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## Rothamsted Report for 1938

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### Chemical Analyses Etc

#### Rothamsted Research

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## CHEMICAL ANALYSES OF MANURES USED IN REPLICATED EXPERIMENTS, 1938

Manures	%N	%P <sub>2</sub> O <sub>5</sub>	%K <sub>2</sub> O
Poultry Manure .. .. .	3.52	3.09	1.62
" " .. .. .	3.77	3.17	1.68
" " (1) .. .. .	4.10	3.57	1.90
" " .. .. .	3.69	3.52	2.12
Rape Dust .. .. .	5.41	1.77	1.01
Soot .. .. .	4.03, 4.83		
Town refuse (2) .. .. .	1.00		
" (3) .. .. .	0.77		
" (4) .. .. .	0.62		
" (5) .. .. .	0.68		
" (6) .. .. .	1.01		
Dung (7) .. .. .	0.66		
" (8) .. .. .	0.69	0.83	0.75
" (9) .. .. .	0.70	0.73	0.94
" (10) .. .. .	0.75	1.00	1.14
" (11) .. .. .	0.92	0.46	1.07
Rotted normal (12) .. .. .	0.75	0.37	0.94
Rotted strawy (12) .. .. .	0.74	0.39	1.06
Fresh normal (12) .. .. .	0.66	0.28	0.82
Fresh strawy (12) .. .. .	0.64	0.24	0.74
Sulphate of ammonia .. .. .	21.1, 21.2		
Nitrate of soda .. .. .	16.1		
Nitrochalk .. .. .	16.0		
Cyanamide .. .. .	20.9, 21.1		
Superphosphate .. .. .	17.0 Total		
	15.8 Water Sol.		
Basic-slag, high-sol. .. .. .	15.8 Total		
	15.0 Citric Sol.		
Sulphate of potash .. .. .	49.1		
Muriate of potash .. .. .	50.2, 53.2		
Muriate of potash (high grade) .. .. .	63.1		

- (1) Rothamsted and Woburn Experiments.
- (2) Woburn Experiment.
- (3) Rothamsted Experiment.
- (4) Tunstall Experiment.
- (5) Rochester Experiment.
- (6) Chichester Experiment.
- (7) Rothamsted Sugar Beet Experiment.
- (8) Rothamsted Kale, Organic Manures Experiment.
- (9) Rothamsted Kale, Town refuse Experiment.
- (10) Woburn Kale, Organic Manures Experiment.
- (11) Woburn Kale, Town refuse Experiment.
- (12) Rothamsted Potato Experiment.

### Three Course Rotation

Manures	% Organic Matter	% N	% P <sub>2</sub> O <sub>5</sub>	% K <sub>2</sub> O
Chaffed straw .. .. .	77.4	0.54	0.30	1.66
Adco .. .. .	12.7	0.42	0.39	0.30
Superphosphate .. .. .	—		16.8 <sup>(1)</sup> 17.0 <sup>(2)</sup>	—
Sulphate of ammonia .. .. .	—	21.1 (1) (2)	—	—
Muriate of potash .. .. .	—	—	—	51.4 <sup>(1)</sup> 53.2 <sup>(2)</sup>
Sulphate of potash .. .. .	—	—	—	49.1
Nitrate of soda .. .. .	—	16.1	—	—

(1) Applied in Autumn.      (2) Applied in Spring.

Four Course Rotation				
Manures	% Organic Matter	% N	% P <sub>2</sub> O <sub>5</sub>	% K <sub>2</sub> O
Chaffed straw .. ..	77.4	0.54	0.30	1.66
Dung .. ..	14.7	0.52	0.40	1.32
Adco .. ..	12.7	0.42	0.39	0.30
Superphosphate .. ..	—	—	16.8 (1) (2)	—
Mineral phosphate (90% through 120 mesh) .. ..	—	—	25.9 (1) (2)	—
Muriate of potash .. ..	—	—	—	51.4 (1) (2)
Sulphate of ammonia .. ..	—	21.1	—	—

(1) Applied in Autumn. (2) Applied in Spring.

**Six Course Rotation**

Sulphate of ammonia .. ..	21.2 % N
Superphosphate .. ..	16.8(1), 17.0(2), % P <sub>2</sub> O <sub>5</sub> (Total)
Muriate of potash .. ..	51.4(1), 53.2(2), % K <sub>2</sub> O

(1) Applied in Autumn. (2) Applied in Spring.

**Long Period Cultivation Experiment**

Cyanamide .. ..	21.1 % N
Nitrochalk .. ..	16.0 % N
Superphosphate .. ..	17.0 % P <sub>2</sub> O <sub>5</sub> (Total)
Muriate of potash .. ..	53.2 % K <sub>2</sub> O

**AVERAGE WHEAT YIELDS OF VARIOUS COUNTRIES**

Country	Mean yield per acre, 1928-37 cwt.	Country	Mean yield per acre, 1928-37 cwt.
Great Britain .. ..	17.8	Denmark .. ..	23.4
England and Wales .. ..	17.6	Argentina .. ..	7.2
Hertfordshire .. ..	16.6	Australia .. ..	6.2
France .. ..	12.0	Canada .. ..	7.0
Germany .. ..	17.3	United States .. ..	7.1
Belgium .. ..	20.6	U.S.S.R. (Europe and Asia)	6.4*

Note.—Figures for Great Britain, England and Hertfordshire are taken from the Ministry of Agriculture's "Agricultural Statistics," Vol. 72. Other figures from "International Year Book of Agricultural Statistics," 1930-38.

\* Excluding 1931.

**CONVERSION TABLE**

1 acre (10 sq. chains or 4,840 sq. yards) .. ..	0.405 Hectare
1 bushel (Imperial) (8 gallons) .. ..	0.364 Hectolitre
1 lb. (pound avoirdupois) .. ..	0.454 Kilogramme
1 cwt. (hundredweight, 112 lb.) .. ..	50.8 Kilogrammes
1 ton (20 cwt. or 2,240 lb.) .. ..	1016 Kilogrammes
1 metric quintal or Doppel Zentner (Dz) .. ..	{ 100.0 Kilogrammes
1 metric ton (tonne) .. ..	{ 220.46 lb.
1 bushel per acre .. ..	1000 Kilogrammes
1 lb. per acre .. ..	0.899 Hectolitre per Hectare
1 cwt. per acre .. ..	1.121 Kilogrammes per Hectare
1 ton per acre .. ..	1.255 dz. per Hectare
1 dz. per Hectare .. ..	25.11 dz. per Hectare
1 kg. per Hectare .. ..	0.797 cwt. per acre
	0.892 lb. per acre

In America the Winchester bushel is used = 35.238 litres. 1 English bushel = 1.032 American bushels. In America 1 cwt. = 100 lb.

The yields of grain in the replicated experiments are given in cwt. per acre. One bushel of wheat weighs 60 lb., of barley weighs 52 lb., of oats weighs 42 lb. approximately.