

KENTUCKY
AGRICULTURAL EXPERIMENT STATION

OF THE
STATE COLLEGE OF KENTUCKY.

BULLETIN NO. 97.

COMMERCIAL FERTILIZERS.

LEXINGTON, KENTUCKY,
DECEMBER 31, 1901.
223

KENTUCKY Agricultural Experiment Station.

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The Bulletins of the Station will be mailed free to any citizen of Kentucky who sends his name and address to the Station for that purpose.

Correspondents will please notify the Director of changes in their postoffice address, or of any failure to receive the Bulletins.

ADDRESS:

KENTUCKY AGRICULTURAL EXPERIMENT STATION,
LEXINGTON, KY.

Bulletin No. 97.

Analyses of Commercial Fertilizers.

Number of Brands. There were 330 different brands of commercial fertilizers registered during the year 1901. Of these, 175 were complete fertilizers, or fertilizers containing all three of the essential ingredients, namely: phosphoric acid, nitrogen and potash; 43 were acid phosphates; 8 contained a mixture of acid phosphate and nitrogen compounds only; 38 acid phosphates and potash salts only; and 66 were classed as bones or tankage.

Samples Collected and Analyzed. Six hundred and forty-eight samples were collected by deputy inspectors or sent by farmers from various parts of the State and 344 were sent in by firms as official samples; of these samples, 655 have been analyzed by the Station. Many of these analyses have already been published in Bulletin No. 95 and are not repeated here. The 337 samples not analyzed were duplicates collected by different deputy inspectors working in different places at the same time. In some instances as many as 6 or 7 samples of the same brand were collected.

Results of the Analyses. The results of the analyses show that of the 217 samples analyzed since the publication of Bulletin No. 95, 30, representing 29 brands and 17 firms, fell so far below the guaranteed analyses in phosphoric acid, nitrogen or potash, or any two, or all three of these ingredients, that this could not be accounted for by variations in sampling or analysis. Adding to these the 83 samples reported in Bulletin No. 95, we have 113 samples which fell so far below the guaranteed

analyses that attention should be called to this fact. It is probable that in most cases variations can be accounted for by hurried or careless mixing at the factories, or gross mistakes in shipping one brand for another, but in several instances, the results show apparently a desire on the part of the manufacturer to guarantee more than the goods contain.

The great majority of the manufacturers, however, have furnished in most instances fertilizers fully up to, and often better than the guarantee.

The following table gives the manufacturers who have registered fertilizers in this State since May 1, or whose fertilizers have been sampled and analyzed since that date. It shows also the number of samples analyzed of each firm's fertilizers, and in how many of these samples there was a serious deficiency of either phosphoric acid, nitrogen or potash, and in how many the percentages of these constituents are such as to be acceptable, from the point of view of the buyer, either because they equal or exceed the percentage guaranteed by the manufacturer, or because a slight deficiency in one constituent is, in the Director's judgment, fully made up by an excess in one or both of the others. Under the heading, "Relative Value Per Ton," is shown in how many instances the "estimated value per ton," calculated from our analysis, equals or exceeds the value calculated from the manufacturer's minimum guaranteed analysis, and in how many it is too low, reasonable allowance having been made for unavoidable variations. This table should be carefully studied. It concisely reviews each firm, showing how the samples of fertilizers taken from various places in the State compare with what was guaranteed. In order, however, to see the amount of variations from the guaranteed analyses, this table should be studied in connection with the table of results of analyses. This table can be easily referred to, as the names of the firms are arranged in alphabetical order.

NAME OF MANUFACTURER.	No. of Samples Analyzed.	Phosphoric Acid.		Nitrogen.		Potash.		Relative Value Per Ton.	
		No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.
The Abbott & Martin Rendering Co.	1	1	0	1	0	0	0	1	0
American Agricultural Chemical Co., Cleveland Dryer Works.....	3	3	0	1	0	1	0	3	0
American Agricultural Chemical Co.....	1	1	0	1	0	0	0	1	0
The Armour Fertilizer Works.....	7	7	0	6	0	4	0	7	0
Geo. S. Bartlett	2	2	0	0	2	1	1	2	0
The Buckeye Phosphate Co.	1	1	0	1	0	0	0	1	0
The Chicago Fertilizer Co.	4	3	1	3	0	2	0	4	0
Continental Fertilizer Co.....	9	9	0	6	0	2	1	9	0
The Currie Fertilizer Co.	6	6	0	5	0	3	0	6	0
Duncan & Bro.	4	4	0	4	0	1	0	4	0
The Empire Guano Co.....	15	13	2	7	0	8	1	14	1

NAME OF MANUFACTURER.	No. of Samples Analyzed.	Phosphoric Acid.		Nitrogen.		Potash.		Relative Value Per Ton.	
		No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.
Fox Chemical Co.....	8	8	0	5	0	6	0	8	0
Globe Fertilizer Co.....	12	12	0	11	0	9	0	12	0
Greer Machinery Co.....	1	1	0	0	0	0	0	1	0
The Hardy Packing Co.....	4	4	0	3	0	1	0	4	0
Helm Bone Fertilizer Co.....	4	4	0	3	0	2	0	4	0
R. H. Hoskins.....	1	0	1	1	0	0	0	1	0
The Jarecki Chemical Co.....	5	4	1	2	1	2	0	4	1
J. B. Jones.....	3	1	2	3	0	1	0	3	0
The Jones Fertilizing Co.....	3	3	0	3	0	2	0	3	0
Louisville Fertilizer Co.....	14	13	1	9	1	8	2	14	0
P. B. Mathiason Mfg. Co.....	2	2	0	2	0	0	0	2	0

Michigan Carbon Works	5	4	4	1	4	0	2	0	5	0
Nelson Morris & Co.....	8	8	0	8	0	4	0	8	0	0
National Fertilizer Co	7	7	0	1	0	3	0	7	0	0
North-Western Fertilizing Co.....	11	9	2	9	0	5	0	11	0	0
The Ohio Farmers' Fertilizer Co.....	7	7	0	6	0	5	1	7	0	0
Packers' Fertilizer Association	6	6	0	3	0	3	1	6	0	0
The E. Raub & Sons' Fertilizer Co	1	1	0	1	0	0	0	1	0	0
Read Phosphate Co.....	10	8	2	8	0	7	0	10	0	0
Ruhl & Pero.....	2	1	1	2	0	0	0	2	0	0
J. F. Singer & Co	9	8	1	8	1	5	2	9	0	0
Swift & Co.	16	16	0	14	1	5	1	16	0	0
Tennessee Chemical Co	13	12	1	8	0	5	0	13	0	0
Virginia-Carolina Chemical Co	2	2	0	1	0	2	0	2	0	0
Wake Fertilizer Co	1	1	0	1	0	1	0	1	0	0
Western Agricultural Chemical Co	3	3	0	3	0	2	0	3	0	0
Wood, Stubbs & Co.....	1	1	0	1	0	0	0	1	0	0

It is evident from the preceding table that while most of the fertilizers examined ran above the minimum guarantee, yet a thorough and careful inspection seems essential. It is hoped that farmers will generally take advantage of Section 8 of the fertilizer law, and when they purchase fertilizers, at least in quantity, that they will take a sample in accordance with section 8 and send it to the Station for free analysis.

