ROTHAMSTED RESEARCH

Report for 1935

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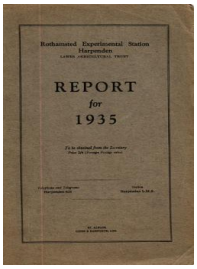

Chemical Analysis of Manures Used in Replicated Experiments, 1935

Rothamsted Research

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CHEMICAL ANALYSES OF MANURES USED IN REPLICATED EXPERIMENTS, 1935

Manures.	% N	% P_2O_5	% K_2O
Sulphate of Ammonia	20.9	—	—
Nitrate of Soda	16.0	—	—
Nitrochalk	15.2	—	—
Cyanamide	19.9	—	—
Poultry Manure (Dried)	3.77	3.34	1.66
Rape Dust	5.20	2.47	1.44
Malt Culms	3.93	1.46	1.97
Soot	4.29, 4.46	—	—
Fish Guano	8.41	5.63	1.48
Dung (1)	0.66	0.25	0.92
Dung (2)	0.42	0.19	0.62
Dung (3)	0.54	0.19	0.62
Dung (3)	0.52	0.19	0.62
Superphosphate	16.6—16.8 (Total) 16.2—(Water Sol.)		% P_2O_5
Sulphate of Potash	48.9		% K_2O
Muriate of Potash	52.0		% K_2O

(1) Used in Beans Experiment, Rothamsted 35 RE. 1-32.

(2) Used in Sugar Beet Experiment, Rothamsted 35 RS. 1-54, 35 RS. 55-102.

(3) Used in Potato Experiment, Rothamsted 35 RP. 1-72.

Three Course Rotation

Manures.	% Organic Matter.	% N	% P_2O_5	% K_2O
Chaffed Straw	86.0	0.48	0.08	1.04
Adco	16.0	0.33	0.37	0.25
Superphosphate	—	—	16.6 (1) (2)	—
Sulphate of Ammonia	—	21.0(1) 20.9(2)	—	—
Muriate of Potash	—	—	—	51.6(1) 52.0(2)
Nitrate of Soda	—	16.0	—	—

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

Four Course Rotation

Manures.	% Organic Matter.	% N	% P_2O_5	% K_2O
Chaffed Straw	86.0	0.48	0.08	1.04
Dung	22.2	0.89	0.30	0.89
Adco	16.0	0.33	0.37	0.25
Superphosphate	—	—	16.6	—
Mineral Phosphate (90% through 120 mesh)	—	—	26.7(1) 25.7(2)	—
Muriate of Potash	—	—	—	51.6
Sulphate of Ammonia	—	21.0	—	—

(1) Applied to the ryegrass. (2) Applied to barley, wheat, potatoes.

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Six Course Rotation

Sulphate of Ammonia .. 20.9% N
Superphosphate .. .. 16.6(1)(2) $\%P_2O_5$
Muriate of Potash .. 51.6(1), 52.0(2) $\%K_2O$
(1) Applied in Autumn. (2) Applied in Spring.

AVERAGE WHEAT YIELDS OF VARIOUS COUNTRIES

Country.	Mean yield per acre, 1925-34 cwt.	Country.	Mean yield per acre, 1925-34 cwt.
Great Britain	17.9	Denmark	22.8
England and Wales ..	17.7	Argentine	7.0
Hertfordshire	16.7	Australia	6.1
France	12.0	Canada	8.6
Germany	16.4	United States	7.4
Belgium	20.8	U.S.S.R. (Europe and Asia)	6.0*

Note—Figures for Great Britain, England and Hertfordshire are taken from the Ministry of Agriculture's "Agricultural Statistics," Vol. 69. Other figures from "International Year Book of Agricultural Statistics," 1928-35.

* 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)	0.453 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 = 220.46 lb.
1 metric ton (tonne)	1000 Kilogrammes
1 bushel per acre	0.899 Hectolitre per Hectare
1 lb. per acre	1.118 Kilogrammes per Hectare
1 cwt. per acre	1.256 dz. per Hectare
1 ton per acre	25.12 dz. per Hectare
1 dz. per Hectare	0.796 cwt. per acre
1 kg. per Hectare	0.892 lb. per acre

In America the Winchester bushel is used = 35.236 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.

