

# The Connecticut Agricultural Experiment Station.

## BULLETIN No. 83.

APRIL, 1885.

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The object of these Bulletins is to place in the hands of those concerned the results of the Station work as promptly as possible.

As required by law, a package of each Bulletin is mailed to every post-office in the State. The package is directed to the Postmaster, with a request to distribute to farmers. The number sent will be increased in any case on application.

The Bulletins are also regularly sent to every newspaper in the State, and to the Secretary of each Agricultural society, Farmers' club and Grange whose address is known to the Station.

The Bulletins will be regularly sent, also, on application, to any private address in Connecticut. Such application, as a rule, must be renewed annually.

To citizens of other States remitting fifty cents, the publications of the current year, including Bulletins and Annual Report, will be mailed as they appear. Applications should be made early in the year.

The wish has been recently expressed that a copy of every Fertilizer Analysis should be sent as soon as made by the Station to each Farmers' club or local society in the State. The Director has used every endeavor to accomplish the prompt publication of the results of Station work, and has tested every method that has come to his knowledge, including the Hektograph, that promised to serve this end. Since the issue of the last Bulletin he has obtained a Hektograph which gives the requisite number of legible copies and henceforth, as soon as practicable after Fertilizer Analyses are finished, Hektograph copies will be mailed to the Secretaries of all Agricultural societies, Farmers'

clubs and Granges,\* to the Connecticut Farmer, and to such newspapers of the State as *may apply for* and will undertake to print them.

On application, Hektograph copies will also be supplied to Agricultural papers in other States so far as the limited supply will permit.

#### ANALYSES OF FERTILIZERS.

**1355. Spent Chloride of Lime.** "Refuse from bleaching in knitting mills." Sent by James N. Bishop of Plainville. The material was a pasty mass which had the following composition :

Sand, .....	1.34
Lime, .....	23.48
Magnesia, .....	0.38
Sulphuric Acid, .....	0.91
Chlorine as hypochlorite, .....	1.65
Chlorine as calcium chloride, .....	3.61
Water and matters undetermined, .....	68.63
	100.00

The 1.65 per cent. of chlorine as hypochlorite corresponds to about 3 per cent. of calcium hypochlorite, which is the essential constituent of bleaching powder or so-called "Chloride of Lime." The remaining 3.61 per cent. of chlorine corresponds to 9.7 per cent. of calcium chloride. There is, then, 12.7 per cent. of lime salts present which are highly soluble in water, and unless **greatly diluted, injurious.** The hypochlorite is extremely corrosive and poisonous to vegetation. The calcium chloride if diluted with near one thousand times its weight of water would not be harmful and might be beneficial, but in a concentrated state would damage plants and injure the soil. It would not be wise to apply this lime to land or muck except in a small way as an experiment. Small quantities of this spent "Chloride of Lime" might perhaps be advantageously used in composting muck. The vegetable matter would neutralize or destroy the hypochlorite, but careful trials would be necessary to establish its value. If spread out thinly on land before plowing, especially on sod in the fall, it might be very useful for the lime it contains.

\* Secretaries of granges and of societies and clubs not included in the official lists on pages 308 and 316 of the Report of The Board of Agriculture just issued, should send their addresses to the Station.

## TOBACCO DUST.

**1346.** Tobacco Dust from the factory of A. Wassermann, New York. Sent by J. S. Kirkham, Newington. We are informed that this material, which is a uniform and quite fine powder, is the siftings from tobacco "clippings." It costs 40 cents per 100 lbs. The analysis follows:

Moisture, .....	9.64
Organic and Volatile matters (by difference), .....	44.68
(Containing nitrogen, .....	2.42)
Sand and soil, .....	32.28
Oxide of iron and alumina, .....	2.35
Lime, .....	4.15
Magnesia, .....	1.62
Potash, .....	2.82
Soda, .....	.59
Sulphuric acid, .....	.79
Phosphoric acid, .....	.52
Chlorine, .....	.56
	<hr/>
	100.00

Valuing nitrogen at 18 cents per pound, phosphoric acid at 6 cents, three-fourths of one per cent. of potash as muriate at  $4\frac{1}{4}$  cents, and the rest as sulphate at  $7\frac{1}{4}$  cents per pound, the total valuation as a fertilizer is \$12.98 per ton.

