

CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

BULLETIN No. 72.

AUGUST 25, 1882.

FERTILIZER LAW.

This Bulletin contains the text of "An Act concerning Commercial Fertilizers" which was passed by the General Assembly to go into effect Sept. 1, 1882, and which repeals and takes the place of all previous legislation on that subject in this State.

Since a full understanding of the provisions and penalties of this law is important to all parties who buy or sell commercial fertilizers, attention is specially directed to the following points.

The law of 1882 holds the *seller* of a fertilizer, retailing at ten dollars or more per ton, responsible for affixing a correct label or statement to every package or lot sold or offered, as well as for the payment of an analysis fee of ten dollars, for each fertilizing ingredient which the fertilizer contains or is claimed to contain, unless the manufacturer or importer shall have provided labels or statements and shall have paid the fee. **Sections 1 and 3.**

The law also requires, in case of any fertilizer selling at ten dollars or more per ton, that a certified statement of composition, net weight in package, etc., shall be filed with the Director of the Experiment Station, and that a sealed sample shall be deposited with him. **Section 2.**

It is also provided that every person in the State who sells any commercial fertilizer of whatever kind or price shall annually report certain facts to the Director of the Experiment Station and on demand of the latter shall deliver a sample for analysis. Here follows the law.

AN ACT CONCERNING COMMERCIAL FERTILIZERS.

GENERAL ASSEMBLY,
January Session, A. D. 1882.

*Be it enacted by the Senate and House of Representatives in
General Assembly convened:*

SECTION 1. Every person or company who shall sell, offer, or expose for sale, in this State, any commercial fertilizer or manure the retail price of which is ten dollars, or more than ten dollars per ton, shall affix conspicuously to every package thereof a plainly printed statement clearly and truly certifying the number of net pounds of fertilizer in the package, the name, brand, or trade-mark under which the fertilizer is sold, the name and address of the manufacturer, the place of manufacture and the chemical composition of the fertilizer, expressed in the terms and manner approved and currently employed by the Connecticut Agricultural Experiment Station.

If any such fertilizer be sold in bulk, such printed statement shall accompany and go with every lot and parcel sold, offered, or exposed for sale.

SEC. 2. Before any commercial fertilizer, the retail price of which is ten dollars, or more than ten dollars per ton, is sold, offered, or exposed for sale, the manufacturer, importer, or party who causes it to be sold, or offered for sale, within the State of Connecticut, shall file with the director of the Connecticut Agricultural Experiment Station two certified copies of the statement named in section one of this act, and shall deposit with said director a sealed glass jar or bottle containing not less than one pound of the fertilizer, accompanied by an affidavit that it is a fair average sample thereof.

SEC. 3. The manufacturer, importer, agent, or seller of any commercial fertilizer, the retail price of which is ten dollars or more than ten dollars per ton, shall pay on or before the first of May, annually, to the director of the Connecticut Agricultural Experiment Station, an analysis fee of ten dollars for each of the fertilizing ingredients contained or claimed to exist in said fertilizer: *provided*, that whenever the manufacturer or importer shall have paid the fee herein required for any persons acting as agents or sellers for such manufacturer or importer, such agents or sellers shall not be required to pay the fee named in this section.

SEC. 4. Every person in this State who sells, or acts as local agent for the sale of any commercial fertilizer of whatever kind or price, shall annually, or at the time of becoming such seller or agent, report to the director of the Connecticut Agricultural Experiment Station his name, residence, and post-office address, and the name and brand of said fertilizer, with the name and address of the manufacturer, importer, or party from whom such fertilizer was obtained, and shall, on demand of the director of the Connecticut Agricultural Experiment Station, deliver to said director a sample suitable for analysis of any such fertilizer or manure then and there sold or offered for sale by said seller or agent.

SEC. 5. No person or party shall sell, offer, or expose for sale, in the State of Connecticut, any pulverized leather, raw, steamed, roasted, or in any form, as a fertilizer or as an ingredient of any fertilizer or manure, without explicit printed certificate of the fact, such certificate to be conspicuously affixed to every package of such fertilizer or manure, and to accompany and go with every parcel or lot of the same.

SEC. 6. Every manufacturer of fish guano, or fertilizers of which the principal ingredient is fish or fish-mass from which the oil has been extracted, shall, before manufacturing or heating the same, and within thirty-six hours from the time such fish or mass has been delivered to him, treat the same with sulphuric acid or other chemical, approved by the director of said experiment station, in such quantity as to arrest decomposition: *provided, however,* that in lieu of such treatment such manufacturers may provide a means for consuming all smoke and vapors arising from such fertilizers during the process of manufacture.

