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## Report for 1933

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### Chemical Analysis of Manures Used in Replicated Experiments, 1933

#### Rothamsted Research

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### CHEMICAL ANALYSIS OF MANURES USED IN REPLICATED EXPERIMENTS, 1933.

Manures.	% N	% P <sub>2</sub> O <sub>5</sub>	% K <sub>2</sub> O
Sulphate of Amm. .. ..	20.8—21.1	—	—
Bicarbonate of Amm. .. ..	17.7	—	—
Nitrate of Soda .. ..	15.8—16.1	—	—
Nitrochalk .. ..	15.5	—	—
Poultry Manure (1) .. ..	3.85	3.22	1.67
Poultry Manure (2) .. ..	4.38	4.05	1.94
Poultry Manure (3) .. ..	3.58	2.89	1.63
Poultry Manure (4) .. ..	3.68	—	—
Poultry Manure (5) .. ..	4.37	—	—
Poultry Manure (fresh) .. ..	1.25	1.80	—
Guano .. ..	6.50	16.4	—
Dung .. ..	0.68	0.25	0.89
		% P <sub>2</sub> O <sub>5</sub>	
		Total.	Soluble in Water.
			Soluble in Cit. Acid.
Basic Slag High Sol. .. ..	14.9	—	14.4
Basic Slag Low Sol. .. ..	15.1	—	3.5
Mineral Phosphate— (90% through 12 mesh) .. ..	25.9	—	—
Superphosphate (6) .. ..	16.1	—	—
Superphosphate .. ..	17.5	16.4	—
Sulphate of Potash .. ..	49.2	} % K <sub>2</sub> O	
Potash Manure Salt 30% .. ..	30.9		
Muriate of Potash .. ..	52.3		

Poultry Manures Nos. 1-5 were obtain in a dried, ground form.

- (1) Used in all poultry manure experiments except at Rothamsted, Woburn, Portobello, Honeydon.
- (2) Used at Rothamsted.
- (3) Used at Woburn.
- (4) Used at Portobello.
- (5) Used at Honeydon.
- (6) Used only in experiments testing basic slags.

**Three Course Rotation, 1933**

Manures.	% Organic Matter.	% N	% P <sub>2</sub> O <sub>5</sub>	% K <sub>2</sub> O
Chaffed Straw .. .. .	77.3	0.301	0.097	1.053
Adco .. .. .	14.1	0.302	0.265	0.160
Superphosphate .. .. .	—	—	17.0 <sup>(1)</sup> 17.5 <sup>(2)</sup>	—
Sulphate of Ammonia .. .. .	—	21.2 <sup>(1)</sup> 21.2 <sup>(2)</sup>	—	—
Muriate of Potash .. .. .	—	—	—	52.1 <sup>(1)</sup> 52.3 <sup>(2)</sup>
Sulphate of Potash .. .. .	—	—	—	49.2
Nitrate of Soda .. .. .	—	15.8	—	—

<sup>1</sup> Applied in Autumn.    <sup>2</sup> Applied in Spring.

**Four Course Rotation, 1933**

Manures.	% Organic Matter.	% N	% P <sub>2</sub> O <sub>5</sub>	% K <sub>2</sub> O
Chaffed Straw .. .. .	77.3	0.301	0.097	1.053
Dung .. .. .	18.6	0.507	0.203	0.859
Adco .. .. .	14.1	0.302	0.265	0.160
Superphosphate .. .. .	—	—	17.0	—
Mineral Phosphate— 90% through 120 mesh .. .. .	—	—	26.7	—
Muriate of Potash .. .. .	—	—	—	52.1
Sulphate of Ammonia .. .. .	—	21.2	—	—

**Six Course Rotation, 1933**

Sulphate of Ammonia .. .. . 21.2% N.  
 Muriate of Potash .. .. . 52.1% K<sub>2</sub>O  
 Superphosphate .. .. . 17.0% P<sub>2</sub>O<sub>5</sub>

**AVERAGE WHEAT YIELDS OF VARIOUS COUNTRIES**

Country.	Mean yield per acre, 1923-32. cwt.	Country.	Mean yield per acre, 1923-32. cwt.
Great Britain .. .. .	17.5	Denmark .. .. .	22.5
England and Wales .. .. .	17.3	Argentina .. .. .	6.7
Hertfordshire .. .. .	16.1	Australia .. .. .	6.4
France .. .. .	11.4	Canada .. .. .	9.2
Germany .. .. .	15.8	United States .. .. .	7.7
Belgium .. .. .	20.4	U.S.S.R. (Europe and Asia)	5.6*

*Note.*—Figures for Great Britain, England and Hertfordshire are taken from the Ministry of Agriculture's "Agricultural Statistics," Vol. 67. Other figures from "International Year Book of Agricultural Statistics," 1925-33.

\*1924-32, excluding 1931.