

# Connecticut Agricultural Experiment Station

NEW HAVEN, CONN.

---

BULLETIN No. 114.

DECEMBER, 1892.

---

## CONTENTS.

	PAGE
Notice as to Bulletins, . . . . .	2
Mixed Fertilizers, . . . . .	3
Bone and Potash, . . . . .	3
Nitrogenous Superphosphates and Guanos, . . . . .	3
Special Manures, . . . . .	16

## NOTICE AS TO BULLETINS.

The Bulletins of this Station, issued quarterly or oftener, are mailed free to citizens of Connecticut who apply for them, and to others, as far as the limited editions permit.

Applications should be renewed annually before January 1st.

Citizens of other States desiring to secure the Bulletins regularly are referred to the notice below.

The matter of all the Bulletins of this Station in so far as it is new and of permanent value will be made part of the Annual Report of the Director.

Bulletins earlier than No. 71 and Nos. 83, 93, 100, 101 and 102 are exhausted and cannot be supplied.

## NOTICE AS TO SUPPLY OF STATION REPORTS.

The Annual Report of this Station for 1891, printed at State expense, is limited to an edition of 7,000 copies, of which 5,000 copies are bound and distributed by the Secretary of the Board of Agriculture, T. S. Gold, West Cornwall, Conn.

After satisfying necessary exchanges, the copies remaining at the disposal of the Station have been sent to citizens of Connecticut, who made application for them, until our supply is exhausted.

The Station has no supply of its Annual Report for the years 1877, 1878, 1879, 1880, 1881, 1883, and 1887, and will pay a liberal price for a number of clean copies of Reports for any of these years.

Extra copies of the next Annual Report can be secured if called for before the printing-forms are broken up. Such copies will be struck off and supplied early next year to citizens of other States who apply to this Station before February 1st, and who remit 25 cents per copy to defray costs. This remittance will also secure to the sender the Bulletins issued by this Station during the year.

Coin may be forwarded by Post at sender's risk with small chance of loss, as follows: Cut an inch hole in a card or scrap of paper-box that will just fit inside an envelope, fasten a twenty-five cent piece in the cavity by pasting paper over it on both sides of the card, write thereon name and Post office address, inclose within an envelope, and send as a letter prepaid in full. P. O. stamps cannot be accepted.

EXPERIMENT STATION.

MIXED FERTILIZERS.

I. BONE AND POTASH.

**3595.** AI Fertilizer, made by C. Buckingham, Southport. Sampled by Station agent from stock of R. C. Wilcox, Guilford.

**3591.** Circle Brand Bone and Potash, made by Bradley Fertilizer Co., Boston, Mass. Sampled by manufacturer.

**3569.** Ground Bone and Potash, made by E. Frank Coe, New York. Sampled by Station agent from stock of City Coal and Wood Co., New Britain.

ANALYSES AND VALUATIONS.

MECHANICAL ANALYSES.*			
	3595	3591	3569
Fine, smaller than $\frac{1}{16}$ inch.....	58	52	62
Fine medium, smaller than $\frac{1}{8}$ inch.....	21	36	20
Coarse medium, smaller than $\frac{1}{4}$ inch.....	15	12	12
Coarse, larger than $\frac{1}{8}$ inch.....	6	0	6
	100	100	100
CHEMICAL ANALYSES.			
Nitrogen.....	4.06	2.66	1.37
Phosphoric acid.....	15.44	17.59	10.26
Potash.....	6.31	5.06	2.90
Valuation per ton.....	\$35.10	34.29	18.89

II. NITROGENOUS SUPERPHOSPHATES AND GUANOS

Here are included those mixed fertilizers containing nitrogen, phosphoric acid and in most cases potash, which are not designed by their manufacturers for use on any special crop. "Special Manures" are noticed further on.

1. *Samples drawn by Station Agents.*

In the tables on pages 6 to 13 are tabulated the analyses of forty-six brands made on samples collected by the Station agents.

In the table on page 11 is an analysis of Sanderson's Formula A, No. **3596**. Another analysis of this brand previously made on a sample drawn by our agent from stock of E. B. Clark, Milford, No. **3513**, is given below. The manufacturer objected that this did not fairly represent the quality of the brand. Analy-

\* In these mixtures the potash salts are washed out before making the mechanical analysis.

sis No. **3596** was then made and also No. **3597**, given below, from another lot of goods. These two later analyses show tolerable agreement and a considerably better quality than the first analysis. See also analyses of this brand on page 17.

## OTHER ANALYSES OF SANDERSON'S FORMULA A.

	<b>3513</b>	<b>3597</b>
Nitrogen as nitrates.....	1.55	1.95
organic .....	1.92	2.91
Total nitrogen.....	3.47	4.86
Phosphoric acid, Soluble .....	5.44	4.99
reverted .....	3.65	3.57
insoluble.....	1.55	.68
Total .....	10.64	9.24
Potash as muriate .....	5.64	7.43
Chlorine .....	6.88	6.25
Cost per ton.....	\$35.00	35.00
Valuation per ton.....	\$29.76	34 60

## THE GUARANTEES.

The law of Connecticut requires every package of fertilizer to bear a statement of the actual composition of the goods. This usually expresses the quantities of nitrogen, phosphoric acid and potash within certain limits, as "nitrogen 2-4 per cent."

If a fertilizer with such a guarantee actually contains 2 per cent. of nitrogen, it is within the manufacturer's guarantee.

It is the lowest figures of the guarantee therefore that purchasers should regard.

Of the forty-six brands here reported eleven are below their minimum guarantee in respect of one ingredient, and four in respect of two ingredients. That is, one-third of all the nitrogenous superphosphates in our market contain less of one or of two ingredients than they are claimed to contain.

It is urged that an excess of one ingredient over the guarantee should be held to make good the deficiency of another. But with reasonable care and skill in the manufacture and in the sampling and analysis of the goods the actual analysis should not fall below the minimum guaranteed in any respect particularly when wide limits are allowed in the guarantees themselves.

Comparison of the tables of analyses with those of past years shows that certain brands have about the same composition year after year, while others fluctuate considerably and cannot be depended on to be alike year after year.

## COST AND VALUATION.

*Cost.*

The method used to ascertain the retail cash price of the phosphates is as follows:

The sampling agents inquire and note the price at the time each sample is drawn. The analysis when done is reported to each dealer from whom a sample was taken, with an enclosed postal card addressed to the Station, and a request to note on it whether the retail cash price is correctly given and to mail to the Station.

To each manufacturer is also sent a request that he will notify the Station regarding the probable average cash price at freight centers in Connecticut, of such brands as he sells in the State.

From these data the average prices are computed.

*Valuation.*

The valuation has been computed in all cases in the usual manner.

*Percentage Difference* given in the last column of the table shows the percentage excess of the cost price over the average retail cost of the nitrogen, phosphoric acid and potash contained in the fertilizer.

This information puts the purchaser in a position where he can figure as to the probable relative value of the different brands and the probable relative economy of buying fertilizers mixed or unmixed.

Which method of buying is preferable can only be determined by each individual farmer, who should know best what his soil and crops need and what his facilities for purchase and payment are.

No general rule can be given. In one case ready-mixed, in another, home-mixed fertilizers may be found the more profitable to use.