SEC. 7. Any person violating any provision of the foregoing sections of this act shall be fined one hundred dollars for the first offense, and two hundred dollars for each subsequent violation.

SEC. 8. This act shall not affect parties manufacturing, importing, or purchasing fertilizers for their own private use, and not to sell in this State.

SEC. 9. The director of the Connecticut Agricultural Experiment Station shall pay the analysis-fees received by him into the treasury of the station, and shall cause one or more analysis of each fertilizer to be made and published annually. Said director is hereby authorized, in person or by deputy, to take samples for analysis from any lot or package of manure or fertilizer which may be in the possession of any dealer.

SEC. 10. The director of the Connecticut Agricultural Station shall, from time to time, as bulletins of said station may be issued, mail or cause to be mailed two copies, at least, of such bulletins to each post-office in the State.

SEC. 11. Title sixteen, chapter fifteen, sections fifteen and sixteen, and title twenty, chapter twelve, section five of the general statutes, and chapter one hundred and twenty of the public acts of 1881, being an act concerning commercial fertilizers, are hereby repealed.

SEC. 12. This act shall take effect on the first day of September, 1882.

FORM OF MANUFACTURER'S STATEMENT.

At the request of several manufacturers, the following form of statement is given for use in complying with Section 1 of the Act.

JOHN DOE'S SUPERPHOSPHATE.

This lot or package (bag or barrel) contains (or is guaranteed to contain) 250 net pounds of JOHN DOE'S SUPERPHOSPHATE, manufactured at New Haven, Ct., and having the following chemical composition, per cent., viz:

Nitrogen in nitrates,	2.1
" ammonia-salts,	1.5
" organic matter,	1.5
Soluble phosphoric acid,	8.0
Reverted " "	1.5
Insoluble " "	1.0
Potash, as sulphate (or muriate),	4.3

John Doe, Manufacturer, New Haven, Ct.

The above statement of chemical composition will cover SUPERPHOSPHATES and SPECIAL MANURES. Ingredients that are not present may of course be omitted in the statement, and others may be named if it is desired.

Be it observed that the common use of the word "ammonia" in place of nitrogen, as applied to articles really containing no ammonia or ammonia-salts, is not "approved" as it is not "currently employed by the Connecticut Agricultural Experiment Station." The same is true of the use of the terms "available" and "assimilable" as covering soluble and reduced phosphoric acid.

In case of BONE, FISH, TANKAGE, DRIED MEAT, DRIED BLOOD, &c., the chemical composition may take account of the two ingredients: Nitrogen, Phosphoric acid.

For POTASH SALTS give the per cent. of Potash (potassium oxide), and of Sulphate of potash or Muriate of potash.

The chemical composition of other fertilizers may be given as found in the Station Reports.

✍ As a rule the Station's analyses cannot take account of ingredients not claimed to be present in a fertilizer.

FORM OF DEALER'S REPORT.

Section 4 of the Act requires that every person in this State who sells or acts as local agent for the sale of any Commercial Fertilizer of whatever kind or price, shall, *annually* or *at the time of becoming* such agent or seller, make a report to the Director of the Experiment Station. The subjoined form may be used for such reports and corresponding blanks may be had of the Station.

I (we), the undersigned, hereby report to the Director of the Connecticut Agricultural Experiment Station, as required by law, that I am agent (we are agents) for the sale of (here give correct full name and brand of fertilizer) manufactured (imported, furnished) by (here give name and address of manufacturer, importer or party from whom the fertilizer was obtained) and hold myself (ourselves) prepared to deliver to said Director a sample of the same on his demand.

Sign with name,

Residence,

Post Office Address,

And Date.

On receiving statements and analysis-fees from manufacturers and reports from dealers, the Station will issue receipts for the same.

LOCATION OF THE EXPERIMENT STATION.

The period of five years, during which, by agreement, the Station was to enjoy the use of apartments belonging to the Sheffield Scientific School, terminated July 1. Our work has nevertheless, thanks to the hospitality of the authorities of the School, been permitted to go on without interruption until Sept. 1. From that date the Station vacates its old quarters and establishes itself permanently on the grounds purchased for its

use on Suburban street, New Haven. Its offices will be well accommodated in the house there standing and, for its Laboratory, a commodious brick building is now going up, which it is expected will be ready for occupancy before the close of the year. Until its completion the Station will be without the means of making analyses and therefore *can undertake no further chemical work until 1883.*

Letters, etc. may be addressed as formerly, to Connecticut Agricultural Experiment Station, New Haven, Ct.

