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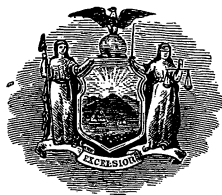
DECEMBER, 1898.

New York Agricultural Experiment Station.

GENEVA, N. Y.

REPORT OF ANALYSES OF COMMERCIAL
FERTILIZERS FOR THE FALL OF 1898.

L. L. VAN SLYKE.



PUBLISHED BY THE STATION.

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*Connected with Fertilizer Control.

†Connected with Second Judicial Department Branch Station.

REPORT OF ANALYSES OF COMMERCIAL
FERTILIZERS FOR THE FALL OF 1898.

SUMMARY.

(1) Samples Collected. During the fall of 1898, the Station collected 244 samples of commercial fertilizers, representing 162 different brands. Of these different brands 111 were complete fertilizers; of the others, 23 contained phosphoric acid and potash without nitrogen; 5 contained nitrogen and phosphoric acid without potash; 12 contained phosphoric acid alone; 5 contained potash salts only; and 6 contained nitrogen only.

(2) Nitrogen. The 111 brands of complete fertilizers contained nitrogen varying in amount from 0.46 to 4.69 per ct. and averaging 1.67 per ct. The average amount of nitrogen found by the Station analysis exceeded the average guaranteed amount by 0.16 per ct., the guaranteed average being 1.51 per ct. and the average found being 1.67 per ct.

In 84 brands of complete fertilizers, the amount of nitrogen found was equal to or above the guaranteed amount, the excess varying from 0.01 to 1.29 per ct. and averaging 0.30 per ct.

In 26 brands, the nitrogen was below the guaranteed amount, the deficiency varying from 0.02 to 0.77 per ct. and averaging 0.20 per ct. In 24 cases, the deficiency was less than 0.5 per ct.

The amount of water-soluble nitrogen varied from 0 to 3.02 per ct. and averaged 0.54 per ct.

(3) Available Phosphoric Acid. The 111 brands of complete fertilizers contained available phosphoric

acid varying in amount from 4.77 to 13.45 per ct. and averaging 9.27 per ct. The average amount of available phosphoric acid found by the Station analysis exceeded the average guaranteed amount by 0.96 per ct., the guaranteed average being 8.31 per ct. and the average found being 9.27 per ct.

In 93 brands of complete fertilizers, the amount of available phosphoric acid found was above the amount guaranteed, the excess varying from 0.09 to 4.62 per ct. and averaging 1.24 per ct.

In 18 brands, the available phosphoric acid was below the guaranteed amount, the deficiency varying from 0.03 to 1.61 per ct. and averaging 0.48 per ct. In 11 cases the deficiency was below 0.5 per ct.

The amount of water-soluble phosphoric acid varied from 0.62 to 9.78 per ct. and averaged 5.72 per ct.

(4) Potash. The complete fertilizers contained potash varying in amount from 0.36 to 10.43 per ct. and averaging 4.36 per ct. The average amount of potash found by the Station analysis exceeded the average guaranteed amount by 0.26 per ct., the guaranteed average being 4.10 per ct. and the average found being 4.36 per ct.

In 79 brands of complete fertilizers, the amount of potash found was above the guaranteed amount, the excess varying from 0.01 to 2.87 per ct. and averaging 0.57 per ct.

In 31 brands, the potash was below the guaranteed amount, the deficiency varying from 0.05 to 2.29 per ct. and averaging 0.54 per ct. In 18 of these cases, the deficiency was less than 0.5 per ct.

In 11 cases among the 111 brands of complete fertilizers the potash was contained in the form of sulphate free from an excess of chlorides.

(5) The retail selling prices of the complete fertilizers varied from \$14.25 to \$35 a ton and averaged \$23.16. The retail cost of the separate ingredients unmixed averaged \$17.34 or \$5.82 less than the selling price.

INTRODUCTION.

NUMBER AND KINDS OF FERTILIZERS COLLECTED.

During the entire year of 1898, we collected 1,427 samples of commercial fertilizers, representing 901 different brands. It is a matter of interest to notice to what extent dealers offer for sale complete fertilizers (those containing nitrogen, phosphoric acid and potash), compared with those containing only one or two of these ingredients. It is also of interest to consider the different forms in which incomplete fertilizers are offered for sale. The following tabulated statement indicates the different kinds of complete and incomplete fertilizers collected during the year.

CLASSES OF FERTILIZERS COLLECTED IN 1898.

1898.	Brands containing only nitrogen.	Brands containing only phosphoric acid.	Brands containing only potash.	Brands containing nitrogen and phosphoric acid without potash.	Brands containing potash and phosphoric acid without nitrogen.	Brands of complete commercial fertilizers.
Spring collection	8	44	7	47	55	578
Fall collection	6	12	5	5	23	111
Total for year	14	56	12	52	78	689

In the spring collection 78 per ct. of the brands offered for sale consisted of complete fertilizers; in the fall, 68.5 per ct.; and, during the year, an average of 76.5 per ct. Of unmixed materials, phosphoric acid was offered much more largely than nitrogen or potash, the average for the year being about 8 per ct. of all brands offered. A smaller number containing phosphoric acid and nitrogen was found. It will be seen that the mixture of phosphoric acid and potash was quite largely used, averaging for the year over 11 per ct. of all the brands collected.

COMPOSITION OF FERTILIZERS COLLECTED IN 1898.

The tabulated statement below shows the average composition of the complete fertilizers collected during the year, together with a comparison of the guaranteed composition and that found by analysis.

AVERAGE COMPOSITION OF COMPLETE FERTILIZERS COLLECTED.