Its fine mechanical condition makes it easy to handle.

## SULPHATE OF AMMONIA.

**1379.** Sulphate of Ammonia. "25 per cent." From stock bought of E. H. Wardwell, N. Y., by J. J. Webb, Hamden.

## ANALYSIS.

Nitrogen found, .....	20.76	equivalent to ammonia, 25.21
Nitrogen guaranteed, .....	20.60	equivalent to ammonia, 25.00
Cost per ton (in New Haven), .....		\$66.80
Nitrogen in this sample cost 16.1 cents per pound.		

## POTASH SALTS.

**1378.** Muriate of Potash, 83.5 per cent. Stock purchased of H. J. Baker & Bro., N. Y., by J. J. Webb, Hamden.

**1374.** Muriate of Potash, 70 per cent. Sold by H. J. Baker & Bro. From stock of R. B. Bradley & Co., New Haven. Sampled and sent by C. P. Augur, Whitneyville.

## ANALYSES.

	1378	1374
Potash found, .....	51.82	42.06
Potash guaranteed, .....	52.7	44.2
Cost per ton, .....	\$40.30*	\$38.00*
Potash costs per pound, .....	3.9 cts.	4.5 cts.

\* In New Haven.

## BUFFALO HORN SAW DUST.

**1403.** Buffalo Horn Saw Dust. Sampled and sent by J. W. Hemingway. From the factory of B. B. Warren & Son, Plainville.

The mechanical analysis of the sample is as follows:

Passed $\frac{1}{80}$ inch, .....	48
“ $\frac{1}{20}$ “ .....	28
“ $\frac{1}{12}$ “ .....	22
“ $\frac{1}{8}$ “ .....	2
	100

It contained 14.85 per cent. of nitrogen and only a trace of phosphoric acid. The nitrogen of horn dust while probably slower in its action than that of blood, fish and meat, has considerable value as a fertilizer. In this sample nitrogen costs 10.1 cents per pound.

## NOTES TO FOLLOWING TABLES.

The different prices reported for the same brand of bone, Nos. **1368**, **1360**, **1376** are due to competition among dealers.

The superphosphate No. **1373** was prepared by Mr. Augur from bone char, which he was able to secure on very favorable terms, and oil of vitriol. Its mechanical condition was excellent.

The superphosphate No. **1384** is a mixture of the sulphate of ammonia (No. **1379**), acid phosphate (No. **1380**), and muriate of potash (No. **1378**), whose analyses are given in this bulletin.

The cost, \$40.11, covers the cost of these materials delivered in New Haven, and the labor of mixing.

BONE MANURES.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1398	Adams' Fine Ground Bone.	Adams & Thomas, Springfield, Mass.	A. W. Leighton & Co., New Haven.	Station Agent.
1404	Cooper's Bone Dust.	Peter Cooper's Glue Factory, New York.	Gilbert Thompson, New York.	J. W. Hemmingway, Plainfle.
1363	Lister's Celebrated Ground Bone.	Lister Brothers, Newark, N. J.	S. J. Hall, Meriden.	Station Agent.
1371	Miller's Ground Bone.	G. W. Miller, Middlefield.	Manufacturer.	M. W. Terrill, Middlefield.
1375	Plumb & Winton's Pure Ground Bone.	Plumb & Winton, Bridgeport.	Manufacturer.	G.P.Jennings, Green's Farms
1377	Plumb & Winton's Bone Fertilizer.	Plumb & Winton, Bridgeport.	Manufacturer.	G.P.Jennings, Green's Farms
1361	Swift Sure Bone Meal.	M. L. Shoemaker & Co., Phila.	F. Ellsworth, Hartford.	Station Agent.
1405	Tvory Sawdust.	B. B. Warren & Son, Plainville.	Manufacturer.	J. W. Hemmingway, Plainfle.
1368	Americus Brand Pure Bone Meal.	Williams, Clark & Co., N. Y.	E. M. Jennings, Southport.	Austin Jennings, Green'sFrs
1360	Americus Brand Pure Bone Meal.	Williams, Clark & Co., N. Y.	R. B. Bradley & Co. New Haven.	Station Agent.
1376	Americus Brand Pure Bone Meal.	Williams, Clark & Co., N. Y.	E. M. Jennings, Southport.	G.P.Jennings, Green's Farms

BONE MANURES.

