

KENTUCKY
AGRICULTURAL EXPERIMENT STATION

OF THE

STATE COLLEGE OF KENTUCKY.

BULLETIN NO. 76.

COMMERCIAL FERTILIZERS.

LEXINGTON, KENTUCKY.

August, 1898.

KENTUCKY
Agricultural Experiment Station.

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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 post-office address, or of any failure to receive the Bulletins.

ADDRESS :

KENTUCKY AGRICULTURAL EXPERIMENT STATION,
LEXINGTON, KY.

BULLETIN No. 76.

COMMERCIAL FERTILIZERS.

In this bulletin are published the names of all fertilizers that have been entered under the new law for sale in the State, together with the analysis of each, given in the affidavit of the manufacturer as the lowest percentages which each fertilizer will contain as put on the market. This information is published now for the use of farmers in the fall season, but at the end of the year we will publish all the analyses that have been made, side by side with the manufacturers' guaranteed analysis, and the estimated value per ton calculated from each, as required by law. The analyses of all fertilizers entered this year before the new law went into effect have been published in Bulletin 75.

FERTILIZER LAW.

The present law regulating the sale of fertilizers has been published in Bulletin 75, copies of which will be furnished on application, but we desire again to call attention to some of its provisions which most concern purchasers of fertilizers.

FREE ANALYSES FOR FARMERS. The law provides for free analyses to be made at the Station for the benefit of purchasers in order to see that the goods sold are up to the guarantee of their manufacturers. Any purchaser of a fertilizer, *who is not an agent or dealer*, may take a sample of the same, under proper regulations, and have it analyzed at the Station free, and such purchaser shall not be required to give the name of the fertilizer or of the person from whom it was bought until after the analysis has been made and reported, but after the purchaser has received the report of analysis he must give the Director all information about the fertilizer that

may be required for publication in the Station bulletins or for prosecution of the case if it appear that the law has been violated. It is desirable that the farmers of the State take advantage of this privilege as much as possible, and it is recommended that in every large purchase a sample be taken for analysis.

IMPORTANT TO CAREFULLY SAMPLE. It is very important that samples for analysis be carefully taken in such a way as to be sure that they fairly represent the fertilizer purchased, and we request that any one intending to have an analysis made will read Section 8 of the law very carefully before taking the sample. To avoid the charge of unfairness in sampling, the law provides that the person or agent who sold the fertilizer be present when the sample is taken, but if this is not possible or convenient, the sample may be taken in presence of two disinterested witnesses. It is required that the sample be taken from at least a tenth of the whole number of sacks purchased, but the more sacks sampled the better, and it is always best to take the sample from at least two or three sacks. A quantity should be taken from each of the sacks selected to be opened, and all mixed together in one pile, and a quart jar filled from the mixture. The jar should be sealed and marked with the name and address of the sender in such a way that there can be no mistake about the identity of the sample, and forwarded at once to the Director of the Station. The Station will furnish blank forms for the certificate, which is to go with the sample, but if there is not time to write for them, it may be made out after the form printed herewith. (See page 99.) All such samples must be taken at, or soon after, the time of purchasing the fertilizer, as it is not intended that a fertilizer be kept for months, possibly subject to change from exposure, and then be submitted to analysis.

FORM OF CERTIFICATE. The following is the proper form of certificate to accompany samples for free analysis. The words in italics are supposed to have been written in the blanks of one of our printed forms by the sender of the sample and give an idea of how these blanks should be filled. Anyone intending to send a sample for free analysis can get these blank certificates by writing to the Station.

CERTIFICATE FOR FREE ANALYSIS.

M. A. SCOVELL, Director,
LEXINGTON, KY.

Smithville, Ky., June 1st, 1898.

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 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: I opened four sacks of the fertilizer and took two shovels full from each and mixed them all together thoroughly on a clean floor and immediately filled a quart jar with the mixed fertilizer and labeled it "No. 1 from John Smith, Smithville, Ky."

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) John Smith,

(P. O. Address) Smithville, Ky.

Signature of Witnesses :

Sam Jones.

Will Brown.

SECTION PROVIDING FOR FREE ANALYSES. We print, also, the section of the Fertilizer Law relative to the taking of samples for free analysis, and we invite particular attention to it :

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 believe that it is a fair sample of the fertilizer as it was delivered to the purchaser.

THE PROPER SELECTION OF FERTILIZERS.

In regard to the proper selection of fertilizers we can only say briefly that their profitable use will depend upon a knowledge of the needs of the particular soil to which they are to be applied, and the requirements of the crop to be grown. The latter knowledge has been gained once for all for most farm crops by a scientific study of these crops, but the needs of the soil must in most cases be learned by the farmer himself, either from systematic field experiments, or by observation and experience. If it is necessary for a farmer to use commercial fertilizers, and he is working upon a kind of soil that has not already been tested, we believe it will pay him to learn its needs by carrying out systematic experiments with fertilizers. The experiments made at the Station amply illustrate this. It

would be very unprofitable to buy phosphates for use on soil like that of the Station farm, but potash salts could be profitably used there with most crops. This is because the soil is already rich in phosphates. But if it were deficient in phosphates, as is the case with many soils in this State, it would be unprofitable to use potash salts alone, and one would have to supply phosphates. It is therefore necessary in purchasing a commercial fertilizer to consider, first, what our soil needs for the crop to be raised, and then to look for that fertilizer containing most of those substances, in an available form, as shown by its chemical analysis and guaranteed by the manufacturer, at the least cost. It is well to bear in mind, also, that nitrogen compounds are the most expensive constituents of commercial fertilizers, and if we can keep up our nitrogen supply by means of clover, cow peas, or other leguminous plants, or by barnyard manure, and purchase only such phosphates and potash as may be needed, we will have accomplished a great saving.