	Per ct. guaranteed.			Per ct. found.			Average per ct. found; above guarantee.
	Lowest.	Highest.	Average.	Lowest.	Highest	Average.	
Spring.							
Nitrogen	0.40	8.78	2.06	0.12	8.21	2.20	0.14
Available phosphoric acid	3.00	14.00	7.65	3.69	14.28	8.65	1.00
Insoluble phosphoric acid....	—	—	—	0.00	10.75	1.90	—
Potash	0.50	15.00	4.67	0.22	15.22	4.91	0.24
Water-soluble phosphoric acid	—	—	—	0.10	11.11	5.08	—
Water-soluble nitrogen.....	—	—	—	0	5.03	0.94	—
Fall.							
Nitrogen	0.41	5.38	1.51	0.46	4.69	1.67	0.16
Available phosphoric acid	4.00	11.00	8.31	4.77	13.45	9.27	0.96
Insoluble phosphoric acid	—	—	—	0.21	4.50	1.89	—
Potash	1.00	19.00	4.10	0.36	10.43	4.36	0.26
Water-soluble phosphoric acid	—	—	—	0.62	9.78	5.72	—
Water-soluble nitrogen.....	—	—	—	0	3.02	0.54	—
Average for year.							
Nitrogen	—	—	1.97	—	—	2.12	0.15
Available phosphoric acid	—	—	7.76	—	—	8.75	0.99
Insoluble phosphoric acid	—	—	—	—	—	1.90	—
Potash	—	—	4.58	—	—	4.82	0.24
Water-soluble phosphoric acid	—	—	—	—	—	5.04	—
Water-soluble nitrogen.....	—	—	—	—	—	0.88	—

AVERAGE COMPOSITION OF CHEMICALS AND INCOMPLETE FERTILIZERS.

	Per ct. guaranteed.			Per ct. found.			Average per ct. found above guarantee
	Low-est.	High-est.	Aver-age.	Low-est.	High-est.	Aver-age.	
Nitrogen in							
Nitrate of soda . . .	14.76	16.00	15.16	14.80	15.76	15.59	0.43
Sulphate of ammonia	—	—	20	—	—	20.34	0.34 ³
Dried blood	9.75	10.50	10.10	9.27	10.55	9.80	0.30*
Dissolved phosphates							
Phosphoric acid . .							
Available	10.00	30.00	13.64	11.05	33.27	14.54	0.90
Water-soluble . .	—	—	—	3.73	15.55	9.51	—
Insoluble	—	—	—	0	4.22	1.33	—
Potash in							
Kainit	12.40	12.48	12.44	11.94	17.36	13.48	1.08
Muriate	50	50.40	50.20	49.74	53.20	50.92	0.72
Sulphate	—	—	22.50	—	—	20.60	—
Fish scrap							
Nitrogen	5.00	8.50	7.17	5.35	9	7.68	0.51
Phosphoric acid . .	4.00	6.00	5.34	3.84	7.23	5.20	—
Bone meal							
Nitrogen	1.00	4.00	2.50	1.05	4.77	2.95	0.45
Phosphoric acid . .	9.00	26.67	19.10	10.93	28.83	21.32	2.22
Mixtures containing							
Phosphoric acid . .							
Available	8.00	13.00	10.25	7.46	14.22	11.00	0.75
Insoluble	—	—	—	0	9.50	2.35	—
Potash	1.00	10.00	3.65	0.84	9.85	3.80	0.15

*Below guarantee.

TRADE VALUES OF PLANT-FOOD ELEMENTS IN RAW MATERIALS AND CHEMICALS.

The trade-values in the following schedule have been agreed upon by the Experiment Stations of Massachusetts, Rhode Island, Connecticut, New York, New Jersey and Vermont, as a result of study of the prices actually prevailing in the large markets of these states.

These trade-values represent, as nearly as can be estimated, the average prices at which, during the six months preceding March, the respective ingredients, *in the form of unmixed raw materials*, could be bought at retail for cash in our large markets. These prices also correspond (except in case of available phosphoric acid) to the average wholesale prices for the six months preceding March plus about 20 per ct. in case of goods for which there are wholesale quotations.

TRADE-VALUES OF PLANT-FOOD ELEMENTS IN RAW MATERIALS AND CHEMICALS.

	1898. Cts. per pound.
Nitrogen in ammonia salts.....	14
“ in nitrates.....	13
Organic nitrogen in dry and fine-ground fish, meat and blood, and mixed fertilizers.....	14
“ in cotton-seed meal and castor-pomace.....	12
“ in fine-ground bone and tankage.....	13½
“ in coarse bone and tankage.....	10
Phosphoric acid, water-soluble.....	4½
“ citrate-soluble.....	4
“ in fine-ground fish, bone and tankage.....	4
“ in coarse fish, bone and tankage.....	3½
“ in cotton-seed meal, castor-pomace and wood ashes.....	4
“ in mixed fertilizers, insoluble in ammonium citrate.....	2
Potash as high-grade sulphate, in forms free from muriates (chlor- ides), in ashes, etc.....	5
Potash in muriate.....	4¼

COMPARISON OF SELLING PRICE AND COMMERCIAL VALUATION.

Giving to the different constituents the values assigned in the schedule for mixed fertilizers, 14 cents a pound for nitrogen, 4½ cents a pound for water-soluble phosphoric acid, 4 cents a pound for citrate-soluble phosphoric acid, 2 cents a pound for insoluble phosphoric acid, and 4¼ cents a pound for potash, we can calculate the commercial valuation, or the price at which the separate unmixed materials contained in one ton of fertilizer, having the composition indicated in the preceding table, could be purchased for cash at retail at the seaboard. Knowing the retail prices at which these goods were offered for sale, we can also readily estimate the difference between the actual selling price of the mixed goods and the retail cash cost of the unmixed materials;

the difference covers the cost of mixing, freight, profits, etc. We present these data in the following table, including only complete fertilizers.

COMMERCIAL VALUATION AND SELLING PRICE OF COMPLETE FERTILIZERS.

1898.	Commercial valuation of complete fertilizers.	Selling price of one ton of complete fertilizer.			Average increased cost of mixed materials over unmixed materials for one ton.
	Average.	Lowest.	Highest.	Average.	
Spring.....	\$18.52	\$15	\$45	\$27.65	\$9.13
Fall..	17.34	14.25	35	23.16	5.82
Average for year....	18.34	—	—	26.93	8.59

COMMERCIAL VALUATION AND SELLING PRICE OF CHEMICALS AND INCOMPLETE FERTILIZERS.

	Commercial valuation.			Selling price.			Average increase of selling price over commercial valuation.
	Low-est.	High-est.	Aver-age.	Low-est.	High-est.	Aver-age.	
Nitrate of soda. ...	\$38.48	\$40.40	\$39.44	\$38.75	\$40	\$39.38	\$0.06*
Sulphate of ammonia.....			56.95			60	3.05
Dissolved phosphate	10.25	26.65	13.10	11	26	15.53	2.43
Kainit			10.84			15	4.16
Muriate of potash..			42.67			40	2.67*
Fish scrap.....	18.05	30.14	25.67	14	26	21.67	4.00*
Bone meal.....	11.94	30.41	25.32	20	38	27.70	2.38
Mixtures containing phosphoric acid and potash.....	8.93	18.38	13.06	15	30	20	6.94
Wood-ashes	3.03	8.37	5.77	9	12	10.30	4.53

*Commercial valuation greater than selling price.

