KENTUCKY

AGRICULTURAL EXPERIMENT STATION

OF THE

STATE COLLEGE OF KENTUCKY.

BULLETIN NO. 104.

COMMERCIAL FERTILIZERS.

LEXINGTON, KENTUCKY,
DECEMBER 31, 1902.
245

KENTUCKY

Agricultural Experiment Station.

Address of the Station—LEXINGTON, KY.

NOTICE.

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. 104.

Analyses of Commercial Fertilizers.

Number of Brands. There were 334 different brands of commercial fertilizers registered during the year 1902. Of these, 184 were complete fertilizers, or fertilizers containing all three of the essential ingredients, namely: phosphoric acid, nitrogen and potash; 41 were acid phosphates; 8 contained a mixture of acid phosphate and nitrogen compounds only; 45 acid phosphates and potash salts only; and 56 were classed as bones or tankage.

Samples Collected and Analyzed. Four hundred and fifty-nine samples were collected by deputy inspectors or sent by farmers from various parts of the State and 370 were sent in by firms as official samples; of these samples, 673 have been analyzed by the Station. Many of these analyses have already been published in Bulletin No. 102 and are not repeated here. The 156 samples not analyzed were duplicates collected by different deputy inspectors working in different places at the same time. In some instances as many as 4 or 5 samples of the same brand were collected.

Results of the Analyses. The results of the analyses show that of the 173 samples analyzed since the publication of Bulletin No. 102, 28, representing 27 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 55 samples reported in Bulletin No. 102, we have 83 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 August 20, 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.
American Agricultural Chemical Co., Cleveland Dryer Works	4	4	0	3	0	2	1	4	0
American Agricultural Chemical Co.	1	1	0	1	0	0	0	1	0
The Armour Fertilizer Works	6	6	0	4	0	2	1	6	0
Peter Backer & Son	1	1	0	1	0	0	0	1	0
The Buckeye Phosphate Co.	5	5	0	4	0	5	0	5	0
The Chicago Fertilizer Co	4	4	0	4	0	3	1	4	0
The Cincinnati Phosphate Co.	2	2	0	1	0	1	1	2	0
Continental Fertilizer Co.	6	6	0	4	0	3	1	6	0
The Currie Fertilizer Co.	3	3	0	3	0	2	0	3	0
Duncan & Bro.	4	4	0	4	0	1	1	4	0
The Empire Guano Co.	4	4	0	1	0	2	0	4	0

NAME OF MANUFACTURER.	No. of Samples Analyzed.	Phosphoric Acid		Nitrogen.		Potash.		Relative Value PerTon.	
		No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.	No. Acceptable.	No. Too Low.
Fox Chemical Co	10	10	0	6	0	5	2	10	0
Furman Farm Improvement Co	1	1	0	0	0	0	0	1	0
Globe Fertilizer Co	10	8	2	8	0	5	2	10	0
The Hardy Packing Co	2	2	0	2	0	1	0	2	0
The Jarecki Chemical Co	7	7	0	4	0	3	2	7	0
J. B. Jones	1	1	0	1	0	0	0	1	0
The Jones Fertilizing Co	7	5	2	6	0	4	0	7	0
Kaufman Fertilizer Co	4	4	0	3	0	3	0	4	0
Louisville Fertilizer Co	10	10	0	7	0	5	0	10	0
Michigan Carbon Works	6	6	0	5	0	3	0	6	0
Nelson Morris & Co.	5	4	1	5	0	3	0	5	0

National Fertilizer Co	11	8	3	6	0	6	3	9	2
North-Western Fertilizing Co	6	6	0	4	0	3	0	6	0
The Ohio Farmers Fertilizer Co	5	5	0	2	1	3	0	5	0
Packers Fertilizer Association	2	2	0	1	0	1	1	1	1
Queen City Fertilizer Co	2	2	0	1	0	2	0	2	0
Read Phosphate Co	12	12	0	9	0	8	1	12	0
Singer & Johnson Fertilizer Co	3	3	0	1	2	3	0	3	0
Standard Guano and Chemical Mfg. Co	1	1	0	1	0	0	0	1	0
Swift & Co	9	9	0	8	0	5	0	9	0
Tennessee Chemical Co	8	8	0	4	0	4	0	8	0
Virginia-Carolina Chemical Co. (S. W. Travers & Co., Branch)	2	2	0	0	0	1	0	2	0
Virginia-Carolina Chemical Co. (Memphis Division)	5	4	1	3	0	2	0	5	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: .....
.....
.....
.....
.....
.....

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 the 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 effects 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.
	A. D. Adair and McCarty Bros., Atlanta, Ga. (See Furman Farm Improvement Co.)	
	Amer. Ag. Chem. Co., New York.	
	Clev. Dryer Works.	
10226	Horsehead Phosphate	O. A. Lutes & Co., Shepherdsv
10227	Ohio Seed Maker with Potash	H. L. Kirkpatrick, Penrod...
10228	Tobacco, Potato and General Crop Fertilizer	H. L. Kirkpatrick, Penrod...
10229	Phospho Bone	W. B. Jones, Stithton
	Amer. Ag. Chem. Co., New York	
10230	Ground Bone	H. L. Kirkpatrick, Penrod...
	The Armour Fertilizer Works, Chicago, Ill.	
10232	Bone Meal	Peter Shearon, Kirk
10233	Raw Bone Meal	Ross & Duncan, Beard
10234	Grain Grower	Ross & Duncan, Beard
10235	Wheat, Corn and Oat Special	Grigsby & Co., Bardstown...
10236	Phosphate and Potash	Christmas & Cary, Glasgow
10237	Cereal Phosphate	O. A. Lutes & Co., Shepherdsv
	Peter Backer & Son, Troy, Ind.	
10243	Grower No. 9, Pure Raw Bone	John Snyder, Stithton

