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2-1-1907

Inspection of fertilizers in 1906, Bulletin, no. 130

New Hampshire Agricultural Experiment Station

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Recommended Citation

New Hampshire Agricultural Experiment Station, "Inspection of fertilizers in 1906, Bulletin, no. 130" (1907). *NHAES Bulletin*. 93.

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Experiment Station Library.



Class 639.73
Number N53
Volume 4
Source Binding
Received February 1912
Cost 1.00
Accession No. 17648



Bulletin 130

February, 1907

NEW HAMPSHIRE COLLEGE

AGRICULTURAL EXPERIMENT STATION

INSPECTION OF FERTILIZERS

IN 1906

In Coöperation with the State Board
of Agriculture

NEW HAMPSHIRE COLLEGE

OF

AGRICULTURE AND THE MECHANIC ARTS

DURHAM

TRADE VALUES OF FERTILIZING INGREDIENTS IN RAW MATERIALS AND CHEMICALS, 1906.

	Cents per pound
Nitrogen in ammonia salts	17.5
Nitrogen in nitrates	16.5
Nitrogen in dry and fine ground fish, meat and blood, and in high grade mixed fertilizers	18.5
Nitrogen in fine ground bone and tankage	18.
Nitrogen in coarse bone and tankage	13.
Phosphoric acid soluble in water	4.5
Phosphoric acid soluble in ammonio citrate (reverted)	4.
Phosphoric acid in fine ground bone, fish and tankage	4.
Phosphoric acid in coarse bone and tankage	3.
Phosphoric acid in cottonseed meal, castor-pomace and wood ashes	4.
Phosphoric acid insoluble in mixed fertilizers	2.
Potash as sulphate free from chlorides and in wood ashes	5.
Potash as muriate	4.25

For the coming year, 1907, there will be an increase in the price of nitrogen in nitrates to not less than 18 cents per pound.

COMMERCIAL FERTILIZERS IN 1906.

BY FRED W. MORSE.

The fertilizer inspection for the past year resulted in the analysis of 104 brands of mixed fertilizers and 10 lots of chemicals. There were more discrepancies than usual between the analyses and the guaranties, and these deficits were scattered among nearly all the companies represented. In a large majority of cases the deficits were in but one constituent and were counterbalanced by an excess of some other, leaving the total value unchanged.

The high prices of nitrogenous chemicals, animal matter, sulphate of ammonia and nitrate of soda make the nitrogen supply the foremost problem for farmers in the fertilization of crops. There is little if any chance of these materials becoming cheaper. Animal nitrogen is directly dependent on soil nitrogen, hence cannot be increased beyond the natural soil supply. Nitrate of soda exists in a world-old deposit, which is being steadily drawn upon, with no evidence of renewal. Sulphate of ammonia can be recovered from coal-gas in proportion to the manufacture of the latter, but its cost will be governed by the scarcity of the other materials.

Two phases of the problem of nitrogen supply are wholly in the hands of the farmers, viz., the lessening of nitrogen loss from manure piles and bare fields, and the development of nitrogen compounds from the atmospheric nitrogen by bacteria.

The supplying of phosphoric acid and potash is secondary to the nitrogen supply, because these constituents are as yet considerably less expensive in proportion to the demand

An important factor, which as yet is an unknown quantity, is the amount of these materials which a soil can supply annually without deterioration, since in the majority of soils there is an abundance of these compounds in an insoluble condition.

In some sections of our state it has become the habit to regard the soil as worn out, but it would be more accurate to consider it temporarily exhausted and fully capable of regaining its original strength. The most convenient remedy for beginning its recovery is a good commercial fertilizer, which should be accompanied by good tillage and an increase in the humus-content.

