

KENTUCKY  
AGRICULTURAL EXPERIMENT STATION

OF THE  
STATE COLLEGE OF KENTUCKY.

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BULLETIN NO. 65.

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ANALYSES OF COMMERCIAL FERTILIZERS.

- I. Official Analyses.
- II. Analyses of other Samples.

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LEXINGTON, KENTUCKY.  
DECEMBER, 1896.

KENTUCKY  
**Agricultural Experiment Station.**

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ADDRESS:  
KENTUCKY AGRICULTURAL EXPERIMENT STATION,  
LEXINGTON, KY.

BULLETIN NO. 65.

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COMMERCIAL FERTILIZERS.

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I. OFFICIAL ANALYSES.

Since the publication of Bulletin No. 64, the following analyses have been made for manufacturers in compliance with the fertilizer law, and these fertilizers were legally on sale in the State during the past season, in addition to those reported in the bulletin referred to above.

The values for the "essential ingredients" for 1897 have not been changed, and are as follows:

Soluble and reverted phosphoric acid in mixed fertilizers, 7 cents; in plain acid and unacidulated phosphates, 5 cents per pound.

Insoluble phosphoric acid in mixed fertilizers,  $2\frac{1}{2}$  cents; in plain acid phosphates, nothing; in Orchilla guano, 3 cents; in other unacidulated phosphates 2 cents per pound.

Phosphoric acid in fine bone, 4 cents; in medium bone, 3 cents per pound.

Nitrogen in all fertilizers,  $17\frac{1}{2}$  cents per pound.

Potash in all fertilizers, from sulphate, 7 cents; from muriate, 6 cents per pound.

TABLE I.—Raw Bone Manures, Etc.

Station Number.	NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	POUNDS IN THE HUNDRED.						Estimated Value per Ton.
			In Fine Bone.	In Medium Bone	Total.	Equivalent to Bone Phosphate.	Nitrogen.	Equivalent to Ammonia.	
3422	A. B. Mayer Mfg. Co, St. Louis, Mo .....	Anchor Brand Pure Bone Meal .....	14.31	7.54	21.85	47.72	3.77	4.58	\$29.17
3408	Nolte & Dolch Fertilizer Co., St. Louis, Mo .....	Pure Raw Bone Meal .....	14.03	6.54	20.57	44.93	3.53	4.29	27.50
3418	J. F. & W. H. Singer, Nashville, Tenn .....	Standard Raw Bone Meal..	13.49	8.31	21.80	47.61	3.77	4.58	28.98
3419	Wm. Skene & Co., Louisville, Ky .....	Skene's Pure Raw Bone Dust or Meal .....	12.50	8.76	21.26	46.44	3.36	4.08	27.02

TABLE II.—Complete Fertilizers, Superphosphates, Etc.

Station Number.	NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	POUNDS IN THE HUNDRED.						Estimated Value per Ton.
			Phosphoric Acid.			Nitrogen.	Equivalent to Ammonia.		
			Soluble.	Reverted.	Insoluble.			From Sulphate.	From Muriate.
3404	The Armour Fertilizer Works, Chicago, Ill. . . . .	Armour's Grain Grower.	3.33	2.53	4.36	1.93	1.68	....	\$19.49
3405	Crocker Fert. and Chemical Co., Buffalo, N.Y. . . . .	Crocker's Wheat and Corn Phosphate. . . . .	7.96	2.64	1.27	2.12	....	2.30	25.66
3435	The Currie Fertilizer Co., Louisville, Ky. . . . .	Currie's Wheat Grower. . .	9.84	1.70	0.93	0.59	2.05	....	21.63
3436	Same. . . . .	Currie's Wheat Special. . .	10.27	3.23	0.38	....	....	....	13.50
3439	The Goulding Fert. Co. Ltd., Pensacola, Fla. . . . .	Goulding's Bone Com-pound . . . . .	9.76	1.36	1.30	1.87	....	2.13	25.33
3407	The Imperial Fert. Co., Charleston, S. C. . . . .	Farmer's Compound Fer-tilizer. . . . .	6.51	3.81	1.96	....	....	2.39	18.30
3423	A. B. Mayer Mfg. Co., St. Louis, Mo. . . . .	Anchor Brand Corn and Wheat Grower. . . . .	2.49	5.52	5.05	3.25	1.88	....	27.75
3440	Meridian Fert. Factory, Meridian, Miss. . . . .	Standard Home Mixture Guano. . . . .	8.78	2.14	0.31	2.41	....	3.19	27.72
3459	Mobile Phos. and Chem. Mfg. Co., Mobile, Ala. . . . .	Mobile Standard Guano. . .	8.39	1.83	2.02	2.05	....	2.51	25.51
3409	Nolte and Dolch Fert. Co., St. Louis, Mo. . . . .	Phosphate and Potash. . . .	0.61	7.04	2.09	....	....	1.31	13.33