Essentials in taking a Sample. 1. Take it at the time of purchase, and if possible in the presence of agent or seller. 2. Take a sample from not less than two bags, and from one additional bag for every ten purchased; mix these samples carefully and take at least a pint of this mixed sample, put it into a fruit jar, seal, box and express to M. A. Scovell, Director, Lexington, Ky. 3. Take the sample in the presence of at least one witness, and have the witness sign the required certificate. 4. The certificate for free analysis to be sent *by mail* and should be in accordance with the law as given in Section 8.

If the sample is taken in accordance with the above directions it may be sent by express and the charges will be paid by the Station.

Form of Certificate. A good form of certificate is the following, and blank certificates will be sent free to any farmer requesting the same.

CERTIFICATE FOR FREE ANALYSIS.

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M. A. SCOVELL, Director, Lexington, Ky.:

This is to certify that I am not a dealer in, or agent for the sale of any fertilizer, and that the fertilizer, a sample of which I have sent by express to you for free analysis was purchased by me.....190 for my own use and not for sale.

I further certify that the sample was taken at the time of purchase from at least 10 per cent. of the sacks or other packages comprising the whole lot purchased, and that it was taken

as provided in Section 8 of the fertilizer law, in the following described manner, to-wit:

.....
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.....

Upon receipt of the analysis from you, I agree to furnish you with a tag taken from one of the sacks sampled, the name and address of the firm or agent of whom the fertilizer was purchased, and the amount purchased.

(Signature)

(P. O. Address)

Signature of Witnesses:

.....
.....

Should, however, any farmer desire to take a sample and not have a blank certificate at hand, he may write one in full like the form above given, or take the sample in presence of seller and witness and so mark it that he can identify it subsequently in a certificate, and send it at once to the Experiment Station with the request that the Station furnish form of certificate, such certificate to be filled out upon receipt covering the sample and properly signed by sender and witnesses and sent by return mail to the Station.

Section Providing for Free Analysis. The Section of the Fertilizer Law, providing for the taking of samples for free analysis is as follows:

SEC. 8. Any person not a dealer in, or agent for the sale of any fertilizer who may purchase any commercial fertilizer in this State for his own use and not for sale, may take a sample of the same for analysis, which analysis shall be made by the said Experiment Station free of charge. Such sample for free analysis shall be taken by the purchaser in presence of the person, company or agent selling the fertilizer from at least ten (10) per cent. of the sacks or other packages comprising the

whole lot purchased, and shall be thoroughly mixed and at least one pound of the material after mixing must be put into a jar or can, securely sealed and marked in such a way as to surely identify the sample and show by whom it was sent, without giving the name of the fertilizer or the person from whom it was purchased, and must be forwarded to the Director of the Kentucky Agricultural Experiment Station, Lexington, Ky. The purchaser shall also send with the sample a certificate signed by himself and witness, or by two witnesses, stating that the sender has purchased the fertilizer for his own use and not for sale, and that the sample was taken in the manner prescribed in this section. Provided, however, that if the person, company or agent shall refuse to witness the taking of the sample, then the sample may be taken at the time of the purchase in the manner already described in the presence of two witnesses who shall certify to the manner of taking the sample. The purchaser shall preserve the official label from one of the bags or other packages sampled to be sent to the Director after having received the report of analysis of the sample, and at the same time he shall furnish to the Director the name and address of the firm of whom the fertilizer was purchased and the amount purchased; and any person having sent a sample for free analysis, under the provisions of this section, who shall, after having received the report of analysis of the same, refuse to furnish the required information, shall thereafter forfeit the privilege of free analysis of fertilizers under this section. But if any sample shall have been submitted for free analysis without all the requirements of this section having been complied with, the Director shall inquire into the case and may accept the sample for free analysis if he believes that it is a fair sample of the fertilizer as it was delivered to the purchaser.

Values Used.—In calculating the relative value per ton, the following values have been used:

Soluble and reverted phosphoric acid in mixed fertilizers	6c per lb.
Soluble and reverted phosphoric acid in plain acid and unacidulated phosphates.....	5c per lb.
Insoluble phosphoric acid in mixed fertilizers.....	2c per lb.
Insoluble phosphoric acid in plain acid phosphates	Nothing.
Phosphoric acid in fine bone.....	4c per lb.
Phosphoric acid in medium bone.....	3c per lb.

Fine bone is all that passes through a sieve with meshes one-twenty-fifth inch square. Medium bone passes through a

sieve with meshes one-sixth inch square, but does not include fine bone.

Nitrogen in all fertilizers..... 15c per lb.
 Potash in all fertilizers, from sulphate..... 6c per lb.
 Potash in all fertilizers, from muriate..... 5c per lb.

The term "Potash from Muriate" does not indicate necessarily that the manufacturers used muriate of potash in furnishing the potash; they may have used sulphate of potash, or other salts of potash, but in all fertilizers where the term "Potash from Muriate" is used there is enough chlorine present to combine with the potash, either from salt in the tankage used, or the potash salts used, as muriate, kainit, carnalite, etc. As the objection to the use of muriate of potash arises from the chlorine present in this salt, it likewise follows that chlorine in a fertilizer is objectionable, whether put in with the potash or otherwise. The using of sulphate of potash where there is chlorine present in other ingredients of the fertilizer will not obviate the injurious effect of the chlorine, and therefore we take this method of showing chlorine present by designating the potash as "from muriate."

Explanation of the Table. In the table of analyses, under the column headed "From Whom Obtained," all samples marked "Manufacturer" are those furnished by the manufacturer at the time the fertilizer was entered for sale. All other samples were collected by deputy inspectors or sent by farmers. The analysis guaranteed by the manufacturer follows the analyses of these other samples and is printed in *italic* figures.

The figures in the table which are set in bold face type are those results which, in the judgment of the Director, were too low to be acceptable. Where the total phosphoric acid in samples of bone is marked with (*) it indicates that the bone contains soluble phosphoric acid. This soluble phosphoric acid is an indication of either the addition of acid phosphate to the bone, in which case it would not be a pure raw bone, or else that the bone containing this soluble phosphoric acid was not strictly a pure or high grade bone, but contained trashy materials, which carried with them the soluble phosphoric acid.

The names of the manufacturers are arranged in alphabetical order, and all the analyses of the same brand have been grouped together.

TABLE OF ANALYSES.