COST OF ONE POUND OF PLANT-FOOD IN FERTILIZERS AS PURCHASED BY CONSUMERS.

In the table below we present figures showing the lowest, highest and average cost to the purchaser of one pound of plant-food in different forms.

COST OF ONE POUND OF PLANT-FOOD TO CONSUMERS.

	Lowest.	Highest.	Average
	<i>Cents.</i>	<i>Cents.</i>	<i>Cents.</i>
Nitrogen in			
Complete fertilizers.....	11.7	382.00	20.3
Bone-meal.....	10.6	26.7	14.7
Fish-scrap.....	10.9	12	11.8
Nitrate of soda.....	12.9	13.1	13
Sulphate of ammonia.....			14.7
Phosphoric acid in			
Complete fertilizers (available).....	3.6	116.00	6.5
Dissolved phosphates (available).....	3.8	10	5.3
Fish-scrap (total).....	3.1	3.5	3.3
Bone-meal (total).....	3	7.6	4.2
Phosphoric acid and potash mixtures (available).....	5.3	12.6	6.9
Wood-ashes.....	4.3	13.9	7.2
Potash in			
Complete fertilizers.....	3.75	123	6.5
Kainit.....			5.9
Muriate of potash.....			4
Wood-ashes.....	5.4	17.4	9
Potash and phosphoric acid mixtures.....	5	11.9	6.9

TERMS USED IN STATING RESULTS OF ANALYSIS.

In the tables following, the terms used to express the results of analysis are self-explanatory for the most part. Attention is called, however, to "water-soluble" phosphoric acid and nitrogen.

While manufacturers are required to guarantee only the amount of available phosphoric acid (water-soluble plus reverted or citrate-soluble), yet it seems desirable that consumers should know what proportion of the available is water-soluble. The amounts of available phosphoric acid being equal, one would choose by preference a fertilizer containing the larger amount of water-soluble phosphoric acid.

The amount of water-soluble phosphoric acid varied from 0.62 to 9.78 per ct. and averaged 5.72 per ct. This constituted nearly 62 per ct. of the available phosphoric acid present.

The water-soluble nitrogen includes nitrogen present in the form of ammonia salts and nitrates together with that present in small amounts of soluble organic matter. The amount of water-soluble nitrogen varied from 0 to 3.02 per ct. and averaged 0.54 per ct. This constituted 32.3 per ct. of the total nitrogen present. It should not be inferred that water-soluble nitrogen is of more value than the rest. It is, of course, more readily available, so far as it consists of nitrates, but it must be remembered that nitrogen in this form leaches and is lost to plants more readily than nitrogen in other forms.

RESULTS OF ANALYSES OF COMMERCIAL FERTILIZERS COL-

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Baker & Engert, Lincoln, N. Y.	Alkaline bone.	Rochester.	5411
Baker & Engert, Lincoln, N. Y.	Giant king.	Rochester.	5406
Bowker Fertilizer Co., Boston, Mass.	A. Baldrige's Seneca Co. special.	Macdougall.	5290
Bowker Fertilizer Co., Boston, Mass.	A. Baldrige's Seneca queen.	Macdougall.	5292
Bowker Fertilizer Co., Boston, Mass.	Alkaline bone.	Newark.	5366
Bowker Fertilizer Co., Boston, Mass.	Brisbin & Douglass grain special.	Clyde.	5486
Bowker Fertilizer Co., Boston, Mass.	Brisbin & Douglass spec- ial wheat fertilizer.	Clyde.	5355
Bowker Fertilizer Co., Boston, Mass.	Chappius XXX phos- phate.	Dryden.	5352
Bowker Fertilizer Co., Boston, Mass.	Dried blood.	Rochester.	5429
Bowker Fertilizer Co., Boston, Mass.	Hopkins' special fertilizer	Canandaigua.	5398
Bowker Fertilizer Co., Boston, Mass.	Kinne's selected fertilizer.	Ovid.	5313
Bowker Fertilizer Co., Boston, Mass.	Muriate of potash.	Penfield.	5417
Bowker Fertilizer Co., Boston, Mass.	Onion special.	North Rose.	5487
Bowker Fertilizer Co., Boston, Mass.	Special grain.	Willow Creek.	5317
Bowker Fertilizer Co., Boston, Mass.	Wilson's golden sheaf.	Rochester.	5430
Bradley Fertilizer Co., Boston, Mass.	Grape fertilizer.	Rochester.	5409
Bradley Fertilizer Co., Boston, Mass.	Muriate of potash.	Newark.	5365
E. B. Chapin, Rochester, N. Y.	Standard.	Rochester.	5418
Cleveland Dryer Co., Cleveland, Ohio	Forest City ammoniated superphosphate.	Cato.	5339
E. Frank Coe Co., New York City	Ralston's Knickerbocker phosphate.	Aurora.	5326

LECTED IN NEW YORK STATE DURING THE FALL OF 1898.

