

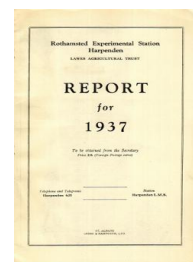
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Chemical Analyses of Manures Used in Replicated Experiments, 1937

Rothamsted Research

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CHEMICAL ANALYSES OF MANURES USED IN REPLICATED EXPERIMENTS, 1937

Manures	% N	% P ₂ O ₅	% K ₂ O
Sulphate of Ammonia	21.0—21.1	—	—
Nitrate of Soda	14.9—15.8	—	—
Nitrochalk	15.5	—	—
Cyanamide	20.7	—	—
Poultry Manure (1)	3.49	3.31	1.64
" "	3.34	3.18	1.62
" "	4.36	3.98	1.71
" "	3.81	3.72	1.76
" "	3.75	3.30	1.76
Rape Dust	5.52	1.80	1.03
Soot	2.57, 3.34, 3.98	—	—
Fish Meal	8.04	5.39	1.41
Dung (stored) (2)	0.53	—	—
Dung + straw (stored) (3)	0.79	—	—
Dung (4)	0.45	—	—
Dung (5)	0.60	—	—
Superphosphate	17.5—16.8 Total 15.0—15.8 Water Sol.	} % P ₂ O ₅	
Sulphate of Potash	49.4	} % K ₂ O	
Muriate of Potash	52.0—51.8		
Muriate of Potash (high grade)	62.4—62.7		

(1) Used for Rothamsted and Woburn Experiments. All other samples of poultry manure used at outside centres.

(2) (3) Used in Rothamsted Potato Experiment, Spring application.

(4) Used in Rothamsted Potato Experiment, Autumn application.

(5) Used in Rothamsted Sugar Beet and Mangold Experiments.

Three Course Rotation

Manures	% Organic Matter	% N	% P ₂ O ₅	% K ₂ O
Chaffed Straw	82.7	0.52	0.21	1.58
Adco	13.6	0.44	0.25	0.18
Superphosphate	—	—	17.5 ⁽¹⁾ 17.6 ⁽²⁾ 16.8 ⁽²⁾	—
Sulphate of Ammonia	—	21.1 ⁽¹⁾ 21.0 ⁽²⁾ 21.1 ⁽²⁾	—	—
Muriate of Potash	—	—	—	52.0 ⁽¹⁾ 51.8 ⁽²⁾
Sulphate of Potash	—	—	—	49.4
Nitrate of Soda	—	14.9	—	—

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

Four Course Rotation

Manures	% Organic Matter	% N	% P ₂ O ₅	% K ₂ O
Chaffed Straw	82.7	0.52	0.21	1.58
Dung	18.5	0.63	0.26	0.90
Adco	13.6	0.44	0.25	0.18
Superphosphate	—	—	17.5 ⁽¹⁾ 17.6 ⁽²⁾	—
Mineral Phosphate (90% through 120 mesh)	—	—	26.0	—
Muriate of Potash	—	—	—	52.0 ⁽¹⁾ 51.8 ⁽²⁾
Sulphate of Ammonia	—	21.1	—	—

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

Six Course Rotation

Sulphate of Ammonia		21.0 % N
Superphosphate		17.5 % P_2O_5 (Total)
Muriate of Potash		52.0 ⁽¹⁾ , 51.8 ⁽²⁾ % K_2O
⁽¹⁾ Applied in Autumn.		⁽²⁾ Applied in Spring.

Long Period Cultivation Experiment

Cyanamide..		20.7% N
Nitrochalk..		15.4% N
Superphosphate		16.8% P_2O_5 (Total)
Muriate of Potash		51.8% K_2O

AVERAGE WHEAT YIELDS OF VARIOUS COUNTRIES

Country	Mean yield per acre, 1927-36 cwt.	Country	Mean yield per acre, 1927-36 cwt.
Great Britain	17.9	Denmark	23.0
England and Wales ..	17.7	Argentina	7.3
Hertfordshire	16.8	Australia	6.1
France	12.0	Canada	7.8
Germany	17.0	United States	7.2
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. 71. Other figures from "International Year Book of Agricultural Statistics," 1929-37.