Station Number	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8600	The Abbott & Martin Rendering Co., Columbus, O. Render's Bone Meal.....	D. G. Meers, Hammonville.
8692	Amer. Ag. Chem. Co., New York, Clev. Dryer Wks..... XXX Superphosphate.....	E. F. Austin, Beaver Dam..
8693	Ohio Seed Maker with Potash.	E. F. Austin, Beaver Dam..
8694	Horsehead Phosphate.....	E. F. Austin, Beaver Dam..
8695	Am. Ag. Chem. Co., New York. Ground Bone.....	J. C. DeHaven, Hardinsb'g.
8740 8832	The Armour Fertilizer Works, Chicago, Ill. Bone Meal.....	Dunagan & Kirtley, Horse Cv. B. F. Wood, Cerulean
8741	Raw Bone Meal.	The Gardner-Warren Im. Co Elizabethtown
8742 8752	Grain Grower	C. P. Cecil, Shelby City
8743	Phosphate and Potash.....	L. E. Henderson, Irvington
8744	Wheat, Corn and Oat Special.	I. K. Miller & Son, Campb'lv'le
8766	Geo. S. Bartlett, Successor to Cin. Des. Co., Cinti. O. Indian Brand Ohio Valley Phosphate.....	C. P. Cecil, Shelby City
8633	Ind. Br. Phoenix Phosphate..	J. S. Horton, Jr., Eubank.
		Manufacturer

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Total.	Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	From Muriate.				From Sulphate.			
12.58	9.88					22.46	4.14	5.63				\$28.41	8600
						20.00	1.65	2.00				16.95	
				15.78	0.36	16.14						15.78	8692
		10.00	4.00	14.00		15.00						14.00	
				9.19	2.11	11.30	1.81	2.20	2.04			19.34	8693
		6.00	2.00	8.00		10.00	1.65	2.00	2.00			17.35	
				10.92	0.45	11.37						10.92	8694
		7.00	3.00	10.00		12.00						10.00	
16.48	6.09					22.57	2.33	2.83				23.82	8695
						20.00	2.47	3.00				19.41	
21.06	4.01					25.07	3.24	3.93				28.98	8740
21.06	5.27					26.33	2.98	3.62				28.95	8832
						24.00	2.47	3.00				21.81	
17.50	5.53					23.03	4.45	5.40				30.67	8741
						22.00	3.71	4.50				24.33	
				9.41	1.30	10.71	1.64	1.99	2.24			18.97	8742
				12.44	1.01	13.45	1.51	1.83	1.81			21.67	8752
		6.00	2.00	8.00		10.00	1.65	2.00	2.00			17.35	
				10.05	0.64	10.69			3.43			15.75	8743
		6.00	4.00	10.00		12.00			2.00			14.80	
				8.83	1.33	10.16	1.66	2.02	2.17			18.28	8744
		5.00	2.00	7.00		9.00	0.82	1.00	1.00			12.66	
				11.73	2.29	14.02	0.71	0.86	0.94			18.07	8766
				8.00		11.00	1.65	2.00	2.00			17.75	
				9.25	0.50	9.75	0.87	1.06	1.59			15.50	8633
				7.00		9.00	1.65	2.00	1.00			15.15	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8523	The Buckeye Phosphate Co., Columbus, O. Buckeye Bone Meal.....	Manufacturer
8739	Wm. Casler, Louisville, Ky. The Chicago Fertilizer Co., Chi- cago, Ill. Chicago Bone Meal.....	See R. H. Hoskins..... F. K. Rhodes, McDaniels
8767	Mt. Pleasant Phosphate.....	Hiner & Gardner, Vanceburg
8768	Bone, Blood & Potash.....	Hiner & Gardner, Vanceburg
8769	Wheat Special	B. F. Thompson, Greensburg
8770	Cleveland Dryer Works. (See Continental Fertilizer Co., Nash- ville, Tenn. Bear Special Wheat and Corn Grower.....	Amer. Ag Chem. Co.) Bading & Patterson, Sonora
8771	Bear High Grade Dis. Bone...	J. T. Gregory, Franklin
8772	Bear Potash Mixture	T. S. Frith, Brodhead.....
8773	Bear Beef, Blood & Bone	Bading & Patterson, Sonora
8116	Bear Potash & Ammonia Comp. for Wheat	Manufacturer
8117	Bear Grain Grower	Manufacturer
8774		T. S. Frith, Brodhead.....
8298	Bear Bone Meal.....	Manufacturer

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Total	Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	From Muriate.				From Sulphate.			
16.55	5.81					22.36 20.00	1.76 1.65	2.14 2.00			\$22.01 16.95	8523	
12.08	5.68					17.76 20.00	2.53 1.65	3.07 2.00			20.66 16.95	8739	
				10.36 9.00	2.28	12.64 10.00					10.36 9.00	8767	
				9.99 8.00	2.44	12.43 10.00	1.26 1.23	1.53 1.50	2.52	2.00	19.27 16.49	8768	
				9.43 8.00	1.83	11.26 9.00	0.96 0.82	1.17 1.00		1.04 1.00	16.18 13.66	8769	
		8.00	2.50	10.43 10.50	1.33	11.76 11.50	0.54 0.41	0.66 0.50		0.87 1.00	15.71 15.43	8770	
		8.00	6.00	13.86 14.00	1.29	15.15 15.00					13.86 14.00	8771	
		8.00	2.00	12.64 10.00	0.87	13.51 11.00				1.53 2.00	17.36 14.80	8772	
		6.00	4.00	10.45 10.00	0.91	11.36 11.00	1.94 1.65	2.36 2.00	0.72	1.09 2.00	20.75 19.75	8773	
		5.00	2.00	8.87 7.00	13.43	22.30 8.00					8.87 7.00	8116	
		7.00	3.00	11.72 11.55 10.00	8.48 0.83	20.20 12.38 11.00	0.45 0.38 0.41	0.55 0.46 0.50			18.80 15.33 13.63	8117 8774	
16.25	6.96					23.21 22.00	2.36 2.47	2.87 3.00			24.26 20.61	8298	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Cont. Fer. Co., Nashville, Tenn	
8299	Bear XX Bone Meal.....	Manufacturer
	The Currie Fer. Co. Louisville, Ky	
8778	Currie's Acid Phosphate.....	Congo & Cardin, Marion
8779	Currie's Corn & Wheat Special	M. T. Crawford, Somerset.....
8780	Currie's Fine Ground Raw Bone Meal.....	Swinney Bros., Beard.....
8781	Currie's Raw Bone Meal.....	Swinney Bros., Beard.....
8782	Currie's Soluble Bone.....	A. C. McElroy, Bowling Green
8783	Currie's Wheat Grower	Grigsby & Co., Bardstown...
	Duncan & Bro., Lagrange, Ky.	
8799	Tiger Corn & Wheat Special....	J. W. Wheeler, O'Bannon.....
8750	Tiger Raw Bone Meal.....	J. J. Sanford, Nugent
8160	Tiger Bone Meal	Manufacturer
8800		Mrs. Warehouse
	The Empire Guano Company, Nashville, Tenn.	
8168	Empire Wheat Grower.....	Manufacturer
8803		D. A. Cabbage, Leitchfield...
8169	Empire Bone & Potash	Manufacturer.....
8804		Goodwin & Eads, Science Hill
8170	Empire Potash Mixture.....	Manufacturer
8805		Mahoney & Engleman, Bedford

