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Yields of the Field Experiments 1982

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82/R/AG/6 Agdell - W. Beans, W. Wheat

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82/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 13th year of revised scheme, w. beans, w. wheat.

For previous years see 'Details' 1967 and 1973, and 74-81/R/AG/6.

Treatments: All combinations of:-

Whole plots

1. OLDRESD 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 1982:

F/WHEAT	With fallow: Roots (turnips or swedes), s. barley, fallow, w. wheat 1848-1951. W. wheat (after w.beans 1981)
L/BEANS	With legume: Roots, s. barley, legume (clover or beans), w. wheat 1848-1951. W. beans (after w. wheat 1981)

Half plots

3. 1964RESID 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

82/R/AG/6

Sixteenth plots

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

Thirty second plots

6.		On P-test half plots: To RN CROP F/WHEAT. Residues of P ₂ O ₅ applied 1970-72 (kg) and in 1979 and 1981 (kg):	
P ₂ O ₅ 721			
(0)0		None	
(375)300		375 total in 1970-72, 150 in 1979, 150 in 1981	
		To RN CROP L/BEANS. Residues of P ₂ O ₅ applied 1970-72 (kg) and fresh dressings in 1980 and 1982 (kg):	
P ₂ O ₅ 722			
(0)0		None	
(375)300		375 total in 1970-72, 150 in 1980, 150 in 1982	
		On K-test half plots: To RN CROP F/WHEAT. Residues of K ₂ O applied 1973-76 (kg) and in 1979 and 1981 (kg):	
K ₂ O 761			
(0)0		None	
(870)600		870 total in 1973-76, 300 in 1979, 300 in 1981	
		To RN CROP L/BEANS. Residues of K ₂ O applied 1973-76 (kg) and fresh dressings in 1980 and 1982 (kg):	
K ₂ O 762			
(0)0		None	
(870)600		870 total in 1973-76, 300 in 1980, 300 in 1982	

Standard applications:

- Both crops: Weedkillers: Glyphosate at 1.4 kg in 250 l. Paraquat at 0.3 kg ion and diquat at 0.3 kg ion in 250 l.
- W. beans: Weedkillers: Propyzamide at 0.85 kg in 250 l. Diquat at 0.42 kg ion (applied with 'Agral', a wetting agent) in 250 l.
- Nematicide: Aldicarb at 10 kg.

82/R/AG/6

W. wheat: Manures: 'Nitro-Chalk' at 130 kg and 770 kg. Weedkillers: Chlortoluron at 5.6 l in 250 l. Mecoprop, bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 250 l. Glyphosate at 1.4 kg in 250 l. Fungicide: Propiconazole at 0.12 kg in 250 l and on a second occasion at 0.25 kg in 250 l with the insecticide. Insecticide: Pirimicarb at 0.14 kg.

Seed: W. beans: Throws MS, sown at 300 kg.
W. wheat: Avalon, sown at 200 kg.

Cultivations, etc.:-

Both crops: Glyphosate applied: 16 Sept, 1981. Paraquat and diquat applied: 7 Oct.

W. beans: Aldicarb applied, seed direct drilled: 29 Oct, 1981. Propyzamide applied: 30 Oct. Diquat applied: 25 Aug, 1982. Combine harvested: 2 Sept.

W. wheat: Seed direct drilled: 13 Oct, 1981. Chlortoluron applied: 16 Oct. N applied: 25 Feb, 1982 and 23 Apr. Mecoprop, bromoxynil and ioxynil applied: 19 Apr. Propiconazole applied: 26 May. Propiconazole with insecticide applied: 15 June. Glyphosate applied: 4 Aug. Combine harvested: 21 Aug.

82/R/AG/6

WHEAT P PLOTS

GRAIN TONNES/HECTARE

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

	OLDRESO	NONE		PKNAMG		NPKNAMGC	
	P205 722	(0)0	(375)300	(0)0	(375)300	(0)0	(375)300
PREVCROP	P205 64						
ARABLE	0	6.51	7.73	7.06	6.26	3.88	3.80
	500	7.57	8.16	7.98	8.57	5.58	5.48
	1000	7.97	7.79	6.04	7.07	5.97	4.31
	2000	7.73	8.22	8.26	8.66	6.43	7.68
GRASS	0	5.27	7.44	4.65	7.37	7.06	7.73
	500	6.78	6.03	7.22	8.06	6.52	7.16
	1000	6.93	8.32	7.66	7.37	5.37	6.90
	2000	6.90	7.44	8.42	8.76	5.13	5.92

GRAIN MEAN DM% 83.6

WHEAT K PLOTS

GRAIN TONNES/HECTARE

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

	OLDRESO	NONE		PKNAMG		NPKNAMGC	
	K20 762	(0)0	(870)600	(0)0	(870)600	(0)0	(870)600
PREVCROP	K20 64						
ARABLE	0	7.35	8.36	8.41	8.08	7.55	7.89
	315	7.28	7.95	8.68	8.75	8.16	8.20
	630	7.99	8.56	6.40	7.16	7.87	7.68
	1260	7.85	8.14	7.15	6.87	7.75	7.37
GRASS	0	4.73	6.81	7.73	8.43	6.97	7.98
	315	6.78	7.74	8.09	8.11	7.48	8.62
	630	7.70	8.23	7.98	8.34	6.84	7.77
	1260	7.50	8.34	8.24	8.54	6.68	7.33

GRAIN MEAN DM% 83.7

PLOT AREA HARVESTED (OLDRESO NONE) 0.00121

PLOT AREA HARVESTED (REMAINDER) 0.00136

82/R/AG/6

BEANS P PLOTS

GRAIN TONNES/HECTARE

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

	OLDRES D	NONE		PKNAMG		NPKNAMGC	
	P205 721	(0)0	(375)300	(0)0	(375)300	(0)0	(375)300
PREVCROP	P205 64						
ARABLE	0	0.92	2.73	1.78	0.76	1.53	1.83
	500	1.98	2.93	2.37	1.95	0.47	0.54
	1000	2.48	2.99	0.45	0.99	1.61	1.53
	2000	1.40	3.57	1.60	2.57	0.85	1.00
GRASS	0	2.36	1.36	0.69	0.61	1.89	2.63
	500	1.87	0.85	0.11	0.53	1.88	1.29
	1000	1.61	0.85	0.46	0.61	2.10	1.29
	2000	2.62	1.11	0.76	0.39	2.82	2.94

GRAIN MEAN DM% 80.9

BEANS K PLOTS

GRAIN TONNES/HECTARE

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

	OLDRES D	NONE		PKNAMG		NPKNAMGC	
	K20 761	(0)0	(870)600	(0)0	(870)600	(0)0	(870)600
PREVCROP	K20 64						
ARABLE	0	2.01	3.07	2.50	2.52	1.22	1.37
	315	3.36	3.69	2.56	3.11	0.70	0.46
	630	2.76	2.90	2.29	2.17	1.91	1.59
	1260	3.32	2.82	2.67	3.34	1.08	0.77
GRASS	0	2.61	2.11	1.15	1.22	1.04	2.44
	315	2.84	2.36	1.12	2.22	1.05	1.86
	630	2.87	1.61	2.06	0.76	0.38	0.76
	1260	2.60	1.18	2.41	2.57	0.38	1.13

GRAIN MEAN DM% 81.4

PLOT AREA HARVESTED (OLDRES D NONE) 0.00144

PLOT AREA HARVESTED (REMAINDER) 0.00127