The average cost of the nitrogenous superphosphates, excluding the last two analyses of the table in which cost exceeds valuation by considerably more than fifty per cent., is \$35.28. The average valuation, \$25.46, and the percentage difference 27.8.

Last year the corresponding figures were:

Average cost \$33.93, Average valuation \$28.13, Percentage difference 20.6.

## NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3620	Pure Fine Dissolved Bone.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	Mapes' Branch, Hartford.	\$32.00
3596	Formula A.	L. Sanderson, New Haven.	Manufacturer.	35.00
3672	X L Phosphate.	Danbury Fertilizer Co., Danbury.	Manufacturer.	30.00
3512	Old Reliable Superphosphate.	L. Sanderson, New Haven.	E. B. Clark, Milford.	30.00
3627	Complete Manure, A Brand.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	City Coal and Wood Co., New Britain. Wilson & Burr, Middletown.	37.00 36.00
3674	Chittenden's Ammoniated Bone Phosphate.	National Fertilizer Co., Bridgeport.	Mapes' Branch, Hartford. Manufacturer.	35.00 30.00
3631	Complete Manure for General Use.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	S. D. Woodruff & Sons, Orange. T. H. Eldridge, Norwich.	32.00 34.00
3498	Peruvian Guano.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	E. P. Matherson, Pomfret.	33.00
3616	Animal Fertilizer.	L. B. Darling Fertilizer Co., Pawtucket, R. I.	D. M. Mitchell, South Britain. Mapes' Branch, Hartford.	32.00 38.00
3529	Farmers' New Method Fertilizer.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	G. K. Nason, Willimantic. City Coal & Wood Co., New Britain. Mapes' Branch, Hartford.	40.00 40.00 43.00
			Olds & Whipple, Hartford. F. S. Bidwell, Windsor Locks. W. W. Cooper, Suffield.	38.00 36.00 38.00
			J. E. Comstock, New London. W. J. Starr, Groton.	33.00 34.00
			J. M. Young, Norwich. Wilson & Burr, Middletown.	30.00 30.00
			J. A. Lewis, Willimantic. W. F. Andrews, East Hartford. S. A. Billings, Meriden.	30.00 33.00 33.00

## NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3675	Chittenden's Complete Fertilizer.	National Fertilizer Co., Bridgeport.	D. M. Mitchell, South Britain.	\$40.00
3600	Sea Fowl Guano.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	T. E. Greene, Torrington.	40.00
3631	Market Garden Phosphate.	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	David Fitzgerald, Stratford.	43.00
3638	Ammoniated Bone Phosphate.	Leander Wilcox, Mystic.	F. S. Bidwell, Windsor Locks.	33.00
3524	A. A. Ammoniated Superphosphate.	H. J. Baker & Bro., 215 Pearl St., New York.	W. W. Cooper, Suffield.	38.00
3605	Original Coe's Superphosphate.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	Meeker Bros., Norwalk.	39.00
3613	Standard Phosphate.	Lister's Agricultural Chemical Works, Newark, N. J.	C. A. Young, Danielsonville.	42.00
3530	High Grade Ammoniated Bone Superphosphate.	Bone E. Frank Coe, 16 Burling Slip, New York.	Frederic Gallup, New London.	32.25
3637	Bay State Fertilizer.	Clarke Cove Fertilizer Co., Boston, Mass.	J. A. Lewis, Willimantic.	30.00
3678	Chittenden's Fish and Potash.	National Fertilizer Co., Bridgeport.	H. K. Brainard, Thompsonville.	34.00
			C. M. Smith, East Hartford.	34.00
			W. F. Andross, East Hartford.	37.00
			A. L. Winton, Bridgeport.	37.50
			E. Hawley, Newtown.	37.50
			S. J. Hall, Meriden.	37.50
			Peck Bros., Northfield.	32.00
			A. N. Clark, Milford.	32.00
			I. W. Denison, Mystic.	32.00
			F. P. Burr, Middletown.	32.00
			J. P. Barstow & Co., Norwich.	32.00
			J. O. Fox & Co., Putnam.	32.00
			Arnold Rudd, New London.	34.00
			H. H. Davenport, Pomfret.	32.00
			T. H. Eldridge, Norwich.	34.00

## NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3525	Hill and Drill Phosphate.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	J. H. Larned, Pomfret. E. Curtis & Son, Stepney. C. H. Bell, Portland. E. M. Brewster, Norwich. C. W. Michael & Co., Yalesville. C. O. Wolcott, Buckland.	\$34.00 35.00 38.00 38.00 38.00 37.50
3634	High Grade Farmers' Friend Fertilizer.	Read Fertilizer Co., Box 3121, New York.		
3577	Ammoniated Bone Fertilizer.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	G. W. Mitchell, South Britain. E. M. Brewster, Norwich. Southington Lumber and Feed Co., Southington.	30.00 32.00 34.00
3579	Gloucester Fish and Potash	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	W. H. Anderson, Putnam. B. Curtis & Son, Stepney.	28.00 30.00
3527	Superphosphate.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	A. C. Sternberg, Hartford. S. A. Billings, Meriden. W. J. Starr, Groton. Wilson & Burr, Middletown. J. M. Young, Norwich. J. A. Lewis, Willimantic. W. F. Andross, East Hartford. T. F. Powers, Waterford. Wheeler & Howe, Bridgeport. J. F. Holmes, Stratford.	35.00 37.00 37.00 35.00 35.00 35.00 35.00 35.00 37.00
3643	High Grade Fish and Potash.	Leander Wilcox, Mystic.	H. K. Brainard, Thompsonville. Frederic Gallup, New London. C. M. Smith, East Hartford. L. C. Gray, Jewett City.	32.00 31.25 34.00 30.00



NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—Continued.

EXPERIMENT STATION.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3543	Quinnipiac Phosphate.	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	J. E. Leonard, Jewett City. Meeker Bros., Norwalk.	\$35.00 36.00
3547	Ammoniated Bone Superphosphate.	Crocker Fertilizer Co., Buffalo, N. Y.	C. A. Young, Danielsonville. C. A. Young, Danielsonville. John Bransfield, Portland. J. E. Leonard, Jewett City. G. W. Clark, Milford.	35.00 35.00 40.00 35.00
3578	Sure Crop Phosphate.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	F. C. Sturtevant, Hartford. C. T. Leonard, Norwalk.	35.00 30.00
3541	Ammoniated Bone Superphosphate, Americus Brand.	Williams & Clark Fertilizer Co., 83 Fulton St., New York.	G. W. Mitchell, South Britain. H. K. Brainard, Thompsonville. C. E. Stagg, Stratford. D. B. Wilson, Waterbury. F. S. Bidwell, Windsor Locks. Daniel Morgan, Poquonock Bridge. John Bransfield, Portland. W. H. Anderson, Putnam.	25.00 36.00 34.00 36.00 35.00 34.00 36.00
3676	Russell Coe's Superphosphate.	National Fertilizer Co., Bridgeport.	J. P. Kingsley's Sons, Plainfield.	35.00
3582	Farm and Garden Phosphate.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	S. D. Woodruff & Sons, Orange. T. H. Eldridge, Norwich. Wilson & Burr, Middletown.	33.00 32.00 30.00
3602	Triangle A Fish and Potash.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	T. E. Greene, Torrington. D. N. Clark, Shelton. F. S. Bidwell, Windsor Locks. J. F. Elwood, Southport. G. W. Grant, Wapping.	33.00 36.00 29.00 30.00 32.00

NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—*Concluded.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3630	Pine Island Phosphate.	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	Olds & Whipple, Hartford.	\$35.00
3619	Alkaline Bone Phosphate.	E. Frank Coe, 16 Burling Slip, New York.	H. L. Hall, 24, Wallingford.	33.00
3610	Soluble Pacific Guano.	Pacific Guano Co., Box 1368, Boston, Mass.	C. H. Lounsbury, Seymour. John Bransfield, Portland. R. H. Tucker, Saybrook.	32.00 36.00 35.00
3644	New England Favorite.	J. S. Reese & Co., 10 South St., Baltimore, Md.	L. J. Grant, Wapping. Montgomery & Co., Groton.	35.00 35.00
3639	Samson Fertilizer.	Read Fertilizer Co., Box 3121, New York.	J. F. Silliman, New Canaan. W. H. Anderson, Putnam.	38.00 38.00
3608	Fish and Potash, Plain Brand.	Bowler Fertilizer Co., 43 Chatham St., Boston, Mass.	H. W. Morse, Jewett City. E. J. Dickerman, Mt. Carmel.	38.00 34.00
3635	Fish and Potash.	Read Fertilizer Co., Box 3121, New York.	W. Kyle, Bethel. H. W. Morse, Jewett City.	32.00 29.00
3611	King Phillip Alkaline Guano.	Clark's Cove Fertilizer Co., Boston, Mass.	C. O. Wolcott, Buckland.	32.00
3617	New Rival Ammoniated Phosphate.	Crocker Fertilizer Co., Buffalo, N. Y.	H. H. Davenport, Pomfret. W. L. L. Spencer, Lebanon. F. C. Sturtevant, Hartford.	28.00 32.00 36.00
3609	Gold Brand Excelsior Guano.	E. Frank Coe, 16 Burling Slip, New York.	E. H. Talcott, Torrington.	32.00
3632	Fish and Potash (Crossed Fishes Brand).	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	D. N. Clark, Shelton. Olds & Whipple, Hartford.	42.00 36.00
3677	Davidge Special Favorite.	Davidge Fertilizer Co., 121 Front St., New York.	H. S. Benedict, Newtown.	35.00
3633	Standard Fertilizer.	Read Fertilizer Co., Box 3121, New York.	J. F. Silliman, New Canaan Eli H. Stevens, Brookfield. W. H. Anderson, Putnam. H. W. Morse, Jewett City.	32.00 32.00 32.00 29.00

ANALYSES OF NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.

Station No.	Name or Brand.	Nitrogen.				Phosphoric Acid.				Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage Difference Between Cost and Valuation.				
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Found.	Total Guaranteed.					Found.	Guaranteed.		
																		Available.	
3620	Mapes' Pure Fine Dissolved Bone	---	---	3.00	3.00	2.1	5.90	10.62	1.13	17.65	12.0	16.52	---	---	---	32.00	\$33.77	*5.2	
3596	Sanderson's Formula A	1.06	.74	2.44	4.24	3.3	3.65	5.03	2.13	10.81	10.0	8.68	6.0	8.21	6.0	4.77	35.00	34.71	.8
3672	Danbury Fertilizer Co's X L Phosphate	---	---	2.97	2.97	2.1	4.12	7.00	.42	11.54	8.0	11.12	---	---	---	.58	30.00	29.23	2.6
3512	Sanderson's Old Reliable Superphosphate	---	---	1.82	1.82	1.7	11.74	1.12	.38	13.24	10.0	12.86	7.0	2.65	2.0	.20	30.00	28.01	7.1
3627	Mapes' Complete Manure, A Brand	.38	.47	2.06	2.91	2.5	9.76	3.31	.30	13.37	12.0	13.07	10.0	3.11	2.5	2.78	36.00	31.57	14.0
3674	Chittenden's Ammoniated Bone Phosphate	trace	---	2.66	2.66	1.7	7.20	2.96	1.16	11.32	9.0	10.16	7.0	2.81	2.0	2.52	31.50	26.45	19.1
3621	Mapes' Complete Manure for General Use	.78	.86	1.81	3.45	3.3	9.28	1.99	.15	11.42	10.0	11.27	8.0	4.33	4.0	4.20	38.00	31.81	19.4
3498	Mapes' Peruvian Guano	---	---	1.86	1.15	3.01	2.78	9.30	13.51	25.59	20.0	12.08	---	2.77	3.0	2.01	43.00	35.27	21.9
3616	Darling's Animal Fertilizer	.17	.57	2.95	3.69	3.3	4.32	3.03	2.05	9.40	10.0	7.35	---	6.05	4.0	3.87	36.00	29.11	23.6
3529	Bradley's Farmers' New Method Fertilizer	---	---	2.34	2.34	1.7	6.92	3.02	1.63	11.57	10.0	9.94	8.0	3.31	3.0	3.57	32.00	25.73	24.3
3675	Chittenden's Complete Fertilizer	.23	.31	3.67	4.21	3.3	4.05	4.13	1.48	9.66	8.0	8.18	6.0	6.26	6.0	4.69	39.50	31.60	25.0
3600	Bradley's Sea Fowl Guano	---	---	2.73	2.73	2.5	7.12	3.01	1.38	11.51	11.0	10.13	9.0	2.28	2.0	1.82	33.00	26.23	25.8
3631	Quinnipiac Market Garden Phosphate	.12	1.13	2.09	3.34	3.3	6.98	2.40	.09	9.47	9.0	9.38	8.0	7.11	7.0	3.95	40.00	31.65	26.4
3638	L. Wilcox's Ammoniated Bone Phosphate	.17	.54	2.55	3.26	2.5	3.81	3.02	1.60	8.43	7.0	6.83	6.0	5.02	5.0	6.84	32.50	25.67	26.6
3524	Baker's A. A. Ammoniated Superphosphate	.36	1.81	.91	3.08	2.5	8.99	2.12	.74	11.85	11.0	11.11	10.0	2.61	2.0	3.35	37.50	29.44	27.4
3605	Bradley's Original Coe's Superphosphate	---	---	2.44	2.44	1.7	7.12	2.93	1.82	11.87	11.0	10.05	8.0	1.96	1.0	2.06	32.00	25.08	27.6
3613	Lister's Standard Phosphate	---	.45	2.15	2.60	1.7	7.14	2.44	1.97	11.55	12.0	9.58	10.0	1.81	1.0	1.45	32.00	25.01	27.9

\* Valuation exceeds cost. † See notice on p. 3.