Correspondence or samples for the Station should *not* be addressed to individual officers.

The force of the Station will be fully employed for the remainder of the year in preparing the Annual Report, attending to correspondence and to the fitting of the offices and laboratory.

Suburban street, on which the Station is situated, extends from Whitney avenue to Prospect street and may be reached by the Lake Whitney Horse Cars, which leave the corner of Church and Chapel streets every half hour.

FERTILIZER ANALYSES.

786. FOSSIL MARL. Sampled and sent by Jones Brothers, South Windsor. — Roberts, East Hartford, dealer.

"FOSSIL MARL" is the Green Sand Marl of New Jersey. The sample **786** is quite similar to **316** analyzed at this Station in 1879 (see Station Report for that year, p. 46). Below are given the full analysis of **316** and a partial analysis of **786**.

	316	786
Moisture,	16.70	17.64
Combined water,	3.26	
Sand, insoluble silica,	18.33	
Soluble silica,	26.65	
Oxides of iron and alumina,	23.00	
Lime, .....	.43	
Magnesia,	3.12	
Potash,	5.69	
Soda, .....	.60	
Phosphoric acid, .....	.90	.92
Undetermined matters, .....	.42	
	100.00	
Cost per ton,	\$4.00*	\$10.00

* At Hartford.

The analysis given in the pamphlet (issued by Hooper & Co., General Agents) accompanying the sample gives phosphoric acid at 2.8 per cent. and potash at 7.3 per cent. The sample contains but one-third that amount of the former, and as to the latter it exists as a silicate—in the mineral *glauconite*, which gives the green color to the marl—and is insoluble or very slowly soluble, and accordingly the marl has little effect as an active fertilizer when used in small doses, but rather belongs to the class of amendments which often produce striking results on poor soils, when applied in large quantities.

This marl has been extremely useful in New Jersey on lands near to market, and but a little way removed from the marl pits, where its cost is but \$3 to \$5 per ton. To transport it to Connecticut can hardly be profitable to the farmer here, unless all the circumstances are favorable to laying it on at low cost.

837. SALTPETER. From stock of E. B. Botchford, New Milford.

838. NITRATE OF SODA. From stock of Merritt Beach, New Milford.

837 and **838** were sampled and sent by J. M. Hallock, Gaylordsville.

ANALYSES.

	837	838
Nitrogen,	12.98	14.29
Potash,	44.65	
Chlorine,	2.06	2.66
Water,	1.12	3.78
Magnesia, .....		.86

The composition of these articles may be represented as follows:—

	837	838
Nitrate of potash,	93.78	
Nitrate of soda,		86.76
Chloride of potassium,	1.47	
Chloride of sodium (salt),	2.24	4.38
Sulphate of magnesia (Epsom salts),		2.59
Water,	1.12	3.78
Other matters, not determined,	1.39	2.49
	<hr/> 100.00	<hr/> 100.00

Reckoning the nitrogen as worth 26 cents per pound, and the potash as worth 7 cents per pound, the estimated value per ton of **837** is \$130.01, of **838**, \$74.31. The retail prices as reported to the Station by the sender are \$30 per 100 pounds or \$600 per ton for **837**, and \$5 per 100 pounds or \$100 per ton for **838**.

SUPERPHOSPHATES AND SPECIAL MANURES.

803. DRIED AND GROUND FISH GUANO. Made by Preston & Sons, Green Point, N. Y. From the stock of E. N. Pierce & Co., Plainville.

827. BOWKER'S PREPARED DRY FISH. Made by the Bowker Fertilizer Co., Boston and New York. From the stock of Coburn & Gale, Hartford.

829. MILES' FISH AND POTASH. Made by the Geo. W. Miles Co., Milford. From the stock of Olds & Whipple, Hartford.

828. COOKE'S BLOOD GUANO. Made by the Bowker Fertilizer Co. From the stock of A. C. Sternberg, Hartford.

832. SOLUBLE PACIFIC GUANO. Made by the Pacific Guano Co., Boston. From stock of H. A. Stillman & Co., Hartford.

831. RUSSELL COE'S AMMONIATED BONE SUPERPHOSPHATE. Made by Russell Coe, Linden, N. J. From stock of H. A. Stillman & Co., Hartford.

833. MILES' I. X. L. AMMONIATED BONE SUPERPHOSPHATE. Made by the G. W. Miles Co., Milford. From stock of Olds & Whipple, Hartford.

830. BRADLEY'S PATENT FERTILIZER FOR TOBACCO. Made by the Bradley Fertilizer Co., Boston. From the stock of A. C. Sternberg, Hartford.