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
Phosphoric Acid.										Potash.			
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				10 92	0.31	11 23					$10.92	10226
		8.00	*2 00*	*10 00*		*12 00*					*10.00*	
				7 74	2 94	10 68	1 84	2.23	2 11		18 10	10227
		5 00	*3 00*	*8 00*		*10 00*	*1 65*	*2 00*	*2.00*		*17 35*	
				8 92	1.34	10 26	0 96	1 17	**2 92**		17 04	10228
		5.00	*3 00*	*8 00*		*10 00*	*0 82*	*1 00*	*4 00*		*16 86*	
				10 68	2 32	13 00	1 22	1 48	1.21		18 62	10229
		7 00	*3 00*	*10.00*		*12 00*	*0 82*	*1.00*	*1 00*		*16 26*	
15 03	7.74					22.77	2 65	3 22			24 61	10230
						20.00	*2 47*	*3 00*			*19 41*	
21.69	4.13					25 82	2.94	3.57			28 65	10232
						24 00	*2.47*	*3 00*			*21.81*	
17 33	9 33					26.66	3 55	4 31			30 11	10233
						22 00	*3.71*	*4 50*			*24 33*	
				7 41	2 26	9.67	1 60	1.94	2 06		16 65	10234
		6.00	*2 00*	*8.00*		*10 00*	*1 65*	*2 00*	*2 00*		*17 35*	
				7 84	0 41	8 25	0 84	1 02	1 16		13 25	10235
		5 00	*2.00*	*7.00*		*9 00*	*0 82*	*1.00*	*1 00*		*12 66*	
				12 66	4.64	17 30			**1 49**		18.54	10236
		6 00	*4 00*	*10 00*					*2 00*		*14.00*	
				11 98	2.14	14 12					11 98	10237
		6.00	*4 00*	*10.00*		*12 00*					*10.00*	
14.19	10.27					24 46	4 01	4 87			29 54	10243
						23.00	*3.00*	*3.64*			*22 80*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	The Buckeye Phosphate Co., Columbus, O.	
10244	Buckeye Special Blood and Potash Mixture.....	J. Worth & Bro., Gibson.....
10245	Buckeye Wheat Maker	Henry Dutchkey, Stephenspt
10246	Complete Fertilizer	J. Worth & Bro., Gibson.....
10157	Special Corn and Wheat Grow'r	Manufacturer.....
10247		Henry Dutchkey, Stephenspt
	The Chicago Fertilizer Co., Chicago, Ill.	
10282	Wheat and Corn Special	Manufacturer.....
10283	Western Bone Black and Pot'h	Manufacturer..... .....
10284	Bone, Blood and Potash.....	Manufacturer.....
10285	Potato, Truck and Tobacco Fertilizer	Manufacturer.....
	The Cincinnati Phosphate Co., Cincinnati, O.	
10251	Capital Grain and Grass Grower	Frank Hook, McQuady.....
10252	Capital Dissolved Bone and Potash	Winfree Bros., Hopkinsville.
	Clev. Dryer Works (See Amer. Ag. Chem. Co.)	
	Continental Fertilizer Co., Nashville, Tenn.	
10177	Bear Beef, Blood and Bone	R. H. Brown, Madisonville...

TABLE OF ANALYSES.

Pounds in the Hundred													
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
				7 79	1 83	9 62	0 93	1 13	1.06	2 98	$17.51	10244
				8.00			*0.82*	*1 00*		*4 00*	*16.86*	
				12 20	3.48	15 68				2.29	18.78	10245
				10 00						*2.00*	*14.40*	
				8 09	1 94	10 03	0.32	0 39		2 91	14.94	10246
				8.00			*0 41*	*0 50*		*2 50*	*13.83*	
				11.95	1 96	13 91	1 10	1 34		3 66	22.81	10157
				10 74	2 64	13 38	0 62	0 75		0 81	16.78	10247
				10 00		*11 00*	*0 82*	*1 00*		*1 00*	*16.06*	
				10.83	2 53	13 36	1 06	1 29	1 38		18.57	10282
				7 00		*9 00*	*0 82*	*1 00*	*1 00*		*12.66*	
				11 21	1 20	12 41	0.60	0 73	2 90		18.63	10283
				8 00		*10 00*	*0 41*	*0 50*	*2 50*		*14.13*	
				11 82	2 11	13 93	1 46	1 77	2 23		21.63	10284
				8 00		*10 00*	*1 23*	*1 50*	*2 00*		*16.09*	
				12 07	1.87	13.94	2 02	2 45	**3 04**		24.33	10285
				8 00		*10 00*	*1 65*	*2 00*	*4 00*		*19.35*	
				11 23	2 37	13 60	0 62	0 75		0 78	17.23	10251
				10 00		*11.00*	*0 82*	*1 00*	*1.00*		*15.86*	
				12 53	4 06	16 59				**1 67**	18.66	10252
				12 00		*13.00*			*3 00*		*17.80*	
				10 62	1.83	12 45	1.44	1 75		1.74	19.88	10177
	6.00	*4 00*		*10 00*		*11 00*	*1.65*	*2 00*		*2 00*	*19.75*	

TABLE OF ANALYSES.

