

KENTUCKY
AGRICULTURAL EXPERIMENT STATION

OF THE

STATE COLLEGE OF KENTUCKY.

BULLETIN NO 60.

ANALYSES OF COMMERCIAL FERTILIZERS.

I. Official Analyses.

**II. Analyses of Farmers' and
Inspectors' Samples.**

LEXINGTON, KENTUCKY.

DECEMBER, 1895.

KENTUCKY Agricultural Experiment Station.

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KENTUCKY AGRICULTURAL EXPERIMENT STATION,
LEXINGTON, KY.

BULLETIN No. 60.

COMMERCIAL FERTILIZERS.

I. OFFICIAL ANALYSES.

Since the publication of Bulletin No. 56, the following analyses have been made for manufacturers in compliance with the fertilizer law, and these fertilizers are now legally on sale in the State, in addition to those reported in the bulletin referred to above, except numbers 3185 and 3186, entered by the Chemical Co. of Canton, Baltimore, Md., for the year beginning Jan. 1st, 1896

The values for the "essential ingredients" for 1896 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 1.—Raw Bone Manures.

Station Number.	NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	POUNDS IN THE HUNDRED.						Estimated Value per Ton.
			Phosphoric Acid.			Equivalent to Bone Phosphate.	Nitrogen.	Equivalent to Ammonia.	
			In Fine Bone.	In Medium Bone.	Total.				
3041	Akin Fertilizer Co., Evansville, Ind.	Pure Raw Bone.....	12.36	7.73	20.09	43.87	3.65	4.43	\$27.31
3036	Currie Fertilizer Co., Louisville, Ky.	Currie's Raw Bone Meal.....	7.92	16.31	24.23	52.92	4.14	5.03	30.62
3035	R. H. Hoskins, Louisville, Ky.....	Champion Raw Bone Meal.....	22.86	.....	22.36	48.84	3.70	4.49	30.84
3038	A. B. Mayer Mfg. Co., St. Louis, Mo.....	Anchor Brand Pure Bone Meal.	13.21	8.51	21.72	47.44	3.96	4.81	29.54
3032	National Fertilizer Co., Nashville, Tenn.....	Pure Bone Meal.....	8.89	13.50	22.39	48.90	4.00	4.86	29.21
3106	Ohio Valley Fertilizing Co., Owensboro, Ky.....	Corn, Wheat and Tobacco Grower.....	19.18	2.62	21.80	47.61	2.58	3.13	25.94
3037	J. F. & W. H. Singer, Nashville, Tenn.....	Standard Raw Bone Meal.....	13.57	9.05	22.62	49.40	3.84	4.66	29.73
3138	Swift & Co., Chicago, Ill.....	Pure Raw Bone Meal.....	18.31	7.30	25.61	55.94	3.90	4.73	32.68

II—ANALYSES OF FARMERS' AND INSPECTORS' 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 most of the fertilizers sampled by farmers or by the Inspector 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 any intention of fraud or gross carelessness on the manufacturers' part. Altogether the results are far more satisfactory than those of last year.

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., general agents for the Furman Farm Improvement Co.

No. 2958. Farish Furman Formula, sent by Winston Henry, Casky, Ky. Tag sent corresponded to No. 2482.

No. 2959. Furman High Grade Fertilizer, sent by B. W. Williams, Oak Grove, Ky. Tag sent corresponded to No. 2257.

ARMOUR & CO., Chicago, Ill.

No. 2962. Bone, Blood and Potash, sampled by M. A. Scovell, Director, from stock of Forbes & Bro., Hopkinsville, Ky. Tag corresponded to No. 2828.

No. 2963. Bone Meal, sampled, etc., from same. Tag corresponded to No. 2477.

No. 3012. White Burley and Black Tobacco, sent by W. L. Thurman, Sonora, Ky. Tag sent corresponded to No. 2827.

THE CINCINNATI DESICCATING CO., Cincinnati, O.

No. 3156. Gilead Phosphate, sent by Robt. T. Marshall, Mt. Carmel, Ky. Tag sent corresponded to No. 2398.

THE CURRIE FERTILIZER CO., Louisville, Ky.

No. 2939. Currie's Tobacco Grower, sent by J. Crit. Alexander, Bowling Green, Ky. Tag sent corresponded to No. 2333.

No. 2967. Same brand, sampled by M. A. Scovell, Director, from stock of S. P. Smith & Co., Trenton, Ky. Tag corresponded to No. 2333.

No. 2968. Currie's Kentucky Phosphate, sampled, etc., from same. Tag corresponded to No. 2907.

FURMAN FARM IMPROVEMENT CO., Atlanta, Ga., see A. D. Adair & McCarty Bros.

GLOBE FERTILIZER CO., Louisville, Ky.