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METEOROLOGICAL RECORDS, 1935

	Rain.		Drainage through soil			Bright Sunshine.	Temperature (Mean).				
	Total Fall 1/1000th Acre Gauge.	No. of Rainy Days (0.01 inch or more) 1/1000th Acre Gauge.	20 ins. deep.	40 ins. deep.	60 ins. deep.		Max.	Min.	1 ft. in gr'd.	Solar Max.	Grass Min.
1935—	Inches.	No.	Inches.	Inches.	Inches.	Hours.	°F	°F	°F	°F	°F
Jan. . .	1.072	15	0.692	0.801	0.771	46.7	42.7	35.5	40.4	68.7	31.7
Feb. . .	2.917	17	1.965	2.079	2.048	53.0	46.3	36.5	40.2	82.8	32.5
Mar. . .	0.634	9	0.086	0.179	0.169	134.3	49.4	36.1	41.3	96.7	31.6
April	3.954	23	1.826	1.964	1.826	126.7	51.9	39.0	45.5	99.2	34.6
May	1.907	9	0.163	0.206	0.182	193.8	57.7	41.2	50.3	100.6	37.8
June	3.004	19	0.853	0.989	0.920	195.0	66.2	51.1	58.1	109.1	46.5
July	0.961	5	0.000	0.005	0.007	280.1	72.8	53.4	64.8	137.0	48.2
Aug. . .	1.635	9	0.000	0.000	0.000	203.9	71.8	52.4	63.7	131.2	46.1
Sept.	4.467	18	2.093	2.101	1.994	149.9	63.5	49.3	57.5	119.8	44.4
Oct. . .	2.986	18	1.674	1.689	1.638	112.1	54.5	42.3	49.9	—*	37.3
Nov.	5.384	26	4.725	4.880	4.759	61.9	48.5	38.0	44.4	—*	33.5
Dec.	3.195	21	2.771	2.914	2.960	47.5	40.9	32.5	37.5	—*	28.3
Total or Mean	32.116	189	16.848	17.807	17.274	1604.9	55.5	42.3	49.5		37.7

*These readings have been discontinued.

RAIN AND DRAINAGE
MONTHLY MEAN FOR 65 HARVEST YEARS 1870-1—1934-5

	Rain-fall.	Drainage.			Drainage % of Rainfall.			Evaporation.		
		20-in. Gauge.	40-in. Gauge.	60-in. Gauge.	20-in. Gauge.	40-in. Gauge.	60-in. Gauge.	20-in. Gauge.	40-in. Gauge.	60-in. Gauge.
	Ins.	Ins.	Ins.	Ins.	%	%	%	Ins.	Ins.	Ins.
Sept. . .	2.378	0.804	0.781	0.721	33.8	32.8	30.3	1.574	1.597	1.657
Oct. . .	3.085	1.738	1.716	1.589	56.3	55.6	51.5	1.347	1.369	1.496
Nov. . .	2.834	2.159	2.212	2.087	76.2	78.1	73.6	0.675	0.622	0.747
Dec. . .	2.814	2.395	2.493	2.380	85.1	88.6	84.6	0.419	0.321	0.434
Jan. . .	2.375	1.944	2.136	2.039	81.9	89.9	85.9	0.431	0.239	0.336
Feb. . .	1.995	1.473	1.586	1.514	73.8	79.5	75.9	0.522	0.409	0.481
Mar. . .	1.968	1.051	1.177	1.114	53.4	59.8	56.6	0.917	0.791	0.854
April . .	2.067	0.678	0.757	0.720	32.8	36.6	34.8	1.389	1.310	1.347
May . .	2.074	0.496	0.562	0.530	23.9	27.1	25.5	1.578	1.512	1.544
June . .	2.178	0.512	0.542	0.521	23.5	24.9	23.9	1.666	1.636	1.657
July . .	2.664	0.693	0.721	0.674	26.0	27.1	25.3	1.971	1.943	1.990
Aug. . .	2.596	0.683	0.697	0.656	26.3	26.8	25.3	1.913	1.899	1.940
Year . .	29.028	14.626	15.380	14.545	50.4	53.0	50.1	14.402	13.648	14.483

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