Station Number.	Name and Address of Manufacturer and Name of Brand.	From Whom Obtained.
	Continental Fertilizer Co.,	
10253	Bear Potash Mixture.	S. Terry & Co., Grayson Spgs
10254	Bear Corn and Wheat Special.	Watkins & Co., Elizabetht'n
10204	Bear Bone Meal.....	Tom Casidy, Woodburn.....
10255	Bear Raw Bone.....	Crews & Lewis, McQuady....
10256	Bear Special Wheat Grower..	Bading & Patterson, Sonora
	The Currie Fertilizer Co., Louisville, Ky.	
10260	Currie's Corn and Wheat Spec.	Bassett & Stone, Leitchfield.
10261	Currie's Soluble Bone	Grigsby & Co., Bardstown...
10262	Currie's Raw Bone Meal.....	Browning Bros., Lewisburg
	Duncan & Bro., Lagrange, Ky.	
10264	Tiger Corn and Wheat Grower	Manufacturers' Warehouse..
10265	Tiger Bone Meal.....	Manufacturers' Warehouse..
10266	Tiger Guano.....	Manufacturers' Warehouse..
10267	Tiger Raw Bone Meal.....	Manufacturers' Warehouse..
	The Empire Guano Co., Nashville, Tenn.	
10268	Empire Bone and Potash.....	Durham, Blakeman & Cantrell, Greensburg.....

TABLE OF ANALYSES.

Pounds in the Hundred.													
Phosphoric Acid.									Potash.				
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				10.48	0.84	11.32				1.36	$14.55	10253
		6.00	*4.00*	*10.00*		*11.00*				*2.00*	*14.80*	
				10.16	0.78	10.94				0.33	12.90	10254
		6.00	*4.00*	*10.00*		*11.00*				*0.50*	*13.00*	
19.64	2.18					21.82	1.02	1.24			20.08	10204
						20.00	*0.82*	*1.00*			*14.46*	
18.51	6.51					25.02	2.50	3.04			26.22	10255
						20.00	*2.47*	*3.00*			*19.41*	
				8.43	1.10	9.53	0.87	1.06		0.95	14.31	10256
		4.00	*3.00*	*7.00*		*8.00*	*0.82*	*1.00*	*1.00*		*12.26*	
				10.41	4.03	14.44	1.07	1.30	1.20		18.51	10260
				10.00		*12.50*	*0.82*	*1.00*		*1.00*	*16.66*	
				11.63	2.99	14.62	1.09	1.32	1.83		20.26	10261
				10.00		*12.00*	*1.03*	*1.25*		*1.50*	*17.69*	
5.07	17.96					23.03	4.03	4.89			26.93	10262
						19.00	*3.09*	*3.75*			*20.67*	
				11.28	0.52	11.80	0.72	0.87		1.52	17.73	10264
		7.00	*3.00*	*10.00*		*11.00*	*0.82*	*1.00*	*2.00*		*16.86*	
22.80	5.01					27.81	2.24	2.72			27.97	10265
						22.00	*2.47*	*3.00*			*20.61*	
				11.47	1.77	13.24	1.36	1.65		1.75	20.65	10266
		6.00	*4.00*	*10.00*		*11.00*	*1.65*	*2.00*	*2.00*		*19.35*	
15.25	8.21					23.46	3.52	4.27			27.69	10267
						22.00	*3.71*	*4.50*			*24.33*	
				10.81	2.33	13.14			2.01		15.91	10268
				10.00					*2.00*		*14.00*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	The Empire Guano Co.	
10269	Empire Potash Mixture.....	Durham, Blakeman & Cantrell, Greensburg.....
10192	Empire Fine Ground Bone.....	Manufacturer.....
10193	Empire Dissolved Bone.....	Manufacturer.....
	Fox Chemical Co., Branch, Federal Chemical Company, Louisville, Ky.	
10273	Fox Wheat and Corn Grower.	Overstreet & Snyder, Lagrange.....
10274	Fox Bone and Blood.....	W. A. Coffman, Vine Grove...
10275	Fox Alkaline Bone.....	Gray & Trent, Garfield.....
10276	Fox Bone and Potash.....	C. R. Maynard, Elkton.....
10277	Fox Formula.....	Overstreet & Snyder. Lagrange.....
10278	Fox Grain Special.....	W. A. Coffman, Vine Grove..
10279	Fox Phosphate of Potash.....	J. H. Lennon, Hardinsburg.
10280	Fox Acid Phosphate.....	P. L. Doss, Franklin.....
10281	Fox Raw Bone.....	P. L. Doss, Franklin.....
10155	Fox Wheat Grower..... ...	Manufacturer.....

TABLE OF ANALYSES.

Pounds in the Hundred.												
Phosphoric Acid.									Potash.			
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				11.19	2.09	13.28				3.58	$18.57	10269
				10.00					*4.00*		*16.00*	
12.30	7.86					20.16	3.57	4.33			25.27	10192
						20.61	*2.47*	*3.00*			*19.78*	
				10.97	3.74	14.71					10.97	10193
				10.00							*10.00*	
				11.15	1.50	12.65	1.83	2.22		2.02	21.89	10273
				10.00			*1.65*	*2.00*		*2.00*	*19.35*	
				10.93	9.30	20.23	1.66	2.02			21.82	10274
				9.00			*1.65*	*2.00*			*15.75*	
				9.80	4.77	14.57				2.28	16.41	10275
				10.00						*2.00*	*14.40*	
				10.94	13.23	24.17				**0.54**	19.07	10276
				9.00						*1.00*	*12.00*	
				11.80	0.69	12.49	0.99	1.20		2.82	20.79	10277
				11.00			*0.82*	*1.00*		*3.00*	*19.26*	
				9.92	8.41	18.33	0.52	0.63		1.62	18.76	10278
				9.00			*0.41*	*0.50*		*1.50*	*13.83*	
				10.86	0.72	11.58				**2.70**	16.56	10279
				9.00						*4.00*	*15.60*	
				14.53	0.64	15.17					14.53	10280
				14.00							*14.00*	
13.39	7.87					21.26	3.95	4.80			27.28	10281
						20.00	*3.29*	*4.00*			*21.87*	
				7.59	1.38	8.97	2.17	2.63		2.04	18.62	10155
				8.00			*1.65*	*2.00*		*2.00*	*16.95*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Furman Farm Improvement Co., Atlanta, Ga.	
10199	Furman High Grade Dissolved Bone	Manufacturer
	Globe Fertilizer Co., Branch, Federal Chemical Company, Louisville, Ky.	
10290	Eagle Wheat and Corn Grower	Goodwin & Carr, Somerset..
10291	Progress Corn & Wh't Grower.	Cash Bros., Princeton.....
10219	Globe Bone Dust	Jeff. Wright, Garrett.....
10292	Bone and Potash	Bassett & Stone, Leitchfield.
10293	Globe Grain Grower	C. R. Barnes, Bardstown....
10294	Globe Bone Meal	Ellis Bros., Beard.....
10222	Golden Harvest Bone Meal	W. B. Meers, Hammonville..
10295	Globe Wheat Grower	Cash Bros., Princeton.....
10296	Globe Acid Phosphate	Langdon Bros., Science Hill.
10297	Potash Special	Goodwin & Carr, Somerset..
	The Hardy Packing Co., Chicago, Ill.	
10299	Hardy's Crop Producer	E. A. Noffsinger, Central City
10300	Hardy's Packers Raw Bone	W. W. Durbin, Grayson Spgs