- No. 2971. Big Four Tobacco Grower, sampled by M. A. Scovell, Director, from stock of Winfree Bros. & Co., Hopkinsville, Ky. Tag corresponded to No. 2887.
- No. 3175. Globe Wheat Grower, sent by W. M. Darby, Cave Spring, Ky. Tag sent corresponded to No. 3013.

THE LOUDENBACK FERTILIZER CO., Urbana, O.

- No. 2940. Urbana Prize Potato and Tobacco Grower, sent by J. R. Rogers, Paris, Ky. Tag sent corresponded to No. 2858.
- No. 2969. Same brand, sampled by M. A. Scovell, Director, from stock of Winfree Bros. & Co., Hopkinsville, Ky. Tag corresponded to No. 2858.
- No. 2970. Urbana Bone Phosphate and Potash, sampled, etc., from same. Tag corresponded to No. 2861.

MICHIGAN CARBON WORKS, Detroit, Mich.

- No. 2964. Homestead Corn and Wheat Grower, sampled by M. A. Scovell, Director, from stock of Forbes & Bro., Hopkinsville, Ky. Tag corresponded to No. 2432.
- No. 3174. Same brand, sent by W. M. Darby, Cave Spring, Ky. Tag sent corresponded to No. 2929.

NATIONAL FERTILIZER CO., Nashville, Tenn.

- No. 2957. Bone Meal, sent by J. S. Reeder, Franklin, Ky. Tag sent corresponded to No. 2599.

NORTH-WESTERN FERTILIZING CO., Chicago, Ill.

- No. 2965. Horse Shoe Brand Kentucky Corn and Tobacco Grower, sampled by M. A. Scovell, Director, from stock of Forbes & Bro., Hopkinsville, Ky. Tag corresponded to No. 2427.
- No. 2966. Horse Shoe Brand Tobacco Grower, sampled, etc., from same. Tag corresponded to No. 2868.
- No. 2986. Horse Shoe Brand Raw Bone and Phosphate Mixture, sent by S. H. Wisdom, Edmonton, Ky. Tag sent corresponded to No. 2877.

WM. SKENE & CO., Louisville, Ky.

- No. 3031. Skene's Complete Plant Food or Perfect Tobacco and Potato Grower, sent by Jas. D. Wallace, Princeton, Ky. Tag sent corresponded to No. 2457.

SWIFT & CO., Chicago, Ill.

- No. 3141. Pure Raw Bone Meal, sent by Levi Collins, Pewee Valley, Ky. Corresponds to No. 3138.

S. W. TRAVERS & Co., Richmond, Va.

No. 2982. National Tobacco Fertilizer, sent by Wesley Vicroy, Maysville, Ky. Tag sent corresponded to No. 2811.

No. 2983. Champion Corn Grower, sent by same. Tag sent corresponded to No. 2853.

Explanations in Regard to the Table.

In the following 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, }
H. E. CURTIS, } *Chemists.*

December 31st, 1895.

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.					
Farish Furman Formula.	Official, 1894.....	2482	.....	.....	11.27	2.19	13.46	.....	.....	.....	.....	.....	.....	2.94	22.66
	Casky.....	2958	.....	.....	11.52	0.95	12.47	.....	.....	.....	.....	.....	.....	4.75	24.61
Furman High Grade Fertilizer.	Official, 1893.....	2257	.....	.....	9.50	1.46	10.96	2.24	2.72	.....	.....	.....	.....	2.83	28.29
	Oak Grove.....	2959	.....	.....	10.55	1.10	11.65	2.45	2.97	.....	.....	.....	.....	3.45	31.37
Bone, Blood and Potash.	Official, 1895.....	2828	.....	.....	8.43	4.93	13.36	4.28	5.20	8.27	.....	.....	.....	.....	40.83
	Hopkinsville.....	2962	.....	.....	9.16	4.58	13.74	3.99	4.84	7.00	.....	.....	.....	.....	38.88
Bone Meal.	Official, 1894.....	2477	22.43	4.05	.....	.....	26.48	2.46	2.99	.....	.....	.....	.....	.....	33.27
	Hopkinsville.....	2963	21.34	3.27	.....	.....	24.61	1.77	2.15	.....	.....	.....	.....	.....	28.91
White Burley and Black Tobacco.	Official, 1895.....	2827	.....	.....	8.70	3.66	12.36	2.98	3.62	6.77	.....	.....	.....	.....	33.92
	Sonora.....	3012	.....	.....	8.10	4.62	12.72	2.94	3.57	6.00	.....	.....	.....	.....	32.34
Gilead Phosphate.	Official, 1894.....	2398	.....	.....	10.31	3.75	14.06	2.23	2.71	.....	.....	.....	.....	2.37	30.14
	Mt. Carmel.....	3156	.....	.....	5.26	2.12	7.38	3.49	4.24	.....	.....	.....	.....	2.88	26.90

