

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1972

[Full Table of Content](#)



72/R/AG/6 Agdell - Potatoes, Sugar Beet, Oats

Rothamsted Research

Rothamsted Research (1973) *72/R/AG/6 Agdell - Potatoes, Sugar Beet, Oats ; Yields Of The Field Experiments 1972*, pp 24 - 33 - DOI: <https://doi.org/10.23637/ERADOC-1-62>

72/R/AG/6

AGDELL

Object: To study, by crop yields and soil analysis, the residual value of phosphate applied in the period 1848 - 1951 and further dressings in 1964.

The third year of revised scheme. Crops, potatoes, sugar beet, oats.

For previous years see 'Details' 1967, 68/A/4, 69/R/AG/6, 70/R/AG/6(t) and 71/R/AG/6(t).

Sub-plot dimensions:

Oats: Plots 1, 2, 3, 4 - 12.1 x 6.04. Plots 5, 6 - 10.9 x 6.04.

Potatoes, sugar beet: Plots 1, 2, 3, 4 - 6.04 x 3.02. Plots 5, 6 - 5.43 x 3.02.

Area harvested: Sugar beet: 0.00077, potatoes: 0.00069, oats: 0.00244.

Rotation (P test) plots continued in potatoes and sugar beet. Plots fallowed in 1971 (K test) were sown to spring oats.

Standard applications:

Potatoes: Manures: 250 kg N, 250 kg K₂O, 100 kg MgO as 'Nitro-Chalk', muriate of potash and kieserite. Weedkillers: Linuron at 0.84 kg plus paraquat at 0.42 kg ion in 450 l. Insecticide: Menazon at 0.22 kg in 340 l. Fungicide: Mancozeb at 1.3 kg in 340 l.

Sugar beet: Manures: 190 kg N, 310 kg K₂O, 100 kg MgO as 'Nitro-Chalk', muriate of potash and kieserite. Insecticides: Pyrethrum ('Py' at 2.1 l in 340 l). Menazon at 0.22 kg in 340 l.

Oats: Manures: 75 kg N, 33 kg P₂O₅ as (30:13:0). Weedkillers: Bromoxynil, ioxynil, dichlorprop and MCPA ('Tetroxone' at 5.6 l in 220 l).

Seeds: Potatoes: King Edward.

Sugar beet: Klein E, sown at 5.6 kg.

Oats: Manod, sown at 210 kg.

Cultivations, etc.: All plots ploughed: 8 Oct, 1971.

Potatoes: Test P, basal N, K and Mg applied: 28 Mar, 1972. Rotary cultivated: 24 Apr. Planted: 25 Apr. Weedkiller applied:

72/R/AG/6

22 May. Insecticide applied: 22 June, 13 July. Fungicide applied: 13 July, 1 Aug. Lifted: 10 - 12 Oct.
Sugar beet: Test P, basal N, K and Mg applied: 29 Mar, 1972.
Power harrowed: 17 Apr. Drilled: 18 Apr. Singled: 5 - 6 June.
Pyrethrum applied: 11 May. Menazon applied: 22 June, 13 July.
1 Aug. Lifted: 16 - 20 Oct.
Oats: Basal NP applied, seed drilled: 23 Mar, 1972. Weedkiller applied: 18 May. Combine harvested: 31 Aug.

NOTE: Green crop samples of oats were taken in July for determination of total dry matter.