## ANALYSES OF NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Nitrogen.						Phosphoric Acid.						Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage Difference between Cost and Valuation.
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Found.	Total Guaranteed.	Found.	Guaranteed.	Available.	Found.				
3530	E. F. Coe's High Grade Ammoniated Bone Superphosphate	---	.80	1.44	2.24	2.0	7.52	2.25	1.48	11.25	11.0	9.77	9.0	2.41	2.0	45	\$32.00	\$24.96	28.2
3637	Clark's Cove Fertilizer Co's Bay State Fertilizer	---	---	2.53	2.53	2.7	6.27	3.17	1.97	11.41	10.0	9.44	8.5	2.45	2.0	2.08	32.00	24.95	28.3
3678	Chittenden's Fish and Potash	---	---	3.42	3.42	3.3	3.92	2.45	2.00	8.37	6.0	6.37	---	5.09	5.0	.59	34.00	26.49	28.4
3525	Bowker's Hill and Drill Phosphate	.86	---	1.84	2.70	2.5	7.70	3.57	2.55	13.82	12.0	11.27	8.0	2.10	2.0	1.63	36.00	27.93	28.9
3634	Read's High Grade Farmers' Friend Fertilizer	---	.39	2.91	3.30	3.3	3.73	2.44	.38	6.55	---	6.17	5.0	10.26	10.0	9.30	37.50	29.08	29.0
3577	Bowker's Ammoniated Bone Fertilizer	.83	---	1.53	2.36	2.0	6.56	3.28	3.03	12.87	10.0	9.84	8.0	1.88	2.0	4.25	32.00	24.71	29.5
3579	Bowker's Gloucester Fish and Potash	.12	---	.84	.96	8	9.34	1.32	3.03	13.69	9.0	10.66	6.0	1.51	2.0	1.99	28.00	21.48	30.3
3527	Bradley's Superphosphate	.12	---	2.75	2.87	2.3	7.18	3.15	1.37	11.70	11.0	10.33	9.0	2.04	1.5	2.34	35.00	26.73	30.9
3643	L. Wilcox's High Grade Fish and Potash	---	.27	3.38	3.65	3.2	3.10	2.25	.73	6.08	6.0	5.35	5.0	4.47	4.0	7.34	31.50	23.87	31.9
3543	Quinnipiac Phosphate	trace	---	2.82	2.82	2.5	6.72	3.34	1.33	11.39	10.0	10.06	9.0	2.01	2.0	2.44	35.00	26.12	34.0
3547	Crocker's Ammoniated Bone Superphosphate	---	---	2.99	2.99	2.9	5.47	4.68	2.83	12.98	11.0	10.15	10.0	1.08	1.0	1.58	35.50	26.43	34.3
3578	Bowker's Sure Crop Phosphate	---	---	.88	.94	---	7.90	2.25	4.14	14.29	---	10.15	---	1.21	---	2.13	28.00	20.75	34.9
3541	Williams & Clark's Bone Superphosphate (American Brand)	.07	---	2.62	2.69	2.5	7.04	3.21	.96	11.21	10.0	10.25	9.0	1.95	2.0	2.37	35.00	25.85	35.4
3676	National Fertilizer Co's Russell's Superphosphate	---	---	2.07	2.07	1.6	3.74	4.40	5.02	13.16	9.0	8.14	8.0	2.70	1.0	2.64	31.00	22.83	35.8

ANALYSES OF NITROGENOUS SUPERPHOSPHATES AND GUANOS SAMPLED BY THE STATION.—*Concluded.*

Station No.	Name or Brand.	Nitrogen.				Phosphoric Acid.				Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage Difference between Cost and Valuation.		
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Found.	Total Guaranteed.					Found.	Guaranteed.
3582	Bowker's Farm and Garden Phosphate	.47	---	1.99	2.46	---	6.72	2.07	3.20	11.99	---	8.79	---	4.25	\$33.00	\$24.27	36.9
3602	Bradley's Triangle A Fish and Potash	---	---	2.62	2.62	2.0	4.72	2.38	.73	7.83	6.0	7.10	4.0	7.18	31.00	22.43	38.2
3630	Quinnipiac Pine Island Phosphate	---	---	2.46	2.46	2.1	5.58	4.07	1.10	10.75	10.0	9.65	9.0	2.11	34.00	24.25	40.2
3619	E. F. Coe's Alkaline Bone Phosphate	---	---	1.51	1.51	.8	6.56	3.33	3.31	13.20	9.0	9.89	7.0	.21	32.00	22.77	40.6
3610	Pacific Guano Co's Soluble Pacific Guano	---	---	2.30	2.30	2.2	7.14	2.85	1.64	11.63	10.5	9.99	8.5	1.98	35.00	24.83	41.0
3644	Reese's New England Favorite Fertilizer	---	---	2.38	2.38	2.4	3.68	6.76	.29	10.73	11.0	10.44	10.0	2.85	35.00	24.68	41.8
3639	Read's Samson Fertilizer	.31	---	2.54	2.85	2.5	6.83	1.03	.46	8.32	9.0	7.86	8.0	5.80	38.00	26.78	41.9
3608	Bowker's Fish and Potash	---	---	2.17	2.17	2.2	6.72	1.12	4.15	11.99	8.0	7.84	---	3.89	34.00	23.61	44.0
3635	Read's Fish and Potash	---	---	2.54	2.77	2.5	3.25	2.08	.29	5.63	6.0	5.34	4.0	4.35	29.00	19.94	45.4
3611	Clark's Cove Fertilizer Co's King Philip Alkaline Guano	---	---	1.13	1.13	1.3	5.71	2.53	1.53	9.77	9.0	8.24	8.0	.23	28.00	18.98	47.5
3617	Crocker's New Rival Ammoniated Phosphate	---	---	1.49	1.49	1.2	6.77	2.73	2.51	12.01	11.0	9.50	10.0	1.67	32.00	21.19	51.0
3609	E. F. Coe's Gold Brand Excelsior Guano	---	---	1.41	2.14	2.5	6.61	2.04	1.75	10.40	8.0	8.65	6.0	.33	40.00	26.37	51.7
3632	Quinnipiac Fish and Potash	---	---	2.85	3.28	3.3	1.79	3.41	2.69	7.89	5.0	5.20	3.0	7.43	34.00	22.33	52.2
3677	Davidge Special Favorite Fertilizer	---	---	2.01	2.01	1.2	8.48	1.15	.59	10.22	11.0	9.63	10.0	1.53	35.00	22.45	55.9
3633	Read's Standard Fertilizer	---	---	1.08	1.08	.8	6.90	1.81	.08	8.79	10.0	8.71	8.0	4.82	31.00	19.87	56.1

## FISH AND POTASH.—SAMPLED BY THE STATION.

	Chittenden's.	Bowker's Gloucester.	Wilcox's.	Bradley's* Triangle A.	Bowker's Plain Brand.	Read's.	Quinnipiac Crossed Fishes.
	3678	3579	3643	3602	3608	3635	3632
Nitrogen as Ammonia.....	----	----	.27	----	----	.23	.43
Nitrogen, Organic.....	3.42	.84	3.38	2.62	2.17	2.54	2.85
Soluble Phosphoric Acid.....	3.92	9.34	3.10	4.72	6.72	3.26	1.79
Reverted Phosphoric Acid.....	2.45	1.32	2.25	2.38	1.12	2.08	3.41
Insoluble Phosphoric Acid.....	2.00	3.03	.73	.73	4.15	.29	2.69
Potash.....	5.09	1.51	4.47	3.72	3.73	3.42	3.50
Cost.....	\$34.00	\$28.00	\$31.50	\$31.00	\$34.00	\$29.00	\$34.00
Valuation.....	26.49	21.48	23.87	22.43	23.61	19.94	22.33

\* See also analysis of Bradley's Anchor Brand manufacturer's sample on page 17.