Currie's Tobacco 2333 8.06 3.67 11.73 1.55 1.88 9.59 35.33

Commercial Fertilizers

Currie's Tobacco Grower.	Official, 1894.	2333	8.06	3.67	11.73	1.55	1.88	9.59	35.33
	Bowling Green.	2939	9.53	3.48	13.01	2.54	3.08	7.61	38.57
	Trenton.	2967	9.78	3.70	13.48	2.60	3.16	6.45	37.58
Currie's Kentucky Phosphate.	Official, 1895.	2907	10.64	1.22	11.86	0.79	0.96	2.02	21.11
	Trenton.	2968	10.63	0.95	11.58	0.57	0.69	1.50	19.46
Big Four Tobacco Grower.	Official 1895.	2887	9.25	2.17	11.42	1.59	1.93	2.32	22.86
	Hopkinsville.	2971	7.87	2.20	10.07	2.38	2.89	2.13	23.43
Globe Wheat Grower.	Official, 1895	3013	11.01	2.61	13.62	2.09	2.54	1.11	25.59
	Cave Spring.	3175	11.51	1.51	13.02	1.98	2.40	1.41	25.77
Urbana Prize Potato and Tobacco Grower.	Official, 1895	2858	9.71	2.65	12.36	2.31	2.80	3.58	31.70
	Paris	2940	10.39	2.97	13.36	2.31	2.80	3.00	33.01
	Hopkinsville	2969	10.53	1.19	11.72	2.27	2.76	2.85	31.47
Urbana Bone Phosphate and Potash.	Official, 1895.	2861	7.93	3.67	11.60	1.47	1.78	.....	3.48 22.27
	Hopkinsville.	2970	8.37	4.78	13.15	1.51	1.83	.....	3.51 23.61
Homestead Corn and Wheat Grower.	Official, 1894.	2432	9.33	1.42	10.75	2.34	2.84	1.91	27.87
	Hopkinsville.	2964	9.62	0.88	10.50	2.23	2.71	2.86	29.04
	Official, 1895	2929	11.22	1.88	13.10	2.44	2.96	2.43	28.59
	Cave Spring	3174	9.22	0.49	9.71	2.03	2.46	2.78	24.16
Bone Meal.	Official 1894.	2599	.....	.....	24.05	3.69	4.48	.....	36.41
	Franklin	2957	7.38	14.85	22.23	3.89	4.72	.....	34.08

TABLE III.—Continued.

NAME OF BRAND.	WHERE SAMPLED.	Station Number.	POUNDS IN THE HUNDRED.							Estimated Value Per Ton—dollars.		
			Phosphoric Acid.			Nitrogen.	Equivalent to Ammonia.	Potash.				
			In Fine Bone.	In Medi-um Bone.	Available.			Insoluble.	Total.		From Sulphate.	From Muriate.
Horse Shoe Brand Ken-tucky Corn and To-bacco Grower.	Official, 1894..... Hopkinsville.....	2427 2965			9.42 6.55	2.67 3.99	12.09 10.54	1.67 1.80	2.03 2.19	1.60 1.01		25.49 21.20
Horse Shoe Brand To-bacco Grower.	Official, 1895..... Hopkinsville.....	2868 2966			8.81 8.47	2.88 3.79	11.69 12.26	3.53 2.89	4.29 3.51	3.17 2.93		30.57 27.98
Horse Shoe Brand Raw Bone and Phosphate Mixture.	Official 1895..... Edmonton.....	2877 2986			7.94 7.56	7.55 7.42	15.49 14.98	3.09 2.80	3.75 3.40	0.60 1.49		26.56 26.18
Skene's Complete Plant Food or Perfect To-bacco & Potato Gro'r.	Official, 1894..... Princeton.....	2457 3031			8.24 7.63	1.02 3.90	9.26 11.53	3.25 2.67	3.95 3.24	13.30 15.19		46.64 47.63
Pure Raw Bone Meal.	Official, 1895..... Pewee Valley.....	3138 3141	18.31 12.45	7.30 13.49			25.61 25.94	3.90 3.95	4.73 4.80			32.68 31.88
National Tobacco Fer-tilizer.	Official, 1895..... Maysville.....	2811 2982			7.69 8.70	1.69 1.47	9.38 10.17	1.89 2.01	2.29 2.44		3.98 3.43	23.02 24.08
Champion Corn Grower.	Official, 1895..... Maysville.....	2853 2983			8.98 9.22	1.15 1.22	10.13 10.44	1.04 1.07	1.26 1.30		3.74 2.11	21.28 19.80