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
16.89	4.22					*21.11 20.00	1.24 1.23	1.51 1.50			\$19.76 15.69	8299
				16.31 13.50	1.68	17.99					16.31 13.50	8778
				10.26 10.00	2.44	12.70 12.50	1.03 0.82	1.25 1.00	1.24 1.00		17.62 16.46	8779
17.08	3.01					*20.09 15.00	2.13 1.65	2.59 2.00			21.86 13.95	8780
11.57	11.12					22.69 19.00	3.93 3.09	4.77 3.75			27.72 20.67	8781
				12.20 10.00	2.01	14.21 12.00	1.26 1.03	1.53 1.25	2.04 1.50		21.26 17.39	8782
				10.02 10.00	2.80	12.82 12.50	0.91 1.03	1.10 1.25	1.77 1.50		17.64 17.59	8783
		5.00	2.00	9.44 7.00	3.19	12.63 12.00	0.78 0.82	0.95 1.00	1.50	1.71	17.00 14.36	8799
12.44	12.94					25.38 22.00	4.12 3.71	5.00 4.50			31.07 24.33	8750
25.15	3.43					28.58	2.37	2.88			29.29	8160
24.93	3.73					28.66 24.00	2.16 2.47	2.62 3.00			28.66 21.81	8800
				8.05 9.35 8.00	2.24 2.46	10.29 11.81	2.06 1.70 1.65	2.50 2.06 2.00	2.48 2.01 2.00		19.22 19.31 16.55	8168 8803
				10.36 10.77 10.00	1.77 2.98	12.13 13.75			2.19 1.65 2.00		15.33 15.76 14.00	8169 8804
				11.18 9.00 10.00	4.58 1.18	15.76 10.18				3.83	19.85 16.98 16.00	8170 8805

*Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	The Empire Guano Co.	
8171	Empire Acid Phosphate.....	Manufacturer
8172	Empire Soluble Bone.....	Manufacturer
8173	Empire Dissolved Bone.....	Manufacturer
8174	Empire High Grade Acid Phosphate	Manufacturer
8806		Goodwin & Eads, Science Hill
8193	Empire Wheat & Corn Grower.	Manufacturer
8339	Empire Favorite Fertilizer	Manufacturer.....
8491	Empire Fine Ground Bone.....	Manufacturer
8807		D. A. Cabbage, Leitchfield....
	Fox Chemical Co., Louisville, Ky.	
8691	Fox Wheat & Corn Grower....	Edgar Goodman, Hardinsb'g
8813	Fox Grain Grower	Buchanan&Sanders,Camp'lle
8814	Fox Alkaline Bone.....	J. W. Crume & Bro., Lebanon
8815	A. A. Acid Phosphate.....	Buchanan&Sanders,Camp'lle
8816	Fox Bone & Potash.....	Dickey & Co., Glasgow.....
8817	Fox Formula.....	Dickey & Co., Glasgow
8178	Fox Grain Special	Manufacturer
8490	Fox Ground Bone.....	Manufacturer

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.														
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Nitrogen.	Equivalent to Ammonia.			Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	Total.		From Muriate.	From Sulphate.					
				10.77 12.00	4.80	15.57							\$10.77 12.00	8171
				7.74 7.00	6.26	14.00	0.69 0.41	0.84 0.50	1.49 1.00				15.35 10.63	8172
				10.57 10.00	1.92	12.49							10.57 10.00	8173
				14.88 14.09 14.00	1.46 1.39	16.34 15.48							14.88 14.09 14.00	8174 8806
				9.37 10.00	4.31	13.68	1.65 0.82	2.00 1.00	1.02 1.00	1.69			20.96 15.46	8193
				10.11 10.00	4.55	14.66	1.03 0.82	1.25 1.00		3.20			20.88 17.46	8339
19.32 19.29	5.14 5.76					24.46 25.05 20.61	2.38 2.35 2.47	2.89 2.85 3.00					25.68 25.94 19.78	8491 8807
				11.90 10.00	2.15	14.05 11.00	1.67 1.65	2.03 2.00		2.11 2.00			22.68 19.75	8691
				10.76 9.00	1.78	12.54 10.00	0.91 0.82	1.10 1.00		0.94 1.00			17.48 14.86	8813
				11.28 10.00	0.78	12.06				1.76 2.00			15.96 14.40	8814
				10.08 10.00	1.50	11.58							10.08 10.00	8815
				11.04 9.00	0.92	11.96				0.78 1.00			14.56 12.00	8816
				12.14 11.00	1.27	13.41	1.12 0.82	1.36 1.00		3.63 3.50			22.80 19.86	8817
				9.33 9.00	0.60	9.93	0.45 0.41	0.55 0.50		1.33 1.50			14.39 13.83	8178
15.06	10.04					25.10 22.00	3.00 2.47	3.64 3.00					27.07 20.61	8490

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8824	Globe Fertilizer Co., Louisville, Ky. Eagle Wheat and Corn Grower	Carson & Pence, Stanford...
8825	Progress Corn and Wheat Grower	Woodson Lewis, Greensb'rg.
8760	Globe Wheat Grower	W. J. Meers, Hammonville.
8826	Bone and Potash	Woodson Lewis, Greensb'rg
8827	Globe Bone Dust	Bassett & Stone, Leitchfield
8828	Big Four Phosphate	H. C. Miller, Elkton.....
8761	Braden's Formula	W. J. Meers, Hammonville.
8686	Globe Bone Meal	D. G. Meers, Hammonville.
8177 8829	Globe Grain Grower	Manufacturer
8489 8830	Acorn Bone Meal	Winter & Everitt, Maysville G. F. Barnes, Hodgenville
8612	Greer Machinery Co., Knoxville, Tenn. Dissolved Bone Phosphate.....	Manufacturer
8839	The Hardy Packing Co., Chicago, Ill. Hardy's Wheat Grower.....	J.M.Trunnell, Bardstown Jc.
8840	Hardy's Southern Phosphate.	J.M.Trunnell, Bardstown Jc.

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED												
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
				9.44 8.00	2.39	11.83 10.00	1.72 1.65	2.09 2.00		1.85 2.00	\$19.67 17.75	8824
				10.89 9.00	2.41	13.30 10.00	1.91 1.65	2.32 2.00		1.07 1.00	21.04 17.35	8825
				11.51 10.00	1.92	13.43 11.00	1.79 1.65	2.17 2.00		2.00 2.00	22.35 19.75	8760
				12.04 11.00	1.16	13.20	0.39 0.41	0.47 0.50		0.88 1.00	17.14 15.63	8826
				9.82 9.00	1.98	11.80 10.00	0.96 0.82	1.17 1.00		0.83 1.00	16.45 14.86	8827
				7.77 8.00	1.36	9.13				0.83 1.00	10.86 10.80	8828
				12.49 11.00	1.56	14.05	1.24 0.82	1.51 1.00	1.14	2.16 3.50	23.06 19.86	8761
8.17	14.52					22.69 20.00	3.91 3.29	4.75 4.00			26.98 21.87	8686
				9.48 9.12 9.00	0.54 1.15	10.02 10.27	0.45 0.57 0.41	0.55 0.69 0.50		1.29 1.56 1.50	14.50 14.98 13.83	8177 8829
16.52 16.86	8.89 13.25					25.41 30.11 22.00	2.89 2.54 2.47	3.51 3.08 3.00			27.22 29.06 20.61	8489 8830
				13.57 12.00	0.40	13.97					13.57 12.00	8612
				8.32 8.00	1.38	9.70 9.00	0.64 0.41	0.78 0.50	2.60		15.05 14.23	8839
				10.62 9.00	1.65	12.27 10.00					10.62 9.00	8840

