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## Yields of the Field Experiments 1974

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### 74/R/AG/6 Agdell - Barley, Potatoes

74/R/AG/6 Agdell - Barley, Potatoes, Rothamsted Research (1975) Yields Of The Field Experiments 1974, pp 31 - 38 - DOI: <https://doi.org/10.23637/ERADOC-1-119>

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AGDELL

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

The fifth year of revised scheme potatoes and barley.

For previous years see 'Details' 1967, 68/A/4, 69/R/AG/6, 70/R/AG/6(t), 71/R/AG/6(t), 72/R/AG/6(t) and 73/R/AG/6.

Treatments: All combinations of:-

Whole plots: 1. Fertilisers and organic manures applied to roots every fourth year, in the period 1848-1948 OLDRESO

None	None
P K Na Mg	PKNaMg
N P K Na Mg C	NPKNaMgC

N: 48 kg N as sulphate of ammonia  
 P: 41 kg P as superphosphate  
 K: 224 kg K as sulphate of potash  
 Na: 16 kg Na as sulphate of soda  
 Mg: 11 kg Mg as sulphate of magnesia  
 C: Castor meal at 2240 kg supplying about 112 kg N

2. Rotation 1848-1951 OLDROTN

With fallow: Roots (turnips or swedes), barley, fallow, wheat	Fallow
With legume: Roots, barley, legume (clover or beans), wheat	Legume

Half plots: 3. Residues of 1964 treatments 1964RESO

P	P
K	K

Quarter plots: 4. Previous cropping 1958-69 on P-test half plots, 1958-70 on K-test half plots PREVCROP

Arable or fallow	Arable
Grass	Grass

Sixteenth plots: 5. Rates of 1964 treatments (kg) P20564 K2064

P205 to P-test half plots	K20 to K-test half plots		
None	None	0	0
500	315	500	315
1000	630	1000	630
2000	1260	2000	1260

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Sixty fourth plots:

6. On P-test half plots: Residuals of P205 applied 1970-72 (total, kg) To barley	On K-test half plots: K20 applied 1974 (kg) (cumulative to dress- ings in 1973) To barley To potatoes	P205(70-2)	K2074		
None 375	None 60	None 250	0 375	0 60	0 250

Strips of sixty fourth plots:

7. On P-test half plots: N (kg) to barley 1974	On K-test half plots: Crops in 1974	N74	CROP		
63 94	Barley Potatoes	63 94	Barley Potatoes		

Sub plot dimensions: Plots 1, 2, 3 and 4 - 6.04 x 3.02. Plots 5, 6 - 5.43 x 3.02. Area harvested: Barley: P-test plots: 0.00085, K-test plots: 0.00074, potatoes: 0.00009.

Standard applications:

Barley: Manures: K20 at 120 kg as muriate of potash on P-test half plots. (30:13:0) at 320 kg on K-test half plots. Weedkillers: Ioxynil with mecoprop ('Actril C' at 5.6 l in 340 l).

Potatoes: Manures: N at 250 kg as 'Nitro-Chalk'. P205 at 190 kg as superphosphate. MgO at 100 kg as Kieserite. Weedkiller: Linuron at 1.2 kg in 340 l. Insecticide: Menazon ('Saphicol' at 0.7 l in 280 l). Fungicide: Mancozeb at 1.3 kg in 280 l.

Seed: Barley: Julia, dressed with ethirimol, sown at 170 kg.  
Potatoes: King Edward.

Cultivations, etc.:-

Barley stubble deep-tine cultivated: 21 Aug, 1973. All plots ploughed: 8 Nov. All plots power harrowed: 1 Apr, 1974.  
Barley: Standard K applied to P-test half plots: 31 Oct, 1973. Treatment K applied to K-test half plots: 2 Apr, 1974. Seed sown and NP applied: 3 Apr. Weedkiller applied: 21 May. Combine harvested: 23 Aug.  
Potatoes: Standard N, P, Mg and treatment K applied: 3 Apr, 1974. Rotary cultivated: 9 Apr. Potatoes planted: 10 Apr. Weedkiller applied: 14 May. Insecticide applied: 14 June. Fungicide applied: 8, 23 July, 16 Aug. Haulm cut off: 16 Sept. Sprayed with undiluted BOV at 220 l: 19 Sept. Lifted: 26 Sept.