## II. ANALYSES OF OTHER SAMPLES.

The law regulating the sale of commercial fertilizers in this State provides (Sec. 7) that: "Any agriculturist, a purchaser of any commercial fertilizer in this State, may take a sample of the same, under the rules and regulations of the Director of the said Experiment Station, and forward the same to the Experiment Station for analysis, which analysis shall be made free of charge." In the same section the Director is authorized "in person, or by deputy, to take samples for analysis from any lot or package of any commercial fertilizer which may be in the possession of any dealer in this State." Under these provisions a number of samples have been analyzed from time to time, and the results of these analyses are published in the following pages.

An examination of the table of analyses will show that, with two exceptions, the fertilizers sampled by farmers, or by the Director, are fairly represented by the samples sent to the Station by the manufacturers. Some are better than the official samples, while a few fall below them — not, however, to such an extent as to show fraud or gross carelessness on the manufacturer's part. The exceptions are:

First: No. 3455. Corn, Wheat and Tobacco Grower, manufactured by the Ohio Valley Fertilizing Co., A. Loeser, Mgr., Owensboro, Ky., where the fertilizer sold was entirely different from what it was represented to be by the tags attached.

Second: No. 3417. Horse Shoe Brand Tobacco Grower, manufactured by North-Western Fertilizing Co., Chicago, Ill., where we found almost two per cent less potash than in the official samples, although having one-half of one per cent more nitrogen; too great a difference to be accounted for on the ground of unavoidable variations in mixing.

Here follows, first, a brief description of each sample, and, second, the analyses in tabular form. For convenience of reference, the "station number" of each sample is given, and all brands of the same manufacturer are arranged together. The names of the manufacturers are placed in alphabetical order in the description of the samples, and following each manufacturer's name are the brands of his make that were analyzed.

It is necessary to compare the analysis of each sample with the "official analysis" on the tags attached to the sacks from which the sample was taken, because it is not possible for manufacturers to make the same fertilizer perfectly uniform from year to year, and any fertilizer is, therefore, liable to vary somewhat in composition; also, because the values assigned to the "essential ingredients" in calculating the "estimated value per ton" are subject to change from time to time. *This is the reason why a tag from one of the packages sampled must be sent with each sample for analysis.*

#### **Description of Samples.**

**A. D. ADAIR & McCARTY BROS., Atlanta, Ga.**

No. 3466. Furman High Grade Fertilizer. Sent by N. B. Riley, Allensville, Ky. Tag sent corresponded to No. 2973.

**THE ARMOUR FERTILIZER WORKS, Chicago, Ill.**

No. 3454. Bone Meal, sent by Milton Tate, Kirk, Ky. Tag sent corresponded to No. 3357.

No. 3464. Same brand, sent by J. W. Wright, McQuady, Ky. Tag sent corresponded to No. 3357.

No. 3465. Same brand, sent by G. M. Slaughter, Hodgenville, Ky. Tag sent corresponded to No. 3357.