## FISH AND POTASH.

The samples of Fish and Potash included in the previous tables are tabulated by themselves for comparison on page 14.

2. *Sampled by Manufacturers and 3. Sampled by private individuals.*

2. *Sampled by Manufacturers.*

These samples were sent to the Station in compliance with the terms of the Fertilizer Law and were analyzed because no samples of the brands named were found in market by our sampling agents:

**3598.** Fish and Potash, Anchor Brand, made by Bradley Fertilizer Co., Boston, Mass.

**3647.** Buffalo Superphosphate, No. 2, made by Crocker Fertilizer Co., Buffalo, N. Y.

**3651.** Vegetable Bone Superphosphate, made by Crocker Fertilizer Co., Buffalo, N. Y.

**3652.** Ammoniated Practical Superphosphate, made by Crocker Fertilizer Co., Buffalo, N. Y.

**3650.** Garden and Lawn Fertilizer, made by L. B. Darling Fertilizer Co., Pawtucket, R. I.

**3654.** Success Phosphate, made by Lister's Agricultural Chemical Works, Newark, N. J.

**3655.** Ammoniated Dissolved Bone, made by Lister's Agricultural Chemical Works, Newark, N. J.

**3656.** Ammoniated Bone Superphosphate, made by Preston Fertilizer Co., Greenpoint, L. I.

**3653.** Pilgrim Fertilizer, made by J. S. Reese & Co., Baltimore, Md.

3. *Sampled by private individuals.*

The following analyses were made on samples submitted by private individuals.

**3521.** Bone Fish and Potash, made by E. R. Kelsey, Branford. Sampled and sent by E. C. Warner, Fair Haven.

**3681.** Fertilizer made for Conn. Valley Orchard Co., by the Quinipiac Co., N. Y. Sampled by D. L. Rogers, New Britain.

**3537.** Formula A, made by L. Sanderson, New Haven. Sampled by F. R. Curtiss, Stratford.

**3698.** Formula A, made by L. Sanderson, in the fall of 1892.

**3699.** Formula A, made by L. Sanderson, in the spring of 1892.

The last two samples were drawn by F. H. Todd, North Haven.

### III. SPECIAL MANURES.

#### 1. *Sampled by Station Agents.*

*For Analyses and Valuations see pages 19 to 26.*

Here are included such Nitrogenous Superphosphates as are claimed by their manufacturers to be specially adapted to the needs of particular crops.

#### NOTICE OF PARTICULAR ANALYSES.

Fairchild's Formula for Corn and General Crops No. **3507** is a mixture of nitrate of soda, muriate of potash and fine bone flour, 90 per cent. of which passes a round mesh  $\frac{1}{8}$  inch in diameter.

An analysis **3534** was made of 6 samples of the Quinipiac Potato Manure with the results given below. The manufacturer protested against the analysis because it did not represent the average quality of the goods which should show a much higher per cent. of potash than was indicated in this analysis. The Station, therefore, determined potash separately in each of the samples with the following results:

From Taylor & Hubbell, Newtown .....	1.79 per cent.
D. C. Wood .....	5.66 "
Olds & Whipple .....	5.39 "
W. L. L. Spencer .....	5.41 "
C. A. Young .....	5.24 "
G. M. Williams .....	4.69 "

It is evident that the sample from Taylor & Hubbell is totally unlike the others. A new mixture of samples was, therefore, prepared from which this sample low in potash was excluded. The analysis of this second sample, No. **3684**, is given in the table on page 26.

	<b>3534</b>
Nitrogen, organic .....	2.71
Phosphoric acid, soluble .....	5.52
reverted .....	2.74
insoluble .....	.75
Total .....	9.01
Potash .....	4.65
Chlorine .....	3.41



NITROGENOUS SUPERPHOSPHATES—SAMPLED BY MANUFACTURERS AND BY PRIVATE INDIVIDUALS—ANALYSES  
AND VALUATIONS.

	<b>3598</b>	<b>3647</b>	<b>3651</b>	<b>3652</b>	<b>3650</b>	<b>3654</b>	<b>3655</b>	<b>3656</b>	<b>3653</b>	<b>3521</b>	<b>3681</b>	<b>3537</b>	<b>3698</b>	<b>3699</b>
Nitrogen as nitrates.....	.....	.....	.....	.....	.98	.....	.....	.....	.....	.....	.71	.....	.....	1.36
as ammonia.....	.....	.....	.....	.....	.23	.27	.47	.39	.31	.66	.....	.....	.....	.....
organic.....	3.85	.....	5.70	.82	2.51	1.58	1.72	2.09	1.25	3.34	1.98	.....	.89	2.16
Total nitrogen found.....	3.85	.....	5.70	.82	3.72	1.85	2.19	2.48	1.56	4.00	2.69	3.54	.89	3.52
NITROGEN GUARANTEED.....	<b>2.2</b>	.....	<b>5.0</b>	<b>.82</b>	.....	<b>1.0</b>	<b>1.8</b>	<b>2.3</b>	<b>1.0</b>	<b>3.3</b>	.....	<b>3.3</b>	<b>3.3</b>	<b>3.3</b>
Phosphoric acid, soluble.....	3.55	10.80	6.35	5.63	4.80	6.38	5.89	4.90	1.68	2.88	6.83	.....	14.16	7.10
reverted.....	2.90	1.43	.73	3.41	3.52	2.92	3.49	4.21	7.89	2.09	3.96	.....	1.01	3.57
insoluble.....	1.70	.95	.75	1.64	2.00	2.85	2.07	2.24	1.65	.26	1.34	.....	.22	.96
Total phosphoric acid found.....	8.15	13.18	7.83	10.68	10.32	12.15	11.45	11.35	11.22	5.23	12.13	9.79	15.39	11.63
PHOSPHORIC ACID GUARANTEED.....	<b>5.0</b>	<b>12.0</b>	<b>7.0</b>	<b>9.0</b>	.....	.....	<b>11.0</b>	.....	<b>7.5</b>	<b>4.0</b>	.....	<b>10.0</b>	<b>10.0</b>	<b>10.0</b>
Available phosphoric acid found.....	6.45	12.23	7.08	9.04	8.32	9.30	9.38	9.11	9.57	4.97	10.79	.....	15.17	10.67
AVAILABLE PHOSPHORIC ACID GUAR.	<b>3.0</b>	<b>11.0</b>	<b>6.0</b>	<b>8.0</b>	.....	<b>10.5</b>	<b>9.0</b>	<b>9.0</b>	<b>6.5</b>	.....	.....	<b>6.0</b>	<b>6.0</b>	<b>6.0</b>
Potash.....	3.84	2.16	6.73	2.17	6.97	1.98	1.89	3.83	2.25	2.83	2.81	7.97	6.37	6.75
POTASH GUARANTEED.....	<b>3.0</b>	<b>1.35</b>	<b>6.0</b>	<b>1.0</b>	.....	<b>1.5</b>	<b>1.5</b>	<b>2.0</b>	.....	<b>3.0</b>	.....	<b>6.0</b>	<b>6.0</b>	<b>6.0</b>
Chlorine.....	1.98	1.95	6.06	2.05	5.61	1.58	1.72	2.08	3.00	.43	2.71	.....	6.06	5.48
Valuation.....	\$26.09	20.52	35.15	18.45	30.98	22.59	23.41	25.85	21.34	23.35	27.34	.....	31.32	33.10

## GUARANTEES.

Of the thirty-nine brands of special manures analyzed, sixteen are below the manufacturer's minimum guarantee in respect of one ingredient, and one is below in respect of two ingredients.

