

TABLE I.

Treatment per Acre.										Production of Dry Matter per Acre.
										lb.
Untreated	..	..	..	..	..	..	..	..	..	4,303.1
Ammonium sulphate, 1 cwt.	..	..	..	..	..	..	..	..	..	4,987.7
Superphosphate, 2 cwt.	..	..	..	..	..	..	..	..	..	4,579.4
Superphosphate, 2 cwt.; ammonium sulphate, 1 cwt.	..	..	..	..	..	..	..	..	..	5,203.3
Superphosphate, 2 cwt.; sulphate of potash, ½ cwt.; ammonium sulphate, 1 cwt.	..	..	..	..	..	..	..	..	..	5,654.7

NOTE.—Previous to 1928 nitrate of soda was used instead of ammonium sulphate.

While the use of superphosphate has given a very small increase of only 276 lb. of dry matter per acre, ammonium sulphate shows an increase of over 680 lb. of dry matter per acre. The highest yield was obtained from plots where the complete treatment was used.

The splendid increase in yield obtained from the use of ammonium sulphate undoubtedly is connected in part with the establishment of a flora responsive to nitrogenous manures.

The influence of the past manurial treatment on the efficacy of ammonium sulphate in increasing pasture-yield is well illustrated by the following data obtained by the application of 4 cwt. of ammonium sulphate per acre at intervals during the season commencing on the 12th October, and finishing on the 8th August: On the plots which formerly were untreated, 4 cwt. of ammonium sulphate gave an increased yield of 871.4 lb. of dry matter per acre; on plots formerly receiving a complete treatment, 4 cwt. of ammonium sulphate gave an increase of 688.6 lb. of dry matter per acre; on plots formerly receiving superphosphate only, 4 cwt. of ammonium sulphate gave an increase of 601.2 lb. of dry matter per acre; on the plot formerly receiving nitrogenous manure only, 4 cwt. of ammonium sulphate gave an increase of 1,023.5 lb. of dry matter per acre. The highest return per 1 cwt. of ammonium sulphate applied was obtained on the plot formerly receiving solely nitrogenous manure. The next best return per 1 cwt. of ammonium sulphate applied was obtained from the untreated plots. Plots receiving the complete manure or superphosphate gave a much lower return per 1 cwt. of ammonium sulphate applied. It must be remarked, however, that even in the case of the plot formerly receiving solely nitrogenous manure the increased yield with additional applications of ammonium sulphate is very much lower per 1 cwt. of ammonium sulphate than is the case when only 1 cwt. per acre is used in the long-continued manurial treatment of pasture.

A striking illustration of the fact that it is not necessarily the high-producing pastures which give the greatest return from the use of ammonium sulphate is provided in the data presented in Table II. In this table a comparison is made of the effect of five applications of ammonium sulphate on (1) untreated pasture; (2) on pasture which in the past has received a complete manure. As has been noted earlier, the difference in yield of the untreated pasture and that receiving the complete manure is very great. The difference in flora of the two pastures is also very striking. The data presented in Table II show that per 1 cwt. of ammonium sulphate applied a bigger increase was obtained on the untreated pasture than on the pasture which in the past has received the complete manure.

TABLE II.—INFLUENCE OF AMMONIUM SULPHATE ON YIELD OF PASTURE.

Production of Dry Matter in Pounds per Acre.—Series II, Season, 1929-30 (Mown Cuts).

Period.	Days.	Plots 3, 6, and 9.					Plots 4 and 5.				
		No Nitrogen (3B, 6B, 9B).		Five applications of Nitrogen (3A, 6A, 9A).		Increase over No Nitrogen.	No Nitrogen.		Five applications of (Nitrogen 4A1 and 5B1)		Increase over No Nitrogen.
		Period.	Per Day.	Period.	Per Day.		Period.	Per Day.	Period.	Per Day.	
9/8/29-11/10/29 ..	64	814.3	12.7	1,015.8	15.9	201.5	971.1	15.1	1,184.1	18.5	213.0
12/10/29-16/12/29	66	1,831.5	27.7	1,955.6	29.6	124.1	1,965.4	29.8	2,173.1	32.9	207.7
17/12/29-12/2/30	58	1,086.8	18.7	1,456.7	25.1	369.9	1,434.5	24.7	1,574.5	27.1	140.0
13/2/30-8/5/30 ..	85	449.9	5.3	651.7	7.7	201.8	834.2	9.8	998.4	11.7	164.2
9/5/30-8/8/30 ..	92	120.7	1.3	296.3	3.2	175.6	242.4	2.6	331.3	3.6	88.9
Totals .. ..	..	4,303.2	..	5,376.1	..	1,072.9	5,447.6	..	6,261.4	..	813.8

NOTE.—Plots 3, 6, 9: No previous treatment. Plots 4 and 5 have had 2 cwt. super, ½ cwt. sulphate of potash, and 1 cwt. ammonium sulphate per acre in previous years. During present season plots 4 and 9 received dressing of 2 cwt. superphosphate and ½ cwt. sulphate of potash per acre in July, 1929. Applications of ammonium sulphate at the rate of 1 cwt. per acre were made to stated plots at the beginning of periods shown in the table.

The magnitude of the effect of ammonium sulphate in increasing production of pasture has varied at different times during the season.

In the case of the data recorded in Table II a variation from 124.1 lb. to 369.6 lb. of dry matter per acre was experienced for two different applications of ammonium sulphate on the untreated plots. In the case of the plots which received the complete manure a variation in the increase obtained by a 1 cwt. application of ammonium sulphate was found of 88.9 lb. to 213.0 lb. These variations in the