TABLE OF ANALYSES.

Pounds in the Hundred.												
Phosphoric Acid.									Potash.			
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
		10.00	*2.00*	13.11 *12.00*	0.82	13.93					$13.11 *12.00*	10199
				10.73 *8.00*	2.33	13.06	1.74 *1.65*	2.11 *2.00*		1.85 *2.00*	21.25 *16.95*	10290
				9.92 *9.00*	2.07	11.99	1.84 *1.65*	2.23 *2.00*		1.14 *1.00*	19.62 *16.95*	10291
				7.99 *9.00*	3.83	11.82	2.40 *0.82*	2.91 *1.00*		1.57 *1.00*	20.20 *14.46*	10219
				12.32 *11.00*	4.66	16.98	0.41 *0.41*	0.50 *0.50*		1.36 *1.00*	19.50 *15.63*	10292
				9.72 *9.00*	0.86	10.58	0.55 *0.41*	0.67 *0.50*		1.19 *1.50*	15.08 *13.83*	10293
12.17	9.96					22.13 *20.00*	3.85 *3.29*	4.67 *4.00*			27.27 *21.87*	10294
				9.09 *10.00*	6.49	15.58	3.23 *2.47*	3.92 *3.00*			23.20 *19.41*	10222
				12.68 *10.00*	1.09	13.77	1.46 *1.65*	1.77 *2.00*		**1.29** *2.00*	21.59 *19.35*	10295
				15.35 *14.00*	0.96	16.31					15.35 *14.00*	10296
				11.37 *10.00*	1.47	12.84				**0.92** *2.00*	15.33 *14.40*	10297
				9.29 *7.00*	2.52	11.81 *8.00*	1.01 *0.82*	1.23 *1.00*	0.76	0.51 *1.00*	16.56 *12.46*	10299
16.19	11.72					27.91 *27.00*	1.06 *1.23*	1.29 *1.50*			23.16 *19.89*	10300

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	The Jarecki Chemical Co., Sandusky and Cincinnati, O.	
10301	Pure Ground Bone	Durham, Blakeman & Cantrell, Greensburg
10302	O. K. Fertilizer	W. P. Ray, Stithton
10303	Phosphate and Potash	Durham, Blakeman & Cantrell, Greensburg
10304	Lake Erie Fish Guano	W. P. Ray, Stithton
10305	Number One Fish Guano	W. P. Ray, Stithton
10307	C. O. D. Phosphate	Hines & Swope, Science Hill.
10240	Dissolved Bone with Potash	L. D. Stringer, Pulaski
	J. B. Jones, Louisville, Ky.	
10308	Raw Bone Meal	D. H. Highbaugh, Sonora
	The Jones Fertilizing Co., Cincinnati, O.	
10309	Bone Meal	W. P. Ray, Stithton
10310	Ammoniated Bone Meal	Dr. J. H. Heart, Glendean
10311	Corn and Wheat Grower	W. P. Ray, Stithton
10312	Miami Valley	Troutman Bros., Shepherdsv
10313	Jones Reliable	Troutman Bros., Shepherdsv

TABLE OF ANALYSES.

Pounds in the Hundred.												
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
18.84	5.31					24.15	3.04	3.69			$27.38	10301
						20.00	*2.47*	*3.00*			*19.41*	
				7.47	1.43	8.90	0.47	0.57		0.50	11.54	10302
				6.00		*7.00*	*0.41*	*0.50*	*0.50*		*9.33*	
				11.56	4.85	16.41				**1.40**	17.49	10303
				10.00		*11.00*			*2.00*		*14.40*	
				10.39	3.39	13.78	1.32	1.60		0.92	18.89	10304
				10.00		*11.00*	*1.65*	*2.00*	*1.00*		*18.35*	
				10.25	2.24	12.49	0.71	0.86		0.86	16.36	10305
				10.00		*11.00*	*0.82*	*1.00*	*1.00*		*15.86*	
				14.15	3.02	17.17					14.15	10307
				14.00		*15.00*					*14.00*	
				12.97	2.41	15.38			**2.21**		18.73	10240
				12.00		*13.00*			*3.00*		*17.80*	
13.50	9.78					23.28	3.72	4.52			27.83	10308
						21.50	*3.50*	*4.25*			*23.40*	
10.43	13.83					24.26	3.77	4.58			27.95	10309
						20.00	*3.29*	*4.00*			*21.87*	
				9.43	7.61	17.04	3.99	4.84			26.33	10310
				5.00		*15.00*	*4.12*	*5.00*			*22.36*	
				8.33	2.15	10.48	0.79	0.96		0.86	14.26	10311
				9.00		*10.00*	*0.82*	*1.00*		*1.00*	*14.86*	
				9.99	1.68	11.67	1.53	1.86		1.68	19.27	10312
				10.00		*12.00*	*1.65*	*2.00*		*2.00*	*20.15*	
				9.86	2.51	12.37	1.11	1.35		1.46	17.91	10313
				8.50		*10.00*	*1.23*	*1.50*		*1.25*	*15.99*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	The Jones Fertilizing Co.,	
10314	Jewel Phosphate	J. W. Webb & Son, Vanceb'rg
10315	Potash Mixture	W. P. Ray, Stithton
	Kaufman Fertilizer Company, Indianapolis, Ind.	
10209	Harvest King	E. G. Beauchamp, Falls of Rough
10210	Banner Crop Grower	E. G. Beauchamp, Falls of Rough
10211	Alkaline Bone and Potash	E. G. Beauchamp, Falls of Rough
10212	Pure Bone	E. G. Beauchamp, Falls of Rough
	Louisville Fertilizer Company, Louisville, Ky.	
10316	Eagle Phosphate	S. P. Simpson, Murray
10317	Eagle Guano	W. J. Martin, Wallonia
10318	Eagle Corn & Wheat Grower	S. B. Froman, Sonora
10319	Eagle Bone Meal	J. B. Taylor Co., Lewisport
10320	Eagle Bone and Potash	Forbes & Bro., Hopkinsville.
10321	Eagle Acid Phosphate	D.L.D. Sandifur, Beaver Dam