**GLOBE FERTILIZER Co., Louisville, Ky.**

No. 3456. Globe Wheat Grower, sent by W. M. Darby, Cave Spring, Ky. Tag sent corresponded to No. 3218.

**R. H. HOSKENS, Louisville, Ky.**

No. 3468. Champion Raw Bone Meal, sampled by A. M. Peter, from stock of Cassell & Co., Louisville, Ky. Tags corresponded to No. 3035.



J. B. JONES, Louisville, Ky.

No. 3463. Raw Bone Meal, sent by J. W. Wright, McQuady, Ky  
Tag sent corresponded to No. 3208.

THE JONES FERTILIZING Co., Cincinnati, O.

No. 3207. Pure Raw Bone Meal, sent by Hugh Jenkins, Glendale,  
Ky. Tags corresponded to No. 2998.

No. 3353. Miami Valley Phosphate, sent by Robt. T. Marshall, Mt.  
Carmel, Ky. Tag sent corresponded to No. 3272.

MOBILE PHOSPHATE & CHEMICAL MFG. Co., Mobile, Ala.

No. 3460. Mobile Standard Guano, sent by Howard Cornelius, Rus-  
sellville, Ky. Tag sent corresponded to No. 3042.

NORTH-WESTERN FERTILIZING Co., Chicago, Ill.

No. 3417. Horse Shoe Brand Tobacco Grower, sent by C. M. Hanna,  
Cropper, Ky. Tag sent corresponded to No. 2868.

No. 3453. Horse Shoe Brand Raw Bone, sent by J. F. McGary, Kirk,  
Ky. Tag sent corresponded to No. 3243.

No. 3462. Same brand, sent by F. P. Strickler, Elizabethtown, Ky.  
Tag sent corresponded to No. 3243.

No. 3467. Same brand, sampled by A. M. Peter from stock of H.  
C. Smith, Louisville, Ky. Tags corresponded to No. 3243.

OHIO VALLEY FERTILIZING Co., Owensboro, Ky.

No. 3455. Corn, Wheat and Tobacco Grower, sent by Lonnie  
Rhodes, Kirk, Ky. Tag sent corresponded to No. 3402.

WM. SKENE & Co., Louisville, Ky.

No. 3352. Skene's Complete Plant Food or Perfect Tobacco and  
Potato Grower, sent by Elijah Coons, Mt. Sterling, Ky. Tag  
sent corresponded to No. 2960.

SWIFT & COMPANY, Chicago, Ill.

No. 3351. Bone Tankage and Potash, sent by P. D. Taylor, La-  
Grange, Ky. Tag sent corresponded to No. 3299.

No. 3568. Bone and Potash, sent by James Tweddell, Elizabethtown,  
Ky. Tag sent corresponded to No. 3302.

TABLE III.

NAME OF BRAND	WHERE SAMPLED.	Station Number.	POUNDS IN THE HUNDRED.										Estimated Value per Ton.
			Phosphoric Acid.						Nitrogen.	Equivalent to Ammonia.	Potash.		
			In Fine Bone.	In Medium Bone.	Available.	Insoluble.	Total.	From Sulphate.			From Muriate.		
Furman High Grade Fertilizer.	Official, 1895.....	2973	.....	.....	9.48	2.58	12.06	2.43	2.95	.....	2.59	26.18	
	Allensville.....	3466	.....	.....	9.43	2.98	12.41	2.65	3.22	.....	2.40	26.85	
Bone Meal.	Official, 1896.....	3257	25.41	2.12	.....	.....	27.53	2.74	3.33	.....	.....	31.19	
	Kirk.....	3454	20.41	5.33	.....	.....	25.74	3.24	3.93	.....	.....	30.87	
	McQuady.....	3464	20.76	4.16	.....	.....	24.92	3.44	4.18	.....	.....	31.15	
	Hodgenville.....	3465	23.41	1.08	.....	.....	24.49	3.43	4.16	.....	.....	31.39	
Globe Wheat Grower.	Official, 1896.....	3218	.....	.....	12.15	1.65	13.80	1.85	2.25	2.09	.....	27.25	
	Cave Spring.....	3456	.....	.....	11.75	2.00	13.75	1.97	2.39	2.59	.....	27.98	
Champion Raw Bone Meal.	Official, 1895.....	3035	22.36	.....	.....	.....	22.36	3.70	4.49	.....	.....	30.84	
	Louisville.....	3468	22.13	.....	.....	.....	22.13	3.83	4.65	.....	.....	31.11	
Raw Bone Meal.	Official, 1896.....	3208	15.42	6.79	.....	.....	22.21	3.68	4.47	.....	.....	29.29	
	McQuady.....	3463	14.14	7.81	.....	.....	21.95	3.33	4.04	.....	.....	27.66	