## COST, VALUATION AND PERCENTAGE DIFFERENCE.

The average cost per ton of the special manures has been \$38.28, the average valuation, \$30.70 and the percentage difference 25.0, a little higher than in case of the nitrogenous superphosphates.

Last year the corresponding figures were: Average cost \$38.84, average valuation \$31.64, percentage difference 22.8.

2. *Sampled by Manufacturers, and 3. Sampled by Private Individuals.*

2. *Manufacturers' Samples.*

These samples were sent to the Station in compliance with the terms of the Fertilizer Law and were analyzed because no samples of the brands named were found in market by our sampling agents.

**3599.** Complete Manure for Grass and Grain, made by the Bradley Fertilizer Co., Boston, Mass.

**3649.** Potato and Root Crop Manure, made by Darling Fertilizer Co., Pawtucket, R. I.

3. *Samples drawn by Private Individuals.*

**3687.** Mapes' Tobacco Manure, Wrapper Brand, from stock of W. H. Filley, Windsor. Sampled by O. P. Parsons, Poquonock.

**3688.** Fine Wrapper Brand Tobacco Grower, made by Williams and Clark Fertilizer Co., N. Y. Stock of I. J. Beardsley, New Preston. Sampled by G. B. Ackley.

## ANALYSES AND VALUATIONS.

	<b>3599</b>	<b>3649</b>	<b>3687</b>	<b>3688</b>
Nitrogen as nitrates.....	5.99	.37	1.51	----
as ammonia.....	----	.23	3.20	2.64
organic.....	----	2.94	1.67	3.33
TOTAL NITROGEN.....	<b>5.99</b>	<b>3.54</b>	<b>6.38</b>	<b>5.97</b>
Phosphoric acid, soluble.....	2.72	4.16	.61	.18
reverted.....	3.70	3.79	3.08	5.49
insoluble.....	1.60	2.69	2.50	5.60
TOTAL PHOSPHORIC ACID.....	<b>8.02</b>	<b>10.64</b>	<b>6.19</b>	<b>11.27</b>
Potash as muriate.....	.36	6.78	.90	1.06
as sulphate.....	2.98	----	10.44	9.58
TOTAL POTASH.....	<b>3.34</b>	<b>6.78</b>	<b>11.34</b>	<b>10.64</b>
Chlorine.....	.27	7.13	.68	.79
Valuation.....	\$31.46	30.05	39.60	41.60

## SPECIAL MANURES SAMPLED BY THE STATION.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3507	Fairchild's Formula for Corn and General Crops.	Rogers & Hubbard Co., Middletown.	Daniel Moriarty, South Meriden.	\$48.00
3671	Tobacco Fertilizer.	Danbury Fertilizer Co., Danbury.	Manufacturer.	35.00
3673	Potato Manure.	Danbury Fertilizer Co., Danbury.	J. B. Beers, Brookfield.	30.00
3629	Manure for Seeding Down.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	Manufacturer.	37.50
3625	Manure for Fruit and Vines.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	Mapes Branch, Hartford.	38.00
3626	Tobacco Starter.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	Mapes Branch, Hartford.	36.00
3576	Corn Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	Southington Lumber & Feed Co., Southington.	37.00
3545	Manure for Light Soil.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	F. S. Bidwell, Windsor Locks.	36.00
3508	Soluble Potato Manure.	The Rogers & Hubbard Co., Middletown.	Wilson & Burr, Middletown.	33.00
3585	Complete Manure for Potatoes and Vegetables.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	Mapes Branch, Hartford.	38.00
3526	Grass and Grain Spring Top Dressing.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	Mapes Branch, Hartford.	43.00
			Raymond Bros., South Norwalk.	42.00
			Wilson & Burr, Middletown.	42.00
			J. P. Barstow & Co., Norwich.	39.00
			Daniel Moriarty, South Meriden.	38.00
			Manufacturer.	39.00
			Feek Bros., Northfield.	40.00
			J. P. Barstow & Co., Norwich.	40.00
			G. K. Nason, Willimantic.	41.00
			Wilson & Burr, Middletown.	40.00
			Mapes Branch, Hartford.	39.00

## SPECIAL MANURES SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3575	Complete Tobacco Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	H. K. Brainard, Thompsonville. E. Hawley, Newtown.	\$40.00 42.50
3640	Potato, Onion and Tobacco Fertilizer.	Leander Wilcox, Mystic.	F. S. Bidwell, Windsor Locks. W. F. Andross, East Hartford. L. C. Gray, Jewett City. Frederic Gallup, New London.	42.00 33.00 34.25 32.00
3646	Havana and Seed Leaf Tobacco Fertilizer.	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	J. A. Lewis, Willimantic. C. M. Smith, East Hartford. Olds & Whipple, Hartford.	36.00 36.00 50.00
3544	Manure for Corn.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	F. S. Bidwell, Windsor Locks. G. K. Nason, Willimantic. J. H. Ray & Son, Greenwich. Mapes Branch, Hartford.	40.00 40.00 43.00 39.00
3584	Stockbridge Top Dressing.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	J. P. Barstow & Co., Norwich. C. W. Beardley, Milford.	40.00 42.00
3628	Tobacco Manure—Wrapper Brand.	Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	F. S. Bidwell, Windsor Locks. Southington Lumber & Feed Co., Southington.	47.50 49.00
3603	High Grade Tobacco Manure.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	F. S. Bidwell, Windsor Locks. G. W. Grant, Wapping. Carter & Strong, Manchester.	48.00 49.00 48.00
3550	Complete Potato Manure.	H. J. Baker & Bro., 215 Pearl St., New York.	S. J. Hall, Meriden. C. O. Jelliff & Co., Southport. W. F. Andross, East Hartford. E. W. Hawley, Newtown	42.00 38.00 40.00 42.50

## SPECIAL MANURES SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
3612 3533	Potato and Tobacco Fertilizer. Potato Manure.	Clark' Cove Fertilizer Co., Boston, Mass. Mapes' Formula & Peruvian Guano Co., 143 Liberty St., New York.	W. H. Anderson, Putnam. J. P. Barslow & Co., Norwich. Mapes Branch, Hartford. Wilson & Burr, Middletown. G. K. Nason, Willimantic. C. W. Beardesley, Milford. Wheeler & Howe, Bridgeport. H. L. Vibberts, Manchester.	\$32.00 41.00 41.00 42.00 42.50 42.00 45.00 40.00 40.00
3641	High Grade Special Fertilizer.	Williams & Clark's Fertilizer Co., 83 Fulton St., New York.	John Bransfield, Portland. S. D. Woodruff & Sons, Orange. S. D. Woodruff & Sons, Orange.	37.00 33.00 33.00
3549	Great Eastern Vegetable and Tobacco Fertilizer.	Great Eastern Fertilizer Co., Rutland, Vermont.	F. E. Mirritt, Noank. J. E. Comstock, New London. W. Burr & Son, Fairfield.	31.00 32.00 34.00
3535	Stockbridge Manure for Potatoes and Vegetables.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	S. C. Lewis, Stratford. L. Browning, New London. C. W. Michael & Co., Yalesville. C. H. Bell, Portland. J. E. Leonard, Jewett City. E. M. Brewster, Norwich.	33.00 42.00 42.00 42.00 40.00 42.00
3583	Tobacco Grower.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	W. H. Anderson, Putnam. H. K. Brainerd, Thompsonville. M. McNamara, New Milford.	40.00 45.00 40.00
3532	Special Potato Manure.	Crocker Fertilizer Co., Buffalo, N. Y.	G. W. Mitchell, South Britain. J. E. Leonard, Jewett City. W. H. Anderson, Putnam. W. L. Spencer, Lebanon.	38.00 40.00 36.00 40.00