72/R/AG/6

TABLES OF MEANS

SUGAR BEET

ROOTS (WASHED): TONNES/HECTARE

1848 - 1951

		None		PK Plot		NPK		
		5	6	3	4	1	2	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-72							
0	0	36.5	28.4	44.0	31.3	34.7	45.6	36.8
1	0	37.3	32.5	42.3	37.3	38.8	38.1	37.7
2	0	35.4	40.5	38.6	41.7	39.6	42.7	39.7
4	0	37.9	33.7	43.6	40.6	37.5	39.0	38.7
0	1	36.4	40.8	44.8	36.8	34.9	44.5	39.7
1	1	37.7	38.6	42.7	40.9	29.4	41.2	38.4
2	1	34.9	42.9	39.7	39.6	36.0	41.0	39.0
4	1	42.0	38.8	38.3	42.5	38.8	39.9	40.0
Mean		37.3	37.0	41.8	38.8	36.2	41.5	38.8
P		Previous cropping 1958-69, Grass						
1964-69	1970-72							
0	0	17.0	8.0	25.4	14.0	34.9	24.1	20.6
1	0	33.6	37.1	41.7	35.5	41.8	41.9	38.6
2	0	39.9	39.6	40.1	39.3	37.4	40.1	39.4
4	0	36.7	40.1	42.6	37.3	34.6	40.4	38.6
0	1	35.5	38.3	42.3	37.4	37.4	36.5	37.9
1	1	36.7	40.4	42.3	32.6	41.4	41.7	39.2
2	1	34.9	43.8	39.9	33.7	37.8	41.2	38.5
4	1	40.5	38.9	39.9	32.1	41.4	38.1	38.5
Mean		34.4	35.8	39.3	32.7	38.3	38.0	36.4

72/R/AG/6

SUGAR BEET

SUGAR PERCENTAGE

1848 - 1951

		None		PK Plot		NPK			
		5	6	3	4	1	2	Mean	
P		Previous cropping 1958-69, Arable or fallow							
1964	1970-72								
0	0	18.2	16.8	18.1	17.8	17.5	17.3	17.6	
1	0	18.5	18.3	18.8	18.8	18.5	18.3	18.5	
2	0	17.7	18.1	18.7	18.3	18.6	18.1	18.3	
4	0	17.8	17.6	18.1	18.3	18.4	18.2	18.1	
0	1	18.7	18.0	18.7	19.0	17.7	18.2	18.4	
1	1	18.2	18.5	18.5	19.0	17.5	18.4	18.4	
2	1	18.3	18.1	17.7	17.4	18.2	17.7	17.9	
4	1	18.4	18.1	18.3	18.5	18.1	18.0	18.2	
Mean		18.2	17.9	18.4	18.4	18.1	18.0	18.2	
P		Previous cropping 1958-69, Grass							
1964-69	1970-72								
0	0	17.6	17.8	17.2	18.1	17.6	16.4	17.4	
1	0	18.1	17.8	18.0	17.6	17.5	17.2	17.7	
2	0	17.8	17.7	18.0	17.6	17.5	16.8	17.6	
4	0	18.0	17.7	18.2	17.0	17.6	17.6	17.7	
0	1	18.0	17.7	18.0	18.1	18.0	17.8	17.9	
1	1	18.0	17.8	17.4	18.3	18.3	17.6	17.9	
2	1	18.0	17.8	18.1	17.8	18.7	17.8	18.1	
4	1	17.9	17.3	17.8	17.5	17.9	18.1	17.8	
Mean		17.9	17.7	17.8	17.7	17.9	17.4	17.8	

72/R/AG/6

SUGAR BEET

TOTAL SUGAR: TONNES/HECTARE

1848 - 1951

		None		PK Plot		NPK			
		5	6	3	4	1	2	Mean	
P		Previous cropping 1958-69, Arable or fallow							
1964	1970-72								
0	0	6.64	4.77	7.95	5.57	6.08	7.89	6.48	
1	0	6.90	5.95	7.95	7.00	7.18	6.98	6.99	
2	0	6.24	7.36	7.22	7.61	7.37	7.74	7.26	
4	0	6.73	5.95	7.91	7.45	6.89	7.10	7.01	
0	1	6.82	7.36	8.35	6.98	6.20	8.09	7.30	
1	1	6.86	7.14	7.91	7.76	5.15	7.57	7.07	
2	1	6.40	7.76	7.05	6.91	6.55	7.28	6.99	
4	1	7.74	7.02	7.02	7.86	7.01	7.17	7.30	
Mean		6.79	6.66	7.67	7.14	6.55	7.48	7.05	
P		Previous cropping 1958-69, Grass							
1964-69	1970-72								
0	0	2.99	1.42	4.37	2.53	6.16	3.94	3.57	
1	0	6.07	6.60	7.52	6.25	7.31	7.23	6.83	
2	0	7.10	7.03	7.23	6.93	6.56	6.76	6.93	
4	0	6.62	7.12	7.73	6.32	6.10	7.10	6.83	
0	1	6.38	6.77	7.64	6.76	6.72	6.49	6.79	
1	1	6.60	7.19	7.35	5.96	7.57	7.33	7.00	
2	1	6.29	7.78	7.22	6.01	7.08	7.33	6.95	
4	1	7.26	6.73	7.10	5.62	7.42	6.89	6.84	
Mean		6.16	6.33	7.02	5.80	6.87	6.63	6.47	