TABLE OF ANALYSES.

Pounds in the Hundred.													
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
				9.46	5.88	15.34	1.12	1.36			$17.06	10314
				8.00		*10.00*	*0.82*	*1.00*			*12.86*	
				9.05	0.43	9.48				2.46	13.98	10315
		6.00	*4.00*	*10.00*		*11.00*			*2.00*		*14.40*	
				11.28	2.49	13.77	1.03	1.25	2.05		19.68	10209
				8.00			*1.03*	*1.25*	*2.00*		*14.69*	
				7.75	2.19	9.94	1.19	1.44	1.51		15.26	10210
				7.00			*0.82*	*1.00*	*1.00*		*11.86*	
				9.50	1.05	10.55			2.14		13.96	10211
				10.00					*2.00*		*14.00*	
16.15	3.55					19.70	4.34	5.27			28.07	10212
						20.00	*2.47*	*3.00*			*19.41*	
				10.83	0.72	11.55	0.46	0.56			14.67	10316
		5.00	*3.00*	*8.00*		*9.00*	*0.41*	*0.50*			*11.23*	
				10.36	1.42	11.78	1.40	1.70		1.78	19.34	10317
		6.00	*4.00*	*10.00*		*11.00*	*1.65*	*2.00*		*2.00*	*19.75*	
				11.20	0.58	11.78				0.58	14.37	10318
		6.00	*4.00*	*10.00*		*11.00*				*0.50*	*13.00*	
17.90	2.44					20.34	1.05	1.27			18.93	10319
						20.00	*0.82*	*1.00*			*14.46*	
				8.51	0.46	8.97	0.55	0.67		1.58	13.94	10320
		5.00	*3.00*	*8.00*		*9.00*	*0.41*	*0.50*		*1.50*	*13.03*	
				12.01	0.97	12.98					12.01	10321
		6.00	*4.00*	*10.00*		*11.00*					*10.00*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Louisville Fertilizer Company,	
10322	Eagle Soluble Bone	S. B. Froman, Sonora
10323	Eagle Special Wheat Grower	S. P. Simpson, Murray.
10324	Eagle Raw Bone	S. B. Froman, Sonora
10215	Eagle High Gr. Diss. Bone	L. L. Harned, Boston
	Michigan Carbon Works, Detroit, Michigan.	
10413	Homestead A Bone Black Fertilizer	J. D. Jackson, Scottsburg...
10414	Red Line Crop Grower	O. A. Lutes & Co., Shepherdsv
10415	Red Line Complete Manure	J. S. Depoyster, Dunmor
10416	Red Line Phosphate	E. W. Curd & Co., Cave City..
10417	Desiccated Bone	Covington, Arnold & Bros., Richmond.
10418	Wolverine Ground Bone	Woodson Lewis & Bro., Greensburg
	Nelson Morris & Co., Chicago, Ill.	
10203	Big One Pure Raw Bone	Whitsitt Hall, Auburn
10421	Big Three Bone Phosphate	Ovesen Burba Co., Hodgenv
10422	Big Five Bone Phosphate	I. K. Miller & Son, Burdick...

TABLE OF ANALYSES.