SPECIAL MANURES SAMPLED BY THE STATION. — *Continued.*

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash-price per ton.
3604	Complete Manure for Corn and Grain.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	M. G. Beach & Son, New Milford.	\$41.00
3548	Great Eastern Grass and Grain Fertilizer.	Great Eastern Fertilizer Co., Rutland, Vt.	Strong & Tanner, Winsted J. E. Comstock, New London. W. Burr & Son, Fairfield. S. C. Lewis, Stratford.	38.00 32.00 34.00 33.00
3581	Stockbridge Manure for Corn and Grain.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	F. E. Merritt, Noank. Southington Lumber & Feed Co., Southington.	41.50 40.00
3614	Potato Manure.	Lister's Agricultural Chemical Works, Newark, N. J.	G. H. Larned, Pomfret. G. W. Mitchell, South Britain.	38.00 40.00
3546	Ammoniated Wheat and Corn Phosphate.	Crocker Fertilizer Co., Buffalo, N. Y.	J. A. Lewis, Willimantic. Waldo Tillinghast. W. B. Martin, Rockville. J. A. Weed, New Canaan.	40.00 40.00 41.00 42.00
3618	Potato Fertilizer.	E. Frank Coe, 16 Burling Slip, New York.	A. N. Clark, Milford. G. W. Clark, Milford W. L. L. Spencer, Lebanon. J. E. Leonard, Jewett City. W. H. Anderson, Putnam. W. Tillinghast, Plainfield. C. A. Young, Danitelsonville. J. O. Fox & Co., Putnam. City Coal & Wood Co., New Britain. Arnold Rudd, New London.	40.00 32.00 31.00 33.00 35.00 33.00 34.00 36.00 38.00

## SPECIAL MANURES SAMPLED BY THE STATION.—Continued.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Dealers' cash price per ton.
<b>3684</b>	Potato Manure.	Quinnipiac Co., 7 Exchange Place, Boston, Mass.	D. C. Wood, Stratford, Olds & Whipple, Hartford.	\$28.00
<b>3606</b>	Potato Phosphate.	Bowker Fertilizer Co., 43 Chatham St., Boston, Mass.	W. L. L. Spencer, Lebanon. C. A. Young, Danielsonville. G. M. Williams, New London. B. Curtiss & Son, Stepany. G. H. Larned, Pomfret.	40.00 35.00 36.00 33.00 35.00
<b>3531</b>	Potato, Tobacco and Hop Phosphate.	Crocker Fertilizer Co., Buffalo, N. Y.	T. E. Greene, Torrington. F. C. Sturtevant, Hartford. John Bransfield, Portland. J. E. Leonard, Jewett City. W. H. Anderson, Putnam. C. A. Young, Danielsonville. Waldo Tillingshast, Plainfield.	38.00 38.00 36.00 35.00 32.00 35.00 36.00
<b>3528</b>	Potato Manure.	Bradley Fertilizer Co., 27 Kilby St., Boston, Mass.	S. A. Billings, Meriden. Wilson & Burr, Middletown. J. M. Young, Norwich. J. E. Holmes, Stratford. T. F. Powers, Waterford. A. C. Sternberg, Hartford. J. A. Lewis, Willimantic.	38.00 35.00 35.00 37.00 35.00 37.00 36.00
<b>3542</b>	Potato Phosphate.	Williams & Clark Fertilizer Co., 83 Fulton St., New York.	J. E. Comstock, New London. H. K. Brainard, Thompsonville. J. P. Kingsley's Sons, Plainfield. W. H. Anderson, Putnam. D. B. Wilson, Waterbury. C. E. Stagg, Stratford.	36.00 36.00 32.00 36.00 36.00 36.00
<b>3615</b>	General Fertilizer for Oats, Buckwheat and Seeding Down.	Great Eastern Fertilizer Co., Rutland, Vermont.	Daniel Morgan, Poquonock Bridge. J. E. Comstock, New London.	34.00
<b>3645</b>	Special Potato Fertilizer.	Pacific Guano Co., Box 1368, Boston, Mass.	E. B. Calkin, Lyme. P. J. Bolan, Waterbury.	31.00 35.00

## ANALYSES OF SPECIAL MANURES SAMPLED BY THE STATION.

Station No.	Name or Brand.	Nitrogen.					Phosphoric Acid.					Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage difference between Cost and Valuation.		
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitro-Gen Found.	Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Found.	Total Guaranteed.	Available.	Found.					Guaranteed.	
3507	Fairchild's Formula for Corn and General Crops	3.61	---	2.13	5.74	5.0	---	---	13.05	12.0	---	---	---	13.66	12.0	11.07	\$46.00	\$45.11	1.9
3671	Danbury Fertilizer Co's Tobacco Fertilizer	1.78	---	2.89	4.67	3.3	3.04	6.43	1.60	11.07	6.0	9.47	---	4.16	4.5	.64	35.00	33.20	5.4
3673	Danbury Fertilizer Co's Potato Manure	---	---	2.84	2.84	2.9	4.34	6.97	1.10	12.41	8.0	11.31	---	6.71	7.0	3.63	35.00	32.22	8.6
3629	Mapes' Manure for Seeding Down	.58	---	2.58	3.16	4.2	---	7.98	8.11	16.09	---	7.98	7.0	11.03	5.0	9.69	37.50	34.35	9.1
3625	Mapes' Manure for Fruit and Vines	.32	.59	1.68	2.59	1.7	6.32	2.74	.80	9.86	---	9.06	7.0	10.75	11.0	.76	38.00	33.67	12.8
3626	Mapes' Tobacco Starter	.38	.61	1.98	2.97	2.5	7.73	4.35	1.06	13.14	12.0	12.08	8.0	3.07	2.5	.37	35.00	31.00	12.9
3576	Baker's Corn Manure	---	---	3.78	.95	4.73	6.24	.75	.25	7.24	---	6.99	6.2	7.40	7.0	5.07	38.00	33.56	13.2
3545	Mapes' Manure for Light Soils	1.03	1.68	2.39	5.10	4.9	6.56	2.45	.78	9.79	8.0	9.01	6.0	7.07	6.0	6.87	42.00	36.56	14.8
3508	The Rogers & Hubbard Co's Soluble Potato Manure	.69	.23	3.97	4.89	5.0	1.82	5.59	2.90	10.31	10.0	7.41	---	5.28	5.0	.54	38.00	32.97	15.2
3585	Bradley's Complete Manure for Potatoes & Vegetables	.38	1.13	2.12	3.63	3.7	6.86	2.84	1.24	10.94	9.0	9.70	8.0	6.45	6.0	3.11	38.00	32.92	15.4
3526	Mapes' Grass and Grain Spring Top Dressing	.95	1.05	2.95	4.95	4.2	5.66	2.78	.75	9.19	7.0	8.44	5.0	5.54	5.0	5.32	39.00	33.64	15.9
3575	Baker's Complete Tobacco Manure	---	3.36	1.15	4.51	4.2	4.42	.94	.08	5.44	---	5.35	4.0	10.55	10.0	.60	41.00	34.87	17.5
3640	L. Wilcox's Potato, Onion and Tobacco Fertilizer	.67	.59	2.54	3.80	3.2	3.39	3.92	.46	7.77	8.0	7.31	7.0	6.24	6.0	2.26	34.00	28.79	18.1



ANALYSES OF SPECIAL MANURES SAMPLED BY THE STATION.