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1906.—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.				POTASH.				
	Inorganic.	Organic.	Total.		Soluble.	Reverted.	Available.		Insoluble.	Found.	Guaranteed.		
			Found.	Guaran- teed.			Found.	Guaran- teed.					
Darling's Potato Manure.....	.40	2.28	2.68	2.50	3.14	3.24	6.38	6.0	2.44	8.82	8.0	5.18	5.0
Great Eastern Grass and Oats Fertilizer.....					4.90	6.12	11.02	11.0	2.28	13.30	8.0	2.23	2.0
Great Eastern Northern Corn Special.....	.56	1.68	2.24	2.06	5.61	3.74	9.35	8.0	2.96	12.31	.....	3.20	3.0
Great Eastern Potato Manure.....	.52	1.64	2.16	2.06	4.41	3.47	7.91	8.0	2.04	9.95	.....	4.07	3.0
High Grade Fertilizer with 10 per cent. Potash.....	.58	2.44	3.02	2.40	2.26	1.06	6.32	6.0	4.28	9.6	7.00	9.30	10.0
High Grade Sulphate of Potash.....												47.0	48.0
Muriate of Potash.....												51.2	50.0
Nitrate of Soda.....			15.16	15.8									
Pacific Potato Special.....	.28	1.99	2.27	2.06	3.84	3.53	7.37	8.0	3.08	10.45	10.00	3.21	3.0
Packer's Union Animal Corn Fertilizer.....	.36	2.11	2.47	2.47	3.72	5.32	9.04	9.00	2.96	12.00	.....	1.93	2.0
Packer's Union Potato Manure.....	.31	1.74	2.05	2.06	5.12	3.21	8.33	8.0	2.72	11.05	.....	6.01	6.0
Packer's Union Universal Fertilizer.....	.....	1.10	1.10	0.82	3.46	4.15	7.61	8.0	3.04	10.65	.....	3.85	4.0
Packer's Union Wheat, Oats and Clover Fertilizer.....	.....	.....	.....	.....	5.98	4.41	10.39	11.0	2.16	12.55	.....	2.29	2.0
Quinnipiac Climax Phosphate for all crops.....	.....	1.38	1.38	1.03	4.15	3.70	7.85	8.0	3.20	11.05	10.	2.62	2.
Quinnipiac Corn Manure.....	.25	1.91	2.16	2.06	3.81	4.05	7.89	8.0	3.76	11.65	10.0	1.71	1.5
Quinnipiac Potato Phosphate.....	.27	1.61	1.88	2.06	5.68	2.45	8.13	8.0	2.92	11.05	10.0	3.05	3.0
Read's Farmer's Friend.....	.31	1.63	1.94	2.06	5.34	2.91	8.28	8.0	2.32	10.60	10.0	3.65	3.0
Read's Potato Manure.....	.23	3.15	3.38	2.40	3.16	3.93	6.09	6.0	1.96	8.05	7.0	9.46	10.0
Read's Practical Potato Special.....	.....	.....	1.32	.82	2.71	3.94	6.65	4.0	2.60	9.25	5.0	7.58	8.0
Read's Standard Superphosphate.....	.....	1.08	1.08	.82	3.68	4.91	8.62	8.00	2.88	11.5	10.0	4.07	4.0
Read's Vegetable and Vine Fertilizer.....	.38	1.67	2.05	2.06	3.40	4.89	8.29	8.0	3.36	11.65	10.0	3.69	6.0
Soluble Pacific Guano.....	.13	2.03	2.16	2.06	5.72	3.05	8.77	8.0	1.68	10.45	10.0	1.86	1.50
Williams & Clark American Corn Phosphate.....	.46	2.21	2.67	2.06	4.80	3.68	8.48	8.0	3.24	11.72	10.0	2.34	1.50
Williams & Clark American Potato Manure.....	.20	1.50	1.70	2.06	4.60	3.88	8.48	8.0	3.12	11.60	10.0	3.55	3.0
BOWKER FERTILIZER Co.													
Bowker's Corn Phosphate.....	.26	1.47	1.73	1.65	5.24	4.04	9.28	8.00	1.72	11.00	9.00	2.31	2.00
Bowker's Farm and Garden Phosphate.....	.27	1.47	1.74	1.65	4.86	3.15	8.31	8.0	2.64	10.95	9.0	2.11	2.00
Bowker's Hill and Drill Phosphate.....	.53	1.79	2.32	2.47	4.06	4.68	8.74	9.0	2.96	11.70	10.0	2.05	2.00
Bowker's Potash Bone.....	.....	1.25	1.25	0.82	2.98	2.86	5.84	6.0	1.96	7.80	7.0	2.48	2.0

COMPOSITION OF COMMERCIAL FERTILIZERS SAMPLED AND ANALYZED IN 1906.—Continued.

