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# Yields of the Field Experiments 1983

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## 83/R/AG/6 Agdell - W. Wheat

### Rothamsted Research

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83/R/AG/6

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 14th year of revised scheme, w. wheat.

For previous years see 'Details' 1967 and 1973, and 74-82/R/AG/6.

Treatments: All combinations of:-

Whole plots

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

NONE	None
PKNAMG	P K Na Mg
NPKNAMGC	N P K Na Mg C

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. RN CROP Rotation 1848-1951 and crop in 1983:

FALLOW	With fallow: Roots (turnips or swedes), s. barley, fallow, w. wheat 1848-1951. Fallow in 1983
WHEAT	With legume: Roots, s. barley, legume (clover or beans), w. wheat 1848-1951. W. wheat 1983 (after w. beans 1982)

Half plots

3. 1964RESO Residues of 1964 treatments:

P  
K

Quarter plots

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

ARABLE	Arable or fallow
GRASS	Grass

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Sixteenth plots

5. P <sub>2</sub> O <sub>5</sub> 64	K <sub>2</sub> O 64	Rates of 1964 treatments (kg):	
		P <sub>2</sub> O <sub>5</sub> to P-test half plots	K <sub>2</sub> O to K-test half plots
0	0		
500	315		
1000	630		
2000	1260		

Thirty second plots

6.	To RN CROP WHEAT. Residues of P <sub>2</sub> O <sub>5</sub> applied 1970-72 (kg) and in 1980 and 1982 (kg):
P <sub>2</sub> O <sub>5</sub> 722	
(0)0	None
(375)300	375 total in 1970-72, 150 in 1980, 150 in 1982
	To RN CROP WHEAT. Residues of K <sub>2</sub> O applied 1973-76 (kg) and in 1980 and 1982 (kg):
K <sub>2</sub> O 762	
(0)0	None
(870)600	870 total in 1973-76, 300 in 1980, 300 in 1982

NOTE: Treatment combinations to thirty second plots of FALLOW plots are not shown above.

Standard applications:

W. wheat: Manures: 'Nitro-Chalk' at 130 kg followed by 770 kg.  
Weedkillers: Mecoprop at 3.2 l with isoproturon at 2.1 kg in 250 l applied with the prochloraz. Glyphosate at 1.4 kg in 250 l.  
Fungicides: Prochloraz at 0.40 kg. Propiconazole at 0.12 kg in 250 l.

Seed: Avalon, sown at 180 kg.

Cultivations, etc.:-

W. wheat: Ploughed: 7 Sept, 1982. Spring-tine cultivated: 2 Oct. Rotary harrowed, seed sown: 15 Oct. First N applied: 16 Mar, 1983. Second N applied: 15 Apr. Mecoprop, isoproturon and prochloraz applied: 16 Apr. Propiconazole applied: 17 June. Glyphosate applied: 4 Aug. Combine harvested: 12 Aug.  
Fallow: Ploughed: 7 Sept, 1982. Rotary cultivated: 24 May, 20 June, 1983. Spring-tine cultivated: 2 Aug.

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WHEAT P PLOTS

GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

PREVCROP	OLDRES	NONE	PKNAMG		NPKNAMGC		
	P205 722	(0)0	(375)300	(0)0	(375)300	(0)0	(375)300
ARABLE	P205 64						
	0	7.57	9.21	7.87	7.99	7.55	8.06
	500	7.51	8.86	8.32	8.46	7.15	8.06
	1000	8.55	8.46	8.08	8.41	8.15	8.53
GRASS	2000	8.94	8.96	8.62	9.03	7.78	7.89
	0	5.99	9.35	6.96	8.56	6.13	7.62
	500	8.77	9.20	6.82	6.54	8.13	8.11
	1000	8.65	9.10	8.13	8.05	7.71	8.45
	2000	8.67	9.04	7.33	5.32	7.90	7.56

GRAIN MEAN DM% 86.3

WHEAT K PLOTS

GRAIN TONNES/HECTARE

\*\*\*\*\* TABLES OF MEANS \*\*\*\*\*

PREVCROP	OLDRES	NONE	PKNAMG		NPKNAMGC		
	K20 762	(0)0	(870)600	(0)0	(870)600	(0)0	(870)600
ARABLE	K20 64						
	0	8.19	9.03	8.53	8.41	8.59	8.33
	315	8.26	9.58	8.13	8.32	7.92	7.33
	630	8.47	8.67	8.27	8.55	8.15	8.48
GRASS	1260	9.00	9.40	9.03	8.36	8.34	8.72
	0	8.50	8.98	7.99	8.45	8.11	8.55
	315	8.75	8.93	8.20	8.48	8.04	8.25
	630	8.71	9.12	8.91	8.61	8.18	8.77
	1260	8.63	9.43	8.36	9.07	8.36	8.77

GRAIN MEAN DM% 86.4

PLOT AREA HARVESTED (OLDRES NONE) 0.00131

PLOT AREA HARVESTED (REMAINDER) 0.00146