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# Yields of the Field Experiments 1972

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## 72/R/BK/1 Broadbalk - W. Wheat, Potatoes, Spring Beans

### Rothamsted Research

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72/R/BK/1

BROADBALK

Object: To study the effects of organic and inorganic manures on continuous winter wheat. Since 1968 two three-year rotations have been included: potatoes, beans, wheat and fallow, wheat, wheat.

The 129th year, wheat, potatoes, beans. The fifth year of revised scheme.

For previous years see 'Details' 1967, Station Report for 1966, pp.229-231 Station Report for 1968, Part 2, 68/A/1(t) and 69-71/R/BK/1.

Areas harvested:

Wheat:	Section 0	0.00434
	Section 1	0.00798
	Sections 2, 3 and 6	0.00659
	Section 9	0.00694
Potatoes:	Section 4	0.00659
Beans:	Section 7	0.00618

Section 8 (continuous wheat without weedkillers) was fallowed in 1972.

Standard applications:-

Winter wheat: Weedkillers: Aminotriazole at 4.5 kg plus ammonium thiocyanate at 4.2 kg in 220 l (not applied to Section 6, first wheat crop after fallow). Terbutryne and related triazines ('Prebane' at 4.5 kg in 220 l). MCPA, mecoprop and dicamba ('Banlene Plus' at 5.6 l in 220 l).

Potatoes: Weedkillers: Aminotriazole at 4.5 kg plus ammonium thiocyanate at 4.2 kg in 220 l. Linuron at 0.84 kg plus paraquat at 0.42 kg ion in 440 l. Fungicide: Mancozeb at 1.4 kg in 440 l on 3 occasions. Insecticide: Demeton-s-methyl at 0.25 kg applied with the mancozeb on the second occasion.

Spring beans: Insecticides: Phorate at 1.1 kg applied as granules. Demeton-s-methyl at 0.25 kg in 440 l applied to ends of plots.

Seed: Winter wheat: Cappelle, seed dressed with dieldrin, sown at 200 kg.  
Potatoes: King Edward, Rothamsted once grown chitted seed.  
Spring beans: Maris Bead sown at 220 kg.

Cultivations, etc.:-

ALL SECTIONS: Autumn fertilisers applied: 21 Sept, 1971. FYM applied: 29 Sept. Ploughed: 30 Sept.

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**CROPPED SECTIONS:**

Winter wheat: Aminotriazole and ammonium thiocyanate applied:  
10 Sept, 1971. Seed drilled: 22 Oct. 'Prebane' applied:  
25 Oct. N applied: 18 Apr, 1972. MCPA/mecoprop/dicamba  
applied: 27 Apr. Combine harvested: 1 Sept.

Potatoes: Aminotriazole and ammonium thiocyanate applied:  
10 Sept, 1971. N applied: 18 Apr, 1972. Plots rotary  
cultivated, potatoes machine planted: 19 Apr. Sprayed with  
linuron and paraquat: 17 May. Grubbed: 14 June. Rotary  
ridged: 15 June - 24 June. Fungicide applied: 12 July,  
21 July, 10 Aug. Insecticide applied: 21 July. Sprayed  
with undiluted BOV at 150 l: 16 Sept. Lifted: 28 Sept.

Spring beans: N applied, seed drilled: 16 Mar, 1972. Phorate  
applied: 17 June. Demeton-s-methyl applied: 5 Aug. Combine  
harvested: 27 Sept.

FALLOW SECTIONS: Aminotriazole and ammonium thiocyanate applied to  
Section 5: 10 Sept, 1971. Ploughed second time: 12 - 14 May,  
third time: 10 July.

**BROADBALK WILDERNESS:**

Ungrazed meadow (north): Topped with rotary grass cutter:  
17 Nov, 1972.

Grazed meadow (centre): Grazed by sheep: 5 - 25 May, 1971.  
9 June - 16 June, 30 June - 7 July, 20 July - 28 July,  
15 Aug - 24 Aug, 11 Sept - 15 Sept. Grass topped:  
25 May, 16 June, 7 July, 28 July, 24 Aug, 15 Sept.



