger	----	----	----	0.50	20.60	----
11-69	20% Superphosphate	Farmers Exchange, Kirksville	----	----	----	0.55	20.60	----
11-70	20% Superphosphate	Farmers Exchange No. 59, Lewistown	----	----	----	0.60	20.50	----
11-71	20% Superphosphate	Farmers Exchange, Pilot Grove	----	----	----	0.52	20.63	----
11-72	20% Superphosphate	Farmers Coop. Exchange, Windsor	----	----	----	0.63	20.47	----
		Average Analysis...	----	----	----	----	20.66	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-73	0-14-4	Farmers Elevator, Clinton	----	----	----	0.23	15.10	3.99
		Guaranteed Analysis	----	----	----	----	14.00	4.00
11-74	0-16-6	Lamar Farmers Exchange, Lamar	----	----	----	0.50	16.83	6.07
		Guaranteed Analysis	----	----	----	----	16.00	6.00
5-72	2-12-2	Farmers Exchange, Lebanon	2.09	83.7	----	1.15	12.59	2.12
5-73	2-12-2	Farmers Produce Exchange, Cassville	2.52	88.9	----	0.76	12.24	3.05
5-75	2-12-2	Farmers Exchange, Ava	2.09	83.7	----	0.59	13.27	2.38
5-76	2-12-2	Farmers Coop. No. 27, Union	2.12	87.7	----	0.63	13.29	2.60
5-77	2-12-2	M. F. A. Farmers Exchange Assn., Grandin	2.10	85.2	----	0.73	13.07	2.43
5-78	2-12-2	Farmers Produce Exchange, St. James	2.05	82.9	----	0.53	12.75	2.26
		Average Analysis...	2.16	85.4	----	----	12.87	2.47
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-75	2-12-2	Farmers Elevator Co., Tipton	2.04	85.3	----	0.66	12.74	2.25
11-76	2-12-2	Farmers Exchange, Cairo	2.03	84.6	----	0.51	12.87	2.18
11-77	2-12-2	Farmers Exchange, Macon	2.01	85.6	----	0.58	11.96	2.45
11-78	2-12-2	Farmers Exchange No. 49, New Cambria	2.21	84.6	----	0.68	12.76	2.31
11-79	2-12-2	Farmers Exchange, Green City	2.08	83.7	----	0.41	12.07	2.81
11-80	2-12-2	Farmers' Coop. No. 24, Liege	2.13	85.0	----	0.50	12.86	2.32
11-81	2-12-2	Producers Grain Co., Mexico	2.05	84.4	----	0.58	12.94	2.20
11-82	2-12-2	Producers Grain Co., Centralia	2.10	87.6	----	0.53	12.95	2.31

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
11-83	2-12-2	Farmers Coop. Exchange, Windsor	2.12	85.9	---	0.53	12.71	2.40
		Average Analysis...	2.08	85.2	---	---	12.65	2.36
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
5-79	2-12-4	Greene County Farmers Sales Assn., Springfield	2.19	86.8	---	0.51	12.69	4.94
5-80	2-12-4	Crane Farmers Exchange, Crane	2.10	88.1	---	0.67	12.95	4.62
		Average Analysis...	2.15	87.5	---	---	12.82	4.78
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
11-84	2-12-4	Farmers Exchange, Brookfield	2.04	88.7	---	0.53	12.79	4.41
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
5-81	2-12-6	Farmers Exchange, Monett	0.25	64.0	---	0.25	12.79	6.23
5-82	2-12-6	Farmers Exchange, Exeter	2.04	88.7	---	0.59	13.01	6.10
5-83	2-12-6	M. F. A. Farmers Exchange Assn., Grandin	2.19	89.9	---	0.79	12.61	6.17
5-84	2-12-6	Farmers Exchange, Mountain View	2.42	90.9	---	0.88	12.76	6.23
		Average Analysis...	1.73	83.4	---	---	12.79	6.18
		Guaranteed Analysis	2.00	---	---	---	12.00	6.00
11-85	2-12-6	Farmers Coop. Exchange, Calhoun	2.05	90.6	---	0.40	12.74	5.86
		Guaranteed Analysis	2.00	---	---	---	12.00	6.00
5-85	2-16-2	Greene County Farmers Sales Assn., Springfield	1.84	88.0	---	0.45	17.38	2.43
		Guaranteed Analysis	2.00	---	---	---	16.00	2.00
5-86	3-8-6	Farmers Exchange, Billings	3.02	94.4	---	0.42	8.88	6.04
5-87	3-8-6	Farmers Produce Exchange, Cassville	2.97	93.6	---	0.37	9.23	6.01
		Average Analysis...	3.00	94.0	---	---	9.06	6.03
		Guaranteed Analysis	3.00	---	---	---	8.00	6.00
5-88	4-8-7 <sup>1</sup>	Farmers Exchange, Marshfield	4.08	96.3	---	0.35	8.87	7.45
5-89	4-8-7	Farmers Coop. Assn., Union	3.87	95.9	---	0.15	9.89	7.27
5-90	4-8-7	Farmers Exchange, Birch Tree	4.08	96.6	---	0.19	9.15	7.18
		Average Analysis...	4.01	96.3	---	---	9.30	7.30
		Guaranteed Analysis	4.00	---	---	---	8.00	7.00
11-86	4-12-4	Farmers Exchange, Shelbyville	4.03	91.8	---	0.80	12.74	4.39
		Guaranteed Analysis	4.00	---	---	---	12.00	4.00
5-91	4-16-4	Greene County Farmers Sales Assn., Springfield	3.75	94.4	---	0.39	16.61	5.19
5-92	4-16-4	Farmers Coop. No. 2, Washington	4.13	96.1	---	0.49	17.16	4.56
		Average Analysis...	3.94	95.3	---	---	16.89	4.88
		Guaranteed Analysis	4.00	---	---	---	16.00	4.00
11-87	4-16-4	Farmers Exchange, Moberly	4.16	96.9	---	0.56	16.82	4.18
11-88	4-16-4	Martinsburg Farmers Elev. Co., Martinsburg	4.27	97.2	---	0.65	16.50	4.47
		Average Analysis...	4.22	97.1	---	---	16.66	4.33
		Guaranteed Analysis	4.00	---	---	---	16.00	4.00
11-89	Pure Ground Bone	Producers Exchange, Lincoln	1.86	14.0	28.30	---	---	---
11-90	Pure Ground Bone <sup>1</sup>	Cole Camp Producers Exchange, Cole Camp	1.76	10.2	30.00	---	---	---
11-91	Pure Ground Bone	Farmers Elevator, Bunce-ton	1.92	10.4	29.00	---	---	---

1. Registration tags not attached.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
11-92	Pure Ground Bone <sup>1</sup> .....	Producers Grain Co. No. 31, Montgomery City...	1.90	12.6	30.35	----	----	----
		Average Analysis...	1.86	11.8	29.41	----	----	----
		Guaranteed Analysis	1.85	----	28.00	----	----	----
	Davison Chemical Corporation Nashville, Tennessee Red Diamond and Davco Brands							
11-93	16% Superphosphate .....	Farmers Exchange, Bolivar .....	----	----	----	0.62	16.18	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-93	Davco Granulated 20% Superphosphate .....	W. R. Cantrell Produce Co., Republic .....	----	----	----	0.39	21.61	----
5-94	Davco Granulated 20% Superphosphate .....	I. J. Shell & Sons, Lutesville .....	----	----	----	0.43	21.67	----
		Average Analysis...	----	----	----	----	21.64	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-94	20% Superphosphate .....	Veulemans & Sons, Syracuse .....	----	----	----	0.82	20.98	----
11-95	20% Superphosphate .....	Breed Milling Co., Garden City .....	----	----	----	0.42	20.58	----
		Average Analysis...	----	----	----	----	20.78	----
		Guaranteed Analysis	----	----	----	----	20.00	----
5-96	Davco Homogeneous Granulated Today Fertilizer ..	W. R. Cantrell, Republic ..	2.33	93.6	----	0.41	13.67	2.07
5-97	Davco Homogeneous Granulated Today Fertilizer ..	Cooper Feed Store, Fredericktown .....	1.71	93.0	----	0.43	13.61	3.27
		Average Analysis...	2.02	93.3	----	----	13.64	2.67
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-96	Homogeneous Granulated 2-12-2 .....	O. P. Combs, Lamar....	2.04	91.7	----	0.76	12.03	2.43
11-97	Homogeneous Granulated 2-12-2 .....	Farmers Exchange, Halfway .....	2.08	89.9	----	0.23	12.05	2.22
11-99	Homogeneous Granulated 2-12-2 .....	Farmers Elevator Co., Silex .....	2.01	90.0	----	0.22	12.08	2.15
11-100	Homogeneous Granulated 2-12-2 .....	Sedalia Traders Co., Sedalia .....	2.00	87.5	----	0.41	12.07	2.15
		Average Analysis...	2.03	89.8	----	----	12.06	2.24
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
5-95	Premium Grain Grower ...	W. R. Cantrell, Republic ..	2.21	87.8	----	0.98	13.06	2.26
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-98	Premium Grain Grower ...	Veulemans & Sons, Syracuse .....	2.00	60.6	----	0.87	13.57	2.07
11-101	Premium Grain Grower ...	Breed Milling Co., Garden City .....	1.75	65.7	----	1.08	13.84	2.03
		Average Analysis...	1.89	63.2	----	----	13.71	2.05
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
5-98	Red Diamond 3-8-6 .....	W. R. Cantrell, Republic ..	3.06	91.2	----	0.55	8.89	6.21
		Guaranteed Analysis	3.00	----	----	----	8.00	6.00
5-99	Davco Homogeneous Granulated Fertilizer 3-8-6 ...	Cooper Feed Store, Fredericktown .....	2.95	99.0	----	0.33	8.67	7.25
		Guaranteed Analysis	3.00	----	----	----	8.00	6.00
11-102	Homogeneous Granulated 4-16-4 <sup>4</sup> .....	Sedalia Traders Co., Sedalia .....	4.13	95.4	----	0.42	16.06	4.20
		Guaranteed Analysis	4.00	----	----	----	16.00	4.00

1. Registration tags not attached.

4. Not registered.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
<b>Federal Chemical Company</b>								
E. St. Louis, Illinois								
Globe and Daybreak Brands								
5-100	16% Superphosphate	E. C. Claxton, Hartsville	----	----	----	1.25	17.15	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-101	20% Superphosphate	G. H. Lane & Son, Marshfield	----	----	----	0.34	22.46	----
		Guaranteed Analysis	----	----	----	----	20.00	----
5-102	Loam Land Fertilizer	Henry Verfurth, Billings	2.23	71.3	----	0.72	12.00	2.01
5-104	Loam Land Fertilizer	Craig-Hart Canning Co., Ava	2.08	68.3	----	0.84	12.06	2.77
		Average Analysis...	2.16	69.8	----	----	12.03	2.39
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-103	Loam Land Fertilizer	Fortuna Elevator Co., Fortuna	2.01	73.1	----	0.83	12.53	2.32
11-104	Loam Land Fertilizer	Sandbothe Feed Store, Martinsburg	2.34	68.4	----	1.41	12.95	2.48
11-105	Loam Land Fertilizer	Shelton and Harris, Windsor	2.16	72.7	----	0.95	13.17	2.20
		Average Analysis...	2.17	71.4	----	----	12.88	2.38
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
5-105	2-12-6 Fertilizer	J. M. Sapp, Exeter	2.11	69.7	----	0.95	12.63	7.10
5-107	2-12-6 Fertilizer	Long Lane Canning Co., Phillipsburg	2.01	69.7	----	0.89	12.69	6.76
		Average Analysis...	2.06	69.7	----	----	12.66	6.93
		Guaranteed Analysis	2.00	----	----	----	12.00	6.00
11-106	2-16-2 Fertilizer	A. M. Broughton, Harwood	1.98	75.3	----	1.22	16.28	2.03
		Guaranteed Analysis	2.00	----	----	----	16.00	2.00
5-108	3-8-6 Fertilizer	Mills & Waterall, Fredericktown	3.22	84.5	----	0.72	10.88	6.56
		Guaranteed Analysis	3.00	----	----	----	8.00	6.00
5-109	Trucker's Special 4-8-6	Frank Mease, Reed Springs	3.74	86.4	----	0.59	9.21	6.20
5-110	Trucker's Special 4-8-6 <sup>s</sup>	Stephens Feed Store, Fredericktown	2.57	82.1	----	0.74	9.96	6.13
		Average Analysis...	3.16	84.3	----	----	9.59	6.17
		Guaranteed Analysis	4.00	----	----	----	8.00	6.00
5-111	Double Duty 4-12-4	Parmenter Produce Co., Ava	4.01	83.0	----	1.18	12.52	4.54
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
11-107	4-16-4 Fertilizer	Macon Elevator, Macon	4.12	90.3	----	0.62	16.68	4.06
11-108	4-16-4 Fertilizer	H. E. Stone, Centralia	4.04	88.6	----	0.53	16.37	4.18
		Average Analysis...	4.08	89.5	----	----	16.53	4.12
		Guaranteed Analysis	4.00	----	----	----	16.00	4.00
11-109	Steamed Bone	Macon Elevator, Macon	2.07	20.3	27.35	----	----	----
		Guaranteed Analysis	2.00	----	27.00	----	----	----
<b>Floyd Money Maker Brands</b>								
5-112	16% Superphosphate	Ava Produce Co., Ava	----	----	----	0.18	16.52	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-113	20% Superphosphate	Ava Produce Co., Ava	----	----	----	0.65	21.70	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-110	20% Superphosphate	Farmers Exchange, Sarcxie	----	----	----	0.38	21.37	----
11-111	20% Superphosphate	E. A. McCollum Feed Store, Frankford	----	----	----	0.53	21.62	----
		Average Analysis...	----	----	----	----	21.50	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-112	32% Superphosphate	Ralls Co. Farm Bureau Service Co., New London	----	----	----	0.50	32.50	----
		Guaranteed Analysis	----	----	----	----	32.00	----
11-113	45% Superphosphate	H. G. Tomlin, Linneus	----	----	----	0.21	47.49	----
		Guaranteed Analysis	----	----	----	----	45.00	----