	NITROGEN.				PHOSPHORIC ACID.				POTASH.			
	Inorganic.	Organic.	Total.		Soluble.	Reverted.	Available.		Insoluble.	Found.	Guaranteed.	
			Found.	Guaranteed.			Found.	Guaranteed.				
												Found.	Guaranteed.
RUSSIA CEMENT CO.												
Essex A. 1 Superphosphate.....	.....	1.07	1.07	1.00	6.46	7.46	7.00	4.24	11.70	9.0	2.37	2.0
Essex Complete Manure for Corn, Grain and Grass.....	.35	2.57	2.92	3.3	4.76	8.67	7.06	2.08	10.75	9.5	9.93	9.5
Essex Complete Manure for Potatoes, Roots and Vegetables...	.44	3.46	3.90	3.7	3.27	3.92	7.19	4.96	12.15	9.0	10.42	8.5
Essex Corn Fertilizer.....	.37	1.53	1.90	2.00	4.96	3.89	8.85	8.0	2.52	11.37	3.09	3.0
Essex XXX Fish and Potash.....	.67	1.69	2.36	2.1	2.59	5.87	8.46	4.41	12.90	12.0	3.25	2.25
Essex Market Garden and Potato Manure.....	.52	1.91	2.43	2.0	3.82	4.74	8.56	8.0	3.64	12.20	4.25	5.0
J. W. SANBORN.												
Hill and Drill.....	.43	2.14	2.57	2.8	3.00	4.41	7.0	6.84	14.25	13.2	3.31	3.
Potato Special.....	.96	2.89	3.85	3.8	2.29	5.07	7.36	3.44	10.8	7.83	7.76	7.2
Sanborn's Formula for Grass.....	4.80	.....	4.80	5.2	2.73	.85	3.58	3.50	7.70	7.10	7.12	6.5
SWIFT'S LOWELL FERTILIZER CO.												
High Grade Sulphate of Potash.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	47.28	4.8
Muriate of Potash.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	62.9	5.0
Nitrate of Soda.....	.....	16.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Swift's Lowell Animal Brand.....	.13	2.36	2.49	2.46	5.76	3.44	9.20	9.00	3.20	12.4	4.72	4.0
Swift's Lowell Bone Fertilizer.....	.13	1.50	1.63	1.64	5.20	3.45	8.65	8.0	3.00	11.65	9.0	3.25
Swift's Lowell Cereal Fertilizer.....	.....	1.92	1.92	.82	3.52	2.87	6.39	7.0	2.36	8.75	8.0	1.37
Swift's Lowell Dissolved Bone and Potash.....	.....	1.77	1.77	1.61	5.00	3.45	8.45	9.0	3.90	12.35	10.0	2.28
Swift's Lowell Empress Brand.....	.....	1.54	1.54	1.23	4.96	2.77	7.73	7.0	2.92	10.65	8.0	2.60
Swift's Lowell Market Garden Manure.....	.....	2.60	4.04	.....	3.48	1.17	1.65	3.50	11.15	.....	6.42	.....
Swift's Lowell Potato Manure.....	.....	1.51	1.66	1.61	3.68	3.82	7.50	7.0	3.00	10.5	8.0	3.86
Swift's Lowell Potato Phosphate.....	.25	2.42	2.67	2.46	1.60	4.10	8.70	8.0	2.92	11.62	3.0	6.52
Swift's Lowell Sterling Phosphate.....	.....	.85	.85	.82	4.91	3.34	8.25	8.0	2.20	10.45	9.0	5.35
Swift's Superior Fertilizer.....	.52	3.62	4.14	3.69	4.90	2.49	7.39	7.0	1.96	9.35	8.0	8.67
WHITMAN & PRATT RESEDERING CO.												
Pure Ground Bone.....	4.11	2.47	23.5	25.0

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