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TABLES OF MEANS

WHEAT

GRAIN: TONNES/HECTARE

Section Years after fallow	6	3	2	1	9	0	Mean
	1	2	**	6	14	21	
Plot							
01	6.72	6.81	6.51				
21	6.87	7.34	6.94	7.24	6.75	3.85	6.50
22	7.60	6.09	8.02	6.82	6.73	6.29	6.92
03	3.11	1.22	3.37	1.76	1.48	1.63	2.09
05	4.03	1.86	4.24	1.68	1.85	2.08	2.62
06	5.56	4.03	6.22	4.15	4.24	4.74	4.82
07	6.42	5.02	6.61	5.30	5.22	5.31	5.65
08	5.61	6.42	6.52	5.46	6.44	4.96	5.90
09	6.05	6.10	6.00	5.86	6.18	5.06	5.88
10	3.59	4.41	5.81	4.87	3.34	3.16	4.20
11	5.17	5.26	6.64	4.89	3.65	4.07	4.95
12	5.51	5.50	6.58	5.65	4.99	5.89	5.69
13	5.96	5.49	6.83	5.43	5.12	5.12	5.66
14	6.06	5.73	6.83	5.81	5.69	5.46	5.93
15	6.18	5.91	6.90	6.09	5.65	5.29	6.00
16	5.59	5.05	6.37	5.46	5.13	5.07	5.45
17	6.13	5.34	7.04	5.25	4.93	5.13	5.64
18	6.37	5.08	6.94	5.53	5.41	5.20	5.76
19	7.01	4.55	6.21	4.55	4.22	4.63	5.19
20				4.51		3.48	

Mean D.M. %: 84.4

\*\* After beans

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WHEAT

STRAW: TONNES/HECTARE

Section	6	3	2	1	9	0	
Years after fallow	1	2	**	6	14	21	Mean
Plot							
01	6.35	9.14	9.09				
21	7.88	10.58	11.26	10.33	7.24	8.89	9.37
22	6.88	7.13	10.97	9.25	6.48	8.34	8.18
03	1.41	1.38	2.71	1.83	1.11	2.00	1.74
05	2.30	1.93	4.08	1.91	1.45	2.23	2.32
06	4.15	4.33	6.07	3.95	3.19	4.34	4.34
07	5.84	5.42	6.90	5.88	4.96	5.87	5.81
08	5.12	6.71	8.26	7.20	6.03	6.64	6.66
09	5.46	7.73	8.91	7.51	6.07	7.24	7.15
10	2.17	3.25	4.09	3.60	1.99	3.20	3.05
11	3.72	4.04	4.60	4.61	2.71	4.22	3.98
12	4.19	4.90	6.01	4.82	3.63	5.15	4.78
13	4.97	4.63	6.31	4.87	4.50	4.84	5.02
14	5.72	4.59	5.52	4.72	4.20	5.36	5.02
15	5.45	5.63	5.85	5.04	4.91	4.77	5.27
16	4.84	4.52	5.19	4.48	4.59	4.20	4.64
17	5.40	5.05	5.54	3.79	4.59	3.87	4.71
18	5.87	4.28	6.52	3.97	4.55	3.81	4.83
19	5.43	3.46	4.54	3.49	3.41	3.09	3.90
20				3.03		3.03	

Mean D.M. %: 80.5

\*\* After beans

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Section

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Plot	SPRING BEANS		POTATOES	
	GRAIN: TONNES/ HECTARE	STRAW: TONNES/ HECTARE	TOTAL TUBERS: TONNES/ HECTARE	% WARE 3.81 CM (1.5 INCH) RIDDLE
01	3.39	3.26	35.0	91.9
21	3.95	3.94	41.4	85.9
22	3.63	3.39	40.2	87.2
03	2.48	1.09	10.8	76.2
05	3.58	2.37	16.2	68.5
06	3.19	3.06	23.7	75.9
07	3.51	3.01	26.4	78.2
08	4.07	3.23	35.5	83.9
09	4.18	3.42	38.8	91.8
10	2.83	1.16	8.1	69.3
11	1.24	0.98	6.6	35.7
12	1.37	1.82	9.7	47.8
13	3.48	3.63	22.3	80.9
14	3.99	3.11	22.6	77.0
15	3.50	3.51	38.6	88.1
16	4.17	3.83	32.7	85.8
17	4.12	3.92	28.0	88.9
18	4.39	4.07	27.8	88.9
19	2.90	2.57	17.5	84.5
Mean D.M. %:	80.7	40.0		