Station No.	Name or Brand.	Nitrogen.					Phosphoric Acid.				Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage difference between Cost and Valuation.	
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitrogen Found.	Nitrogen Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Found.	Total Guaranteed.	Found.					Guaranteed.
3646	Quinnipiac Havana and Seed Leaf Tobacco Fertilizer	...	2.17	3.34	5.51	5.7	5.7	3.32	4.90	10.76	6.0	5.86	12.28	10.0	50.00	41.72	19.8
3544	Mapes' Manure for Corn	.88	.78	2.12	3.78	3.7	3.7	6.56	1.78	11.68	10.0	9.90	6.37	6.0	40.00	33.11	20.8
3584	Stockbridge Top Dressing	2.91	...	2.13	5.04	5.0	5.0	1.76	4.91	12.33	6.0	7.42	3.0	5.52	40.00	33.04	21.0
3628	Mapes' Tobacco Manure.	1.16	3.16	1.89	6.21	6.7	6.7	.61	1.85	5.95	4.5	4.10	...	11.49	48.00	39.54	21.3
3603	Bradley's High Grade Tobacco Manure	...	3.03	2.73	5.76	5.7	5.7	1.68	2.57	5.50	4.0	4.25	...	10.70	46.00	37.52	22.5
3550	Baker's Complete Potato Manure	.18	2.62	.93	3.73	3.3	3.3	5.01	1.18	.65	6.84	...	6.19	5.0	40.50	32.90	23.1
3612	Clark's Cove Fertilizer Co's Potato and Tobacco Fert.	...	...	2.38	2.38	2.5	2.5	7.52	2.61	1.47	11.60	10.13	8.0	3.05	32.00	25.89	23.6
3583	Mapes' Potato Manure	.83	.78	2.15	3.76	3.7	3.7	6.90	2.21	.55	9.66	8.0	9.11	8.0	42.00	33.84	24.1
3641	Williams & Clark's High Grade Special for Potatoes, Tobacco, etc.	.24	1.19	2.22	3.65	3.7	3.7	6.00	2.74	.93	9.67	8.0	8.74	7.0	40.00	31.63	26.4
3549	Great Eastern Vegetable and Tobacco Fertilizer	.05	...	2.20	2.25	2.1	2.1	7.57	.95	.84	9.36	9.0	8.52	8.0	33.00	25.87	21.5
3555	Stockbridge Manure for Potatoes and Vegetables	1.54	...	2.11	3.65	3.2	3.2	5.66	2.95	2.14	10.75	8.0	8.61	7.0	40.00	30.83	29.7
3583	Bowker's Tobacco Grower	.91	...	1.67	2.58	2.5	2.5	6.99	2.77	1.18	10.94	12.0	9.76	8.0	39.00	29.35	32.8
3532	Crocker's Special Potato Manure	...	.20	3.47	3.67	3.7	3.7	6.16	1.20	2.27	9.63	9.0	7.36	8.0	39.00	29.11	33.9

## ANALYSES OF SPECIAL MANURES SAMPLED BY THE STATION.

Station No.	Name or Brand.	Nitrogen.					Phosphoric Acid.					Potash.		Chlorine.	Cost per Ton.	Valuation per Ton.	Percentage difference between Cost and Valuation.		
		Nitrogen as Nitrates.	Nitrogen as Ammonia.	Nitrogen Organic.	Total Nitrogen Found.	Guaranteed Nitrogen.	Soluble.	Reverted.	Insoluble.	Total Found.	Guaranteed Total.	Found.	Available.					Guaranteed.	Found.
3604	Bradley's Complete Manure for Corn and Grain	.29	.60	2.29	3.18	2.9	7.60	2.90	.76	11.26	9.0	10.50	8.0	4.19	3.0	4.29	40.00	29.83	34.0
3548	Great Eastern Grass and Grain Fertilizer	trace	---	2.95	2.95	2.9	7.42	1.27	.76	9.45	9.0	8.69	8.0	2.11	2.0	4.10	33.00	24.55	84.4
3581	Stockbridge Manure for Corn and Grain	1.15	1.56	2.01	3.16	3.2	7.12	3.14	1.51	11.77	9.0	10.26	8.0	4.46	7.0	4.11	40.00	29.57	35.2
3614	Lister's Potato Manure	---	---	2.23	3.79	3.7	5.92	1.11	.74	7.77	7.0	7.03	---	6.51	7.0	5.93	40.00	29.18	37.1
3546	Crocker's Ammoniated Wheat & Corn Phosphate	---	---	2.25	2.25	2.0	6.91	2.77	2.63	12.31	10.0	9.68	9.0	1.61	1.6	2.00	33.00	23.95	37.8
3618	E. F. Coe's Potato Fertilizer	---	.70	1.63	2.33	2.0	6.05	2.39	1.67	10.11	---	8.45	8.0	4.96	5.8	.71	36.00	26.04	38.2
3684	Quinnipiac Potato Manure	---	---	2.78	2.78	2.5	4.64	2.83	1.30	8.77	7.0	6.47	6.0	5.29	5.0	3.83	36.00	25.14	43.1
3606	Bowker's Potato Phosphate	.70	---	1.78	2.48	2.5	6.85	1.89	3.43	12.08	11.0	8.65	7.0	2.43	2.0	3.51	35.00	24.15	44.9
3531	Crocker's Potato, Tobacco and Hop Phosphate	---	---	2.15	2.15	2.0	6.26	2.81	2.35	11.42	11.0	9.07	10.0	3.21	2.5	3.63	35.00	24.03	45.6
3528	Bradley's Potato Manure	.21	---	2.63	2.84	2.5	4.67	2.30	1.50	8.47	8.0	6.97	6.0	5.26	5.0	6.59	36.00	24.61	46.2
3542	Williams & Clark's Potato Phosphate	---	---	2.56	2.56	2.5	5.17	2.11	.78	8.06	7.0	7.28	6.0	5.64	5.0	3.09	36.00	24.59	46.4
3615	Great Eastern Fertilizer for Oats, Buckwheat and Seeding Down	trace	---	1.41	1.41	0.8	7.20	1.10	.90	9.20	9.0	8.30	8.0	4.69	4.0	5.95	32.00	21.54	49.9
3645	Pacific Guano Co's Special Potato Fertilizer	---	.31	2.56	2.87	3.0	3.25	2.74	1.71	7.70	7.0	5.99	5.0	4.92	5.0	5.74	35.00	23.11	51.4