Pounds in the Hundred.												
Phosphoric Acid.									Potash.			
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				9.42	0.65	10.07	0.96	1.17		1.68	$16.46	10322
		5.00	*3.00*	*8.00*		*9.00*	*0.82*	*1.00*		*1.50*	*14.26*	
				9.32	0.95	10.27	0.65	0.79		1.08	14.81	10323
		4.00	*3.00*	*7.00*		*8.00*	*0.82*	*1.00*		*1.00*	*12.46*	
17.10	5.39					22.49	2.48	3.01			24.35	10324
						20.00	*2.47*	*3.00*			*19.41*	
				13.95	0.84	14.79					13.95	10215
		8.00	*6.00*	*14.00*		*15.00*					*14.00*	
				7.81	3.72	11.53	2.29	2.78	1.78		9.51	10413
				8.00		*9.00*	*2.06*	*2.50*	*1.50*		*17.68*	
				8.38	2.60	10.98	1.77	2.15	2.08		18.49	10414
				8.00		*9.00*	*1.65*	*2.00*	*2.00*		*16.95*	
				7.63	0.83	8.46	0.92	1.12	1.08		13.33	10415
				7.00		*8.00*	*0.82*	*1.00*	*1.00*		*12.26*	
				15.36	0.12	15.48					15.36	10416
				14.00		*15.00*					*14.00*	
24.92	6.63					31.55	1.34	1.63			27.94	10417
						25.00	*1.23*	*1.50*			*18.69*	
19.38	9.12					28.50	1.88	2.28			26.61	10418
						25.00	*1.65*	*2.00*			*19.95*	
14.23	10.31					24.54	4.10	4.98			29.87	10203
						24.00	*3.29*	*4.00*			*24.27*	
7.04	2.87					9.91	3.81	4.63	1.48	0.70	21.10	10421
						10.00	*2.47*	*3.00*		*2.00*	*15.81*	
7.67	1.25					8.92	3.14	3.81		1.21	17.76	10422
						10.00	*2.47*	*3.00*		*1.00*	*14.61*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Nelson Morris & Co.,	
10423	Big Six Special Bone Meal	I. K. Miller & Son, Burdick.
10424	Big Eight Amm. Acid Phos. with Potash added	I. K. Miller & Son, Burdick.
	National Fertilizer Company, Nashville, Tenn.	
10425	Acid Phosphate	J. S. Depoyster, Dunmor
10426	Sadler's Formula	H. C. Miller & Co., Elkton
10427	National Dissolved Bone	Wilson & Clark, Russellville
10428	Acid Phosphate and Potash	J. S. Depoyster, Dunmor
10154	Rock City Guano	Manufacturer
10171	Bone Meal	Manufacturer
10194	Acid Phosphate and Potash	Manufacturer
10195	Tennessee Guano	Manufacturer
10429		J. S. Depoyster, Dunmor
10196	Twentieth Century Guano	Manufacturer
10197	National Wheat Grower	Manufacturer
	North-Western Fertilizing Co., Chicago, Ill.	
10430	Horse Shoe Brand Quick Acting Phosphate	E. W. Curd & Co., Cave City,

TABLE OF ANALYSES.

Pounds in the Hundred.													
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
23.06	4 39					27 45	1 46	1.77			$25 46	10423
						27.00	*0.82*	*1.00*			*18 66*	
				11.20	1.59	12.79	1 10	1.34	1 39		18.77	10424
				10.00		*11.00*	*0 82*	*1.00*		*1.00*	*16.06*	
				12.56	1.10	13.66					12 56	10425
		8.00	*4.00*	*12.00*							*12.00*	
				14.58	0.31	14.89			2.09		19 71	10426
		8 00	*4.00*	*12.00*					*2 00*		*16 40*	
				11.10	1 97	13.07	0.78	0 95	1.83		18.28	10427
				10.00		*11.00*	*0 82*	*1.00*	*1.00*		*15.86*	
				7.51	2.84	10.35			2 96		**13.11**	10428
				10 00		*11.00*			*2.00*		*14 40*	
				10.11	3.04	13 15	1.56	1 89	**1 55**		19 58	10154
				8.00		*9 00*	*1.65*	*2.00*	*2.00*		*16.95*	
13 25	5.15					**18.40**	2 88	3.50			22 33	10171
						20 00	*2.47*	*3.00*			*19 41*	
				13.32	0.29	13 61			**3.54**		**19 64**	10194
		11 00	*3.00*	*14.00*		*15.00*			*4.00*		*21.20*	
				8.51	3 81	12.32	1.95	2 37	2.33		19 91	10195
				9.78	3.72	13.50	1.68	2.04	**1 50**		19.77	10429
				8.00		*9.00*	*1 65*	*2.00*	*2.00*		*16.95*	
				12.49	1.94	14.43			4 10		19.87	10196
				12.00		*13.00*			*4 00*		*18.80*	
				10.60	2.28	12.88	2 30	2.79	2 30		22 83	10197
				10.00		*11.00*	*1.65*	*2 00*	*2.00*		*19 35*	
				10 61	0.28	10.89					10 61	10430
		8.00	*2 00*	*10.00*		*12.00*					*10.00*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	North-Western Fertilizing Co.,	
10431	H. S. B. Bone and Potash.....	R. W. Lovely, Big Clifty .....
10432	H.S. B. Cap Sheaf Wh't Grow'r	S. L. Morgan, Brandenburg.
10433	H. S. B. Corn & Wheat Grower	J. R. Beazley, Stanford.....
10434	H. S. B. Pure Ground Bone....	R. W. Lovely, Big Clifty .....
10161	H. S. B. Fine Raw Bone	C. E. Dutschke, Stephensburg
	The Ohio Farmers Fertilizer Co., Columbus, O.	
10435	Acid Phosphate.....	W. H. Elgin, Hopkinsville...
10436	Soluble Bone and Potash.....	W. H. Elgin, Hopkinsville...
10437	General Crop Fish Guano	Shaw & Smith, Hodgenville.
10438	Corn, Oats & Wh't Fish Guano	W. H. Elgin, Hopkinsville ..
10439	Raw Bone Meal.....	W. H. Elgin, Hopkinsville ..
	Packers Fertilizer Association. Chicago, Ill.	
10441	Boars Head Brand Corn and Wheat Grower	Thos. McDonahugh, Vine Grv
10442	B. H. B. Potash Phosphate....	Thos. McDonahugh, Vine Grv
	Queen City Fertilizer Company. Cincinnati, O.	
10187	Ammoniated Superphosphate and Potash.....	Manufacturer.....

TABLE OF ANALYSES.