Station Number.	Name or Brand.	Nitrogen.	Phosphoric Acid.	Finer than				Coarser than 16 in	Cost per ton.	Valuation per ton.
				1-60 inch. inch.	1-12 inch. inch.	1-6 inch. inch.	1-6 inch. inch.			
1398	Adams' Fine Ground Bone, .....	4.14	17.30	37	25	29	9	---	\$32.50	\$31.95
1404	Cooper's Bone Dust, .....	1.41	30.99	34	12	34	20	---	*31.20	37.13
1363	Lister's Celebrated Ground Bone, .....	3.61	13.72	30	15	27	28	---	27.00	25.16
1371	Miller's Ground Bone, .....	3.90	21.34	10	13	41	35	1	34.00	32.10
1375	Plumb & Winton's Pure Ground Bone, .....	3.32	22.88	41	16	17	14	12	35.00	34.35
1377	Plumb & Winton's Bone Fertilizer, .....	3.78	19.61	26	13	18	17	26	35.00	30.05
1361	Swift Sure Bone Meal, .....	6.04	21.98	72	24	4	---	---	45.00	46.65
1405	Ivory Sawdust, .....	5.41	24.77	98	2	---	---	---	30.00	49.10
1368	American Brand Pure Bone Meal, .....	3.94	20.06	58	19	22	1	---	37.00	35.90
1360	American Brand Pure Bone Meal, .....	3.63	20.27	45	21	25	9	---	38.00	33.97
1376	American Brand Pure Bone Meal, .....	3.93	20.10	51	19	28	2	---	35.00	35.36

\*In Plainville.

SUPERPHOSPHATES AND SPECIALS.

Station No.	Name or Brand.	Manufacturer.	Dealer.	Sampled and sent by
1373	Home-made Superphosphate.	C. P. Augur, Whitneyville.		C. P. Augur, Whitneyville.
1381	Home-mixed Superphosphate.	J. J. Webb, Hamden.		J. J. Webb, Hamden.
1387	Acme Fertilizer, No. 1.	C. Meyer, Jr., Maspeth, L. I.	A. S. Russell & Co., Meriden.	Station Agent.
1388	Acme Fertilizer, No. 2.	C. Meyer, Jr., Maspeth, L. I.	A. S. Russell & Co., Meriden.	Station Agent.
1394	Adams Market Bone Fertilizer.	Adams & Thomas, Springfield.	A. W. Leighton, New Haven.	Station Agent.
1357	Ameriteus Ammoniated Bone Superphosphate.	Williams, Clark & Co., New York.	R. B. Bradley & Co., N. Haven.	Station Agent.
1369	Ameriteus Ammoniated Bone Superphosphate.	Williams, Clark & Co., New York.	E. M. Jennings, Southport.	Austin Jennings, Green's Farms.
1380	Baker's Acid Phosphate.	H. J. Baker & Bro., New York.	Manufacturer.	J. J. Webb, Hamden.
1386	Bradley's Patent Superphosphate.	Bradley Fertilizer Co., Boston.	Wheeler & Howes, Bridgeport.	Station Agent.
1382	Cooke's Blood Guano.	Nat'l Fertilizer Co., Bridgeport.	Swan's Seed Store.	Station Agent.
1406	Chittenden's Complete Fertilizer for Roots.	Nat'l Fertilizer Co., Bridgeport.	William Fowler, Milford.	Station Agent.
1365	Lister's Standard Superphosphate of Lime.	Lister Brothers, Newark, N. J.	S. J. Hall, Meriden.	Station Agent.
1385	Mapes' Complete Manure, "A" Brand.	Mapes Formula and Peruvian Guano Co., New York.	C. C. Hegeman & Co., Bridgeport.	Station Agent.
1384	Mapes' Complete Manure for Potatoes.	Mapes F. & P. G. Co., New York.	C. C. Hegeman & Co., Bridgeport.	Station Agent.
1372	Miller's Raw Bone Superphosphate.	G. W. Miller, Middlefield.	Manufacturer.	M. W. Terrill, Middlefield.
1362	Shoemaker's Swift-sure Superphosphate.	M. L. Shoemaker & Co., Philad.	F. Ellsworth, Hartford.	Station Agent.