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TABLES OF MEANS

BARLEY

P-TEST HALF PLOTS

GRAIN: TONNES/HECTARE

OLDRESD OLDROTN			None		PKNaMg		NPKNaMgC		Mean
			Fallow	Legume	Fallow	Legume	Fallow	Legume	
PREVCROP Arable									
P20570-2	P20564	N74							
0	0	63	4.49	5.02	5.08	4.59	3.99	4.72	4.65
0	0	94	4.40	5.98	5.87	5.61	5.15	5.05	5.34
0	500	63	4.96	4.69	4.75	4.93	4.20	4.67	4.70
0	500	94	5.68	5.64	5.69	5.56	5.76	4.96	5.55
0	1000	63	5.12	5.06	5.28	5.14	3.89	4.46	4.83
0	1000	94	6.00	6.23	5.86	5.77	5.18	5.08	5.68
0	2000	63	5.07	4.81	5.29	4.88	4.60	4.26	4.82
0	2000	94	5.30	6.48	5.68	5.91	6.22	5.48	5.85
375	0	63	5.10	4.95	5.03	4.67	4.45	5.36	4.93
375	0	94	5.21	6.28	6.16	5.89	5.25	5.03	5.64
375	500	63	4.80	4.86	5.30	5.00	4.69	4.70	4.89
375	500	94	5.89	5.79	5.81	5.79	5.89	5.31	5.75
375	1000	63	5.27	5.05	5.41	5.22	4.31	5.38	5.11
375	1000	94	6.32	6.03	6.03	5.96	5.51	5.82	5.94
375	2000	63	4.79	5.11	5.28	5.36	4.44	4.56	4.92
375	2000	94	5.84	6.18	5.76	6.13	5.88	5.60	5.90
Mean			5.27	5.51	5.52	5.40	4.96	5.03	5.28



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BARLEY

P-TEST HALF PLOTS

GRAIN: TONNES/HECTARE

OLDRES D OLDROT N			None		PKNaMg		NPKNaMgC		Mean
			Fallow	Legume	Fallow	Legume	Fallow	Legume	
PREVCROP Grass									
P20570-2	P20564	N74							
0	0	63	4.55	3.22	3.97	5.32	5.09	4.54	4.45
0	0	94	4.46	3.58	5.39	5.01	5.98	5.23	4.94
0	500	63	5.62	6.41	5.58	5.39	5.29	5.35	5.61
0	500	94	5.86	6.06	5.56	5.40	5.98	6.31	5.86
0	1000	63	6.14	6.26	5.59	5.88	5.42	5.71	5.83
0	1000	94	6.33	6.12	6.03	6.19	5.81	6.43	6.15
0	2000	63	6.11	6.44	6.22	6.13	5.60	5.76	6.04
0	2000	94	6.67	6.67	6.18	6.05	6.03	6.09	6.28
375	0	63	5.72	5.80	5.19	5.64	5.32	5.33	5.50
375	0	94	5.97	5.52	5.98	6.12	6.07	5.68	5.89
375	500	63	5.86	6.70	5.82	5.28	5.42	5.64	5.79
375	500	94	6.29	5.97	6.02	5.85	6.10	5.40	5.94
375	1000	63	5.67	6.12	5.11	5.84	5.50	5.70	5.66
375	1000	94	6.57	6.74	5.86	6.39	6.25	6.18	6.33
375	2000	63	5.96	6.59	5.99	5.76	5.39	5.71	5.90
375	2000	94	6.57	6.33	6.15	6.05	6.24	6.56	6.32
Mean			5.90	5.91	5.66	5.77	5.72	5.73	5.78

Mean D.M. % 84.1

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BARLEY

K-TEST HALF PLOTS

GRAIN: TONNES/HECTARE

OLDRES OLDROTN		None		PKNaMg		NPKNaMgC		Mean
		Fallow	Legume	Fallow	Legume	Fallow	Legume	
PREVCROP Arable								
K2074	K2064							
0	0	4.93	5.28	5.75	5.84	5.83	5.88	5.58
	315	4.95	4.90	6.06	6.01	5.82	5.55	5.55
	630	5.03	4.75	5.93	6.39	6.07	5.81	5.66
	1260	4.93	5.36	5.85	6.51	5.57	5.89	5.69
60	0	4.38	5.30	5.44	6.02	5.68	5.80	5.44
	315	5.14	4.73	5.44	6.16	5.57	5.57	5.43
	630	5.20	4.96	5.72	5.92	5.43	5.90	5.52
	1260	4.81	5.22	5.94	6.02	5.42	5.94	5.56
Mean		4.92	5.06	5.77	6.11	5.68	5.79	5.55
PREVCROP Grass								
K2074	K2064							
0	0	4.61	3.68	5.43	5.02	4.07	4.33	4.52
	315	5.30	5.47	6.26	6.19	5.72	6.05	5.83
	630	5.11	5.29	6.24	6.25	5.77	5.57	5.71
	1260	5.45	5.78	6.34	6.05	6.29	4.59	5.75
60	0	5.36	5.60	6.20	6.06	5.99	6.37	5.93
	315	5.19	5.36	6.19	5.84	6.06	6.44	5.85
	630	5.12	5.42	6.53	6.77	5.99	6.01	5.97
	1260	5.60	4.99	6.27	6.46	5.98	6.36	5.94
Mean		5.22	5.20	6.18	6.08	5.73	5.71	5.69