Pounds in the Hundred.													
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate.		
				10.99	0.41	11.40			1.68		$15.03	10431
		7.00	3.00	10.00		12.00			2.00		14.80	
				6.94	2.65	9.59	0.94	1.14	1.14		13.35	10432
		4.00	3.00	7.00		8.00	0.82	1.00	1.00		12.26	
				8.21	2.57	10.78	1.79	2.17	2.15		18.40	10433
		5.00	3.00	8.00		10.00	1.65	2.00	2.00		17.35	
14.06	8.25					22.31	2.71	3.29			24.33	10434
						20.00	2.47	3.00			19.41	
9.19	13.22					22.41	3.80	4.61			26.68	10161
						22.00	3.29	4.00			23.07	
				11.90	2.53	14.43					11.90	10435
				9.00		10.00					9.00	
				9.08	1.30	10.38			1.86		13.28	10436
				8.00					2.00		11.60	
				8.02	1.68	9.70	0.82	1.00	1.54		14.29	10437
				7.00			0.82	1.00	1.00		11.86	
				8.23	2.87	11.10	1.33	1.61	2.11		17.13	10438
				8.00			1.23	1.50	2.00		15.29	
19.01	10.70					29.71	0.84	1.02			24.15	10439
						27.00	1.23	1.50			19.89	
				8.24	2.66	10.90	1.74	2.11	2.26		18.43	10441
		5.00	3.00	8.00		10.00	1.65	2.00	2.00		17.35	
				10.08	0.54	10.62			2.93		15.25	10442
		8.00	2.00	10.00		12.00			4.00		16.80	
				11.67	2.53	14.20	2.40	2.91		2.79	25.56	10187
				10.00		12.00	1.65	2.00		2.00	20.15	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Queen City Fertilizer Company,	
10188	High Grade Corn and Wheat Grower with Potash.....	Manufacturer ....
	Read Phosphate Co., Nashville, Tenn.	
10443	Read's Blood and Bone No. 1.	Moore & Gilbert, Adairville.
10444	Read's Alkaline Bone	Moore & Gilbert, Adairville.
10445	Read's Farmers Spec'l Manure	J. W. Bearce & Co., Bowl'g Gr'n
10446	Read's XXX Dissolved Bone.	Moore & Gilbert, Adairville.
10447	Read's Special Potash Mixture	W. T. Kirkman, Elkton.....
10158	Read's Wheat Special.....	Manufacturer.....
10214		J. R. Pendleton, Trenton...
10170	Read's Fine Ground Bone.....	Manufacturer.....
10448		G. S. Farwood, Beard .....
10190	Read's Wheat Grower.....	Manufacturer.....
10449		Henry Lewis, Hodgenville..
10191	Read's Wh't & Clover Grower.	Manufacturer.....
	Singer & Johnson Fertilizer Co., Nashville, Tenn.	
10178	Singer's Wheat Grower.....	Manufacturer.....
10202		S. W. Herring, Oakville.....
10217		L. H. Dawson, Russellville..

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.													
Phosphoric Acid.									Potash.				
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				12.74	2.16	14.90				3.01	$19.76	10188
				10.00		*12.00*				*2.00*	*15.20*	
				8.60	3.13	11.73	1.30	1.58	2.42		17.89	10443
				8.00			*1.65*	*2.00*	*2.00*		*16.55*	
				10.50	1.83	12.33			1.85		15.18	10444
				10.00					*2.00*		*14.00*	
				10.85	0.86	11.71	0.79	0.96		2.65	18.91	10445
				10.00			*0.82*	*1.00*	*3.00*		*17.46*	
				13.95	2.55	16.50					13.95	10446
				13.00							*13.00*	
				10.68	2.93	13.61			1.12	1.98	17.49	10447
				10.00					*4.00*		*16.00*	
				9.98	2.92	12 90	0.99	1.20		4.50	21.52	10158
				10.51	0.79	11.30	1.13	1.37	4.12		20 44	10214
				10.00			*0 82*	*1 00*	*4.00*		*18.46*	
13.63	6.71					20.34	3.62	4.39			25.79	10170
10.81	9.20					20.01	3.39	4.12			24.34	10448
						20.61	*2.47*	*3.00*			*19.78*	
				10.08	1.66	11.74	2.07	2.51	2.58		21.55	10190
				11.27	1.48	12.75	1.37	1.66	0.64	1.39	20.53	10449
				10.00			*1.65*	*2.00*	*2.00*		*18.95*	
				10.14	1.32	11.46	1.18	1 43	2.99		19 23	10191
				10.00			*0.82*	*1.00*	*2 00*		*16.46*	
				9 96	4.07	14.03	1.74	2.11		1 63	20.76	10178
				11.00	3.12	14.12	1.13	1.37		1.76	19.95	10202
				9.77	2.84	12.61	1.17	1.42		2.23	19.05	10217
				10.00			*1.65*	*2.00*		*2.00*	*19.35*	

TABLE OF ANALYSES.

Station Number	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Standard Guano & Chem. Mfg. Company, New Orleans, La.	
10450	Pure Raw Ground Bone.....	Long House & Co., Adairville
	Swift & Company, Chicago, Ill.	
10453	Swift's Garden City Phosphate	E. F. Austin & Bro., Beav'r D'm
10454	Swift's Superphosphate.....	A. G. Lewis & Co., Glendale.
10455	Swift's Complete Fertilizer.....	Turner Bros., Cerulean Sp'ngs
10223	Swift's Pure Raw Bone Meal .	C. A. Cosby, Cub Run .....
10456	Swift's Bone Meal.....	C. P. Clark & Co., Owensboro
10457	Ammoniated Bone.....	A. G. Lewis & Co., Glendale.
10198	Ammoniated Bone and Potash	S. M. Vinson, Sonora.....
10458	Bone and Potash	D. G. Hunt, Vine Grove.....
10459	Champion Wheat Grower	Ky. Supply Co., Danville.....
	Tennessee Chemical Company, Nashville, Tenn.	
10464	Ox Slaughter House Bone	Norris & Lockett, Henderson
10465	Ox Potash Mixture.....	Depp, Hugh's & Holm'n, Glasg
10466	Ox High Grade Diss. Bone.....	E. P. Austin, Beaver Dam ..
10467	Ox Phosphate.....	Depp, Hugh's & Holm'n, Glasg

TABLE OF ANALYSES.