72/R/AG/6

SUGAR BEET

TOPS: TONNES/HECTARE

1848 - 1951

		None		PK Plot		NPK		
		5	6	3	4	2	1	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-72							
0	0	40.3	40.3	44.0	38.2	45.8	56.4	44.1
1	0	38.2	34.2	40.5	36.4	37.6	48.7	39.3
2	0	38.2	49.7	39.9	47.0	45.8	44.0	44.1
4	0	53.0	46.3	52.8	45.8	41.1	47.6	47.8
0	1	40.9	45.6	42.3	35.8	45.8	51.1	43.6
1	1	41.6	39.6	47.6	43.4	42.9	44.0	43.2
2	1	44.3	47.0	47.6	50.5	44.6	55.8	48.3
4	1	45.0	42.3	44.6	43.4	47.0	48.1	45.1
Mean		42.7	43.1	44.9	42.6	43.8	49.5	44.4
P		Previous cropping 1958-69, Grass						
1964-69	1970-72							
0	0	18.8	11.4	32.3	18.2	45.2	38.2	27.3
1	0	42.9	48.3	47.0	45.8	49.9	52.3	47.7
2	0	42.9	53.0	55.8	39.3	47.0	59.9	49.7
4	0	47.0	48.3	48.7	47.6	51.1	51.1	49.0
0	1	51.0	57.0	54.0	44.6	51.1	51.7	51.6
1	1	39.6	55.0	52.8	39.9	54.6	59.9	50.3
2	1	49.7	53.0	51.7	35.8	47.0	53.4	48.4
4	1	47.0	51.0	45.8	36.4	49.3	47.6	46.2
Mean		42.4	47.1	48.5	38.5	49.4	51.7	46.3

72/R/AG/6

SUGAR BEET

PLANT NUMBER: THOUSANDS/HECTARE

1848 - 1951

		None		PK Plot		NPK		
		5	6	3	4	1	2	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-72							
0	0	99.1	121.3	94.5	90.6	86.7	93.2	97.6
1	0	108.0	105.0	90.6	94.5	94.5	89.3	97.0
2	0	88.8	113.9	98.4	101.0	88.0	99.7	98.3
4	0	87.3	93.2	98.4	98.4	94.5	91.9	93.9
0	1	93.2	103.5	99.7	90.6	91.9	94.5	95.6
1	1	100.6	97.6	101.0	93.2	97.1	93.2	97.1
2	1	103.5	116.9	94.5	101.0	89.3	90.6	99.3
4	1	87.3	94.7	94.5	97.1	95.8	90.6	93.3
Mean		96.0	105.8	96.4	95.8	92.2	92.9	96.5
P		Previous cropping 1958-69, Grass						
1964-69	1970-72							
0	0	96.2	96.2	90.6	80.3	90.6	98.4	92.0
1	0	110.9	94.7	95.8	124.3	94.5	91.9	102.0
2	0	105.0	90.2	93.2	88.0	95.8	95.8	94.7
4	0	99.1	97.6	101.0	88.0	90.6	90.6	94.5
0	1	91.7	91.7	98.4	99.7	91.9	93.2	94.4
1	1	94.7	100.6	98.4	101.0	108.7	95.8	99.9
2	1	100.6	88.8	85.4	84.1	88.0	99.7	91.1
4	1	100.6	91.7	101.0	99.7	98.4	91.9	97.2
Mean		99.9	93.9	95.5	95.6	94.8	94.7	95.7

