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## Yields of the Field Experiments 1979

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### 79/R/AG/6 Agdell - Ryegrass, Beans

#### Rothamsted Research

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79/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 tenth year of revised scheme, ryegrass and beans.

For previous yers see 'Details' 1967 and 1973, and 74-78/R/AG/6.

Treatments: All combinations of:-

Whole plots

1. OLDRES D Fertilisers 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:

F/BEANS	With fallow: Roots (turnips or swedes), barley, fallow, wheat 1848-1951. Beans (after grass/clover 1977 & 1978)
L/GRASS	With legume: Roots, barley, legume (clover or beans), wheat 1848-1951. Grass 1977-1979.

Half plots

3. 1964RES D 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.  $P_2O_5$  64  $K_2O$  64 Rates of 1964 treatments (kg):  
 $P_2O_5$  to P-test  $K_2O$  to K-test  
half plots half plots

0	0
500	315
1000	630
2000	1260

Thirty second plots

6. On P-test half plots:  
To RN CROP F/BEANS. Residues of  $P_2O_5$  applied 1970-72  
(total, kg) and a fresh dressing in 1979 (kg):

$P_2O_5$  729  
(0)0  
(375)150

To RN CROP L/GRASS. Residues of  $P_2O_5$  applied 1970-72  
(total, kg):

$P_2O_5$  72  
0  
375

On K-test half plots:  
To RN CROP F/BEANS. Residues of  $K_2O$  applied 1973-76  
(total, kg) and a fresh dressing in 1979 (kg):

$K_2O$  769  
(0)0  
(870)300

To RN CROP L/GRASS. Residues of  $K_2O$  applied 1973-76  
(total, kg):

$K_2O$  76  
0  
870

NOTE: L/GRASS plots were ploughed on 18 July. Yields were not taken.

Standard applications: Beans: Manures: P at 65 kg as superphosphate to K-test half plots. K at 250 kg as muriate of potash to P-test half plots.  
Weedkiller: Trietazine with simazine (as 'Rental SC' at 2.8 kg) in 340 l.  
Insecticide: Pirimicarb at 0.14 kg in 340 l applied twice.  
Grass: Manures: 'Nitro-Chalk' at 380 kg. Weedkiller: Glyphosate at 1.5 kg in 220 l.

Seed: Minden, sown at 220 kg.

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Cultivations, etc.:- Beans: Basal P and K applied: 28 Nov, 1978. Test P and K applied: 7 Dec. Ploughed: 23 Jan, 1979. Rotary harrowed, seed sown: 23 Apr. Weedkiller applied: 13 May. Insecticide applied: 22 June and 12 July. Combine harvested: 14 Sept.  
Grass: N applied: 7 Mar, 1979. Weedkiller applied: 12 June. Cut: 28 June.

BEANS

P - TEST PLOTS

GRAIN TONNES/HECTARE

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

PREVCROP	OLDRES D	NONE	PKNAMG		NPKNAMGC		
	P205 729 P205 64	(0)0	(375)150	(0)0	(375)150	(0)0	(375)150
ARABLE	0	2.06	2.55	3.36	3.22	2.63	3.03
	500	2.67	3.21	2.54	2.25	3.38	2.91
	1000	2.25	4.40	2.50	2.25	2.62	3.12
	2000	1.69	2.32	2.73	2.56	2.01	2.49
GRASS	0	1.69	2.67	2.17	1.66	1.69	2.09
	500	2.48	3.14	2.14	3.05	2.34	2.90
	1000	3.20	3.03	2.14	1.44	2.26	2.09
	2000	3.57	3.22	3.42	3.52	2.50	2.66

GRAIN MEAN DM% 86.7

PLOT AREA HARVESTED 0.00128

BEANS

K - TEST PLOTS

GRAIN TONNES/HECTARE

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

PREVCROP	OLDRES D	NONE	PKNAMG		NPKNAMGC		
	K20 769 K20 64	(0)0	(870)300	(0)0	(870)300	(0)0	(870)300
ARABLE	0	0.89	1.25	2.23	2.38	2.17	2.49
	315	1.16	0.99	2.31	2.55	3.28	2.48
	630	2.44	3.40	2.79	2.89	2.08	2.49
	1260	2.58	3.05	3.05	3.03	1.69	2.40
GRASS	0	1.52	2.16	1.58	3.11	2.01	2.10
	315	1.44	2.94	3.03	3.03	1.52	2.24
	630	2.48	2.94	2.23	2.91	1.93	3.15
	1260	1.78	2.29	2.86	2.92	1.93	2.58

GRAIN MEAN DM% 86.6

PLOT AREA HARVESTED 0.00128