*Excluding 1931, and 1936.

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		{ 100.0 Kilogrammes
Zentner (Dz.)		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.

METEOROLOGICAL RECORDS, 1937

	Rain.		Drainage through soil.			Bright Sun- shine.	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 ground	Grass Min.
1937—	Inches.	No.	Inches.	Inches.	Inches.	Hours.	°F.	°F.	°F.	°F.
Jan. . .	4.714	24	4.348	4.662	4.477	44.4	44.6	35.2	40.1	31.9
Feb. . .	4.282	24	3.437	3.739	3.597	64.4	46.4	36.6	39.8	32.7
Mar. . .	3.557	19	3.107	3.419	3.254	104.5	43.0	32.5	38.2	28.0
April . .	3.023	19	1.544	1.714	1.597	95.3	53.3	40.9	46.5	37.3
May . .	3.777	15	1.800	2.018	1.920	158.3	60.6	45.5	53.0	41.9
June . .	1.831	11	0.328	0.353	0.339	187.6	65.1	49.0	59.4	43.6
July . .	1.779	10	0.000	0.000	0.000	126.1	67.4	53.6	61.2	49.4
Aug. . .	1.985	6	0.848	0.850	0.781	187.1	71.3	54.3	62.3	49.8
Sept. . .	2.786	16	1.040	1.044	0.922	138.7	63.4	47.3	56.5	42.8
Oct. . .	2.647	14	1.608	1.575	1.501	78.3	56.2	44.2	51.1	40.0
Nov. . .	1.804	13	1.299	1.325	1.242	69.3	45.9	36.1	43.2	32.1
Dec. . .	3.207	25	3.036	3.234	3.099	24.1	40.0	31.7	37.8	28.9
Total or Mean	35.392	196	22.395	23.933	22.729	1278.1	54.8	42.2	49.1	38.2

RAIN AND DRAINAGE

MONTHLY MEAN FOR 67 HARVEST YEARS, 1870-1—1936-7

	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.
	Inches	Inches	Inches	Inches	%	%	%	Inches	Inches	Inches
Sept. . .	2.427	0.828	0.807	0.746	34.1	33.3	30.7	1.599	1.620	1.681
Oct. . .	3.065	1.721	1.700	1.575	56.2	55.5	51.4	1.344	1.365	1.490
Nov. . .	2.889	2.216	2.274	2.147	76.7	78.7	74.3	0.673	0.615	0.742
Dec. . .	2.812	2.391	2.490	2.381	85.0	88.5	84.7	0.421	0.322	0.431
Jan. . .	2.438	2.008	2.200	2.101	82.4	90.2	86.2	0.430	0.238	0.337
Feb. . .	2.034	1.508	1.626	1.552	74.1	79.9	76.3	0.526	0.408	0.482
Mar. . .	1.984	1.073	1.201	1.137	54.1	60.5	57.3	0.911	0.783	0.847
April . .	2.071	0.684	0.764	0.727	33.0	36.9	35.1	1.387	1.307	1.344
May . .	2.077	0.508	0.576	0.543	24.5	27.7	26.1	1.569	1.501	1.534
June . .	2.235	0.544	0.562	0.539	24.3	25.1	24.1	1.691	1.673	1.696
July . .	2.685	0.701	0.730	0.682	26.1	27.2	25.4	1.984	1.955	2.003
Aug. . .	2.553	0.676	0.690	0.648	26.5	27.0	25.4	1.877	1.863	1.905
Year	29.270	14.858	15.620	14.778	50.8	53.4	50.5	14.412	13.650	14.492