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8841	The Hardy Packing Co., Chicago, Ill. Hardy's Bone Meal.....	J. A. Ballman, Cloverport ...
8261	Hardy's Raw Bone.....	Manufacturer.
8581	Helm Bone Fertilizer Co., Birmingham, Ala. Helm's Ground Bone and Tobacco Stems.....	Manufacturer
8582	Helm's Raw Bone Meal (Standard).....	Manufacturer
8583	Helm's Pure Bone Meal	Manufacturer
8619	Helm's Dissolved Bone & Pot- ash.....	Manufacturer
8508	R. H. Hoskins, Louisville, Ky. Champion Raw Bone Meal.....	Manufacturer.....
8842	The Jarecki Chemical Co., San- dusky & Cincinnati, Ohio. Lake Erie Fish Guano.....	Flaherty & Ray, Stithton....
8843	Number One Fish Guano	Thomas Price, Smithfield
8844	C. O. D. Phosphate.....	J. M. Miller, Lagrange.....
8845	Ground Bone.....	Joseph Roberts, Smithfield...
8846	St. Bernard Phosphate	C. M. Kelley, Leitchfield.....

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Total.	Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	From Muriate.				From Sulphate.			
11.75	8.51					20.26 20.00	1.43 1.65	1.74 2.00			\$18.80 16.95	8841	
17.13	5.41					22.54 20.00	2.48 1.65	3.01 2.00			24.39 16.95	8261	
8.70	3.90					12.60 10.00	2.36 1.65	2.87 2.00	2.02	2.00	18.40 13.35	8581	
10.47	10.89					21.36 22.00	3.62 2.47	4.39 3.00			25.77 20.61	8582	
11.58	10.68					22.26 22.00	3.93 3.29	4.77 4.00			27.46 23.07	8583	
		10.00	2.00	11.45 12.00	1.85	13.30 14.00			4.54 2.00		19.02 16.40	8619	
19.50						19.50 22.00	3.77 3.29	4.58 4.00			26.91 23.07	8508	
				11.39 10.00	2.38	13.77 11.00	1.18 1.65	1.43 2.00	1.21	1.00	19.37 18.35	8842	
				10.71 10.00	3.52	14.23 11.00	1.00 0.82	1.21 1.00	1.19	1.00	18.45 15.86	8843	
				12.02 14.00	3.97	15.99 15.00					12.02 14.00	8844	
17.47	7.48					*24.95 20.00	2.43 2.47	2.95 3.00			25.76 19.41	8845	
				14.87 12.00	0.67	15.54 13.00					14.87 12.00	8846	

*Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	J. B. Jones, Louisville, Ky.	
8853	Raw Bone Meal.....	Sam Terry & Co. Gr'ys'n Sp'gs
8854	Ammoniated Bone Meal	Sam Terry & Co. Gr'ys'n Sp'gs
8855	Wheat Grower	I. K. Miller & Son, Campb'ls'lle
	The Jones Fertilizing Co., Cincinnati, Ohio.	
8861	Bone Meal.....	Goldsboro & Co., Lagrange..
8862	Miami Valley Phosphate.....	R. T. Marshall, Mt. Carmel...
8863	Jones' Reliable	Higgins & McKinney, Stanf'd
	Louisville Fertilizer Co., Louisville, Ky.	
8864	Eagle Phosphate	A. H. Smithern, Eubank
8865	Dissolved Bone.....	E. P. Gillenw't'r & Br. Glasg'w
8866	Corn & Wheat Grower.....	W. L. Harris, Lewisburg
8867	Soluble Bone.....	Smith & Flora, Campbellsville
8868	Bone and Potash	J. M. Stone & Bro., Sturgis...
8869	Bone Meal	W. C. Greening, Moreland.....
8518	Special Wheat Grower.....	Manufacturer
8852		Geo. L. Dobyms, Mt. Gilead...
8870		A. H. Smithern, Eubank

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.	
		Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.			
12.82	9.29						22.11	3.84	4.66			\$27.35	8853
							21.50	3.50	4.25			23.40	
11.11	2.12						*13.23	2.76	3.35			18.44	8854
							15.00	2.06	2.50			15.18	
				7.23	3.29	10.52	2.45	2.97		2.10	19.87	8855	
				9.00		11.00	1.70	2.06		2.00	19.10		
12.99	11.52						*24.51	3.21	3.90			26.93	8861
							20.00	3.29	4.00			21.87	
				8.73	6.58	15.31	3.39	4.12		3.42	27.38	8862	
				9.00		13.00	2.47	3.00		2.75	23.11		
				9.43	3.22	12.65	1.89	2.29		2.06	20.75	8863	
				8.50		10.00	1.23	1.50		1.25	15.99		
				9.14	0.88	10.02	0.50	0.61			12.82	8864	
		5.00	3.00	8.00		9.00	0.41	0.50			11.23		
				8.22	1.00	9.22				1.26	11.77	8865	
		4.00	3.00	7.00		8.00			1.00		9.80		
				9.82	1.66	11.48				0.48	13.02	8866	
		6.00	4.00	10.00		11.00			0.50		12.90		
				8.88	1.30	10.18	0.78	0.95		1.73	15.60	8867	
		5.00	3.00	8.00		9.00	0.82	1.00	1.50		13.96		
				9.12	0.86	9.98	0.40	0.49		1.13	13.84	8868	
		5.00	3.00	8.00		9.00	0.41	0.50	1.50		12.73		
25.06	1.60						26.66	0.83	1.01			23.50	8869
							20.00	0.82	1.00			14.46	
				8.47	0.96	9.43	0.74	0.90		0.91	13.85	8518	
				7.48	1.27	8.75	0.98	1.19		1.52	14.25	8852	
				8.57	1.92	10.49	0.98	1.19		0.92	15.09	8870	
		4.00	3.00	7.00		8.00	0.82	1.00	1.00		12.26		

*Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Louisville Fertilizer Co., Louisville, Ky.	
8519	Eagle Guano	Manufacturer
8871		Harris & Crowdus, Frankln.
8568	Eagle Potash Mixture	Manufacturer
8676	Acid Phosphate	Manufacturer
8677	Raw Bone Meal	Manufacturer
	P. B. Mathiason Manufacturing Co., St. Louis, Mo.	
8147	Increscent Brand Pure Raw Bone Meal.....	Manufacturer
8148	Incr. Brand Pure Bone Meal...	Manufacturer
	Michigan Carbon Works, Detroit, Mich.	
8874	Homestead A Bone Black Fertilizer	Depp & Holman, Glasgow ...
8875	Red Line Complete Manure.....	G. W. Stamper, Vanceburg...
8876	Red Line Phosphate	Straughan & Brown, Emin'ce
8877	Wolverine Ground Bone	H. A. Hayes, Hodgenville...
8878	Desiccated Bone	J. W. Bearce & Co., Bowling Green
	Nelson Morris & Co., Chicago, Illinois.	
8589	Big One.....	Manufacturer
8889		Ovesen Burba Co., Hodgensv'l