SUPERPHOSPHATES AND SPECIALS.

Station Number.	Name or Brand.	NITROGEN.		PHOSPHORIC ACID.						POTASH.		Chlorine.	Cost per ton.	Valuation per ton.	
		Found.	Guaranteed.	Soluble.	Reverted.	Insoluble.	Total Phos. Acid Found.	Phos. Acid Guaranteed.	Available.	Found.	Guaranteed.				
1373	Home-made Superphosphate (C. P. Augur).	---	---	16.31	1.48	.27	18.06	---	17.79	---	---	---	---	---	\$31.82
1381	Home-mixed Superphosphate (J. J. Webb).	5.23	---	10.68	.80	.27	11.75	---	11.48	---	---	---	---	---	47.73
1387	Acme Fertilizer, No. 1.	4.36	3.70	8.37	1.0	.06	8.53	8.50	8.47	8.00	9.35	9.00	6.97	47.00	38.93
1388	Acme Fertilizer, No. 2.	6.13	5.10	8.54	.18	.06	8.75	8.50	8.69	8.00	6.54	5.00	5.31	47.00	42.25
1394	Adams' Market Bone Fertilizer.	3.40	3.50	4.51	5.14	.96	10.61	10.00	9.65	---	3.43	3.00	3.08	38.00	32.26
1397	Americus Bone Superphosphate.	3.33	1.65	10.61	1.38	.70	12.69	10.00	11.99	9.00	3.04	2.00	.48	38.00	37.96
1369	Americus Bone Superphosphate.	2.72	1.65	11.19	1.39	.21	12.79	10.00	12.58	9.00	2.24	2.00	.38	38.00	35.29
1380	H. J. Baker's Acid Phosphate.	---	---	19.10	1.15	.46	20.71	---	20.25	19.00	---	---	---	---	*23.42
1386	Bradley's Patent Superphosphate.	2.70	2.27	8.59	2.15	1.56	12.30	11.00	10.74	9.00	1.51	1.50	1.48	40.00	31.30
1382	Cooke's Blood Guano.	1.35	1.23	5.16	2.94	1.50	9.60	10.00	8.10	7.00	1.71	---	3.33	38.00	21.65
1406	Chittenden's Complete Fertilizer for Roots.	3.84	3.50	6.27	1.57	1.20	9.04	8.00	7.84	6.00	7.60	6.00	6.49	45.00	35.16
1365	Lister's Standard Superphosphate of Lime.	2.75	2.34	8.72	1.98	1.09	11.79	12.00	10.70	10.00	1.55	1.50	1.42	32.00	31.07
1385	Mapes' Complete Manure, "A" Brand.	2.62	2.47	7.13	4.19	3.31	14.63	14.00	11.32	10.00	3.23	2.50	3.16	40.00	34.69
1384	Mapes' Complete Manure for Potatoes.	4.08	3.70	8.13	2.54	1.37	12.04	8.00	10.67	---	7.55	6.00	3.95	48.00	44.17
1372	Miller's Raw Bone Phosphate.	4.89	---	4.44	3.83	.49	8.76	---	8.27	---	5.23	---	6.75	42.00	36.61
1362	Shoemaker's Swift-sure Superphosphate.	3.14	2.47	7.71	3.57	3.28	14.56	14.00	11.28	9.00	5.12	---	3.92	42.00	38.19

\* In New Haven.