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phosphoric acid.	Pounds of total phosphoric acid.	Pounds of water-soluble potash.	Pounds of water-soluble nitrogen.	Pounds of water-soluble phosphoric acid.
Guaranteed Found	—	13 14.81	— 14.81	4 4.03*	—	— 2.71
Guaranteed Found	1.65 1.57	8 9.10	— 10.86	4 4.22	— 0.49	— 4.24
Guaranteed Found	0.75 0.92	10 11.37	— 15.15	4 4.85	— 0.17	— 8.81
Guaranteed Found	—	14 16.76	— 17.28	—	—	— 11.35
Guaranteed Found	—	11 13.80	— 17.79	1 1.05	—	— 10.34
Guaranteed Found	0.75 1.06	8 9.82	— 11.17	4 3.80	— 0.31	— 6.55
Guaranteed Found	1.50 1.77	10 10.61	— 13.77	5 4.95	— 0.42	— 6.07
Guaranteed Found	1 1.21	8 10.57	— 12.50	1 1.43	— 0.61	— 7.01
Guaranteed Found	9.75 9.59	—	— 4.80	—	— 2.53	—
Guaranteed Found	1 1.18	10 10.51	— 14.56	4 4.45	— 0.39	— 3.03
Guaranteed Found	1 1.27	9 10.77	— 13.42	2.50 2.89	— 0.25	— 6.59
Guaranteed Found	—	—	—	50 52.36	—	—
Guaranteed Found	0.75 0.99	6 9.35	— 10.56	5 5.29	— 0.27	— 6.50
Guaranteed Found	0.75 1.16	8 9.23	— 12.52	4 4.91	— 0.45	— 4.12
Guaranteed Found	0.75 1.37	10 10.97	— 12.98	6 6.16	— 0.57	— 7.65
Guaranteed Found	0.82 0.88	4 5.50	— 9.77	8 8.23	— 0.27	— 1.22
Guaranteed Found	—	—	—	50 50.48	—	—
Guaranteed Found	1.65 1.34	7 6.45	— 8.42	3 5.87	— 0.33	— 2.50
Below guarantee	0.81	0.55	—	—	—	—
Guaranteed Found	1.65 1.83	7 8.93	— 10.89	1 1.22	— 0.40	— 1 P 6.68
Guaranteed Found	1.75 1.83	8 9.76	— 12.57	1.35 1.62	— 0.83	— 7.04

*Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
E. Frank Coe Co., New York City	S. G. Lyon's ammoniated bone superphosphate.	Aurora.	5325
E. Frank Coe Co., New York City	Wonder superphosphate.	Geneva.	5271
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Alkaline bone and potash.	Holley.	5480
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Buddington's corn and wheat grower.	Holley.	5479
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Cabbage, onion and celery manure.	Canandaigua.	5394
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Chappius special corn phosphate.	Dryden.	5354
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Chappius XXV phosphate.	Dryden.	5353
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Conklin's dissolved bone.	Penn Yan.	5385
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Crocker's phosphate.	Hilton.	5462
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Dissolved bone black.	Canandaigua.	5395
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	General phosphate.	Seneca.	5268
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Hanlon Bros. special.	Medina.	5470
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Harvest jewel.	Seneca.	5267
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	High-grade cereal guano.	Romulus.	5297
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Market garden special.	Seneca.	5269
Crocker Fertilizer & Chemical Co., Buffalo, N. Y.	Potash salts.	Canandaigua.	5396
E. A. Cross, Hilton, N. Y.	King superphosphate.	Hilton.	5460
E. A. Cross, Hilton, N. Y.	Parma superphosphate.	Hilton.	5461
E. A. Cross, Hilton, N. Y.	Queen superphosphate.	Hilton.	5459
Detrick Fertilizer & Chemical Co., Baltimore, Md.	Potash and bone.	Seneca Castle.	5275

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phori- acid.
Guaranteed	1.20	8		3		
Found	1.34	10.69	12.38	3.38*	0.52	8.25
Guaranteed	1	10		3		
Found	1.14	9.91	12.84	4.17*	0.51	6.81
Guaranteed		8		5		
Found		8.25	9.13	5.53		5.26
Guaranteed	0.82	10		5		
Found	0.87	10.84	12.03	5.12	0.59	7.42
Guaranteed	3.28	7		7		
Found	3.31	6.91	8.53	7.62	0.59	3.87
Guaranteed	2	9		2		
Found	1.93	9.76	10.64	2.44	0.42	6.30
Guaranteed	0.82	8		2		
Found	1.18	10.36	10.95	2.82	0.18	7.27
Guaranteed		14				
Found		14.76	16.57			10.41
Guaranteed	1.23	10		1.76		
Found	1.10	11.98	14.04	1.57	0.08	7.85
Guaranteed		16				
Found		16.47	16.47			15.51
Guaranteed	0.82	10		8		
Found	1.31	10.53	11.60	7.38	0	7.15
Below guarantee				0.62		
Guaranteed	0.82	10		8.10		
Found	1.29	9.94	11.57	8.46	0.13	7.28
Guaranteed	1.64	8		2		
Found	1.95	7.80	10.37	2.17	0	4.97
Guaranteed	0.82	8		2		
Found	1.10	8.32	10.15	2.11	0.10	4.55
Guaranteed	3.70	8		8		
Found	3.95	8.13	8.76	8.43	1.19	6.20
Guaranteed				50		
Found				51.28		
Guaranteed	2.35	8		3.40		
Found	2.36	8.17	10.52	7.16	1.56	2.52
Guaranteed	1.65	8		3.20		
Found	1.71	7.87	9.91	3.37	1.05	2.42
Guaranteed	2	8		3		
Found	2.17	8.09	10.75	3.81	1.37	2.87
Guaranteed		10		6		
Found		9.38	11.01	8.36		6.51
Below guarantee		0.62				

* Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Detrick Fertilizer & Chemical Co., Baltimore Md.	Wheat mixture.	Seneca Castle.	5274
Louis F. Detrick, Baltimore, Md.	X.X.T.R.A. acid phosphate.	Groton.	5350
J. W. Dunbar, Attica, N. Y.	Grass and grain grower.	Attica.	5441
J. W. Dunbar, Attica, N. Y.	Special wheat fertilizer.	Attica.	5442
Farmers' Union Fertilizer Works, Buffalo, N. Y.	Dissolved bone and potash.	Eagle Harbor.	5472
Farmers' Union Fertilizer Works, Buffalo, N. Y.	Potato, tobacco, and truck manure.	Alexander.	5438
Farmers' Union Fertilizer Works, Buffalo, N. Y.	Standard phosphate.	Eagle Harbor.	5473
Louis Fechter, East Buffalo, N. Y.	East star fertilizer.	East Buffalo.	5450
Geneva Coal Co., Geneva, N. Y.	Harvest king	Geneva.	5248
Geneva Coal Co., Geneva, N. Y.	New York standard wheat grower.	Geneva.	5247
Geneva Coal Co., Geneva, N. Y.	Reclaimer animal bone.	Geneva.	5249
Griffith & Boyd, Baltimore, Md.	A. Baldridge special N. Y. phosphate.	Macdougall.	5288
Griffith & Boyd, Baltimore, Md.	Farmers' potato manure.	Dryden.	5351
Griffith & Boyd, Baltimore, Md.	Fayette special bone and potash.	Macdougall.	5289
Griffith & Boyd, Baltimore, Md.	General crop complete fertilizer.	Kendaia.	5304
Griffith & Boyd, Baltimore, Md.	Original superphosphate.	Kendaia.	5302
Griffith & Boyd, Baltimore, Md.	Seneca County special.	Macdougall.	5294
Griffith & Boyd, Baltimore, Md.	Seneca queen.	Macdougall.	5293