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Total.	Nitrogen.	Equivalent to Ammonia.	Potash		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	From Muriate.				From Sulphate.			
				12.71	2.17	14.88	1.21	1.47			1.75	\$21.85	8519
				10.85	1.75	12.60	1.62	1.97			1.95	20.92	8871
		6.00	4.00	10.00		11.00	1.65	2.00	2.00			19.35	
				13.66	1.37	15.03					2.14	19.51	8568
		7.00	5.00	12.00		13.00			3.00			17.80	
				12.54	0.87	13.41						12.54	8676
		6.00	4.00	10.00		11.00						10.00	
10.97	6.45					*17.42	3.80	4.61				24.05	8677
						20.00	2.47	3.00				19.41	
17.28	6.72					24.00	3.42	4.15				28.11	8147
						22.00	3.29	4.00				23.07	
22.31	2.76					25.07	2.57	3.12				27.22	8148
						22.00	2.88	3.50				21.84	
		5.00	3.00	9.90	2.56	12.46	1.83	2.22	1.69			20.08	8874
				8.00		9.00	2.06	2.50	1.50			17.68	
		5.00	2.00	8.13	1.18	9.31	0.95	1.15	1.01			14.09	8875
				7.00		8.00	0.82	1.00	1.00			12.26	
				15.66	0.31	15.97						15.66	8876
		10.00	4.00	14.00		15.00						14.00	
9.24	13.86					23.10	4.24	5.15				28.43	8877
						25.00	1.65	2.00				19.95	
19.44	10.93					30.37	1.90	2.31				27.81	8878
						25.00	1.23	1.50				18.69	
13.37	10.09					23.46	4.36	5.29				29.83	8589
14.49	9.66					24.15	4.17	5.06				29.90	8839
						24.00	3.29	4.00				24.27	

*Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Nelson Morris & Co., Chicago, Illinois.	
8590 8890	Big Two	Manufacturer Ovesen Burba Co., Hodgenville
8591	Big Three	Manufacturer
8592 8891	Big Four	Manufacturer Ovesen Burba Co., Hodgenville
8593	Big Five	Manufacturer
	National Fertilizer Co., Nashville, Tenn.	
8883	Acid Phosphate	A. C. McElroy, Bowling Green
8884	Sadler's Formula	W. H. Bland, Sonora
7863 8885	Acid Phosphate with Potash...	Manufacturer Bourland & Moore, Madisonville
7864	Bone Meal	Manufacturer
8584 8886	Acid Phosphate	Manufacturer Austin & Rowe, Beaver Dam
	North-Western Fertilizing Company, Chicago, Ill.	
8525	Horse Shoe Brand Fine Raw Bone	J. D. Hill, Franklin X Roads. Higdon & Glascock, Long Grove.....
8601		Grant Young, Sonora
8758		
8892	H. S. B. Corn & Wheat Grower	T. B. Upton, Hodgenville ...

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash		Relative Value Per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
24.07	5.28					29.35	2.03	2.46			\$28.52	8590
23.51	6.25					29.76	2.35	2.85			29.61	8890
						28.00	2.06	2.50			22.98	
12.63	1.40					*14.03	3.56	4.32		2.10	24.14	8591
						10.00	2.47	3.00		2.00	15.81	
8.68	2.74					*11.42	4.60	5.58		4.97	28.34	8592
9.95	2.97					*12.2	4.48	5.44		4.52	28.60	8891
						12.00	4.12	5.00		4.00	24.36	
10.83	1.48					*12.31	2.80	3.40	1.27		19.22	8593
						10.00	2.47	3.00		1.00	14.61	
				12.31	2.90	15.21					12.31	8883
		8.00	4.00	12.00							12.00	
				12.95	4.13	17.08			1.98		19.17	8884
		8.00	4.00	12.00					2.00		16.40	
				10.60	5.10	15.70			1.80		16.56	7863
				10.72	4.32	15.04			2.31		16.90	8885
		6.00	4.00	10.00					2.00		14.00	
9.22	13.27					22.49	3.96	4.81			27.22	7864
						20.00	2.47	3.00			19.41	
				16.64	0.73	17.37					16.64	8584
				15.54	0.78	16.32					15.54	8886
				15.00							15.00	
14.93	7.69					22.62	4.36	5.29			29.63	8525
15.81	2.36					18.17	4.48	5.44			27.51	8601
17.19	4.30					21.49	4.13	5.01			28.72	8758
						22.00	3.29	4.00			23.07	
				8.45	2.85	11.30	1.91	2.32	2.04		19.05	8892
		5.00	3.00	8.00		10.00	1.65	2.00	2.00		17.35	

*Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	North-Western Fertilizing Co., Chicago, Ill.	
8526	H.S.B. Quick Acting Phosphate	J. D. Hill, Franklin X Roads
8893	H. S. B. Bone and Potash.....	J. W. Crume & Bro., Lebanon
8894	H.S.B. Cap Sheaf Wheat Grower	Bassett & Stone, Leitchfield.
8895	H.S. B. Acidulated Bone & Potash	D. W. Gowdy, Campbellsville
8751 9073	H. S. B. Pure Ground Bone.....	E. L. Bennett, Irvington..... Jno. W. Kennedy, Harned....
8896	H. S. B. Raw Bone & Phos. Mix.	T. B. Upton, Hodgenville ...
	The Ohio Farmers Fertilizer Co., Columbus, Ohio.	
8812	Soluble Bone & Potash	James H. Florence, Roanoke
8899	General Crop Fish Guano	Buchanan & Sanders, Campbellsville
8625 8811	Corn, Oats & Wheat Fish Guano	Lewis F. Brooks, Bardstown James H. Florence, Roanoke
8900	Ammoniated Bone & Potash..	C. E. Shekell, Mt. Carmel.....
8901	Tobacco Grower.....	Grant McDaniel, Vanceburg
8777	Fine Ground Bone Meal.....	John R. Mattingly, St. Mary's
	Packers Fertilizer Association, Chicago, Ill.	
8905	Boars Head Brand Soluble Phosphate	T. F. Nell, Somerset