THE TABLES.

The following tables are self-explanatory. They give the minimum analyses, expressed in percents, of all fertilizers that have been entered under the new law up to the date of this bulletin. For the analyses of the fertilizers that were entered this year under the old law see Bulletin 75. These tables and those of Bulletin 75 together contain the names of all brands legally on sale in the State up to the date of the present issue.

Station Number.	NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	GUARANTEED MINIMUM ANALYSIS.—PER CENT.							
			Phosphoric Acid.				Nitrogen.	Equivalent to Ammonia.	Potash.	
			Soluble	Reverted.	Available.	Total.			From Muriate.	From Sulphate.
4358	A. D. Adair & McCarty Bros., Atlanta, Ga. Armour & Co., Chicago, Ill.	See Furman Farm Improvement Co.	6.00	2.00	8.00	10.00	4.11	5.00	.....	7.00
4443	William Casler, Louisville, Ky. Continental Fertilizer Co., Nashville, Tenn.	See R. H. Hoskins.	9.00	2.00	11.00	12.00	.....	.....	2.00	.....
4444	Same.	Bear Dissolved Bone	8.00	6.00	14.00	15.00	.....	.....	.....	.....
4357	The Currie Fertilizer Co., Louisville, Ky.	Currie's Tobacco and Potato Grower.	.....	.....	7.00	8.00	2.06	2.50	.....	8.00
4508	Same.	Currie's Butchertown Raw Bone Meal	5.00	5.25	10.25	15.00	0.82	1.00	.....	1.25
4509	Same.	Currie's Raw Bone Meal	.....	.....	.....	22.00	3.71	4.50	.....	.....
4510	Same.	Currie's Fine Ground Raw Bone Meal	.....	.....	.....	23.00	1.65	2.00	.....	.....
4511	Same.	Currie's Wheat Grower	8.50	2.50	11.00	14.00	0.41	0.50	.....	1.25

		GUARANTEED MINIMUM ANALYSIS.—PER CENT.									
Station Number.	NAME AND ADDRESS OF MANUFACTURER.	NAME OF BRAND.	Phosphoric Acid.				Nitrogen.	Equivalent to Ammonia.	Potash.		
			Soluble.	Reverted.	Available.	Total.			From Muriate.	From Sulphate.	
4544	Meridian Fertilizer Factory, Meridian, Miss.	Meridian Corn and Wheat Grower	8.00	2.00	10.00	11.00	2.47	3.00	2.50	.....
4307	National Fertilizer Co., Nashville, Tenn.	Acid Phosphate	.....	.....	15.00	.....	.....	.....	.....	.....
4308	Same	Acid Phosphate with Potash (Sadler's Formula)	.....	.....	12.00	.....	.....	.....	2.00	.....
4309	Same	Tobacco Grower	.....	.....	10.00	.....	1.65	2.00	2.00	.....
4310	Same	Tobacco Fertilizer	.....	.....	10.00	.....	2.06	2.50	3.60	.....
4311	Same	Bone Meal	.....	.....	.....	20.00	2.47	3.00	.....	.....
4312	Same	Corn Grower	.....	.....	12.00	.....	0.82	1.00	1.00	.....
4507	The E. Rauh & Son's Fertilizer Co., Indianapolis, Ind.	Pure Raw Bone	.....	.....	.....	22.00	4.00	4.86	.....	.....
4503	Read Fertilizer Company, Charleston, S. C.	Farmer's Special Manure	.....	.....	10.00	11.00	0.82	1.00	3.00	.....
4504	Same	Dissolved Bone	.....	.....	13.00	14.00	.....	.....	.....	.....

Commercial Fertilizers.

4505	Same.....	Read's High Grade Special Potash Mixture	10.00	11.00	.....	.....	4.00	.....
4318	The J. & F. Schroth Packing Co., Cincinnati, O....	Schroth's Special.....	7.00	10.00	1.65	2.00	1.00	.....
4319	Same	Corn and Wheat Grower.....	9.00	12.00	3.30	4.00	4.00	.....
4500	Southern Fertilizer Co., Rome, Ga.....	Greer's Compound Fertilizer ...	12.00	14.00	.....	.....	2.00	.....
4515	Stan'd Guano & Chemical Mfg Co., New Orleans, La	Pure Ground Bone.....	.....	20.00	3.09	3.75	.....	.....
4303	Swift & Co., Chicago, Ill...	Ground Steamed Bone.....	.....	23.75	3.28	4.00	.....	.....
4304	Same	Bone and Potash, 3 per cent....	.....	24.50	2.05	2.50	.....	3.00
4305	Same	Bone Tankage & Potash, 3 per cent .....	.....	17.00	4.92	6.00	.....	3.00
4306	Same	Potato and Tobacco Grower....	8.00	10.00	3.28	4.00	.....	5.00
4379	Same	Raw Bone Meal .....	.....	23.00	3.70	4.50	.....	.....
4380	Same	Bone Tankage .....	.....	17.00	4.92	6.00	.....	.....
4381	Same	Superphosphate.....	6.00	8.00	2.46	3.00	.....	2.00
4445	Tennessee Chemical Co., Nashville, Tenn.....	Ox Ammoniated Bone	6.00	10.00	1.65	2.00	2.00	.....
4446	Same	Ox Alkaline Bone	9.00	12.00	.....	.....	2.00	.....

AUGUST 25, 1898.

M. A. SCOVELL, Director.

A. M. PETER.

H. E. CURTIS.