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Report for 1923-1924 With the Supplement to the Guide to the Experimental Plots Containing the Yields per Acre Etc.



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Fertilisers As Chlorides or Sulphates

Rothamsted Research

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CHLORIDES AND SULPHATES AS FERTILISERS.

Farmers now have the choice of muriate or sulphate of potash : and they can also have the choice of muriate or sulphate of ammonia. The experiments with potassic fertilisers are described under "Potatoes." Our experience with the muriate of ammonia is that it is less effective than the sulphate for potatoes but more effective for barley. The difference depends on the rainfall during the months of March, April and May and becomes less as the rainfall increases. The average of all the results at Rothamsted has been as follows :—

	1921	1922	1923	1924
Effectiveness of muriate when that of Sulphate = 100 Corn Potatoes	106 (112)*	103 95	109 92	104 100
Rainfall—March, April and May (inches)	4·08	7·38	5·64	8·95

*Crop almost failed ; 2 tons per acre only.

The chloride of ammonia has had a remarkable effect on the grain of barley as is described below.

BARLEY.

During the past three years an extended investigation into the effect of manures on the yield and quality of barley has been carried out at Rothamsted and on certain good barley farms in various parts of the country, the work being done in connection with the Research Scheme of the Institute of Brewing. The variety grown is Plumage Archer, and seed from one and the same field was used at all the centres.

The results show a considerable degree of concordance among themselves, but they differ in several important respects from the current teachings of agricultural science. It is usually recommended that the manuring for barley should be mainly phosphatic, nitrogen being given only after a corn crop and potash but rarely. Out of 30 different tests this recommendation would have involved loss of money in no less than 26. The actual yields are given on p. 114; the average reduction in yield in bushels per acre, consequent on the omission of each fertiliser during the three years 1922, 1923 and 1924, has been :—

Decrease due to omission of :—	After a straw crop.	After roots fed off.	After potatoes or beets (well manured).	Mean of all experiments.
1 cwt. sulphate of ammonia	5·8	3·9	6·7	5·4
3 cwt. super-phosphate	0·9	[0·5]	1·2	0·5
1½ cwt. sulphate of potash	[1·1]	1·3	1·1	0·3

(The figures in brackets are increases and not decreases.)