72/R/AG/6

POTATOES

TOTAL TUBERS: TONNES/HECTARE

1848 - 1951

		None		PK Plot		NPK			
		5	6	3	4	1	2	Mean	
P		Previous cropping 1958-69, Arable or fallow							
1964	1970-72								
0	0	32.8	36.2	49.2	40.0	45.2	42.3	41.0	
1	0	40.8	31.7	47.6	42.3	47.2	49.9	43.2	
2	0	44.2	42.6	46.6	39.3	46.9	51.2	45.1	
4	0	42.6	42.3	55.8	49.2	53.2	53.5	49.4	
0	1	46.4	46.0	50.2	43.3	49.2	54.2	48.2	
1	1	46.4	46.0	51.2	50.5	52.2	55.5	50.3	
2	1	54.7	44.9	57.8	43.6	52.2	54.8	51.3	
4	1	46.8	49.1	62.7	49.2	54.8	55.2	53.0	
Mean		44.3	42.4	52.6	44.7	50.1	52.1	47.7	
P		Previous cropping 1958-69, Grass							
1964-69	1970-72								
0	0	25.3	21.5	30.7	26.8	52.5	38.6	32.6	
1	0	47.6	47.2	53.8	44.9	53.5	50.5	49.6	
2	0	49.4	42.6	53.2	50.9	54.5	55.5	51.0	
4	0	52.5	51.0	56.5	53.8	49.5	55.5	53.1	
0	1	46.0	50.6	55.8	46.9	59.4	54.2	52.2	
1	1	52.1	52.1	59.4	51.8	53.8	57.5	54.5	
2	1	51.0	51.7	49.2	54.2	66.1	60.4	55.4	
4	1	45.3	52.1	53.2	42.6	58.5	58.5	51.7	
Mean		46.1	46.1	51.5	46.5	56.0	53.8	50.0	

72/R/AG/6

POTATOES

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

1848 - 1951

		None		PK Plot		NPK		
		5	6	3	4	1	2	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-72							
0	0	85.7	87.5	88.7	90.9	87.1	82.9	87.2
1	0	87.4	91.7	85.3	89.1	82.1	81.6	86.2
2	0	88.3	88.5	86.7	85.7	83.9	87.2	86.7
4	0	88.0	85.7	79.9	86.6	80.6	82.1	83.8
0	1	85.1	86.1	84.2	87.0	81.9	82.8	84.5
1	1	83.9	91.0	85.6	86.9	81.0	80.0	84.7
2	1	84.9	86.6	79.0	83.3	82.1	85.4	83.5
4	1	83.9	88.5	84.0	84.6	81.1	78.7	83.5
Mean		85.9	88.2	84.2	86.8	82.5	82.6	85.0
P		Previous cropping 1958-69, Grass						
1964-69	1970-72							
0	0	81.2	82.5	85.4	84.6	92.1	85.7	85.3
1	0	90.2	84.0	89.2	93.8	87.1	87.7	88.7
2	0	88.9	87.6	89.5	85.2	88.0	85.7	87.5
4	0	89.3	90.4	88.4	87.3	80.3	84.6	86.7
0	1	88.0	89.6	88.2	91.2	87.8	83.5	88.0
1	1	88.0	87.0	85.5	91.3	80.3	80.1	85.4
2	1	85.9	85.4	90.4	84.2	87.0	80.7	85.6
4	1	88.8	88.4	81.9	88.0	84.0	82.5	85.6
Mean		87.5	86.8	87.3	88.2	85.8	83.8	86.6

72/R/AG/6

OATS

GRAIN: TONNES/HECTARE

	Plot						
	5	6	3	4	1	2	Mean
K	Previous cropping 1959-62, Arable. 1963-71, Fallow						
0	4.69	4.85	4.56	4.75	4.70	6.01	4.93
1	7.58	4.55	4.72	5.06	4.76	3.98	5.11
2	4.27	1.83	4.96	4.76	4.91	4.86	4.27
4	4.16	7.94	4.53	5.16	4.49	4.57	4.41
Mean	5.18	4.80	4.69	4.93	4.71	3.75	4.68
K	Previous cropping 1958-70, Grass 1971, Fallow						
0	3.74	4.33	5.12	4.56	4.39	3.81	4.33
1	4.57	4.29	4.28	5.15	5.59	6.55	5.07
2	4.56	3.94	4.84	4.88	4.24	3.52	4.16
4	4.29	3.66	4.05	3.26	3.73	2.95	3.65
Mean	4.29	4.05	4.57	4.21	4.49	4.21	4.30

Mean D.M. %: 86.5