8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
5-114	2-12-2	Ed McCormick Canning Co., Reed Springs	2.10	70.0	---	0.78	13.20	2.66
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
11-114	2-12-2	Farmers Exchange, Sarcocie	1.98	73.7	---	1.05	12.79	2.25
11-115	2-12-2	May's Cash Feed Co., Centralia	2.05	75.1	---	0.80	12.24	2.04
		Average Analysis	2.02	74.4	---	---	12.52	2.15
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
11-116	2-12-4	Farmers Exchange, Sarcocie	1.92	75.0	---	0.98	12.04	4.16
11-117	2-12-4	A. M. Hamilton, Truxton	2.01	75.1	---	0.91	12.83	4.41
		Average Analysis	1.97	75.1	---	---	12.44	4.29
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
5-115	2-12-6	Clifford Willis, Northview	2.01	69.2	---	0.65	12.75	6.39
		Guaranteed Analysis	2.00	---	---	---	12.00	6.00
11-118	2-14-4	Marion Co. Farm Bureau, Palmyra	1.78	75.3	---	0.67	13.63	3.88
		Guaranteed Analysis	2.00	---	---	---	14.00	4.00
5-116	3-8-6	Cope & Co., Salem	2.75	83.6	---	0.79	8.05	6.10
		Guaranteed Analysis	3.00	---	---	---	8.00	6.00
5-117	4-8-6 <sup>1</sup>	Cope & Co., Salem	3.72	88.2	---	0.55	8.29	6.74
		Guaranteed Analysis	4.00	---	---	---	8.00	6.00
5-113	4-10-6	Lomax and Harkey, Hornersville	4.00	85.7	---	1.17	10.37	6.72
		Guaranteed Analysis	4.00	---	---	---	10.00	6.00
5-119	4-12-8	Lomax and Harkey, Hornersville	3.86	85.0	---	1.68	12.14	8.25
		Guaranteed Analysis	4.00	---	---	---	12.00	8.00
Ford Motor Company Dearborn, Michigan								
5-120	Ford Ammonium Sulphate	Ford Motor Co., St. Louis	20.81	100.0 <sup>5</sup>	---	---	---	---
		Guaranteed Analysis	20.80	---	---	---	---	---
Fort Smith Cotton Oil Co. Ft. Smith, Arkansas								
5-121	Old Fort Rais More 8-16-16 <sup>1,4</sup>	Farmers Exchange, Seligman	7.81	90.8	---	0.40	16.38	17.63
		Guaranteed Analysis	8.00	---	---	---	16.00	16.00
Gate City Fertilizer Co. Make It Grow Fertilizer <sup>1,4,8</sup>								
5-122		Wise Feed & Seed Co., Springfield	3.16	97.5	---	0.89	12.11	4.00
		Guaranteed Analysis	4.00	---	---	---	12.00	4.00
Christian Haefele 825 West Tesson St. St. Louis, Missouri								
5-124	Star Brand Ground Steam Bone	Warehouse, St. Louis	2.24	33.9	28.80	---	---	---
		Guaranteed Analysis	2.00	---	20.00	---	---	---
A. H. Hoffman, Inc. Landisville Pennsylvania								
5-125	Hoffman's Sheep Manure	S. S. Kresge 5 & 10 Cent Store, Kansas City	2.08	10.1	---	0.20	1.05	3.88
		Guaranteed Analysis	1.85	---	---	---	1.00	2.00
Kansas City Fertilizer Co. Kansas City, Mo.								
5-126	Archer Brand Sheep Manure	Soil Service Co., Kansas City	1.94	27.3	---	0.17	1.44	2.29
		Guaranteed Analysis	1.85	---	---	---	1.00	2.00

1. Registration tags not attached. 4. Not registered. 5. Not actually determined.  
8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
11-119	Archer Brand Pulverized Sheed Manure <sup>s</sup> .....	Banning Seed & Nursery House, Brookfield ....	2.27	26.4	----	0.16	2.69	4.31
		Guaranteed Analysis	2.00	----	----	----	1.00	2.00
5-127	Archer Brand Cattle Manure .....	Soil Service Co., Kansas City .....	1.79	20.7	----	0.21	1.10	1.83
		Guaranteed Analysis	2.00	----	----	----	2.00	2.00
	Missouri Dahlia Farms, Inc. 8601 St. Charles Road St. Louis, Missouri							
5-129	Nature's Plant Food Sheep Manure .....	Palmer Seed Co., St. Louis	1.78	31.5	----	0.12	1.81	4.59
		Guaranteed Analysis	2.00	----	----	----	1.00	2.00
11-120	Sheep Manure, Nature's Plant Food .....	C. C. Wonneman & Sons, Mexico .....	1.85	36.2	----	0.15	1.98	3.90
		Guaranteed Analysis	2.00	----	----	----	1.00	2.00
5-130	Nature's Plant Food, Cattle Manure .....	Palmer Seed Co., St. Louis	1.58	32.3	----	0.12	1.55	2.75
		Guaranteed Analysis	1.00	----	----	----	1.00	2.00
11-121	Nature's Plant Food <sup>4</sup> .....	Griffin's Flower Shop, Hannibal .....	1.40	28.6	----	0.15	1.24	2.15
11-122	Nature's Plant Food .....	C. C. Wonneman & Sons, Mexico .....	1.25	18.4	----	0.15	1.08	1.32
		Average Analysis...	1.33	23.5	----	----	1.16	1.74
		Guaranteed Analysis	1.00	----	----	----	1.00	2.00
	Newhouse Chemical & Supply Co. Little Rock, Arkansas							
5-131	Triangle Brand 20% Superphosphate .....	Boots Milling Co., Springfield .....	----	----	----	0.27	21.23	----
		Guaranteed Analysis	----	----	----	0.50	20.00	----
11-123	Triangle Brand 20% Superphosphate .....	Custom Mills, Butler ...	----	----	----	0.40	22.50	----
		Guaranteed Analysis	----	----	----	0.50	20.00	----
11-124	Triangle Brand 2-16-2 Fertilizer <sup>1</sup> .....	Boots Milling Co., Springfield .....	2.22	95.0	----	0.69	17.16	1.96
		Guaranteed Analysis	2.00	----	----	----	16.00	2.00
	N. V. Potash Export, Inc. 19 West 44th Street New York, New York							
5-133	Kainit .....	Senath Gin Co., Senath..	----	----	----	----	----	20.82
5-134	Kainit .....	L. Edmonston Hdwe. Co., Hornersville .....	----	----	----	----	----	21.25
5-135	Kainit .....	Hart & Vancil, Holcomb	----	----	----	----	----	21.46
		Average Analysis...	----	----	----	----	----	21.18
		Guaranteed Analysis	----	----	----	----	----	20.00
	Pearson Ferguson Company Kansas City, Missouri							
5-136	P. F. Fertilizer 0-14-7 ....	Warehouse, Kansas City	----	----	----	2.57	13.71	7.18
		Guaranteed Analysis	----	----	----	----	14.00	7.00
5-137	P-F Fertilizer 4-12-4 ....	Warehouse, Kansas City	4.15	81.2	----	0.55	12.95	4.42
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
5-138	P-F Fertilizer 9-18-18 <sup>7</sup> ....	Warehouse, Kansas City	8.94	98.2	----	0.72	20.03	18.19
		Guaranteed Analysis	9.00	----	----	----	18.00	18.00

1. Registration tags not attached. 4. Not registered. 7. Labels missing. 8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
<b>Pulverized Manure Co.</b>								
Chicago, Illinois								
Wizard Brands								
5-139	Sheep Manure	St. Louis Seed Co., St. Louis	2.02	24.3	----	0.16	1.59	4.06
5-142	Sheep Manure*	A. H. Hummert Seed Co., St. Louis	2.09	23.9	----	0.18	1.31	3.37
			2.06	24.1	----	----	1.45	3.73
			2.00	----	----	----	1.00	2.00
5-141	Garden Mulch <sup>8</sup>	St. Louis Seed Co., St. Louis	2.07	25.6	----	0.18	1.03	1.09
			2.00	----	----	----	1.00	1.00
<b>E. Rauh &amp; Sons Fertilizer Co.</b>								
Indianapolis, Indiana								
Red Star Brands								
5-143	20% Superphosphate <sup>8</sup>	Wrinkle Produce Co., Lebanon	----	----	----	0.63	21.32	----
			----	----	----	----	20.00	----
11-125	20% Superphosphate	Arnold Feed Store, Butler	----	----	----	0.70	20.85	----
			----	----	----	----	20.00	----
11-126	0-14-6 <sup>3</sup>	Willems Oil Co., Rockville	----	----	----	0.61	14.79	6.48
			----	----	----	----	14.00	6.00
11-127	2-12-2	Arnold Feed Store, Butler	2.01	39.6	----	0.56	12.44	2.20
			2.00	----	----	----	12.00	2.00
5-144	2-12-2 <sup>1 6</sup>	Wrinkle Produce Co., Lebanon	1.99	37.9	----	0.39	12.93	2.09
			2.00	----	----	----	12.00	2.00
5-145	2-12-6 <sup>8</sup>	Wrinkle Produce Co., Lebanon	1.95	37.2	----	0.47	12.61	6.71
			2.00	----	----	----	12.00	6.00
11-128	2-16-2 <sup>3 4</sup>	Willems Oil Co., Rockville	2.32	93.1	----	0.80	16.55	3.03
			2.00	----	----	----	16.00	2.00
11-129	4-8-6 Fertilizer	G. K. Means, Harwood..	3.60	95.8	----	0.36	8.92	5.16
			4.00	----	----	----	8.00	6.00
11-130	4-12-4 Fertilizer <sup>3 4</sup>	Willems Oil Co., Rockville	3.87	96.4	----	0.52	12.92	4.06
			4.00	----	----	----	12.00	4.00
<b>Sears Roebuck &amp; Co.</b>								
Kansas City, Missouri								
5-146	Sears Guaranteed Fertilizer 5-8-7	Sears, Roebuck & Co., Kansas City	5.04	96.0	----	0.32	9.42	7.44
			5.00	----	----	----	8.00	7.00
<b>The Sewerage Commission</b>								
Milwaukee, Wisconsin								
5-147	Milorganite	Palmer Seed Co., St. Louis	5.94	15.3	----	0.53	2.46	----
			6.00	----	----	0.75	2.00	----
11-131	Milorganite <sup>8</sup>	Griffin's Flower Shop, Hannibal	5.90	19.5	----	0.50	2.62	----
			6.00	----	----	0.75	2.00	----
<b>Smith Agricultural Chemical Co.</b>								
Columbus, Ohio								
5-148	Sacco Plant Food	Cloverset Flower Farm, Kansas City	4.31	91.4	----	0.68	12.46	5.10
			4.00	----	----	----	12.00	4.00

\*Also carried labels reading "Cow Manure."