Mean D.M. % 84.4

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BARLEY

K-TEST HALF PLOTS

STRAW: TONNES/HECTARE

OLDRESID OLDROTN		None		PKNaMg		NPKNaMgC		Mean
		Fallow	Legume	Fallow	Legume	Fallow	Legume	
PREVCROP Arable								
K2074	K2064							
0	0	2.18	3.09	3.45	2.77	2.30	2.40	2.70
	315	2.38	2.29	2.57	2.51	2.60	2.64	2.50
	630	3.26	2.02	3.23	2.81	2.71	2.70	2.79
	1260	3.28	2.61	2.57	2.88	2.26	2.92	2.75
60	0	1.84	3.24	2.86	3.39	3.03	2.83	2.86
	315	2.57	2.34	2.54	2.63	2.03	2.97	2.51
	630	3.14	2.07	3.13	2.70	2.42	2.95	2.74
	1260	3.01	3.22	3.18	2.95	2.35	2.88	2.93
Mean		2.71	2.61	2.94	2.83	2.46	2.79	2.72
PREVCROP Grass								
K2074	K2064							
0	0	2.31	1.33	2.61	1.96	1.64	1.90	1.96
	315	3.01	3.19	2.46	3.24	2.27	2.06	2.70
	630	2.19	3.03	2.67	2.91	1.88	3.01	2.62
	1260	2.04	2.68	3.45	2.92	2.54	2.49	2.69
60	0	2.57	3.04	3.33	2.72	2.68	2.75	2.85
	315	2.16	2.65	3.14	2.95	2.37	3.05	2.72
	630	2.71	2.88	4.15	3.20	2.79	2.47	3.03
	1260	4.00	2.73	4.18	3.58	2.50	3.17	3.36
Mean		2.62	2.69	3.25	2.93	2.34	2.62	2.74

Mean D.M. % 66.8

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POTATOES

TOTAL TUBERS: TONNES/HECTARE

OLDRESID OLDROTN		None Fallow Legume		PKNaMg Fallow Legume		NPKNaMgC Fallow Legume		Mean
PREVCROP Arable								
K2074	K2064							
0	0	34.6	34.6	53.4	54.8	49.7	52.7	46.6
	315	40.3	37.4	51.8	50.7	55.8	56.4	48.7
	630	46.6	50.8	56.8	56.9	53.9	49.8	52.5
	1260	41.8	46.3	48.6	55.2	56.8	53.7	50.4
250	0	38.6	52.8	56.4	60.0	55.3	60.1	53.9
	315	54.8	48.4	58.4	61.6	72.5	55.6	58.6
	630	48.9	56.6	53.6	57.1	59.1	55.8	55.2
	1260	55.7	47.4	54.2	60.3	56.2	55.3	54.9
Mean		45.2	46.8	54.2	57.1	57.4	54.9	52.6
PREVCROP Grass								
K2074	K2064							
0	0	6.5	8.7	16.0	15.4	10.9	11.2	11.5
	315	27.6	34.9	44.1	43.0	31.0	32.5	35.5
	630	36.8	30.8	39.5	51.0	49.2	49.2	42.7
	1260	40.4	30.8	51.5	54.3	49.2	52.0	46.4
250	0	42.1	32.8	47.5	50.1	44.6	48.3	44.2
	315	48.1	42.3	53.4	53.9	56.1	46.6	50.1
	630	49.4	50.1	51.0	62.0	59.1	60.4	55.3
	1260	53.9	37.3	56.4	50.8	60.3	57.4	52.7
Mean		38.1	33.4	44.9	47.6	45.0	44.7	42.3



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POTATOES

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

OLDRESID OLDFRTN		None		PKNaMg		NPKNaMgC		Mean
		Fallow	Legume	Fallow	Legume	Fallow	Legume	
PREVCROP Arable								
K2074	K2064							
0	0	91.3	92.3	95.6	93.6	92.4	93.6	93.2
	315	90.5	91.6	94.9	95.1	95.3	93.5	93.5
	630	92.1	94.8	94.9	95.4	94.3	90.1	93.6
	1260	93.2	92.8	94.6	93.4	91.0	93.8	93.1
250	0	87.9	95.0	92.8	92.7	91.6	94.4	92.4
	315	95.1	92.8	94.0	95.5	92.0	92.9	93.7
	630	93.5	94.1	94.0	94.4	93.3	92.4	93.6
	1260	95.2	95.4	96.8	93.7	91.2	93.2	94.3
Mean		92.4	93.6	94.7	94.2	92.6	93.0	93.4
PREVCROP Grass								
K2074	K2064							
0	0	51.3	61.5	59.1	77.4	58.7	64.9	62.1
	315	84.3	91.4	95.0	91.5	85.0	87.9	89.2
	630	95.5	88.1	89.7	91.4	93.8	94.1	92.1
	1260	92.2	93.0	93.8	93.3	94.1	93.6	93.3
250	0	91.7	93.9	91.1	92.7	91.5	91.0	92.0
	315	94.5	92.1	94.3	90.5	92.5	93.4	92.9
	630	96.3	94.4	91.4	92.5	94.1	93.5	93.7
	1260	95.1	92.9	94.3	92.0	93.0	94.9	93.7
Mean		87.6	88.4	88.6	90.2	87.8	89.2	88.6