

CONNECTICUT AGRICULTURAL EXPERIMENT STATION.

Bulletin 25.—May 2, 1879.

FERTILIZER ANALYSES.

257. Hen Manure.

Sampled and sent April 15, by L. H. Gager, Quarryville, Wet, giving off ammonia.

260. Stockbridge Potato Fertilizer.

Sold by Hubbell & Wakeman, Saugatuck. Sampled and sent April 19, by T. B. Wakeman, Greens Farms.

261. 262. Hair Felt.

From T. H. Rylands, Bridgeport, April 12.

	260	257	261	262
Nitrogen.....	3.82	.82	9.27	9.34
Phos. Acid soluble	6.19			
Phos. Acid revert'd	.92	.45		
Phos. Acid insol'ble	.19			
Potash.....	8.84	.49		
Chlorine.....	7.49			
Estima'd val. p. ton	\$40.42	5.01	27.81	28.02
Cost p. ton	\$50.00	?	?	?

The worth of 260 is based upon the trade values given in the Station Report for 1878, p. 19. Potash is valued at the cheapest rate there given, viz: 4½ cents per lb. The analysis shows it to be present in 260 as muriate (potassium chloride). Potash is now offered in sulphate and muriate at New Haven for 4½ and 3½ cents per lb., respectively, in single ton lots.

The more complete analysis of hen manure is as follows:

	257
Moisture.....	71.40
Organic matter*	14.40
Sand and soil.....	10.45
Phosphoric Acid.....	.45
Potash.....	.49
Lime and other mineral matters.....	2.91
	100.00
*With nitrogen.....	.82

This result of the analysis of hen manure is perhaps disappointing. We are accustomed to hear it said that the excrement of fowls is very rich, being in fact, a domestic guano almost comparable to the guano of Peru. The poverty of this sample in fertilizing matters, stands in direct

relation to the abundance of moisture and soil which it contains, amounting together to more than 80 per cent. The remaining 20 per cent. includes all the fertilizing elements, and this would contain if dry and pure over 4 per cent. nitrogen, 2½ per cent. phos. acid and 2½ per cent. potash. But these percentages are, with the exception of potash, far inferior to those of good guano, and for two reasons: 1st, the moist state of the manure has permitted a decomposition whereby nitrogen has escaped in the form of carbonate of ammonia. 2d, the food of hens, at the best, is much less rich in nitrogen and phosphates than that of the guano birds, which feed almost exclusively on fish.

The hair felt is a manufacturing refuse, very rich in nitrogen, and undoubtedly valuable as a fertilizer. Whether it is worth \$28 per ton is doubted by some. I know of no practical experience in this country that could fix the agricultural value of hair, and there is not any considerable commerce in the article for agricultural purposes, that can serve to assign to it a trade value. The valuation above given rests upon the trade-value adopted for the nitrogen of the lowest grades of coarse bone, for horn shavings, and for crude fish scrap, viz: 15 cents per pound. This figure agrees with that employed by the chemists of the German experiment stations, and is presumably based on experience in that country.

Hair is slow to decompose, as compared with many other animal matters, but nevertheless does decompose, and from the fine state of division in which it occurs, it acts with sufficient rapidity, under favorable circumstances, to be an excellent application dug in to fruit trees and hop vines, and as a top dressing to grass. By composting with alkaline substances, ashes, lime, etc., hair is softened, and decomposes with greater ease.

S. W. JOHNSON,

Director.