1. Registration tags not attached. 3. Incomplete labels. 4. Not registered. 8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
Standard Wholesale Phosphate and Acid Works Baltimore, Maryland Standard Brands								
11-132	20% Superphosphate <sup>1</sup>	University of Missouri, Columbia	----	----	----	0.21	21.94	----
11-133	20% Superphosphate <sup>1</sup>	W. L. Barrett & Tom Devine Farm, Boonville	----	----	----	0.88	21.37	----
11-134	20% Superphosphate <sup>1</sup>	Summers Elevator Co., Armstrong	----	----	----	0.44	21.26	----
11-135	20% Superphosphate <sup>1</sup>	Randolph County Farm Bureau, Moberly	----	----	----	0.84	21.36	----
11-136	20% Superphosphate <sup>1</sup>	F. H. Campen, Lewistown	----	----	----	0.75	21.05	----
11-137	20% Superphosphate	Farmers Equity Exchange, Bowling Green	----	----	----	0.91	21.74	----
		Average Analysis	----	----	----	----	21.45	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-138	4-16-4 <sup>1</sup>	University of Missouri, Columbia	4.00	91.8	----	0.71	16.64	5.94
		Guaranteed Analysis	4.00	----	----	----	16.00	4.00
Stockdale Fertilizer Co. Morris, Illinois								
5-149	Ovene Fertilizer	S. S. Kresge 5 & 10c Store, Kansas City	2.08	21.2	----	0.19	1.36	2.47
		Guaranteed Analysis	2.00	----	----	----	1.00	2.00
Swift & Co. Fertilizer Works National Stock Yards, Illinois Red Steer Brands								
5-150	16% Superphosphate	Greene Co. Farmers Sales Assn., Springfield	----	----	----	0.23	17.62	----
		Guaranteed Analysis	----	----	----	----	16.00	----
11-139	Superphosphate, 16%	C. F. Witter, Asbury	----	----	----	0.37	17.48	----
11-140	Superphosphate, 16%	Greene Co. Farmers Sales Assn., Springfield	----	----	----	0.42	16.38	----
		Average Analysis	----	----	----	----	16.93	----
		Guaranteed Analysis	----	----	----	----	16.00	----
5-151	20% Superphosphate	Greene Co. Farmers Sales Assn., Springfield	----	----	----	0.52	20.58	----
5-152	20% Superphosphate	Williams & Son, Seligman	----	----	----	0.25	21.65	----
		Average Analysis	----	----	----	----	21.12	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-141	Superphosphate, 20%	C. F. Witter, Asbury	----	----	----	0.36	21.74	----
11-142	Superphosphate, 20%	Farmers Elevator & Exchange, Hannibal	----	----	----	0.44	22.11	----
		Average Analysis	----	----	----	----	21.93	----
		Guaranteed Analysis	----	----	----	----	20.00	----
11-143	0-14-7	Farmers Elevator & Exchange Co., Palmyra	----	----	----	0.24	14.66	7.00
11-144	0-14-7	Roscoe G. Smith, Wells-ville	----	----	----	0.25	14.90	6.94
		Average Analysis	----	----	----	----	14.78	6.97
		Guaranteed Analysis	----	----	----	----	14.00	7.00
5-154	2-12-2	Farmers Elevator Co., Purdy	2.03	82.8	----	1.17	12.75	2.12
5-155	2-12-2	Hahn Feed Co., Union	2.61	89.3	----	0.92	12.52	2.36
		Average Analysis	2.32	86.1	----	----	12.64	2.24
		Guaranteed Analysis	2.00	----	----	----	12.00	2.00
11-145	2-12-2	C. F. Witter, Asbury	2.00	83.5	----	1.21	12.55	2.17
11-146	2-12-2	T. S. Graham, Vista	2.06	82.0	----	1.20	12.56	2.34
11-147	2-12-2	O. M. Cozad, Jackson-ville	2.16	84.3	----	1.00	12.44	2.24

1. Registration tags not attached.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
11-148	2-12-2	Haldeman & Son, La Belle	2.08	83.2	---	1.05	12.11	2.25
11-149	2-12-2	Farmers Elevator Co., Silex	2.09	85.2	---	0.61	12.27	2.19
		Average Analysis...	2.08	83.6	---	---	12.39	2.24
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
5-156	2-12-4	Williams & Son, Seligman	2.36	87.3	---	0.98	12.06	4.36
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
11-150	2-12-4	C. F. Witter, Asbury	2.04	85.3	---	0.63	13.13	4.11
11-151	2-12-4	Farmers Elevator & Exchange Co., Frankford	1.96	84.7	---	0.60	13.20	4.51
11-152	2-12-4	Sandbothe Feed Store, Martinsburg	1.98	84.8	---	0.78	13.34	4.02
		Average Analysis...	1.99	84.9	---	---	13.22	4.21
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
5-157	2-12-6	Gaetz Tractor & Implement Co., Monett	2.12	88.2	---	0.73	12.29	6.26
		Guaranteed Analysis	2.00	---	---	---	12.00	6.00
11-153	2-12-6	Frank Cunningham, Montgomery City	2.06	85.9	---	0.70	12.88	6.12
		Guaranteed Analysis	2.00	---	---	---	12.00	6.00
5-153	3-8-6	Farmers Union Gin Co., Senath	2.98	92.3	---	0.52	8.18	6.10
5-159	3-8-6	Thos. McKinney & Sons, Grandin	2.97	91.9	---	0.73	8.73	6.11
		Average Analysis...	2.98	92.1	---	---	8.46	6.11
		Guaranteed Analysis	3.00	---	---	---	8.00	6.00
5-160	3-12-12	L. K. Ashcraft & Co., Malden	3.15	94.0	---	0.38	12.08	12.18
		Guaranteed Analysis	3.00	---	---	---	12.00	12.00
5-161	4-8-8	Swift & Co. Poultry House, Dexter	3.77	92.0	---	0.73	11.46	6.84
5-162	4-8-8	Farmers Union Gin Co., Senath	4.10	94.9	---	0.58	8.44	8.00
		Average Analysis...	3.94	---	---	---	9.95	7.42
		Guaranteed Analysis	4.00	93.5	---	---	8.00	8.00
5-163	4-12-4	Swift & Co. Poultry House, Dexter	3.98	91.2	---	1.36	12.12	4.18
		Guaranteed Analysis	4.00	---	---	---	12.00	4.00
5-164	4-16-4	Williams & Son, Seligman	3.97	94.0	---	1.20	16.90	4.13
5-165	4-16-4	Madison County Farmers Warehouse Assn., Fredericktown	3.92	93.4	---	1.42	16.23	4.11
		Average Analysis...	3.95	93.7	---	---	16.57	4.12
		Guaranteed Analysis	4.00	---	---	---	16.00	4.00
5-166	Special Golf Fertilizer <sup>6</sup>	Hugo Busch, Jefferson City	11.19	90.6	---	0.09	6.83	4.14
		Guaranteed Analysis	12.00	---	---	---	6.00	4.00
5-163	2 & 26 Bone Fertilizer	Hugo Busch, Jefferson City	2.47	27.5	26.30	---	---	---
5-169	2 & 26 Bone Fertilizer	A. H. Hummert Seed Co., St. Louis	2.26	28.3	26.95	---	---	---
		Average Analysis...	2.37	27.9	26.63	---	---	---
		Guaranteed Analysis	2.00	---	26.00	---	---	---
11-161	2 & 26 Bone Fertilizer	C. F. Witter, Asbury	1.86	22.0	27.80	---	---	---
11-162	2 & 26 Bone Fertilizer	Farmers Elevator Co., Shelbyville	1.80	17.3	27.25	---	---	---
		Average Analysis...	1.83	19.9	27.53	---	---	---
		Guaranteed Analysis	2.00	---	26.00	---	---	---
5-170	Rose Grower Bone Meal <sup>8</sup>	Hugo Busch, Jefferson City	4.60	17.4	23.70	---	---	---
		Guaranteed Analysis	3.75	---	20.00	---	---	---

6. Wrong or indefinite labels.

8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
5-171	Kainit	Stokes Bros. Store, Malden	---	---	---	---	---	20.34
		Guaranteed Analysis	---	---	---	---	---	20.00
5-172	Muriate of Potash <sup>s</sup>	Hugo Busch, Jefferson City	---	---	---	---	---	50.52
5-173	Muriate of Potash	Stokes Bros. Store, Malden	---	---	---	---	---	50.30
		Average Analysis...	---	---	---	---	---	50.41
		Guaranteed Analysis	---	---	---	---	---	50.00
5-175	Pulverized Sheep Manure	A. H. Hummert Seed Co., St. Louis	1.93	20.2	---	0.18	1.74	3.53
		Guaranteed Analysis	1.85	---	---	---	1.00	1.75
11-154	Sheep Manure	Bannings Seed & Nursery House, Brookfield	1.62	19.1	---	0.16	0.89	2.57
		Guaranteed Analysis	1.85	---	---	---	1.00	1.75
5-176	Sulphate of Ammonia <sup>s</sup>	Hugo Busch, Jefferson City	20.68	100.0 <sup>s</sup>	---	---	---	---
5-177	Sulphate of Ammonia <sup>s</sup>	A. H. Hummert Seed Co., St. Louis	20.55	100.0 <sup>s</sup>	---	---	---	---
		Average Analysis...	20.62	100.0 <sup>s</sup>	---	---	---	---
		Guaranteed Analysis	20.50	---	---	---	---	---
5-178	Vigoro	Hugo Busch, Jefferson City	4.12	96.8	---	0.78	12.86	4.14
5-179	Vigoro <sup>1</sup>	Spence Hdwe. Co., Kennett	4.07	94.3	---	1.63	12.29	4.69
5-181	Vigoro	A. H. Hummert Seed Co., St. Louis	4.13	95.9	---	1.28	12.54	4.34
		Average Analysis...	4.11	95.7	---	---	12.56	4.39
		Guaranteed Analysis	4.00	---	---	---	12.00	4.00
11-155	Vigoro	Economy Cash Hardware, Macon	4.06	91.6	---	0.75	12.97	4.18
11-156	Vigoro	Stobbert Floral Co., Brookfield	4.02	92.3	---	0.75	13.65	4.00
11-157	Vigoro	Ed Lane Hdwe. Co., Milan	4.19	93.1	---	0.26	12.90	4.57
		Average Analysis...	4.09	92.3	---	---	13.17	4.25
		Guaranteed Analysis	4.00	---	---	---	12.00	4.00
11-158	Half and Half	Versailles Feed & Produce Co., Versailles	1.42	70.4	---	3.06	17.44	---
11-159	Half and Half	Pete Erdel, Jr., Rush Hill	1.13	70.8	---	3.40	18.15	---
		Average Analysis...	1.28	70.6	---	---	17.80	---
		Guaranteed Analysis	1.00	---	---	8.00	12.00	---
11-160	Raw Bone Meal Fertilizer	Farmers Hdwe. Co., Buffalo	4.13	7.7	24.10	---	---	---
		Guaranteed Analysis	3.70	---	23.00	---	---	---
Tennessee Corporation Lockland, Ohio								
5-182	Loma	McGroary 5 & 10c Store, St. Louis	5.30	93.4	---	0.23	10.81	4.92
		Guaranteed Analysis	5.00	---	---	0.65	10.00	4.00
Virginia Carolina Chemical Corp. E. St. Louis, Illinois V-C Brands								
5-183	16% Superphosphate	Lebanon Produce Co., Lebanon	---	---	---	1.06	16.84	---
5-184	16% Superphosphate	Crane Feed Co., Crane	---	---	---	1.14	17.24	---
		Average Analysis...	---	---	---	---	17.04	---
		Guaranteed Analysis	---	---	---	---	16.00	---
11-163	16% Superphosphate	D. C. Stuckey, Carl Junction	---	---	---	0.52	17.91	---
11-164	16% Superphosphate	A. W. Allgaier & Sons, Lincoln	---	---	---	0.66	17.12	---

1. Registration tags not attached.      5. Not actually determined.

8. Samples drawn from less than five sacks.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
11-165	16% Superphosphate	Silex Grain Co., Silex...	---	---	---	0.66	16.99	---
		Average Analysis...	---	---	---	---	17.34	---
		Guaranteed Analysis	---	---	---	---	16.00	---
5-186	20% Superphosphate	Crane Feed Co., Crane..	---	---	---	1.34	21.41	---
5-187	20% Superphosphate	Cole County Farmers Coop., Jefferson City...	---	---	---	---	1.29	22.26
5-188	20% Superphosphate	P. J. Burford, Doniphan	---	---	---	1.10	22.00	---
5-189	20% Superphosphate	E. H. Charles & Co., Summersville .....	---	---	---	0.78	22.02	---
		Average Analysis...	---	---	---	---	21.92	---
		Guaranteed Analysis	---	---	---	---	20.00	---
11-166	20% Superphosphate	A. W. Allgaier & Sons, Lincoln .....	---	---	---	0.47	22.23	---
11-167	20% Superphosphate	Tipton Elevator Co., Tipton .....	---	---	---	0.44	22.31	---
11-168	20% Superphosphate	Otterville Elevator, Otter- ville .....	---	---	---	0.63	22.47	---
11-169	20% Superphosphate	Mann Grain Co., Clinton	---	---	---	0.40	22.60	---
		Average Analysis...	---	---	---	---	22.40	---
		Guaranteed Analysis	---	---	---	---	20.00	---
11-170	0-14-4	W. M. Todd, Clifton City	---	---	---	0.31	15.04	4.24
		Guaranteed Analysis	---	---	---	---	14.00	4.00
11-171	0-14-6	A. H. Sartain, Smithton	---	---	---	0.15	14.93	6.31
		Guaranteed Analysis	---	---	---	---	14.00	6.00
11-172	0-16-4	A. H. Sartain, Smithton	---	---	---	0.26	17.17	4.48
		Guaranteed Analysis	---	---	---	---	16.00	4.00
11-173	1-12-4	Gastler Bros., Wellsville	1.11	88.3	---	0.23	12.87	4.62
11-174	1-12-4	D. M. Schrock, Garden City .....	1.12	88.4	---	0.23	12.81	4.49
		Average Analysis...	1.12	88.4	---	---	12.84	4.56
		Guaranteed Analysis	1.00	---	---	---	12.00	4.00
5-190	2-12-2	Marshfield Supply Co., Marshfield .....	2.04	91.7	---	0.30	12.84	2.18
5-191	2-12-2	Farmers Elevator, Purdy	2.04	90.2	---	0.58	12.70	2.22
5-192	2-12-2	Rush Canning Co., But- terfield .....	2.13	93.4	---	0.54	12.60	2.37
5-193	2-12-2	J. M. Sapp, Exeter.....	2.03	92.6	---	0.54	12.64	2.29
5-194	2-12-2	Cole County Farmers Coop., Jefferson City..	2.13	92.5	---	0.75	12.75	2.41
5-196	2-12-2	P. J. Burford, Doniphan	2.11	91.9	---	0.66	12.90	2.12
5-197	2-12-2	Hughes Milling Co., Salem	2.04	91.7	---	0.53	13.11	2.26
		Average Analysis...	2.08	92.0	---	---	12.66	2.26
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
11-175	2-12-2	Adrian Feed Store, Adrian	2.11	92.4	---	0.25	12.67	2.29
11-176	2-12-2	McConnell Feed Store, Appleton City .....	2.16	94.0	---	0.41	12.73	2.11
11-177	2-12-2	Lester Bean Cash Pro- duce, Jacksonville ...	2.09	92.3	---	0.31	12.65	2.29
11-178	2-12-2	Ewing Produce Co., Ewing .....	2.17	92.6	---	0.31	12.83	2.30
11-179	2-12-2	L. A. Zeller Elevator, Pilot Grove .....	2.05	92.2	---	0.35	12.57	2.20
		Average Analysis...	2.12	92.7	---	---	12.69	2.24
		Guaranteed Analysis	2.00	---	---	---	12.00	2.00
5-198	2-12-4	Crane Feed Store, Crane	2.01	92.0	---	0.61	12.83	5.13
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
11-180	2-12-4	W. M. Todd, Clifton City	2.12	91.0	---	0.34	12.94	4.24
11-181	2-12-4	H. Weaver, Oronogo....	2.20	92.7	---	0.30	12.88	4.71
		Average Analysis...	2.16	91.9	---	---	12.91	4.48
		Guaranteed Analysis	2.00	---	---	---	12.00	4.00
5-200	2-12-6	C. C. Carter, Monett....	2.00	94.5	---	0.71	13.13	7.10
5-201	2-12-6	Rush Canning Co., But- terfield .....	2.02	93.6	---	0.69	13.05	6.31