807. BAKER'S POTATO MANURE. Made by H. J. Baker & Bro., N. Y. From the stock of Wilcox & Judd, Bristol.

806. BAKER'S CORN MANURE. Made by H. J. Baker & Bro., N. Y. From the stock of Wilcox & Judd, Bristol.

810. STOCKBRIDGE MANURE FOR GRAIN. Made by the Bowker Fertilizer Co., Boston and New York. From the stock of S. A. Weldon & Son, Bristol.

All the above were sampled by the Station Agent.

820. FORRESTER'S CORN MANURE.

821. FORRESTER'S ONION MANURE.

822. FORRESTER'S POTATO MANURE.

The last three were made by Geo. B. Forrester, 169 Front St., N. Y., and were sampled from his stock by S. B. Wakeman, Saugatuck.

ANALYSES AND VALUATIONS.

	803	827	829	828	832	831	833	830	807	806	810	820	821	822
Nitrogen as nitrates, .....	.39	---	---	---	.75	---	---	.56	trace	1.62	1.05	---	---	---
Nitrogen as ammonia salts,	1.21	---	.46	---	---	---	---	---	3.00	1.93	.13	5.09	5.53	3.78
Organic nitrogen,	1.95	3.75	3.43	1.88	1.56	2.10	1.70	2.08	1.15	.61	2.30	.21	---	---
Soluble phosphoric acid,	2.23	1.05	4.08	4.11	6.19	8.08	7.71	7.00	4.88	4.42	4.85	6.94	5.93	5.98
Reverted phosphoric acid,	3.25	5.85	1.24	2.83	1.91	1.88	.90	1.31	.14	1.34	1.72	.84	.30	.93
Insoluble phosphoric acid, .....	.52	3.67	1.86	4.26	4.88	1.82	2.18	1.51	.10	.43	2.57	.78	.40	.31
Potash,	---	---	4.31	1.54	3.11	1.41	1.90	1.90	9.37	7.97	6.83	8.06	5.69	10.27
Chlorine,	---	---	4.25	2.42	2.62	2.48	1.68	2.11	12.15	9.68	6.62	6.39	.66	4.90
Cost per ton, -	\$35.00	40.00	40.00	42.50	45.00	40.00	42.00	50.00	50.00	50.00	50.00	50.00*	50.00*	50.00*
Estimated value per ton,	\$30.46	35.56	38.10	31.04	39.28	37.25	33.58	36.46	44.86	44.49	42.39	58.39	55.53	50.69

* In New York.

POTASH SALTS.

809. ACORN BRAND GERMAN POTASH SALTS. Williams, Clark & Co., N. Y. From stock of O. F. Strunz, Bristol. Sample drawn by the Station Agent.

823. SULPHATE OF POTASH. From stock of Geo. B. Forrester, N. Y. Sampled and sent by S. B. Wakeman, Saugatuck. Cost \$6.50 per barrel, containing 346 pounds net.

ANALYSES.

	809	823
Potash,	11.63	24.20
Chlorine,	25.07	2.20
Equivalent sulphate of potash,	21.50	44.82
Cost per ton,	\$15.00	37.57
Estimated value per ton,	\$11.63	33.88
100 pounds actual potash cost,	\$6.44	7.76

823 is a double sulphate of potash and magnesia like numbers **775** and **798** reported in the last Bulletin.

BONE.

824. PURE GROUND BONE. From stock of Geo. B. Forrester, N. Y. Sampled and sent by S. B. Wakeman, Saugatuck.

839. RICHARDS' PURE BONE. Made by Geo. Richards & Co. Sample drawn from their stock by William Porter, Unionville.

MECHANICAL ANALYSES.

	824	839
Fine, smaller than $\frac{1}{80}$ inch,	42	14
Fine-medium, smaller than $\frac{1}{20}$ inch,	19	21
Medium, smaller than $\frac{1}{12}$ inch,	21	24
Coarse medium, smaller than $\frac{1}{8}$ inch,	16	31
Coarse, larger than $\frac{1}{8}$ inch,	2	10
	<hr/> 100	<hr/> 100

CHEMICAL ANALYSES AND VALUATIONS.

	824	839
Nitrogen, -----	3.40	4.08
Phosphoric acid, ---	21.95	20.55
Cost per ton, -----	36.00*	35.00
Estimated value per ton, ---	34.13	31.94

* In New York.

CORRECTION.

The price of Mapes' Corn Manure (No. 789, Bulletin LXXI of this Station) is \$50 per ton and not \$51 as reported by the sender of the sample.

S. W. JOHNSON, *Director*.