Pounds in the Hundred.												
Phosphoric Acid.							Nitrogen.	Equivalent to Ammonia.	Potash.		Estimated Value per Ton.	Station Number.
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.			From Muriate.	From Sulphate		
11.39	11.38					22.77	3.51	4.26			$26.47	10450
						20.00	*3.09*	*3.75*			*21.27*	
				15.03	2.21	17.24					15.03	10453
				14.00		*15.00*					*14.00*	
				8.30	5.81	14.11	1.64	1.99	1.93		19.13	10454
				8.00		*12.00*	*1.65*	*2.00*	*2.00*		*18.15*	
				9.57	2.93	12.50	1.49	1.81	0.93		18.05	10455
				8.00		*11.00*	*1.03*	*1.25*	*1.00*		*14.89*	
11.83	13.35					25.18	3.92	4.76			29.23	10223
						23.00	*3.71*	*4.50*			*24.93*	
19.86	6.62					26.48	2.48	3.01			27.30	10456
						25.00	*2.47*	*3.00*			*22.41*	
12.31	5.27					17.58	5.10	6.19			28.31	10457
						17.00	*4.94*	*6.00*			*25.02*	
13.67	2.60					16.27	5.15	6.25	2.77		30.72	10198
						16.00	*4.74*	*5.75*	*3.00*		*26.82*	
18.59	7.97					26.56	2.39	2.79	2.64		29.19	10458
						23.50	*2.47*	*3.00*	*3.00*		*24.51*	
				12.72	6.23	18.95	1.49	1.81	2.60		24.82	10459
				12.00		*13.00*	*1.65*	*2.00*	*2.00*		*21.75*	
				8.68	1.27	9.95	1.39	1.69		1.68	17.12	10464
		5.00	*3.00*	*8.00*		*9.00*	*1.65*	*2.00*		*2.00*	*17.35*	
				11.70	0.61	12.31				2.26	16.99	10465
		6.00	*4.00*	*10.00*		*11.00*				*2.00*	*14.80*	
				14.56	1.07	15.63					14.56	10466
		8.00	*6.00*	*14.00*		*15.00*					*14.00*	
				12.80	0.79	13.59					12.80	10467
		7.00	*5.00*	*12.00*		*13.00*					*12.00*	

TABLE OF ANALYSES.

Station Number.	NAME AND ADDRESS OF MANUFACTURER AND NAME OF BRAND.	FROM WHOM OBTAINED.
	Tennessee Chemical Company.	
10468	Ox Corn and Wheat Guano...	Depp, Hugh's & Holm'n, Glasg
10469	Ox Bone Meal.....	T. N. McGlothlan, Irvington
10470	Ox Raw Bone.....	Franklin Hardware Co., Franklin.
10471	Ox Special Wheat Grower	T. N. McGlothlan, Irvington
	Virginia-Carolina Chemical Co., S. W. Travers & Co., Branch, Richmond, Va.	
10479	Capital Bone Potash Comp'nd	E. S. Duiguid, Murray,.....
10480	Capital Dissolved S. C. Bone..	Dick Wigginton, Fredonia..
	Virginia-Carolina Chemical Co., Memphis Division, Memphis, Tenn.	
10481	Royal Grain Grower.....	T. W. Buchanan & Co., Campbellsville.....
10225	Beef, Blood & Bone Fertilizer.	Chas. M. Miller, Hardinsburg
10174	Royal Dissolved Bone	Manufacturer.....
10175	Ground Bone Meal.....	Manufacturer.....
10482		O. P. Eldred & Co., Princeton

TABLE OF ANALYSES.

POUNDS IN THE HUNDRED.												
Phosphoric Acid.									Potash.			
In Fine Bone.	In Medium Bone.	Soluble.	Reverted.	Available.	Insoluble.	Total.	Nitrogen.	Equivalent to Ammonia.	From Muriate.	From Sulphate.	Estimated Value per Ton.	Station Number.
				13.25	0.92	14.17	0.82	1.00		1.01	$19.94	10468
		7.00	*5.00*	*12.00*		*13.00*	*0.82*	*1.00*		*1.00*	*18.46*	
17.63	1 53					19.16	1.12	1.36			18.38	10469
						20.00	*0.82*	*1.00*			*14.46*	
13.34	6.57					19.91	2.60	3.16			22.41	10470
						20.00	*2.47*	*3.00*			*19.41*	
				7.89	1.64	9.53	0.84	1.02		0.93	13.77	10471
		4.00	*3.00*	*7.00*		*8.00*	*0.82*	*1.00*	*1.00*		*12.26*	
				11.40	0.91	12 31			1.98		16.02	10479
		7.00	*3.00*	*10.00*		*11.00*			*2 00*		*14.40*	
				15.27	1.51	16.78					15.27	10480
		9.00	*3.00*	*12.00*		*13.00*					*12.00*	
				11.60	1.14	12.74			3.64		18.02	10481
		7.00	*3.00*	*10.00*		*12.00*			*4.00*		*16.80*	
				8.99	4.67	13.66	1.73	2.10	2.09		19.94	10225
		6.00	*2.00*	*8.00*		*10.00*	*1.65*	*2.00*	*2.00*		*17.35*	
				15.92	0.51	16.43					15.92	10174
		10 00	*4.00*	*14.00*		*16.00*					*14.00*	
15.03	8.10					23.13	3.35	4.07			26.93	10175
18.96	3.61					**22.57*	2.73	3.31			25.53	10482
						24.00	*2.47*	*3.00*			*21.81*	

*Contains Soluble Phosphoric Acid.

M. A. SCOVELL, Director and Chemist.
H. E. CURTIS, Chemist, Fertilizers.

December 31, 1902.