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

Lab. No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	
5-202	2-12-6	Roy Nelson Canning Co., Crane	2.05	92.7	----	0.47	12.79	6.91
5-203	2-12-6	Wilson & Cope Canning Co., Galena	2.09	93.3	----	0.55	12.75	6.86
5-204	2-12-6 <sup>s</sup>	P. J. Burford, Doniphan	2.02	94.6	----	0.64	12.68	6.49
		Average Analysis...	2.04	93.7	----	----	12.88	6.73
		Guaranteed Analysis	2.00	----	----	----	12.00	6.00
11-182	2-12-6	Rice Mercantile Co., Lamar	2.10	91.9	----	0.36	12.68	6.25
11-183	2-12-6	D. C. Stuckey, Carl Junction	2.10	93.8	----	0.70	12.10	6.12
11-184	2-12-6	D. M. Schrock, Garden City	2.05	93.2	----	0.76	12.32	6.06
		Average Analysis...	2.08	93.0	----	----	12.37	6.14
		Guaranteed Analysis	2.00	----	----	----	12.00	6.00
11-185	2-14-4	Farmers Elevator, Archie	2.01	93.0	----	0.45	15.15	4.45
		Guaranteed Analysis	2.00	----	----	----	14.00	4.00
11-186	2-16-2	J. L. Cornelius & Sons, Edina	2.12	91.0	----	0.73	16.50	2.66
		Guaranteed Analysis	2.00	----	----	----	16.00	2.00
5-205	3-8-6	Madison County Farmers Warehouse Assn., Fredericktown	2.87	95.1	----	0.35	8.91	6.73
		Guaranteed Analysis	3.00	----	----	----	8.00	6.00
5-206	3-12-4	Roy Nelson Canning Co., Crane	3.12	95.5	----	0.42	12.24	4.66
		Guaranteed Analysis	3.00	----	----	----	12.00	4.00
5-207	3-12-12 <sup>s</sup>	P. J. Burford, Doniphan	2.91	95.2	----	0.45	12.99	11.74
		Guaranteed Analysis	3.00	----	----	----	12.00	12.00
11-187	3-12-12	Gastler Bros., Wellsville	3.19	96.2	----	0.33	12.53	12.74
		Guaranteed Analysis	3.00	----	----	----	12.00	12.00
5-208	4-8-7 <sup>s</sup>	P. J. Burford, Doniphan	3.77	93.4	----	0.35	8.63	7.00
5-209	4-8-7 <sup>s</sup>	Hughes Milling Co., Salem	4.15	94.9	----	0.23	8.41	7.65
		Average Analysis...	3.96	94.2	----	----	8.52	7.33
		Guaranteed Analysis	4.00	----	----	----	8.00	7.00
5-210	4-8-8	C. A. Williams, Chesterfield	3.87	96.6	----	0.36	8.68	8.44
		Guaranteed Analysis	4.00	----	----	----	8.00	8.00
5-211	4-12-4	Clarence Bumgardner, Strafford	4.06	98.0	----	0.47	12.99	4.31
5-212	4-12-4	P. J. Burford, Doniphan	3.96	93.9	----	0.45	12.69	4.38
5-213	4-12-4	Thayer Milling Co., Thayer	4.01	95.8	----	0.40	12.56	5.12
		Average Analysis...	4.01	96.6	----	----	12.75	4.60
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
11-188	4-12-4	Northern Feed Company, Springfield	3.55	87.6	----	0.75	11.53	4.16
11-189	4-12-4	W. M. Todd, Clifton City	3.96	93.2	----	0.70	12.80	4.42
		Average Analysis...	3.76	91.4	----	----	12.17	4.29
		Guaranteed Analysis	4.00	----	----	----	12.00	4.00
11-190	4-16-4	A. H. Sartain, Smithton	3.41	93.8	----	0.58	17.57	4.31
		Guaranteed Analysis	4.00	----	----	----	16.00	4.00
11-191	Steamed Bone Meal	D. B. Drake Grocery, Fortuna	2.09	9.1	28.95	----	----	----
11-192	Steamed Bone Meal	A. H. Sartain, Smithton	2.16	9.7	28.75	----	----	----
		Average Analysis...	2.13	9.4	28.85	----	----	----
		Guaranteed Analysis	2.00	----	27.00	----	----	----
5-214	Sulphate of Ammonia	Thayer Milling Company, Thayer	20.57	100.0 <sup>s</sup>	----	----	----	----
		Guaranteed Analysis	20.00	----	----	----	----	----

8. Samples drawn from less than five sacks.

5. Not actually determined.

TABLE 3.—FERTILIZER ANALYSES AND GUARANTEES; 1938 (Continued)

No.	Manufacturer and Brands	Dealer or Purchaser	Nitrogen		Phosphoric Acid, P <sub>2</sub> O <sub>5</sub>			Water Soluble Potash K <sub>2</sub> O
			Total	Water Soluble to Total	Total in Bone	Insoluble	Available	
			Per Cent	Per Cent	Per Cent	Per Cent	Per Cent	Per Cent
Westover Nursery Co. 8100 Olive Blvd. St. Louis, Missouri								
5-215	Westover Rosegro <sup>s</sup> .....	Westover Nursery Co., Clayton .....	5.02	22.5	19.05	----	----	----
			Guaranteed Analysis	3.30	----	25.00	----	----
5-216	Westover Lawngro .....	Westover Nursery Co., Clayton .....	1.52	44.1	----	5.60	17.30	----
			Guaranteed Analysis	2.00	----	10.00	10.00	----
UNOFFICIAL SAMPLES TESTED FOR BUYERS								
American Cyanamid Company								
5-309	32% "Aero" Superphos- phate-Granular .....	Mo. Farm Bureau Feder- ation, Jefferson City	----	----	----	0.16	34.27	----
			Guaranteed Analysis	----	----	----	32.00	----
5-310	"Ammo Phos" 11-48-0 ....	Mo. Farm Bureau Feder- ation, Jefferson City ..	11.08	----	----	1.28	49.30	----
			Guaranteed Analysis	11.00	----	----	48.00	----
Armour Fertilizer Works								
12-13	Big Crop Bone Meal .....	Emery Weiss, Hoberg ..	2.71	----	26.40	----	----	----
			Guaranteed Analysis	2.00	----	27.00	----	----
12-13	Big Crop Raw Bone Meal ..	Emery Weiss, Hoberg....	4.00	----	23.70	----	----	----
			Guaranteed Analysis	3.75	----	22.00	----	----
Cudahy Packing Co.								
6-38	Bigwin 0-14-6 .....	E. J. Rodekoehr, Corder	----	----	----	1.45	13.90	6.37
			Guaranteed Analysis	----	----	----	14.00	6.00
Darling & Company								
9-394	Pure Ground Bone 1934 ...	John W. Woodward, Mt. sample Vernon .....	1.78	----	29.70	----	----	----
9-395	Pure Ground Bone 1936 ...	John W. Woodward, Mt. sample Vernon .....	2.54	----	27.90	----	----	----
			Guaranteed Analysis	1.85	----	23.00	----	----
Federal Chemical Co.								
9-401	Floyd Money Maker 45% Superphosphate .....	J. Robert Hall, Linneus	----	----	----	0.40	48.90	----
			Guaranteed Analysis	----	----	----	45.00	----
Pearson-Ferguson Chemical Co.								
8-264	P. F. Brand 4-16-4 .....	Lee E. Bivens, Gashland	4.91	----	----	----	13.34	4.36
			Guaranteed Analysis	4.00	----	----	16.00	4.00
M. R. Porter Co. Ocala, Fla.								
5-219	Calphos (Soft Phosphate with Colloidal Clay) ....	M. R. Porter Co., Ocala, Florida .....	----	----	----	19.00	7.13	----
11-266	Calphos (Soft Phosphate with Colloidal Clay) ....	Corneli Seed Co., St. Louis .....	----	----	----	19.40	4.05	----
			Guaranteed Analysis	----	----	22.00	----	----
Swift & Co. Fertilizer Works								
11-286	Red Steer Bone Meal and Potash .....	John T. Montgomery, Mo- nett .....	2.26	----	28.73	----	----	7.24
			Guaranteed Analysis	2.00	----	26.00	----	6.00
Lewis Treeland Kansas City, Mo.								
3-75	Sup-Ro .....	Lewis Treeland, Kansas City .....	4.57	----	----	0.06	4.60	4.94
			Guaranteed Analysis	4.00	----	----	4.00	4.00

8. Samples drawn from less than five sacks.

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939

Fertilizer	Nitrogen Per cent	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O) Per cent
		Total in Bone Per cent	Avail- able Per cent	Insol- uble Per cent	
<b>American Agricultural Chemical Co.</b>					
<b>National Stock Yards, Ill.</b>					
Agrico for Wheat	2.00	.....	12.00	0.50	6.00
Agrico for Potatoes	4.00	.....	8.00	0.50	6.00
Agrico for Truck	4.00	.....	10.00	0.50	6.00
Agrico for Tobacco	4.00	.....	10.00	0.50	6.00
Agrico for Corn	3.00	.....	14.00	0.50	6.00
Agrico for Grain	2.00	.....	12.00	0.50	4.00
Agrico for Tomatoes	2.00	.....	12.00	0.05	6.00
AA Two-in-One Fertilizer	4.00	.....	16.00	0.50	4.00
AA Red Dragon Fertilizer	2.00	.....	12.00	0.50	2.00
AA Gilt Edge Fertilizer	2.00	.....	16.00	0.50	2.00
AA Elm Mixture	.....	.....	16.00	0.50	6.00
AA 16 per cent Superphosphate	.....	.....	16.00	0.50	.....
AA 20 per cent Superphosphate	.....	.....	20.00	0.50	.....
Steamed Bone Meal Fertilizer	1.65	27.00	.....	.....	.....
Kainit 20 per cent	.....	.....	.....	.....	20.00
Sulphate of Ammonia	20.56	.....	.....	.....	.....
Muriate of Potash	.....	.....	.....	.....	50.00
Agrico for Pastures and Top Dressing	10.00	.....	6.00	0.50	4.00
AA Excelsior Fertilizer	4.00	.....	8.00	0.50	12.00
AA Antler Fertilizer	2.00	.....	12.00	0.50	6.00
AA Defender Fertilizer	4.00	.....	8.00	0.50	8.00
AA Laurel Fertilizer	3.00	.....	9.00	0.50	18.00
AA Hercules Fertilizer	3.00	.....	12.00	0.50	12.00
<b>American Cyanamid Company</b>					
<b>30 Rockefeller Plaza</b>					
<b>New York, New York</b>					
21 per cent "Aero" Cyanamid Granular	21.00	.....	.....	.....	.....
"Ammo-Phos" 11-48-0	11.00	.....	48.00	.....	.....
Granular "Aero" 32 per cent Superphosphate	.....	.....	32.00	.....	.....
<b>Anaconda Copper Mining Company</b>					
<b>Anaconda, Montana</b>					
Anaconda Treble Superphosphate	.....	.....	48.00	3.00	.....
Anaconda Ammoniated Phosphate	10.00	.....	52.00	1.00	.....
<b>Archias Seed Store</b>					
<b>Sedalia, Missouri</b>					
Archias Fairy Brand Plant Food	10.00	.....	12.00	.....	11.00
<b>Arkansas Fertilizer Company</b>					
<b>Little Rock, Arkansas</b>					
White Diamond 10-6-4	10.00	.....	6.00	.....	4.00
White Diamond 6-8-12	6.00	.....	8.00	.....	12.00
White Diamond Economy	6.00	.....	12.00	.....	6.00
White Diamond 4-16-4	4.00	.....	16.00	.....	4.00
White Diamond Crop Getter	4.00	.....	12.00	.....	4.00
White Diamond 4-10-6	4.00	.....	10.00	.....	6.00
White Diamond Farmers' Choice	4.00	.....	10.00	.....	4.00
White Diamond Jack Rabbit	4.00	.....	8.00	.....	6.00
White Diamond Old Reliable	4.00	.....	8.00	.....	4.00
White Diamond Early Bull	3.00	.....	10.00	.....	3.00
White Diamond 3-8-6	3.00	.....	8.00	.....	6.00
White Diamond 2-16-0	2.00	.....	16.00	.....	.....
White Diamond Prize Wheat Grower	2.00	.....	16.00	.....	2.00
White Diamond 2-14-4	2.00	.....	14.00	.....	4.00
White Diamond Gro-Fast	2.00	.....	12.00	.....	6.00
White Diamond Southern King	2.00	.....	12.00	.....	2.00
White Diamond 2-10-2	2.00	.....	10.00	.....	2.00
White Diamond 0-15-6	.....	.....	15.00	.....	6.00
White Diamond 0-14-7	.....	.....	14.00	.....	7.00
White Diamond 0-14-4	.....	.....	14.00	.....	4.00
White Diamond 0-12-12	.....	.....	12.00	.....	12.00
White Diamond Kali-Superphosphate	.....	.....	12.00	.....	4.00
White Diamond 20 per cent Superphosphate	.....	.....	20.00	0.50	.....
White Diamond 18 per cent Superphosphate	.....	.....	18.00	0.50	.....
White Diamond 16 per cent Superphosphate	.....	.....	16.00	0.50	.....
White Diamond Steamed Bone Meal	1.65	27.00	.....	.....	.....
White Diamond Pure Raw Bone	3.70	23.00	.....	.....	.....

