

experiments was to measure the usefulness of various phosphatic manures and to ascertain whether bonedust could be economically replaced by a cheaper phosphatic fertilizer.

In the 1926 trials the fertilizers compared were 15 cwt. bonedust, a mixture of  $7\frac{1}{2}$  cwt. superphosphate and  $7\frac{1}{2}$  cwt. bonedust, and another mixture of  $7\frac{1}{2}$  cwt. super and  $7\frac{1}{2}$  cwt. Ephos phosphate, per acre. Bonedust contains about 4 per cent. of nitrogen, and sufficient sulphate of ammonia was added to the other phosphatic fertilizer mixtures used in the trial to make up their deficiency in nitrogen. In addition 2 cwt. sulphate of potash was added to each mixture. The results of this trial are given in Table 1, from which it may be seen that bonedust can be quite well replaced by super and Ephos, and that super is probably a more efficient phosphatic fertilizer than bonedust. However, it should be noted that the super and Ephos mixture contained its nitrogen in a water-soluble form, whereas the bonedust contained it in a slower-acting form, and later trials have shown that water-soluble nitrogen is very important in the manuring of the early potato crop.

Table 1.—Summary of Results for 1926, 1927, and 1928.

Year.	Fertilizer.	Yield of Table Potatoes.
		Tons cwt. lb.
1926	15 cwt. bonedust (1) .. .. .	5 13 101
	$7\frac{1}{2}$ cwt. bonedust and $7\frac{1}{2}$ cwt. super (2) .. .. .	6 6 90
	$7\frac{1}{2}$ cwt. Ephos phosphate and $7\frac{1}{2}$ cwt. super (3) .. .. .	6 9 0
1927	$7\frac{1}{2}$ cwt. bonedust and $7\frac{1}{2}$ cwt. super (2) .. .. .	2 1 49
	$7\frac{1}{2}$ cwt. Ephos and $7\frac{1}{2}$ cwt. super (3) .. .. .	2 4 61
	15 cwt. super (3) .. .. .	2 5 80
1928	$7\frac{1}{2}$ cwt. bonedust and $7\frac{1}{2}$ cwt. super (2) .. .. .	3 13 2
	$7\frac{1}{2}$ cwt. Ephos and $7\frac{1}{2}$ cwt. super (3) .. .. .	3 13 67
	15 cwt. super (3) .. .. .	3 15 22
	$4\frac{3}{4}$ cwt. Diammonphos (1) .. .. .	4 5 45
	$7\frac{1}{2}$ cwt. Gafsa phosphate and $7\frac{1}{2}$ cwt. super (3) .. .. .	3 14 67

(1) Plus 2 cwt. sulphate of potash.

(2) Plus 2 cwt. sulphate of potash and  $1\frac{3}{8}$  cwt. sulphate of ammonia.

(3) Plus 2 cwt. sulphate of potash and  $3\frac{1}{8}$  cwt. sulphate of ammonia.

In 1927 the trials were carried a stage further, and the manurial treatments used were  $7\frac{1}{2}$  cwt. bonedust and  $7\frac{1}{2}$  cwt. super,  $7\frac{1}{2}$  cwt. Ephos and  $7\frac{1}{2}$  cwt. of super, and 15 cwt. of super, per acre. Sulphate of ammonia and potash were also added to the mixtures, as in the 1926 trials. The results of these trials are also given in Table 1, and the relative yields were similar to those obtained in 1926. In 1928 these trials were repeated with additional treatments, in which Gafsa replaced Ephos in the mixture and Diammonphos replaced super and sulphate of ammonia. The Diammonphos treatment, when compared with the superphosphate mixture, increased the yield of table potatoes by 10 cwt. per acre. It contained nitrogen to the equivalent of 1.6 cwt. sulphate of ammonia more than the super mixture, but the phosphate content was less by an amount equivalent to 3 cwt. super. These trials indicated that the early potato-crop responded best to water-soluble phosphatic and nitrogenous fertilizers, and that expensive bonedust could be economically replaced by them.