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												Relative Value Per Ton.	Station Number.
Phosphoric Acid.											Potash.		
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.			
		8.00	2.00	11.50 10.00	0.56	12.06 12.00						\$11.50 10.00	8526
		7.00	3.00	11.16 10.00	1.33	12.49 12.00			1.77 2.00			15.69 14.80	8893
		4.00	3.00	9.33 7.00	1.01	10.34 8.00	1.10 0.82	1.34 1.00	0.90 1.00			15.80 12.26	8894
		7.00	3.00	9.03 10.00	2.85	11.88 12.00	1.15 0.82	1.40 1.00	1.05 1.00			16.48 16.26	8895
15.98	7.18					23.16	2.80	3.40				25.49	8751
14.46	5.91					20.37	2.44	2.96				22.44	9073
						20.00	2.47	3.00				19.41	
		4.00	3.00	10.55 7.00	5.59	16.14 13.00	2.79 2.47	3.39 3.00	1.13 0.50			24.40 18.71	8896
		6.00	2.00	10.33 8.00	2.26	12.59 10.00			1.43 2.00			14.73 12.40	8812
		6.00	2.00	8.65 8.00	1.87	10.52 10.00	1.27 0.82	1.54 1.00	2.39	1.00		17.33 14.06	8899
		6.00	2.00	8.64 8.63 8.00	1.79 1.66	10.43 10.29 10.00	1.26 1.34 1.23	1.53 1.63 1.50	1.93 2.54 1.00	1.00		16.80 17.58 16.29	8625 8811
		6.00	2.00	7.90 8.00	2.05	9.95 10.00	1.11 0.82	1.35 1.00	4.67 3.00	1.00		18.30 17.06	8900
		6.00	2.00	8.37 8.00	1.65	10.02 10.00	1.56 1.23	1.89 1.50	2.33 1.00	1.00		17.71 16.29	8901
11.63	10.73					22.36 20.00	4.16 1.65	5.05 2.00				28.22 16.95	8777
		8.00	2.00	10.96 10.00	1.13	12.09 12.00						10.96 10.00	8905

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8906	Packers Fertilizer Association, Chicago, Ill. B. H. B. Potash Phosphate....	Christmas & Hawley, Glasgow
8907	B. H. B. Kentucky Potash Mixture.....	T. F. Nell, Somerset
8131 8908	B. H. B. Corn & Wheat Grower	Manufacturer
8132	B. H. B. Raw Bone	T. F. Nell, Somerset.....
8623	The E. Rauh & Sons Fertilizer Co., Indianapolis, Ind. Pure Ground Bone.....	Manufacturer.....
8909	Read Phosphate Co., Nashville, Tenn. Read's Blood & Bone No. 1....	Manufacturer.....
8910	Read's Blood & Bone No. 1....	Lebanon Carriage & Implement Company, Lebanon ...
8911	Read's Farmers' Special Manure.....	J. W. Bearce & Co. Bowling Gr.
8912	Read's Wheat Grower	W. T. Kirkman, Elkton
8913	Read's Alkaline Bone.....	Johnson & Mahan Lawr'ceb'g
8914	Read's Wheat and Clover Grower	J. B. Singleton, Elizabet'wn
8915	Read's XXX Dissolved Bone..	Goodwin & Carr, Somerset.
8111 8915	Read's Soluble Bone	Manufacturer
		Lebanon Carriage & Imp. Co., Lebanon

Commercial Fertilizers.

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.

In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
		8.00	2.00	10.60 10.00	0.40	11.00 12.00			3.85 4.00		\$16.73 16.80	8906
		8.00	2.00	11.65 10.00	1.10	12.75 11.00				1.28	15.96 14.40	8907
				7.65 8.78	3.08 2.39	10.73 11.17	1.73 1.84	2.10 2.23	1.89 1.92		17.49 18.94	8131 8908
		5.00	3.00	8.00		10.00	1.65	2.00	2.00		17.35	
22.53	1.96					24.49 22.00	3.48 3.29	4.22 4.00			29.64 23.07	8132
23.38	2.31					25.69 21.00	2.88 2.47	3.50 3.00			28.73 20.01	8623
				6.91 8.00	3.45	10.36	1.72 1.65	2.09 2.00	2.40 2.00		17.23 16.55	8909
				9.21 10.00	1.54	10.75	0.92 0.82	1.12 1.00	3.28 3.00		17.71 17.46	8910
				10.02 10.00	3.45	13.47	1.63 1.65	1.98 2.00	1.88 2.00		20.17 18.95	8911
				10.44 10.00	2.07	12.51			2.15 2.00		15.51 14.00	8912
				10.83 10.00	2.41	13.24	0.93 0.82	1.13 1.00	2.11 2.00		18.86 16.46	8913
				12.41 13.00	2.75	15.16					12.41 13.00	8914
				8.55	6.79	15.34	1.17	1.42	2.94		19.43	8111
				8.80 8.00	2.20	11.00 9.00	1.13 0.82	1.37 1.00	2.19 2.00		17.02 14.46	8915

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Read Phosphate Co., Nashville, Tenn.	
8588	Read's Fine Ground Bone.....	Manufacturer
8916		Johnson & Mahan, Law'burg
	Ruhl & Pero, Louisville, Ky.	
8617	Pure Bone Meal.....	Manufacturer
8618	Pure Ammoniated Bone Meal.	Manufacturer
	J. F. Singer & Co., Nashville, Tenn.	
8576	Singer's Special Wheat Grower	Manufacturer
8587		Farmers' Club, Franklin.....
8620		J. M. McCutcheon, Russellville
8632		Whitsitt Hall, Auburn
8757		L. H. Dawson, Russellville....
8759		A. P. Campbell, Ray
8614	Singer's Special Bone Meal.....	Manufacturer
8615	Singer's Pure Raw Hard Bone Meal.....	Manufacturer
8616	Singer's No. 2 Wheat Grower.	Manufacturer
	Swift & Co., Chicago, Ill.	
8919	Superphosphate.....	N. H. Putnam, Lebanon
8527	Raw Bone Meal.....	F. K. Rhodes, McDaniels
8634		W. A. Moon, Smith's Grove...
8753		Jno. R. Wimp, Irvington.....
8831		B. F. Wood, Cerulean
8624	Bone Meal.....	E. Hop Philpott, Liletown....
8687		E. C. Radford, Howell.....
8749		S. Melton, Wanamaker.....
8833		B. F. Wood, Cerulean
8920	Ammoniated Bone.....	Walker, Redman & Co. Glend'e