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total in Bone	Avail-able	Insol-uble	
	Per cent	Per cent	Per cent	Per cent	Per cent
White Diamond Muriate of Potash .....	.....	.....	.....	.....	50.00
White Diamond "Extra Dry" Sulphate Ammonia .....	20.00	.....	.....	.....	.....
White Diamond 16 per cent Nitrate of Soda .....	16.00	.....	.....	.....	.....
White Diamond Kainit .....	.....	.....	.....	.....	20.00
White Diamond 2-12-4 .....	2.00	.....	12.00	.....	4.00
<b>Armour Fertilizer Works</b>					
<b>East St. Louis, Illinois</b>					
Armour's Big Crop 4-16-4 Fertilizer .....	4.00	.....	16.00	.....	4.00
Armour's Big Crop 4-12-4 Fertilizer .....	4.00	.....	12.00	.....	4.00
Armour's Big Crop 4-8-12 Fertilizer .....	4.00	.....	8.00	.....	12.00
Armour's Big Crop 4-8-6 Fertilizer .....	4.00	.....	8.00	.....	6.00
Armour's Big Crop 3-8-6 Fertilizer .....	3.00	.....	8.00	.....	6.00
Armour's Big Crop 2-16-2 Fertilizer .....	2.00	.....	16.00	.....	2.00
Armour's Big Crop 2-14-4 Fertilizer .....	2.00	.....	14.00	.....	4.00
Armour's Big Crop 2-12-6 Fertilizer .....	2.00	.....	12.00	.....	6.00
Armour's Big Crop 2-12-4 Fertilizer .....	2.00	.....	12.00	.....	4.00
Armour's Big Crop 2-12-2 Fertilizer .....	2.00	.....	12.00	.....	2.00
Armour's Big Crop 0-14-6 Fertilizer .....	.....	.....	14.00	.....	6.00
Armour's Big Crop 0-14-4 Fertilizer .....	.....	.....	14.00	.....	4.00
Armour's Big Crop 0-12-12 Fertilizer .....	.....	.....	12.00	.....	12.00
Armour's Big Crop 0-12-6 Fertilizer .....	.....	.....	12.00	.....	6.00
Armour's Big Crop 20 per cent Superphosphate .....	.....	.....	20.00	.....	.....
Armour's Big Crop 16 per cent Superphosphate .....	.....	.....	16.00	.....	.....
Armour's Big Crop Bone Meal .....	2.00	27.00	.....	.....	.....
Armour's Big Crop Raw Bone Meal .....	3.75	22.00	.....	.....	.....
Armour's Big Crop 2-8-16 Fertilizer .....	2.00	.....	8.00	.....	16.00
Armour's Big Crop 3-9-18 Fertilizer .....	3.00	.....	9.00	.....	18.00
Armour's Big Crop 0-10-20 Fertilizer .....	.....	.....	10.00	.....	20.00
Armour's Bone Meal and Superphosphate .....	1.00	.....	14.00	6.00	.....
Armour's Multiphos 45 per cent Superphosphate .....	.....	.....	45.00	.....	.....
Armour's Kainit .....	.....	.....	.....	.....	20.00
Armour's Sulphate of Ammonia .....	20.50	.....	.....	.....	.....
Armour's Special Tree Food 10-8-6 .....	10.00	.....	8.00	.....	6.00
Armour's Special Turf Fertilizer 10-8-6 .....	10.00	.....	8.00	.....	6.00
Armour's Special Florists' Mixture 5-15-5 .....	5.00	.....	15.00	.....	5.00
Armour's Garden and Lawn Fertilizer 4-8-6 .....	4.00	.....	8.00	.....	6.00
Armour's Rose Grower Bone Meal .....	3.75	22.00	.....	.....	.....
Armour's Bone, Blood and Sulphate of Potash 5-8-7's .....	5.00	8.00	.....	.....	7.00†
Pulverized Sheen Manure .....	2.00	.....	1.00	.....	2.00
Armour's Shredded Cattle Manure .....	2.00	.....	1.00	.....	2.00
Armour's Florists' Bone Meal .....	2.00	27.00	.....	.....	.....
Armour's Home Use Bone Meal .....	2.00	27.00	.....	.....	.....
Armour's Blood and Bone .....	5.50	13.74	.....	.....	.....
Armour's 18-12-6 Fertilizer .....	18.00	.....	12.00	.....	6.00
Armour's Big Crop 9-18-18 Fertilizer .....	9.00	.....	18.00	.....	18.00
Armour's Big Crop 8-16-16 Fertilizer .....	8.00	.....	16.00	.....	16.00
Armour's Big Crop 4-16-8 Fertilizer .....	4.00	.....	16.00	.....	8.00
Armour's Big Crop 0-20-10 Fertilizer .....	.....	.....	20.00	.....	10.00
<b>Barada and Page, Inc.</b>					
<b>Kansas City, Missouri</b>					
B-P Ammonia Sulphate .....	20.50	.....	.....	.....	.....
<b>The Barrett Company</b>					
<b>40 Rector Street</b>					
<b>New York, New York</b>					
Arcadian the American Nitrate of Soda .....	16.00	.....	.....	.....	.....
Arcadian Sulphate of Ammonia .....	20.56	.....	.....	.....	.....
Sulphate of Ammonia .....	20.56	.....	.....	.....	.....
<b>John Paul Bartz</b>					
<b>Rockville, Missouri</b>					
Barco XX Lime and Manure Superphosphate .....	.....	.....	20.00	.....	.....
Barco XX Lime and Manure Phosphate .....	.....	.....	0.00	20.00	.....
Barco XX Bone Meal Fertilizer .....	0.00	20.00	.....	.....	.....
Barco Synthetic Bone Meal Fertilizer .....	2.00	.....	0.00	25.00	.....
Barco "226" Fertilizer .....	2.00	.....	0.00	20.00	6.00
Barco "224" Fertilizer .....	2.00	.....	0.00	20.00	4.00
Barco "222" Fertilizer .....	2.00	.....	0.00	20.00	2.00

†Potash from Sulphate.

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen Per cent	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O) Per cent
		Total in Bone Per cent	Avail- able Per cent	Insol- uble Per cent	
Barco "220" Fertilizer .....	2.00	.....	0.00	20.00	.....
Barco XXX Lime and Manure Superphosphate .....	.....	.....	30.00	.....	.....
Barco XXX Lime and Manure Phosphate .....	.....	.....	0.00	30.00	.....
Barco XXXX Lime and Manure Superphosphate .....	.....	.....	40.00	.....	.....
Barco Limanure 1-12-2 Fertilizer .....	1.00	.....	12.00	.....	2.00
Barco Limanure 2-12-2 Fertilizer .....	2.00	.....	12.00	.....	2.00
Barco Limanure 2-12-4 Fertilizer .....	2.00	.....	12.00	.....	4.00
Barco Limanure 2-12-6 Fertilizer .....	2.00	.....	12.00	.....	6.00
Barco Limanure 4-12-4 Fertilizer .....	4.00	.....	12.00	.....	4.00
Barco Limanure 4-16-4 Fertilizer .....	4.00	.....	16.00	.....	4.00
Barco Lawn and Garden Fertilizer .....	4.00	.....	10.00	.....	6.00
Barco "204" Lime and Manure Fertilizer .....	.....	.....	0.00	20.00	4.00
Barco Limanure 0-14-7 Fertilizer .....	.....	.....	14.00	.....	7.00
Blood and Bone Products, Inc. East St. Louis, Illinois					
"Steer Head Brand"					
Special Truck Grower .....	4.00	.....	8.00	.....	6.00
Two Twelve Six Fertilizer .....	2.00	.....	12.00	.....	6.00
Missouri Special Fertilizer .....	2.00	.....	12.00	.....	2.00
Twelve Six Fertilizer .....	.....	.....	12.00	.....	6.00
Superphosphate .....	.....	.....	16.00	.....	.....
Superphosphate .....	.....	.....	20.00	.....	.....
Raw Bone Meal .....	3.23	20.00	.....	.....	.....
Steam Bone Meal .....	1.00	30.00	.....	.....	.....
Phosphate and Bone Mixture, Half and Half .....	1.00	.....	12.00	8.00†	.....
Special Lawn Grower .....	2.00	.....	10.00	10.00†	.....
Flower Grower (Blood and Bone Tankage) .....	3.30	25.00	.....	.....	.....
Chaumiere Farm Steelville, Missouri					
Poul-a-nure .....	2.75	.....	2.50	.....	1.50
Chilean Nitrate Sales Corporation 120 Broadway New York, New York					
Champion Brand Chilean Nitrate of Soda .....	16.00	.....	.....	.....	.....
Old Style Chilean Nitrate of Soda .....	16.00	.....	.....	.....	.....
Cloverset Flower Farm 150th and Wornall Road Kansas City, Missouri					
Cloverset Rose Grower .....	4.00	.....	12.00	.....	4.00
Cloverset Blood and Bone .....	4.63	22.40	.....	.....	.....
Crocker Packing Company Joplin, Missouri					
Inter-State Steam Bone .....	2.50	24.00	.....	.....	.....
Inter-State 4-12-3 .....	4.00	.....	12.00	.....	8.00
Inter-State 4-12-4 .....	4.00	.....	12.00	.....	4.00
Inter-State 4-8-6 .....	4.00	.....	8.00	.....	6.00
Inter-State 4-8-4 .....	4.00	.....	8.00	.....	4.00
Inter-State 2-16-6 .....	2.00	.....	16.00	.....	6.00
Inter-State 2-16-2 .....	2.00	.....	16.00	.....	2.00
Inter-State 2-12-3 .....	2.00	.....	12.00	.....	8.00
Inter-State 2-12-2 .....	2.00	.....	12.00	.....	2.00
Inter-State 2-12-6 .....	2.00	.....	12.00	.....	6.00
Inter-State 2-8-5 .....	2.00	.....	8.00	.....	5.00
Inter-State 2-8-10 Potato Special .....	2.00	.....	8.00	.....	10.00
Inter-State 0-16-0 Superphosphate 16 per cent .....	.....	.....	16.00	.....	.....
Inter-State 0-20-0 Superphosphate 20 per cent .....	.....	.....	20.00	.....	.....
Inter-State 0-20-0 Superphosphate 20 per cent .....	.....	.....	15.00	.....	2.00
Inter-State 0.50-15-2 .....	0.50	.....	32.00	.....	.....
"Aero" Superphosphate Granular .....	.....	.....	8.00	.....	6.00
Lawn Vegetable and Flower Grower .....	4.00	.....	8.00	.....	.....
Inter-State Half and Half .....	1.20	.....	14.00	6.00	.....
Muriate of Potash .....	.....	.....	.....	.....	60.72
Sulphate of Ammonia .....	20.60	.....	.....	.....	.....

†From Bone.