Pure Raw Bone Meal.	Official, 1895.....	2998	7.88	14.07	.....	.....	21.95	3.89	4.72	.....	28.36
	Glendale .....	3207	14.61	5.68	.....	.....	20.29	3.90	4.73	.....	28.75
Miami Valley Phosphate.	Official, 1896.....	3272	.....	.....	7.61	3.81	11.42	2.85	3.46	2.98	26.71
	Mt. Carmel.....	3353	.....	.....	6.99	6.56	13.55	2.81	3.41	2.03	25.75
Mobile Standard Guano.	Official, 1895.....	3042	.....	.....	10.48	1.30	11.78	2.12	2.57	.....	24.82
	Russellville.....	3460	.....	.....	10.24	2.03	12.27	1.99	2.42	.....	25.49
H. S. B. Tobacco Grower.	Official, 1895.....	2868	.....	.....	8.81	2.88	11.69	3.53	4.29	3.17	30.57
	Cropper .....	3417	.....	.....	6.52	4.61	11.13	4.09	4.97	1.18	27.41
H. S. B. Raw Bone.	Official, 1896 .....	3243	15.84	7.62	.....	.....	23.46	4.22	5.12	.....	32.01
	Kirk .....	3453	12.94	10.37	.....	.....	23.31	3.99	4.84	.....	30.54
	Elizabethtown.....	3462	10.55	12.73	.....	.....	23.28	4.14	5.03	.....	30.57
	Louisville.....	3467	12.14	11.35	.....	.....	23.49	3.89	4.72	.....	30.14
Corn, Wheat and Tobacco Grower.	Official, 1896 .....	3402	.....	.....	6.69	7.79	14.48	3.20	3.88	2.45	27.90
	Kirk, .....	3455	10.43	6.69	.....	.....	17.12	3.30	4.01	.....	23.90
Skene's Complete Plant Food.	Official, 1895 .....	2960	.....	.....	6.85	3.90	10.75	3.27	3.97	12.34	40.27
	Mt. Sterling .....	3352	.....	.....	10.56	3.65	14.21	4.91	5.96	12.16	50.82
Bone Tankage and Potash.	Official, 1896.....	3299	15.51	1.86	.....	.....	17.37	4.84	5.88	.....	34.66
	LaGrange.....	3351	13.52	2.09	.....	.....	15.61	4.59	5.57	5.95	36.47
Bone and Potash.	Official, 1896.....	3302	23.20	1.77	.....	.....	24.97	2.80	3.40	.....	33.07
	Elizabethtown.....	3568	23.39	2.25	.....	.....	25.64	2.70	3.28	.....	32.74

In the preceding table we have given in the first column the name of the brand, next, where the sample was taken; then the "station number," and, lastly, the analysis and valuation. The same order is preserved in the table as in the description of the samples, hence it is not necessary to repeat the name of the manufacturer. In the case of each brand, the official analysis is first given, in *bold-faced type*, for comparison. This official analysis is the same as the analysis that was on the tag attached to the sack from which the sample was taken.

M. A. SCOVELL, *Director.*

A. M. PETER, }  
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December 31st, 1896.