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed	1.65	8	—	4	—	—
Found	1.66	8.23	10.24	4.30	0.35	6.12
Guaranteed	—	14	—	—	—	—
Found	—	15.22	15.67	—	—	12.50
Guaranteed	1.82	8	—	4	—	—
Found	1.06	8.19	10.46	4.07	0.36	5.88
Guaranteed	1.65	8	—	5	—	—
Found	2.10	8.58	10.69	4.85	0.69	6.03
Guaranteed	—	8	—	2	—	—
Found	—	7.95	8.79	3.39	—	3.98
Guaranteed	1.85	9	—	4	—	—
Found	1.95	9.88	10.51	4.10	0.08	6.65
Guaranteed	1.23	9	—	2	—	—
Found	1.38	10.95	11.58	2.06	0.34	6.54
Guaranteed	5.38	4.15	—	1.31	—	—
Found	4.66	5.09	9.59	0.40	1.81	0
Below guarantee	0.72	—	—	0.91	—	—
Guaranteed	0.82	9	—	2	—	—
Found	0.96	10.29	11.83	2.17	0.50	7.85
Guaranteed	1.65	9	—	2	—	—
Found	1.75	10.27	12.05	2.21	0.89	7.78
Guaranteed	1.85	9	—	4	—	—
Found	2.14	10.13	14.40	4.06	2.05	6.76
Guaranteed	0.82	8	—	2	—	—
Found	1.02	8.62	9.97	2.36	0.38	6.07
Guaranteed	0.85	8	—	9	—	—
Found	0.83	8.57	10.16	7.70	0.13	5.30
Below guarantee	—	—	—	1.30	—	—
Guaranteed	—	12	—	5	—	—
Found	—	11.17	14.46	3.74	—	7.84
Below guarantee	—	0.83	—	1.26	—	—
Guaranteed	0.82	8	—	4	—	—
Found	0.92	8.87	11.06	4.45*	0.32	5.67
Guaranteed	—	14	—	—	—	—
Found	—	15.10	16.59	—	—	10.47
Guaranteed	0.82	10	—	4	—	—
Found	1.06	9.43	11.12	3.64	0	5.89
Below guarantee	—	0.57	—	0.36	—	—
Guaranteed	—	14	—	—	—	—
Found	—	13.85	15.67	—	—	10.25

*Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Griffith & Boyd, Baltimore, Md.	Thirteen and three.	Mapleton.	5337
Griffith & Boyd, Baltimore, Md.	XX potash manure.	Mapleton.	5336
Hanlon Bros., Medina, N. Y.	Complete manure.	Medina.	5380
Hanlon Bros., Medina, N. Y.	High-grade bone and potash.	Medina.	5379
Hanlon Bros., Medina, N. Y.	Special for potatoes and cabbage.	Medina.	5378
Hanlon Bros., Medina, N. Y.	Wheat, corn and oats.	Medina.	5381
J. S. Hewitt & Sons, Locke, N. Y.	Bone and potash super- phosphate.	Locke.	5347
J. S. Hewitt & Sons, Locke, N. Y.	Cayuga County pride.	Locke.	5348
J. S. Hewitt & Sons, Locke, N. Y.	Special grain and grass.	Locke.	5346
C. C. Hicks, Penn Yan, N. Y.	Ontario wheat special.	Seneca Castle.	5278
Humphrey & Holdridge, Honeoye Falls, N. Y.	Best grain.	Honeoye Falls.	5282 5283
Humphrey & Holdridge, Honeoye Falls, N. Y.	Dissolved bone.	Honeoye Falls.	5284
Humphrey & Holdridge, Honeoye Falls, N. Y.	Standard phosphate.	Honeoye Falls.	5281
Lazaretto Guano Co., Baltimore, Md.	Pure ground bone.	Attica.	5447
Liebig Manufacturing Co., Carteret, N. J.	Special mixture.	Moravia.	5342
Liebig Manufacturing Co., Carteret, N. J.	Van Duyn & O'Hara's high-grade bone & potash.	Moravia.	5344

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed Found	—	13 11.59	13.72	3 4.38	—	7.94
Below guarantee		1.41				
Guaranteed Found	—	10 9.80	11.96	5 5.63	—	6.65
Guaranteed Found	0.82 1.87	8 10.02	12.04	4 2.19	0.84	2.92
Below guarantee				1.81		
Guaranteed Found	—	13 13.93	14.32	3 3.03	—	9.83
Guaranteed Found	3.29 3.53	7 7.29	8.87	8 8.10	1.94	4.36
Guaranteed Found	1.85 1.94	9 9.75	11.03	4 4.44	0.57	7.29
Guaranteed Found	—	10 10.07	11.63	2 2.60	—	6.91
Guaranteed Found	2.06 1.73	8 8.19	10.47	4 4.09	0.10	5.63
Below guarantee		0.33				
Guaranteed Found	0.82 0.97	8 8.29	10.37	4 3.94	0.11	7.33
Guaranteed Found	1.64 1.47	10 11.11	12.93	5 4.04	0.13	8.11
Below guarantee				0.96		
Guaranteed Found	1.23 1.70	10 10.41	12.48	6 5.79	0.80	8.02
Below guarantee				0.21		
Guaranteed Found	—	14 13.80	15.25	—	—	5.53
Guaranteed Found	1.23 1.30	10 12.30	13.70	3 2.87	0.05	9.78
Guaranteed Found	3.70 4.61	—	20 18.70	—	0.31	—
Below guarantee			1.30			
Guaranteed Found	4.10 4.69	8 9.42	9.84	7 7.82*	3.02	7.50
Guaranteed Found	—	10 10.88	13.62	5 4.85	—	6.43

*Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Liebig Manufacturing Co., Carteret, N. J.	Van Duyne & O'Hara's standard phosphate.	Moravia.	5343
Liebig Manufacturing Co., Carteret, N. J.	Van Duyne & O'Hara's T. & F. bone.	Moravia.	5345
Lister's Agr'l Chemical Works, Newark, N. J.	Crop grower.	Lodi.	5316
Lister's Agr'l Chemical Works, Newark, N. J.	Minot & Decker's ammoniated dissolved bone and potash.	Newark.	5485
Fred'k Ludlam, New York City.	Sickle brand.	Magee.	5252
Maryland Fertilizer Co., Baltimore, Md.	Ammoniated fertilizer O. K.	Holley.	5482
Maryland Fertilizer Co., Baltimore, Md.	Bone superphosphate.	Magee. Holley.	5257 5481
Maryland Fertilizer Co., Baltimore, Md.	Tornado fertilizer.	Fairport.	5362
Miller Fertilizer Co., Baltimore, Md.	Harvest queen.	Kendall.	5357
Miller Fertilizer Co., Baltimore, Md.	Hustler phosphate.	Stanley. Kendall.	5264 5358
Miller Fertilizer Co., Baltimore, Md.	Special cabbage.	Stanley.	5263
Miller Fertilizer Co., Baltimore, Md.	Special wheat grower.	Kendall.	5356
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Acidulated bone and potash.	Penn Yan.	5383
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Attica special.	Attica.	5440
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Ballsmith & Moritz's special.	Attica.	5439
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Dried blood.	Canandaigua.	5400
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Fourteen per cent acid phosphate.	Penn Yan.	5382

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed	1.25	10	—	2.50	—	—
Found	1.25	10.10	11.94	1.45	0.43	0.62
Below guarantee	—	—	—	1.05	—	—
Guaranteed	—	13	—	5	—	—
Found	—	13.99	14.39	4.88	—	9.17
Guaranteed	0.83	8	—	1	—	—
Found	1.06	8.39	9.21	1.51	0	4.10
Guaranteed	0.82	8	—	4	—	—
Found	0.95	8.37	10.21	4*	0.13	4.43
Guaranteed	—	10	—	1	—	—
Found	—	9.88	13.10	1.20	—	3.69
Guaranteed	0.82	8	—	2	—	—
Found	1.06	8.87	11.58	2.64	0.35	4.58
Guaranteed	—	10	—	2	—	—
Found	—	11.45	12.15	2.55	—	8.89
Guaranteed	0.41	11	—	3.25	—	—
Found	0.46	13.45	14.36	2.86	0.25	9.44
Below guarantee	—	—	—	0.39	—	—
Guaranteed	1	10	—	2.25	—	—
Found	1.57	9.97	11.34	2.35	0.28	6.58
Guaranteed	0.82	9	—	2.25	—	—
Found	0.91	9.40	10.75	3.32	0.14	6.62
Guaranteed	3.30	7	—	7	—	—
Found	3.47	7.36	9.09	7.32	0.20	5.23
Guaranteed	1.65	8	—	2	—	—
Found	1.59	8.51	11.41	2.47	0.16	5.86
Guaranteed	—	10	—	8	—	—
Found	—	10.59	10.99	8.22	—	7.09
Guaranteed	0.85	8	—	4	—	—
Found	1.04	7.91	10.49	4.44	0.54	5.71
Guaranteed	1.85	8	—	4	—	—
Found	1.81	8.51	9.98	3.18	0.67	6.20
Below guarantee	—	—	—	0.82	—	—
Guaranteed	10.52	—	—	—	—	—
Found	9.27	—	—	—	1.25	—
Below guarantee	1.27	—	—	—	—	—
Guaranteed	—	14	—	—	—	—
Found	—	16.64	16.98	—	—	13.01

* Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	General crop No. 2.	Kendaia.	5303
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Morgan & Linson's high-grade.	Albion.	5478
Milsom Rendering & Fertilizer Co., Buffalo, N. Y.	Tankage.	Canandaigua.	5399
Minot & Decker, Brockport, N. Y.	Soluble bone.	Brockport.	5359
Oakfield Fertilizer Co., Buffalo, N. Y.	Great value fertilizer.	Oakfield.	5458
Oakfield Fertilizer Co., Buffalo, N. Y.	Potato and tobacco fertilizer.	Oakfield.	5457
Oakfield Fertilizer Co., Buffalo, N. Y.	Special corn and wheat manure.	Oakfield.	5453
Oakfield Fertilizer Co., Buffalo, N. Y.	Standard fertilizer.	Oakfield.	5454
Pacific Guano Co., Boston, Mass.	Alkaline bone.	Fairport.	5361
Patapsco Guano Co., Baltimore, Md.	Alkaline soluble bone.	Albion.	5476
Patapsco Guano Co., Baltimore, Md.	Soluble bone and potash.	Albion.	5477
G. A. Pearsall, Williamson, N. Y.	Bean special.	Williamson.	5370
G. A. Pearsall, Williamson, N. Y.	Dissolved phosphate.	Williamson.	5371
G. A. Pearsall, Williamson, N. Y.	Potato and onion fertilizer	Williamson.	5369
A. Peterson, Penfield, N. Y.	High-grade potato phosphate.	Penfield.	5414
A. Peterson, Penfield, N. Y.	Farmers' benefit.	Penfield.	5416

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed Found	0.82 1.02	9 9.28	11.18	7 5.99	0.52	7.38
Below guarantee				1.01		
Guaranteed Found	1.64 1.54	8 6.70	9.37	4 3.32	0.66	4.08
Below guarantee		1.30		0.68		
Guaranteed Found	6.15 7.16	7.90	12.27		1.30	
Guaranteed Found		14 16.86	17.08			11.81
Guaranteed Found	0.82 0.83	6 6.43	6.78	1.08 1.18	0.01	3.30
Guaranteed Found	2.47 2.28	6 4.77	7.29	4.32 3.81*	0.06	2.60
Below guarantee		1.23		0.51		
Guaranteed Found	3.70 2.93	8 6.39	8.95	6 5.51	0.73	3.73
Below guarantee	0.77	1.61		0.49		
Guaranteed Found	2.47 2.09	10 8.40	10.63	1.62 1.57	0.43	5.51
Below guarantee	0.38	1.60				
Guaranteed Found		10 11.15	13.30	4 3.83		4.83
Guaranteed Found		13 14.22	14.46	3 3.17		10.91
Guaranteed Found		10 11.77	13.61	2 2		8.58
Guaranteed Found	0.82 1.30	8 8.22	11.09	4 4.21	0.24	5
Guaranteed Found		14 14.11	15			9.82
Guaranteed Found	4.10 3.13	8 10.38	10.99	5 4.43	1.18	7.37
Below guarantee	0.97			0.57		
Guaranteed Found	2.50 3.17	6.50 8.48	11.55	9 10.43	1.72	3.40
Guaranteed Found	1.25 2.54	6 10.62	14.12	2 2.19	1.20	4.45

* Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
A. Peterson, Penfield, N. Y.	Penfield standard.	Penfield.	5415
W. W. Phipps, Albion, N. Y.	Ammoniated dissolved bone with potash.	Eagle Harbor.	5474
W. W. Phipps, Albion, N. Y.	Eagle brand superphosphate and potash.	Eagle Harbor.	5471
H. A. Pierce & Co., Armor, N. Y.	Bone and meat.	Armor.	5449
H. A. Pierce & Co., Armor, N. Y.	Pure bone.	Armor.	5448
Potomac Fertilizer Co., Boston, Mass.	Bone and potash.	Fleming.	5341
Potomac Fertilizer Co., Boston, Mass.	Special fertilizer.	Fleming.	5340
Queen City Fertilizer Co., Buffalo, N. Y.	Ammoniated bone.	Lockport.	5468
Queen City Fertilizer Co., Buffalo, N. Y.	Wheat, corn and seeding-down.	Lockport.	5467
Quinnipiac Co., New York City.	Anscomb's special wheat.	Rochester.	5407
Quinnipiac Co., New York City.	Bachman's special complete manure.	Macdougall.	5295
Quinnipiac Co., New York City.	Bone meal.	Rochester.	5413
Quinnipiac Co., New York City.	Grain and seeding.	Oakwood.	5323
Quinnipiac Co., New York City.	Potash and bone.	Oakwood.	5324
Read Fertilizer Co., New York City.	Corn, wheat and rye.	Webster.	5376
Read Fertilizer Co., New York City.	Dried blood.	Phelps.	5386
Read Fertilizer Co., New York City.	Muriate of potash.	Phelps.	5387
Read Fertilizer Co., New York City.	Nitrate of soda.	Phelps.	5388
Read Fertilizer Co., New York City.	Seneca special.	Romulus.	5314
Rochester Fertilizer Works Rochester, N. Y.	Blood and bone guano XX	Rochester.	5419
Rochester Fertilizer Works Rochester, N. Y.	Perfection brand.	Rochester.	5420

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed	2.25	8	—	4	—	—
Found	3.13	10.28	13.60	5.70	1.82	4.19
Guaranteed	1.64	11	—	2	—	—
Found	1.78	13.05	15.33	4.45	0.	8.82
Guaranteed	—	13	—	2	—	—
Found	—	12.98	15.85	2.49	—	7.79
Guaranteed	6.04	—	8.25	0.48	—	—
Found	6.59	—	11.03	0.36	1.90	—
Guaranteed	2.51	—	24.55	—	—	—
Found	2.88	—	26.75	—	0.70	—
Guaranteed	—	10	—	6	—	—
Found	—	11.88	12.59	3.67	—	7.08
Below guarantee	—	—	—	2.33	—	—
Guaranteed	1.65	8	—	4	—	—
Found	1.63	9.47	11.29	4.12	0.49	6
Guaranteed	0.82	9	—	2	—	—
Found	0.94	9.11	10.78	3.59	0.50	6.20
Guaranteed	0.82	8	—	4	—	—
Found	0.95	8.68	10.18	4.15	0.48	5.93
Guaranteed	0.82	10	—	8	—	—
Found	0.72	11.81	12.91	8.22*	0.63	5.53
Guaranteed	0.82	10	—	4	—	—
Found	1.12	10.82	12.87	3.94	0.33	7.52
Guaranteed	2.45	—	20	—	—	—
Found	3.32	—	22.79	—	0.33	—
Guaranteed	0.82	8	—	5	—	—
Found	0.92	10.45	12.68	4.82	0.14	7.33
Guaranteed	—	10	—	6	—	—
Found	—	11	14.35	5.95	—	3.57
Guaranteed	1.65	8	—	4	—	—
Found	1.90	9.58	10.09	4.34	0.19	6.39
Guaranteed	10	—	—	—	—	—
Found	10.55	—	—	—	0.71	—
Guaranteed	—	—	—	50	—	—
Found	—	—	—	53.20	—	—
Guaranteed	16	—	—	—	—	—
Found	15.76	—	—	—	15.76	—
Below guarantee	0.24	—	—	—	—	—
Guaranteed	1.23	9	—	2	—	—
Found	1.54	10.98	11.68	2.28	0.28	7.08
Guaranteed	0.82	8	—	4	0.28	—
Found	0.97	8.96	9.87	4.28*	0.49	5.60
Guaranteed	2.46	8	—	3	—	—
Found	2.96	9.89	11.08	3.75*	1.80	7.10

*Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Rochester Fertilizer Works, Rochester, N. Y.	Potato manure.	Rochester.	5423
Rochester Fertilizer Works, Rochester, N. Y.	Tankage.	Rochester.	5424
Sessions & Leonard, Palmyra, N. Y.	Guano ammoniated bone.	Palmyra.	5377
Sessions & Leonard, Palmyra, N. Y.	Wayne County special.	Palmyra.	5364
Sheldon & Co., Buffalo, N. Y.	Pure ground bone.	Brockport.	5360
Spaulding & Conde, Lyndonville.	High-grade fertilizer.	Lyndonville.	5463
Standard Fertilizer Co., Boston, Mass.	Empire State.	Rochester.	5408
Standard Fertilizer Co., Boston, Mass.	Hop special.	Rochester.	5410
F. W. Tassell, Williamson, N. Y.	Wheat special.	Williamson.	5372
F. W. Tassell, Williamson, N. Y.	Williamson standard.	Williamson.	5373
I. P. Thomas, Philadelphia, Pa.	S. C. phosphate.	Penn Yan.	5384
E. D. Tolles, Attica, N. Y.	Animal bone.	Attica.	5446
E. D. Tolles, Attica, N. Y.	Barnyard manure.	Attica.	5445
E. D. Tolles, Attica, N. Y.	Tolles' guano.	Attica.	5444
Henry F. Tucker Co., Boston, Mass.	Special potato fertilizer.	Brighton.	5403
G. O. P. Turner, Churchville, N. Y.	Grain special.	Churchville.	5434
G. O. P. Turner, Churchville, N. Y.	High-grade guano.	Churchville.	5433
G. O. P. Turner, Churchville, N. Y.	None such fertilizer.	Churchville.	5432
Walker Fertilizer Co., Clifton Springs, N. Y.	Acid phosphate.	Phelps Junction.	5392