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen Per cent	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O) Per cent
		Total in Bone Per cent	Avail- able Per cent	Insol- uble Per cent	
<b>The Cudahy Packing Company</b>					
221 North LaSalle					
Chicago, Illinois					
Bigwin Fertilizer Steamed Bone Meal	2.50	24.00	.....	.....	.....
Bigwin High Grade 16 per cent Superphosphate	.....	.....	16.00	1.00	.....
Bigwin High Grade 18 per cent Superphosphate	.....	.....	18.00	1.00	.....
Bigwin High Grade Fertilizer 2-12-2	2.00	.....	12.00	.....	2.00
Bigwin High Grade Fertilizer 2-16-2	2.00	.....	16.00	.....	2.00
Bigwin High Grade Fertilizer 2-12-6	2.00	.....	12.00	.....	6.00
Bigwin High Grade Fertilizer 4-8-6	4.00	.....	8.00	.....	6.00
Bigwin High Grade 20 per cent Superphosphate	.....	.....	20.00	1.00	.....
Nitrate of Soda	15.00	.....	.....	.....	.....
Bigwin Fertilizer, Half and Half 1-13-0	1.00	.....	13.00	7.00†	.....
Muriate of Potash	.....	.....	.....	.....	58.00
Sulphate of Ammonia	21.00	.....	.....	.....	.....
Bigwin High Grade Fertilizer 4-16-4	4.00	.....	16.00	.....	4.00
Bigwin High Grade Fertilizer 4-12-4	4.00	.....	12.00	.....	4.00
Bigwin High Grade Fertilizer 0-14-6	.....	.....	14.00	.....	6.00
Bigwin High Grade Fertilizer 2-12-4	2.00	.....	12.00	.....	4.00
Bigwin High Grade 45 per cent Superphosphate	.....	.....	45.00	2.00	.....
Bigwin High Grade Fertilizer Steamed Bone Meal with Potash added	2.50	22.00	.....	.....	6.00
<b>Darling and Company</b>					
4201 South Ashland Avenue					
Chicago, Illinois					
Darling's Sixteen Six 0-16-6	.....	.....	16.00	.....	6.00
Darling's All Crop 4-16-4	4.00	.....	16.00	.....	4.00
Darling's Potato Special 4-8-7	4.00	.....	8.00	.....	7.00
Darling's Field Marshal 4-12-4	4.00	.....	12.00	.....	4.00
Darling's Farmers Favorite 3-8-6	3.00	.....	8.00	.....	6.00
Darling's Crop King 2-12-6	2.00	.....	12.00	.....	6.00
Darling's Tomato Grower 2-12-6	2.00	.....	12.00	.....	6.00
Darling's Bumper Crop 2-16-2	2.00	.....	16.00	.....	2.00
Darling's General Crop 2-14-4	2.00	.....	14.00	.....	4.00
Darling's Special Lawn and Garden Fertilizer	4.00	.....	8.00	.....	7.00
Darling's Big Harvest 2-12-2	2.00	.....	12.00	.....	2.00
Darling's Two Twelve Four 2-12-4	2.00	.....	12.00	.....	4.00
Darling's Fourteen Four 0-14-4	.....	.....	14.00	.....	4.00
Darling's Ten Ten 0-10-10	.....	.....	10.00	.....	10.00
Darling's Pure Ground Bone	1.85	28.00	.....	.....	.....
Darling's Bone and Superphosphate Half and Half	1.00	.....	14.00	6.00†	.....
Darling's Nitrate of Soda	16.00	.....	.....	.....	.....
Darling's Sulphate of Ammonia	20.56	.....	.....	.....	.....
Darling's Muriate of Potash	.....	.....	.....	.....	50.00
Darling's Twelve Twelve 0-12-12	.....	.....	12.00	.....	12.00
Darling's 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Darling's 16 per cent Superphosphate	.....	.....	16.00	.....	.....
Darling's 45 per cent Superphosphate	.....	.....	45.00	.....	.....
Darling's Potato Brand 4-8-6	4.00	.....	8.00	.....	6.00
Darling's Twenty Ten 0-20-10	.....	.....	20.00	.....	10.00
Darling's Fourteen Six 0-14-6	.....	.....	14.00	.....	6.00
Darling's Ace 4-8-7	4.00	.....	8.00	.....	7.00
M.F.A. 0-16-6	.....	.....	16.00	.....	6.00
M.F.A. 4-16-4	4.00	.....	16.00	.....	4.00
M.F.A. 4-8-7	4.00	.....	8.00	.....	7.00
M.F.A. 4-12-4	4.00	.....	12.00	.....	4.00
M.F.A. 3-8-6	3.00	.....	8.00	.....	6.00
M.F.A. 2-12-6	2.00	.....	12.00	.....	6.00
M.F.A. 2-16-2	2.00	.....	16.00	.....	2.00
M.F.A. 2-14-4	2.00	.....	14.00	.....	4.00
M.F.A. 2-12-2	2.00	.....	12.00	.....	2.00
M.F.A. 2-12-4	2.00	.....	12.00	.....	4.00
M.F.A. 0-14-4	.....	.....	14.00	.....	4.00
M.F.A. 0-10-10	.....	.....	10.00	.....	10.00
M.F.A. Pure Ground Bone	1.85	28.00	.....	.....	.....
M.F.A. Bone and Superphosphate Half and Half	1.00	.....	14.00	6.00†	.....

†From Bone.

‡Insoluble P<sub>2</sub>O<sub>5</sub> is from Bone.

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total in Bone	Avail-able	Insol-uble	
	Per cent	Per cent	Per cent	Per cent	Per cent
M.F.A. Nitrate of Soda	16.00	.....	.....	.....	.....
M.F.A. Sulphate of Ammonia	20.56	.....	.....	.....	.....
M.F.A. Muriate of Potash	.....	.....	.....	.....	50.00
M.F.A. 0-12-12	.....	.....	12.00	.....	12.00
M.F.A. 20 per cent Superphosphate	.....	.....	20.00	.....	.....
M.F.A. 16 per cent Superphosphate	.....	.....	16.00	.....	.....
M.F.A. 45 per cent Superphosphate	.....	.....	45.00	.....	.....
M.F.A. 4-8-6	4.00	.....	8.00	.....	6.00
M.F.A. 0-20-10	.....	.....	20.00	.....	10.00
M.F.A. 0-14-6	.....	.....	14.00	.....	6.00
Davison Chemical Corporation					
Nashville, Tennessee and					
Baltimore, Maryland					
Premium Grain Grower	2.00	.....	12.00	.....	2.00
Red Diamond 2-12-4	2.00	.....	12.00	.....	4.00
Red Diamond 2-12-6	2.00	.....	12.00	.....	6.00
Red Diamond 3-8-6	3.00	.....	8.00	.....	6.00
Red Diamond 4-12-4	4.00	.....	12.00	.....	4.00
Red Diamond 4-16-4	4.00	.....	16.00	.....	4.00
Red Diamond 0-14-4	.....	.....	14.00	.....	4.00
Red Diamond 0-14-7	.....	.....	14.00	.....	7.00
Red Diamond 16 per cent Superphosphate	.....	.....	16.00	.....	.....
Red Diamond 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Raw Bone Meal	3.70	20.00	.....	.....	.....
Steam Bone	2.00	27.00	.....	.....	.....
Half and Half	1.00	.....	12.00	8.00	.....
Nitrate of Soda	16.00	.....	.....	.....	.....
Sulphate Ammonia	20.50	.....	.....	.....	.....
Muriate of Potash	.....	.....	.....	.....	50.00
Davco Granulated Fertilizer 2-12-6	2.00	.....	12.00	.....	6.00
Davco Granulated 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Davco Granulated Fertilizer 2-12-2	2.00	.....	12.00	.....	2.00
Davco Granulated Fertilizer 4-8-4	4.00	.....	8.00	.....	4.00
Davco Granulated Fertilizer 3-8-6	3.00	.....	8.00	.....	6.00
Davco Granulated Fertilizer 4-12-4	4.00	.....	12.00	.....	4.00
Davco Granulated Fertilizer 2-12-4	2.00	.....	12.00	.....	4.00
Federal Chemical Co., Inc.					
East St. Louis, Illinois					
Daybreak Loam Land Fertilizer	2.00	.....	12.00	.....	2.00
Daybreak Official Formula 2-12-6	2.00	.....	12.00	.....	6.00
Daybreak Official Formula 2-14-4	2.00	.....	14.00	.....	4.00
Daybreak 3-8-6 Fertilizer	3.00	.....	8.00	.....	6.00
Daybreak Double Duty	4.00	.....	12.00	.....	4.00
Phosphate and Potash	.....	.....	12.00	.....	4.00
Daybreak 0-12-6 Fertilizer	.....	.....	12.00	.....	6.00
Daybreak 0-14-6 Fertilizer	.....	.....	14.00	.....	6.00
Daybreak 4-16-4	4.00	.....	16.00	.....	4.00
Daybreak 2-12-4	2.00	.....	12.00	.....	4.00
Daybreak Trucker's Special 4-8-6	4.00	.....	8.00	.....	6.00
Daybreak 16 per cent Superphosphate	.....	.....	16.00	.....	.....
Daybreak 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Daybreak 32 per cent Superphosphate	.....	.....	32.00	.....	.....
Daybreak Bone and Phosphate Mixture	1.00	.....	12.00	8.00	.....
Daybreak Blue Ribbon Mixture	2.00	.....	10.00	10.00	.....
Raw Bone	3.30	20.00	.....	.....	.....
Steam Bone	2.00	27.00	.....	.....	.....
Nitrate of Soda	16.00	.....	.....	.....	.....
Sulphate of Ammonia	20.00	.....	.....	.....	.....
Muriate of Potash	.....	.....	.....	.....	50.00
Globe Loam Land Fertilizer	2.00	.....	12.00	.....	2.00
Globe Official Formula 2-12-6	2.00	.....	12.00	.....	6.00
Globe Official Formula 2-14-4	2.00	.....	14.00	.....	4.00
Globe Double Duty	4.00	.....	12.00	.....	4.00
Globe Phosphate and Potash	.....	.....	12.00	.....	4.00
Globe 0-12-6	.....	.....	12.00	.....	6.00
Globe 3-8-6	3.00	.....	8.00	.....	6.00
Globe Trucker's Special 4-8-6	4.00	.....	8.00	.....	6.00
Globe 2-12-4	2.00	.....	12.00	.....	4.00

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen Per cent	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O) Per cent
		Total in Bone Per cent	Avail- able Per cent	Insol- uble Per cent	
Globe 4-16-4	4.00	.....	16.00	.....	4.00
Globe Blue Ribbon Meal Mixture	2.00	.....	10.00	10.00	.....
Globe Bone and Phosphate Mixture	1.00	.....	12.00	8.00	.....
Globe 16 per cent Superphosphate	.....	.....	16.00	.....	.....
Globe 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Globe 32 per cent Superphosphate	.....	.....	32.00	.....	.....
Globe Raw Bone	3.30	20.00	.....	.....	.....
Globe Steam Bone	2.00	27.00	.....	.....	.....
Globe 0-14-6	.....	.....	14.00	.....	6.00
Floyd Money Maker 2-12-2	2.00	.....	12.00	.....	2.00
Floyd Money Maker 2-12-4	2.00	.....	12.00	.....	4.00
Floyd Money Maker 2-14-4	2.00	.....	14.00	.....	4.00
Floyd Money Maker 2-12-6	2.00	.....	12.00	.....	6.00
Floyd Money Maker 3-8-6	3.00	.....	8.00	.....	6.00
Floyd Money Maker 4-12-4	4.00	.....	12.00	.....	4.00
Floyd Money Maker 4-16-4	4.00	.....	16.00	.....	4.00
Floyd Money Maker 4-8-6	4.00	.....	8.00	.....	6.00
Floyd Money Maker 0-12-4	.....	.....	12.00	.....	4.00
Floyd Money Maker 0-12-6	.....	.....	12.00	.....	6.00
Floyd Money Maker 0-14-6	.....	.....	14.00	.....	6.00
Floyd Money Maker 16 per cent Superphosphate	.....	.....	16.00	.....	.....
Floyd Money Maker 20 per cent Superphosphate	.....	.....	20.00	.....	.....
Floyd Money Maker 32 per cent Superphosphate	.....	.....	32.00	.....	.....
Floyd Money Maker Garden Grow	5.00	.....	10.00	5.00	5.00
Floyd Money Maker Bone and Phosphate Mixture	1.00	.....	12.00	8.00	.....
Floyd Money Maker Raw Bone	3.30	20.00	.....	.....	.....
Floyd Money Maker Steam Bone	2.00	27.00	.....	.....	.....
Flower City Plant Food Company					
Pittsford, New York					
Wondergro	10.00	.....	12.00	.....	11.00
Archia's Fairy Brand Plant Food	10.00	.....	12.00	.....	11.00
Ford Motor Company					
Dearborn, Michigan					
Ford Ammonium Sulphate	20.80	.....	.....	.....	.....
Goulard and Olean, Inc.					
140 Liberty Street					
New York, New York					
G and O Plant Food	11.00	.....	15.00	.....	20.00
Sulphate of Ammonia	20.56	.....	.....	.....	.....
A. H. Hoffman, Inc.					
Landisville, Pennsylvania					
Hoffman's Bone Meal	3.70	20.00	.....	.....	.....
Hoffman's Cow Manure (Dehydrated)	2.00	.....	2.00	.....	2.00
Hoffman's Sheep Manure (Kiln-Dried)	1.85	.....	1.00	.....	2.00
Hoffman's Plant Food	5.00	.....	8.00	.....	6.00
Kansas City Fertilizer Company					
Kansas City, Missouri					
Archer Brand Sheep Manure	2.00	.....	1.00	.....	2.00
Archer Brand Cattle Manure	2.00	.....	1.00	.....	1.00
Milwaukee Sewerage Commission					
Milwaukee, Wisconsin					
Milorganite	6.00	.....	2.00	0.75	.....
Nebraska Fertilizer Company					
Omaha, Nebraska					
Sheepo Brand Pulverized Sheep Manure	2.00	.....	1.00	.....	2.00
Newhouse Chemical and Supply Co.					
Little Rock, Arkansas					
Triangle 2-12-4	2.00	.....	12.00	.....	4.00
Triangle 10-6-4	10.00	.....	6.00	.....	4.00
Triangle Up-Ahead Fertilizer	6.00	.....	8.00	.....	12.00
Triangle Master Farmer	6.00	.....	12.00	.....	6.00
Triangle 4-16-4	4.00	.....	16.00	.....	4.00
Triangle Complete Fertilizer	4.00	.....	12.00	.....	4.00
Triangle 4-10-6	4.00	.....	10.00	.....	6.00
Triangle All Crop Fertilizer	4.00	.....	10.00	.....	4.00
Triangle Potato and Truck	4.00	.....	8.00	.....	6.00