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												Relative Value Per Ton.	Station Number.
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.				
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total			From Muriate.	From Sulphate.			
19.54	5.20					24.74	2.26	2.74				\$25.53	8588
19.16	5.40					24.56	2.32	2.82				25.53	8916
						20.61	2.47	3.00				19.78	
20.01	6.32					26.33	2.05	2.49				25.95	8617
						24.50	2.38	2.89				21.84	
5.10	2.18					7.28	5.29	6.42				21.26	8618
						8.50	3.50	4.25				15.60	
				9.09	3.91	13.00	1.63	1.98	2.52			19.88	8576
				9.71	4.44	14.15	1.44	1.75	2.20			19.95	8587
				10.18	6.31	16.49	1.42	1.72	1.97			20.97	8620
				11.14	7.69	18.83	1.60	1.94	1.55			22.80	8632
				10.40	4.61	15.01	1.78	2.16		2.33		22.46	8757
				11.64	2.30	13.94	1.98	2.40	1.84	0.46		23.22	8759
				10.00			1.65	2.00	2.00			18.95	
19.53	4.29					23.82	3.29	3.99				28.06	8614
						23.00	2.47	3.00				21.21	
11.06	10.20					21.26	4.42	5.37				28.23	8615
						22.00	3.29	4.00				23.07	
				8.62	8.64	17.26	1.29	1.57	1.26			18.93	8616
				7.00		13.00	1.65	2.00		2.00		18.15	
				7.96	8.97	16.93	2.20	2.67	1.79			21.53	8919
		5.00	3.00	8.00		12.00	1.65	2.00		2.00		18.55	
14.40	10.01					24.41	4.05	4.92				29.68	8527
11.27	13.24					24.51	4.19	5.09				29.53	8634
11.29	13.25					24.54	4.17	5.06				29.49	8753
13.66	11.18					24.84	3.99	4.84				29.61	8831
						23.00	3.71	4.50				24.93	
20.96	5.57					26.53	2.31	2.80				27.04	8624
22.18	5.20					27.38	2.47	3.00				28.27	8687
19.79	8.89					28.68	2.17	2.63				27.67	8749
21.51	4.72					26.23	2.29	2.78				26.91	8833
						25.00	2.47	3.00				22.41	
15.21	4.54					19.75	4.34	5.27				27.91	8920
						17.00	4.94	6.00				25.02	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Swift & Co., Chicago, Ill.	
8921	Ammoniated Bone and Potash	H. R. Turner, Campbellsville
8922	Bone and Potash	G. M. Hedrick, Monticello....
8923	Diamond S Phosphate.....	R. J. Smith & Co., Somerset
8924	Complete Fertilizer	Bassett & Stone, Leitchfield
8183	Swift's Champ. Wheat Grower	Manufacturer.....
8925		Bassett & Stone, Leitchfield
	Tenn. Chemical Co., Nashville.	
8927	Ox Alkaline Bone with Ammo.	G. M. Hedrick, Monticello ...
8928	Ox Sp'l Wheat and Corn Guano	G. M. Hedrick, Monticello ...
8929	Ox Potash Mixture	Depp & Holman, Glasgow..
8930	Ox High Grade Dissolved Bone	Ed Scott, Beaver Dam.....
8931	Ox Slaughter House Bone	Woosley & Mon'go'ry Caney
8932	Ox Alkaline Bone.....	J. R. Davis & Bro., Camp'sv
8114	Ox Wheat Grower No. 1	Manufacturer.....
8933		T. S. Frith, Brodhead.....
8115	Ox Wheat Grower No. 2	Manufacturer.. ..
8934		G.M. & L. McCubbins, Stephensport
8296	Ox Bone Meal.....	Manufacturer.....
8935		Sauer Bros., Lagrange.....
8297	Ox XX Bone Meal.....	Manufacturer.....

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												
Phosphoric Acid.									Potash.		Relative Value Per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.		
10.79	6.33					17.12 16.00	4.75 4.74	5.77 5.75	1.36	2.02 3.00	30.46 27.42	8921
23.70	1.78					25.48 23.50	2.35 2.47	2.85 3.00		2.46 3.00	30.03 25.11	8922
				10.39 10.00	1.24	11.63 11.00					10.39 10.00	8923
		5.00	3.00	10.04 8.00	2.61	12.65 11.00	1.07 1.03	1.30 1.25	0.74	1.00	17.04 15.09	8924
				13.19 11.20 12.00	2.99 3.84	16.18 15.04 13.00	2.05 2.25 1.65	2.49 2.73 2.00	2.60 2.91 2.00		25.78 24.64 21.75	8183 8925
		8.00	2.50	12.00 10.50	1.20	13.20 11.50	0.53 0.41	0.64 0.50		1.03 1.00	17.71 15.43	8927
		9.00	3.00	11.37 12.00	1.46	12.83 13.00	1.06 0.82	1.29 1.00	0.76	0.58 1.00	18.86 18.46	8928
		6.00	4.00	11.34 10.00	4.13	15.47 11.00				2.00 2.00	17.66 14.80	8929
		8.00	6.00	13.78 14.00	3.21	16.99 15.00					13.78 14.00	8930
		6.00	2.00	9.45 8.00	1.13	10.58 9.00	1.62 1.65	1.97 2.00		2.28 2.00	19.39 17.35	8931
		9.00	3.00	13.42 12.00	0.59	14.01 13.00				1.71 2.00	18.39 17.20	8932
		8.00	2.00	11.45 10.31 10.00	8.57 1.01	20.02 11.32 11.00	0.48 0.53 0.41	0.58 0.64 0.50			18.61 14.36 13.63	8114 8933
		5.00	2.00	8.46 7.86 7.00	13.70 0.86	22.16 8.72 8.00					8.46 7.86 7.00	8115 8934
16.41	7.03					23.44	2.43	2.95			24.64	8296
22.00	3.28					25.28 22.00	2.70 2.47	3.28 3.00			27.67 20.61	8935
16.33	4.60					*20.93 20.00	1.29 1.23	1.57 1.50			19.69 15.69	8297

* Contains Soluble Phosphoric Acid.

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
8688	Virginia-Carolina Chemical Co. S. W. Travers & Co., Branch, Richmond, Va. Beef, Blood & Bone Fertilizer	G. T. Cottrell, Upton
8936	Capital Bone Potash Comp'nd	Buchanan & Sanders, Campbellsville
8937	Wake Fertilizer Co., Adairville, Ky. Old Kentucky Wheat Grower	M'rs Warehouse
8520	Western Agricultural Chemical Co., Chicago, Ill. Corn & Wheat Special.....	Manufacturer
8521	X X X Potash Special.....	Manufacturer
8522	X X Bone.....	Manufacturer
8938	Wood, Stubbs & Co., Louisville, Ky. Acme Brand Pure Raw Bone Meal.....	Wm. Winckler, Lyndon.....

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TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
In Fine Bone.	In Medium Bone.	Phosphoric Acid.					Total.	Nitrogen.	Equivalent to Ammonia.	Potash.		Relative Value Per Ton.	Station Number.
		Soluble.	Reverted.	Available.	Insoluble.	From Muriate.				From Sulphate.			
		5.00	2.00	9.18 7.00	4.48	13.66 8.00	1.83 1.65	2.22 2.00		1.77	\$20.42 15.75	8688	
		7.00	3.00	10.61 10.00	4.52	15.13 11.00			2.41 2.00		16.95 14.40	8936	
				8.12 8.00	2.29	10.41	2.42 2.00	2.94 2.43	0.98	3.84 4.00	23.51 20.40	8937	
				8.84 8.00	0.86	9.70 9.00	1.03 0.82	1.25 1.00		1.03 1.00	15.28 13.66	8520	
				9.17 8.00	0.60	9.77 9.00	1.03 0.82	1.25 1.00		4.23 4.00	19.41 17.26	8521	
17.44	5.82					23.26 20.00	2.52 1.65	3.06 2.00			25.00 16.95	8522	
17.93	8.83					26.76 23.00	3.60 3.29	4.37 4.00			30.44 23.67	8938	

M. A. SCOVELL, Director.
 A. M. PETER, }
 H. E. CURTIS, } Chemists.

December 31st, 1901.