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed	2.87	8	—	5.40	—	—
Found	3.10	10.28	11.86	4.48*	1.64	7.55
Below guarantee				0.92		
Guaranteed	7.40	—	—	—	—	—
Found	7.81	—	7.37	—	4.62	—
Guaranteed	0.82	8	—	4	—	—
Found	1.21	8.66	11.87	5.53	0.22	3.92
Guaranteed	1.85	9	—	4	—	—
Found	1.70	9.95	11.40	4.48	0.49	7.74
Guaranteed	2.70	10	22	—	—	—
Found	3.35	7.36	21.45	—	0.70	—
Below guarantee		2.64	0.55			
Guaranteed	0.75	5	—	8.50	—	—
Found	1.16	6.56	8.75	9.56	0.20	4.47
Guaranteed	0.82	4	—	8	—	—
Found	2	7.27	8.89	7.84	0.69	3.55
Guaranteed	1.65	8	—	4.30	—	—
Found	1.46	8.32	10.98	5.38*	0.30	3.34
Guaranteed	1.50	10	—	3	—	—
Found	1.89	9.97	12.91	3.46	1.25	6.25
Guaranteed	1	8	—	3.25	—	—
Found	0.84	10.32	12.73	5.57	0.06	5.53
Guaranteed	—	14	—	—	—	—
Found	—	14.39	18.61	—	—	3.73
Guaranteed	1.85	8	—	4	—	—
Found	2.29	10.45	14.22	4.01	1.38	6.60
Guaranteed	0.82	8	—	4	—	—
Found	0.97	9.16	10.48	4.20	0.46	5.97
Guaranteed	1.85	9	—	4	—	—
Found	1.87	10.33	11.29	4.09	0.49	7.74
Guaranteed	2.06	8	—	4	—	—
Found	2.57	9.89	10.83	4.09	0.25	5.53
Guaranteed	1.65	8	—	3	—	—
Found	1.83	8.18	10.76	3.22	0.92	6.28
Guaranteed	2.50	9	—	4.75	—	—
Found	2.12	10.07	11.48	6.39	0.79	5.11
Below guarantee	0.38					
Guaranteed	1.25	10	—	7	—	—
Found	1.79	10.67	12.13	4.71	0.72	5.75
Below guarantee				2.29		
Guaranteed	—	14	—	—	—	—
Found	—	14.10	14.44	—	—	9.31

* Potash present in form of sulphate.

MANUFACTURER.	Trade name or brand.	Locality where sample was taken.	Station No.
Walker Fertilizer Co., Clifton Springs, N. Y.	Ammoniated phosphate.	Phelps Junction.	5390
Walker Fertilizer Co., Clifton Springs, N. Y.	Ontario brand.	Phelps Junction.	5389
Walker Fertilizer Co., Clifton Springs, N. Y.	Special mixture.	Phelps Junction.	5391
Walker Fertilizer Co., Clifton Springs, N. Y.	Victoria bone.	Albion.	5475
Walker Fertilizer Co., Clifton Springs, N. Y.	Wheat special No. 1.	Phelps Junction.	5393
Williams & Clark Fertilizer Co., New York City.	Goodrich grain fertilizer.	Lima.	5287
Williams & Clark Fertilizer Co., New York City.	Kainit.	Rochester.	5412
Williams & Clark Fertilizer Co., New York City.	Royal grain phosphate.	Middleport.	5469
Williams & Clark Fertilizer Co., New York City.	Standard grain fertilizer.	Holley.	5484
Williams & Clark Fertilizer Co., New York City.	Standard grain and vegetable fertilizer.	Holley.	5483
Wooster & Mott, Union Hill, N. Y.	Alkaline bone.	Union Hill.	5374
Wooster & Mott, Union Hill, N. Y.	Special manure for potatoes and onions.	Union Hill.	5375
Zell Guano Co., Baltimore, Md.	Hoster's high-grade wheat fertilizer.	Canoga.	5308
Zell Guano Co., Baltimore, Md.	Potato and cabbage special.	Lyons.	5368
Zell Guano Co., Baltimore, Md.	Special grain.	Romulus.	5315

In 100 pounds of fertilizer.

	Pounds of nitrogen	Pounds of available phos- phoric acid.	Pounds of total phos- phoric acid.	Pounds of water- soluble potash.	Pounds of water- soluble nitrogen.	Pounds of water- soluble phos- phoric acid.
Guaranteed Found	1.65 1.25	8 9.16	9.41	1 0.77	0.11	4.06
Below guarantee	0.40			0.23		
Guaranteed Found		10 10.58	11.09	4 3.46		5.75
Below guarantee				0.54		
Guaranteed Found	0.82 0.79	10 9.95	13.19	5 5.87	0.16	4.41
Guaranteed Found	0.82 0.95	8 8.19	10.18	1.50 1.85	0	4.55
Guaranteed Found	0.82 0.62	8 8.36	8.57	5 4.12	0.12	4.89
Below guarantee				0.88		
Guaranteed Found	2 2.20	10 9.84	12.49	5 4.92	0.22	7.27
Guaranteed Found				12.48 14.20		
Guaranteed Found	0.82 1.06	8 7.87	11.09	4 3.90	0.23	3.16
Guaranteed Found	1.03 1.34	8 8.06	11.38	4 4.33	0.68	3.53
Guaranteed Found	1.64 2.08	8 7.33	11.25	4 4.34	0.53	1.95
Below guarantee		0.67				
Guaranteed Found		13 13.46	13.95	3 3.03		10.11
Guaranteed- Found	2.46 2.44	7 8.65	10.24	7 8.18	0.78	6.27
Guaranteed Found	1.65 1.58	10 12.01	13.88	5 5.02	0.12	9.03
Guaranteed Found	2.45 2.44	7 9.37	10.44	8 7.82	0.23	7.37
Guaranteed Found	0.80 1	8 10.68	11.72	4 4.07	0.12	8.01