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total in Bone	Avail-able	Insol-uble	
	Per cent	Per cent	Per cent	Per cent	Per cent
Triangle Four State Cotton .....	4.00	.....	8.00	.....	4.00
Triangle Sandyland Fertilizer .....	3.00	.....	10.00	.....	3.00
Triangle 3-8-6 .....	3.00	.....	8.00	.....	6.00
Triangle 2-16-2 .....	2.00	.....	16.00	.....	2.00
Triangle 2-16-0 .....	2.00	.....	16.00	.....	.....
Triangle 2-14-4 .....	2.00	.....	14.00	.....	4.00
Triangle Tomato Fertilizer .....	2.00	.....	12.00	.....	6.00
Triangle Old Timer Fertilizer .....	2.00	.....	12.00	.....	2.00
Triangle Early Day Fertilizer .....	2.00	.....	10.00	.....	2.00
Triangle 0-15-6 .....	.....	.....	15.00	.....	6.00
Triangle 0-14-7 .....	.....	.....	14.00	.....	7.00
Triangle 0-14-4 .....	.....	.....	14.00	.....	4.00
Triangle 0-12-12 .....	.....	.....	12.00	.....	12.00
Triangle 0-12-4 .....	.....	.....	12.00	.....	4.00
Triangle 16 per cent Superphosphate .....	.....	.....	16.00	0.50	.....
Triangle 18 per cent Superphosphate .....	.....	.....	18.00	0.50	.....
Triangle 20 per cent Superphosphate .....	.....	.....	20.00	0.50	.....
Triangle Steamed Bone Meal .....	1.65	27.00	.....	.....	.....
Triangle Pure Raw Bone Meal .....	3.70	23.00	.....	.....	.....
Triangle Muriate of Potash .....	.....	.....	.....	.....	50.00
Triangle Kainit .....	.....	.....	.....	.....	20.00
Triangle Sulphate of Ammonia .....	20.00	.....	.....	.....	.....
Triangle Nitrate of Soda .....	16.00	.....	.....	.....	.....
N. V. Potash Export My., Inc.					
19 West 44th Street					
New York City, New York					
Muriate of Potash .....	.....	.....	.....	.....	50.00
20 per cent Kainit .....	.....	.....	.....	.....	20.00
30 per cent Manure Salts .....	.....	.....	.....	.....	30.00
Pearson-Ferguson Chemical Co.					
1400 Union Avenue					
Kansas City, Missouri					
P-F Brand 10-20-10 .....	10.00	.....	20.00	.....	10.00
P-F Brand 9-27-9 .....	9.00	.....	27.00	.....	9.00
P-F Brand 9-18-18 .....	9.00	.....	18.00	.....	18.00
P-F Brand 8-24-8 .....	8.00	.....	24.00	.....	8.00
P-F Brand 8-16-16 .....	8.00	.....	16.00	.....	16.00
P-F Brand 6-12-4 .....	6.00	.....	12.00	.....	4.00
P-F Brand 5-15-5 .....	5.00	.....	15.00	.....	5.00
P-F Brand 4-16-4 .....	4.00	.....	16.00	.....	4.00
P-F Brand 4-12-4 .....	4.00	.....	12.00	.....	4.00
P-F Brand 4-8-6 .....	4.00	.....	8.00	.....	6.00
P-F Brand 2-6-6 .....	2.00	.....	6.00	.....	6.00
P-F Brand 0-20-20 .....	.....	.....	20.00	.....	20.00
P-F Brand Steamed Bone Meal .....	0.95	33.00	.....	.....	.....
P-F Brand Sheep Manure .....	2.00	.....	1.00	.....	2.00
Plantabbs Corporation					
Baltimore, Maryland					
Fulton's Plantabbs .....	11.00	.....	15.00	.....	20.00
The Pulverized Manure Company					
Chicago, Illinois					
Wizard Brand Pulverized Sheep Manure .....	2.00	.....	1.00	.....	2.00
Wizard Brand Cow Manure .....	2.00	.....	1.00	.....	1.00
Garden Mulch (Pure Cow Manure) Unprocessed .....	2.00	.....	1.00	.....	1.00
Quaker Oats Company					
Chicago, Illinois					
Processed Organic Fertilizer 4-16-4 .....	4.00	.....	16.00	0.30	4.00
Processed Organic Fertilizer 2-12-2 .....	2.00	.....	12.00	0.30	2.00
Processed Organic Fertilizer 3-12-6 .....	3.00	.....	12.00	0.30	6.00
E. Rauh and Sons Fertilizer Co.					
Indianapolis, Indiana					
Rauh's Red Star 16 per cent Superphosphate .....	.....	.....	16.00	.....	.....
Rauh's Red Star 20 per cent Superphosphate .....	.....	.....	20.00	.....	.....
Rauh's Red Star 0-12-12 .....	.....	.....	12.00	.....	12.00
Rauh's Red Star 0-14-6 .....	.....	.....	14.00	.....	6.00
Rauh's Red Star 0-16-8 .....	.....	.....	16.00	.....	8.00

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)	
	Nitrogen	Total in Bone	Avail-able		Insol-uble
	Per cent	Per cent	Per cent	Per cent	
Rauh's Red Star 0-20-20 .....	.....	.....	20.00	.....	20.00
Rauh's Red Star 1-11-5 .....	1.00	.....	11.00	.....	5.00
Rauh's Red Star Half and Half .....	1.00	.....	10.00	10.00	.....
Rauh's Red Star 2-12-2 .....	2.00	.....	12.00	.....	2.00
Rauh's Red Star 2-12-4 .....	2.00	.....	12.00	.....	4.00
Rauh's Red Star 2-12-6 .....	2.00	.....	12.00	.....	6.00
Rauh's Red Star 2-16-2 .....	2.00	.....	16.00	.....	2.00
Rauh's Red Star 3-12-12 .....	3.00	.....	12.00	.....	12.00
Rauh's Red Star 4-8-6 .....	4.00	.....	8.00	.....	6.00
Rauh's Red Star 4-12-4 .....	4.00	.....	12.00	.....	4.00
Rauh's Red Star 4-16-4 .....	4.00	.....	16.00	.....	4.00
Rauh's Red Star 4-24-4 .....	4.00	.....	24.00	.....	4.00
Rauh's Red Star 4-24-12 .....	4.00	.....	24.00	.....	12.00
Rauh's Steamed Bone Meal .....	1.60	27.00	.....	.....	.....
M. C. Reed 302 South McGregory Street Carthage, Missouri					
Kalosecta 4-12-4 .....	4.00	.....	12.00	1.00	4.00
Ruhm Phosphate and Chemical Co. Mt. Pleasant, Tennessee					
Ruhm's Phosphate Rock (washed and ground) .....	.....	.....	.....	34.30	.....
O. M. Scott and Sons Co. Marysville, Ohio					
Scotts Turf Builder .....	10.00	.....	6.00	.....	4.00
Sears, Roebuck and Company 3625 East 15th Street Kansas City, Missouri					
Sears Guaranteed Fertilizer 5-8-7 .....	5.00	.....	8.00	.....	7.00
The Smith Agricultural Chemical Co. Columbus, Ohio					
Sacco Plant Food .....	4.00	.....	12.00	.....	4.00
Wedo .....	8.00	.....	5.00	.....	3.00
Soils Builders, Inc. Orlando, Florida					
Mineral Colloids .....	.....	.....	.....	18.00	.....
Swift and Company Fertilizer Works National Stock Yards, Illinois					
Red Steer 9-18-18 .....	9.00	.....	18.00	.....	18.00
Red Steer 8-24-8 .....	8.00	.....	24.00	.....	8.00
Red Steer 8-16-16 .....	8.00	.....	16.00	.....	16.00
Red Steer 6-12-6 .....	6.00	.....	12.00	.....	6.00
Red Steer 5-8-7 .....	5.00	.....	8.00	.....	7.00
Red Steer 4-16-4 .....	4.00	.....	16.00	.....	4.00
Red Steer 4-12-4 .....	4.00	.....	12.00	.....	4.00
Red Steer 4-10-6 .....	4.00	.....	10.00	.....	6.00
Red Steer 4-8-8 .....	4.00	.....	8.00	.....	8.00
Red Steer 4-8-6 .....	4.00	.....	8.00	.....	6.00
Red Steer 3-12-12 .....	3.00	.....	12.00	.....	12.00
Red Steer 3-12-4 .....	3.00	.....	12.00	.....	4.00
Red Steer 3-8-6 .....	3.00	.....	8.00	.....	6.00
Red Steer 2-16-2 .....	2.00	.....	16.00	.....	2.00
Red Steer 2-14-4 .....	2.00	.....	14.00	.....	4.00
Red Steer 2-12-4 .....	2.00	.....	12.00	.....	4.00
Red Steer 2-12-2 .....	2.00	.....	12.00	.....	2.00
Red Steer 1-12-4 .....	1.00	.....	12.00	.....	4.00
Red Steer 0-20-20 .....	.....	.....	20.00	.....	20.00
Red Steer 0-16-6 .....	.....	.....	16.00	.....	6.00
Red Steer 0-14-7 .....	.....	.....	14.00	.....	7.00
Red Steer 0-14-4 .....	.....	.....	14.00	.....	4.00
Red Steer 0-12-12 .....	.....	.....	12.00	.....	12.00
Red Steer 20 per cent Superphosphate .....	.....	.....	20.00	.....	.....
Red Steer 16 per cent Superphosphate .....	.....	.....	16.00	.....	.....
Special Golf Fertilizer 12-6-4 .....	12.00	.....	6.00	.....	4.00
Special Golf Fertilizer 6-12-4 .....	6.00	.....	12.00	.....	4.00
Steam Bone Fertilizer 2-26-0 .....	2.00	26.00	.....	.....	.....
Raw Bone Fertilizer 3.7-23-0 .....	3.70	23.00	.....	.....	.....

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total in Bone	Avail-able	Insol-uble	
	Per cent	Per cent	Per cent	Per cent	Per cent
Red Steer Half and Half Fertilizer .....	1.00	.....	12.00	8.00	.....
Red Steer Bone Meal and Potash .....	2.00	26.00	.....	.....	6.00
Nitrate of Soda .....	15.00	.....	.....	.....	.....
Sulphate of Ammonia .....	20.50	.....	.....	.....	.....
Muriate of Potash .....	.....	.....	.....	.....	50.00
Sulphate of Potash .....	.....	.....	.....	.....	48.00
Blood and Bone Tankage Fertilizer .....	5.50	18.00	.....	.....	.....
Vigoro .....	4.00	.....	12.00	.....	4.00
Kainit .....	.....	.....	.....	.....	20.00
Triple Superphosphate 45 per cent .....	.....	.....	45.00	.....	.....
Pulverized Sheep Manure .....	1.85	.....	1.00	.....	1.75
Cattle Manure .....	1.85	.....	1.00	.....	1.75
Cyanamid .....	21.00	.....	.....	.....	.....
Red Steer 0-14-6 .....	.....	.....	14.00	.....	6.00
Bonro .....	12.00	.....	6.00	.....	4.00
Special Tree Fertilizer .....	12.00	.....	6.00	.....	4.00
Synthetic Nitrogen Products Corporation					
235 Madison Avenue					
New York, New York					
Nitrophoska 15-30-15 .....	15.00	.....	30.00	.....	15.00
Urea .....	46.00	.....	.....	.....	.....
Calcium Nitrate (Nitrate of Lime) .....	15.00	.....	.....	.....	.....
Cal-Nitro 16 per cent .....	16.00	.....	.....	.....	.....
Tennessee Corporation					
Lockland, Ohio					
Loma .....	5.00	.....	10.00	0.65	4.00
Soil-Prep .....	4.00	.....	2.00	.....	2.00
United States Gypsum Company					
Chicago, Illinois					
USG Agricultural Hydrate Lime .....	.....	.....	.....	.....	.....
USG Red Top Hydrated Lime .....	.....	.....	.....	.....	.....
USG Ben Franklin Agricultural Gypsum .....	.....	.....	.....	.....	.....
Powdered Crystalline Calcium Sulphate—Minimum 90 per cent .....	.....	.....	.....	.....	.....
Virginia-Carolina Chemical Corporation					
East St. Louis, Illinois					
V-C Fertilizer 9-18-18 .....	9.00	.....	18.00	.....	18.00
V-C Fertilizer 3-18-9 .....	3.00	.....	18.00	.....	9.00
V-C Fertilizer 8-16-16 .....	8.00	.....	16.00	.....	16.00
V-C Fertilizer 4-16-4 .....	4.00	.....	16.00	.....	4.00
V-C Fertilizer 4-14-6 .....	4.00	.....	14.00	.....	6.00
V-C Fertilizer 2-16-4 .....	2.00	.....	16.00	.....	4.00
V-C Fertilizer 4-16-2 .....	4.00	.....	16.00	.....	2.00
V-C Fertilizer 2-16-2 .....	2.00	.....	16.00	.....	2.00
V-C Fertilizer 3-14-6 .....	3.00	.....	14.00	.....	6.00
V-C Fertilizer 2-14-4 .....	2.00	.....	14.00	.....	4.00
V-C Fertilizer 4-12-4 .....	4.00	.....	12.00	.....	4.00
V-C Fertilizer 3-12-12 .....	3.00	.....	12.00	.....	12.00
V-C Fertilizer 3-12-4 .....	3.00	.....	12.00	.....	4.00
V-C Fertilizer 2-12-6 .....	2.00	.....	12.00	.....	6.00
V-C Fertilizer 2-12-4 .....	2.00	.....	12.00	.....	4.00
V-C Fertilizer 2-12-2 .....	2.00	.....	12.00	.....	2.00
V-C Fertilizer 1-12-4 .....	1.00	.....	12.00	.....	4.00
V-C Fertilizer 4-10-6 .....	4.00	.....	10.00	.....	6.00
V-C Fertilizer 3-9-18 .....	3.00	.....	9.00	.....	18.00
V-C Fairway Fertilizer .....	6.00	.....	8.00	.....	4.00
V-C Fertilizer 4-8-12 .....	4.00	.....	8.00	.....	12.00
V-C Fertilizer 4-8-8 .....	4.00	.....	8.00	.....	8.00
V-C Fertilizer 4-8-7 .....	4.00	.....	8.00	.....	7.00
V-C Fertilizer 4-8-6 .....	4.00	.....	8.00	.....	6.00
V-C Fertilizer 4-8-4 .....	4.00	.....	8.00	.....	4.00
V-C Fertilizer 3-8-6 .....	3.00	.....	8.00	.....	6.00
V-C Fertilizer 10-6-4 .....	10.00	.....	6.00	.....	4.00
V-C Fertilizer 0-20-2 .....	.....	.....	20.00	.....	2.00
V-C Fertilizer 0-16-6 .....	.....	.....	16.00	.....	6.00
V-C Fertilizer 0-16-4 .....	.....	.....	16.00	.....	4.00
V-C Fertilizer 0-14-6 .....	.....	.....	14.00	.....	6.00

TABLE 4.—BRANDS AND GUARANTEED ANALYSES OF FERTILIZERS REGISTERED AND OFFERED FOR SALE IN MISSOURI; 1939 (Continued)

Fertilizer	Nitrogen	Phosphoric Acid (P <sub>2</sub> O <sub>5</sub> )			Potash (K <sub>2</sub> O)
		Total in Bone	Available	Insoluble	
	Per cent	Per cent	Per cent	Per cent	Per cent
V-C Fertilizer 0-14-4 .....	.....	.....	14.00	.....	4.00
V-C Fertilizer 0-14-2 .....	.....	.....	14.00	.....	2.00
V-C Fertilizer 0-12-6 .....	.....	.....	12.00	.....	6.00
V-C Fertilizer 0-12-4 .....	.....	.....	12.00	.....	4.00
V-C Fertilizer 0-12-2 .....	.....	.....	12.00	.....	2.00
V-C Fertilizer 0-10-10 .....	.....	.....	10.00	.....	10.00
V-C Fertilizer 0-8-24 .....	.....	.....	8.00	.....	24.00
V-C 45 per cent Superphosphate .....	.....	.....	45.00	.....	.....
V-C 32 per cent Superphosphate .....	.....	.....	32.00	.....	.....
V-C 20 per cent Superphosphate .....	.....	.....	20.00	.....	.....
V-C 16 per cent Superphosphate .....	.....	.....	16.00	.....	.....
20 per cent Kainit .....	.....	.....	.....	.....	20.00
Half and Half .....	1.00	.....	12.00	8.00	.....
Muriate of Potash .....	.....	.....	.....	.....	50.00
Sulphate of Ammonia .....	20.00	.....	.....	.....	.....
Nitrate of Soda .....	16.00	.....	.....	.....	.....
Steamed Bone Meal .....	2.00	27.00	.....	.....	.....
Raw Bone Meal .....	3.70	23.00	.....	.....	.....
Cyanamid .....	23.00	.....	.....	.....	.....
Ground Tobacco Stems .....	2.00	.....	.....	.....	4.00
Wallace Bros. Packing Co., Inc. Joplin, Missouri	.....	.....	.....	.....	.....
Wallace's Bone-Meal Fertilizer .....	3.22	25.94	.....	.....	.....
Westover Nursery Company 8100 Olive Street Road St. Louis, Missouri	.....	.....	.....	.....	.....
Wesgro Cattle Manure .....	1.00	.....	1.00	.....	2.00
Wesgro Sheep Manure .....	2.00	.....	1.00	.....	2.00
Rosegro (Blood and Bone Mixture) .....	3.30	25.00	.....	.....	.....
Lawnagro .....	2.00	.....	10.00	10.00*	.....

\*From Bone

TABLE 5.—APPROXIMATE TONNAGE OF FERTILIZER SOLD IN THE STATE OF MISSOURI BY COUNTIES, BASED UPON REPORT OF SHIPMENTS BY THE FERTILIZER COMPANIES, 1938

County	Spring	Fall	Total	County	Spring	Fall	Total
Adair	67	70	137	Livingston	2	27	29
Andrew	0	78	78	McDonald	25	61	86
Atchison	15	2	17	Macon	42	265	307
Audrain	83	513	596	Madison	132	189	321
Barry	569	742	1311	Maries	30	183	213
Barton	589	1893	2482	Marion	84	519	603
Bates	53	1069	1122	Mercer	0	22	22
Benton	119	465	584	Miller	67	457	524
Bollinger	314	434	798	Mississippi	151	2	153
Boone	65	271	336	Moniteau	15	511	526
Buchanan	120	281	401	Monroe	60	677	737
Butler	54	5	59	Montgomery	99	846	945
Caldwell	13	114	127	Morgan	48	487	535
Callaway	29	395	424	New Madrid	109	2	111
Camden	22	69	91	Newton	336	1086	1422
Cape Girardeau	116	381	497	Nodaway	3	42	45
Carroll	7	122	129	Oregon	31	56	87
Carter	35	4	39	Osage	18	302	320
Cass	36	537	573	Ozark	0	5	5
Cedar	179	485	664	Pemiscot	2	0	2
Chariton	9	197	206	Perry	81	176	257
Christian	435	415	900	Pettis	101	750	851
Clark	26	120	146	Phelps	130	311	441
Clay	52	17	69	Pike	222	712	934
Clinton	5	76	81	Platte	61	69	130
Cole	86	607	693	Polk	517	347	1364
Cooper	12	191	203	Pulaski	57	222	279
Crawford	62	252	314	Putnam	15	16	31
Dade	184	905	1089	Ralls	21	323	344
Dallas	39	73	112	Randolph	29	216	245
Daviess	1	28	29	Ray	138	46	234
DeKalb	6	16	22	Reynolds	19	1	20
Dent	195	191	386	Ripley	85	34	119
Douglas	81	36	117	St. Charles	82	333	915
Dunklin	1582	0	1582	St. Clair	51	429	480
Franklin	141	1253	1394	St. Francois	291	472	763
Gasconade	34	516	550	St. Genevieve	14	126	140
Gentry	15	18	33	St. Louis	1081	318	1399
Greene	1190	1322	2512	Saline	26	53	79
Grundy	61	405	466	Schuyler	26	70	96
Harrison	53	94	147	Scotland	8	49	57
Henry	59	553	612	Scott	68	35	103
Hickory	60	180	240	Shannon	30	40	70
Holt	0	26	26	Shelby	53	335	393
Howard	47	71	118	Stoddard	55	28	83
Howell	232	162	394	Stone	275	45	320
Iron	48	75	123	Sullivan	18	31	49
Jackson	749	811	1560	Taney	1	4	5
Jasper	571	2550	3121	Texas	449	644	1093
Jefferson	52	101	153	Vernon	438	1736	2174
Johnson	59	422	481	Warren	54	453	507
Knox	23	98	121	Washington	44	165	209
Laclede	207	337	544	Wayne	29	58	87
Lafayette	24	79	103	Webster	565	284	849
Lawrence	631	1522	2153	Worth	0	0	0
Lewis	70	516	586	Wright	434	225	659
Lincoln	184	1520	1704				
Linn	64	120	184				
				Grand Total	16,761	40,307	57,068

TABLE 6.—APPROXIMATE TONNAGE OF FERTILIZER SOLD IN THE STATE OF MISSOURI IN 1938, CLASSIFIED AS TO KIND AND GRADE

	Tonnage	Fertilizer Sales Classified for 1938					
		Bone	Superphosphate	High Grade	Medium Grade	Low Grade	Misc.
Spring Sales .....	16,761	171	4,645	3,292	6,490	5	2,158
Fall Sales .....	40,307	934	16,061	5,423	16,986	2	901
Total Sales (1938) .....	57,068	1,105	20,706	8,715	23,476	7	3,059
1938 Sales (Summary Report) .....	63,674	1,245	23,662	9,806	25,940	10	3,011

TABLE 7.—TONNAGE OF PLANT FOOD CONSTITUENTS SOLD IN MISSOURI IN 1938 (APPROXIMATE)

Kind of Fertilizer	Fertilizer Tonnage	Plant Food Tonnage				
		Nitrogen	Phosphoric Acid from Bone	Available Phosphoric Acid	Insoluble Phosphoric Acid	Potash
Bone Fertilizer .....	1,245.18	26.87	326.98	.....	.....	.....
Half and Half .....	433.18	4.51	67.18	34.96	.....	.....
Superphosphate .....	23,662.09	.....	.....	4,616.54	.....	.....
High Grade Mixed .....	9,372.70	256.90	4.68	1,226.90	.....	506.84
Medium Grade Mixed .....	25,939.80	523.26	.....	3,074.15	.....	685.54
Low Grade Mixed .....	9.96	0.25	.....	0.61	.....	0.30
Nitrate of Soda .....	127.85	20.46	.....	.....	.....	.....
Sulphate of Ammonia .....	239.97	49.43	.....	.....	.....	.....
Cyanamid .....	307.75	64.63	.....	.....	.....	.....
Dried Manure and Garden Mulch .....	332.23	6.84	.....	3.32	.....	5.33
Sewerage Residues .....	727.88	43.67	.....	14.56	.....	.....
Mineral Phosphates and Phosphatic Clays .....	164.10	.....	.....	.....	49.90	.....
Potash Salts .....	1,110.91	.....	.....	.....	.....	244.34
Totals .....	63,673.60	1,001.62	398.84	8,971.04	49.90	1,442.35

TABLE 8.—TONNAGE OF SUPERPHOSPHATE AND THE LEADING FERTILIZER MIXTURE (BRANDS) SOLD IN MISSOURI IN 1938 (APPROXIMATE)

Brand	Tonnage	Brand	Tonnage
2-12-2	18,921.87	0-12-55	74.55
0-20-0	16,221.47	8-16-16	73.55
0-16-0	6,728.75	3-18-3	73.00
2-12-4	4,982.93	10-6-4	66.59
2-12-6	3,476.22	4-8-12	58.06
4-12-4	1,525.40	5-10-4	52.35
4-16-4	1,129.63	3-12-4	49.00
2-14-4	596.83	3-9-18	36.50
0-45-0	590.88	0-12-12	34.40
4-8-6	530.59	2-8-16	31.00
0-14-4	488.43	11-48-0	30.60
2-16-2	419.56	5-8-7	29.59
0-16-6	325.19	3-12-12	29.05
0-14-6	311.34	0-14-2	24.00
4-8-7	308.76	10-3-3	23.50
3-14-6	286.25	0-16-4	18.60
3-8-6	272.23	2-26t-6	18.00
0-14-7	237.28	0-16-8	17.00
4-8-8	227.50	4-12-8	16.50
4-10-6	141.30	1-12-3	16.40
0-32-0	120.99	4-24-12	15.00
1-12-4	106.33	7-7-5	11.00
0-12-6	98.18	16-20-0	11.00
10-8-6	78.00	0-20-10	7.25

**FINANCIAL STATEMENT**

Fertilizer Control Fund  
of the  
Missouri Agricultural Experiment Station  
For the year ending December 31, 1938

**RECEIPTS**

Balance January 1, 1938 .....	\$21,880.17	
Receipt from the sale of Tags 1938 .....	24,545.20	\$46,425.37
	<hr/>	

**DISBURSEMENTS**

Salaries .....	\$8,235.55	
Labor .....	18,232.74	
Stationery and Office Supplies .....	142.51	
Scientific Supplies .....	453.52	
Feeding Stuffs .....	39.84	
Sundry Supplies .....	1,892.91	
Communication Service .....	229.43	
Travel Expense .....	685.15	
Transportation of Things .....	20.61	
Publications .....	563.85	
Heat, Light, Water and Power .....	344.65	
Contingent Expenses .....	145.24	
Repairs to Equipment .....	320.30	
Furniture and Fixtures .....	6.28	
Library .....	.18	
Scientific Equipment .....	3.00	
Tools and Machinery .....	13.50	
Buildings and Structures .....	58.52	\$31,387.78
	<hr/>	
Balance, Cash on Hand December 31, 1938..		\$15,037.59
March 8, 1939.		