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Yields of the Field Experiments 1956

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56/W/BD/1 Green Manuring

Rothamsted Research

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56/Bd/1.1

GREEN MANURING EXPERIMENT

Woburn Stackyard - 1956, the 3rd year of the revised scheme.

For history, treatments etc, see "Details of the Classical and Long Term Experiments" 1956.

Note: In 1955 the green manure crops undersown in the barley failed; these were resown after the barley was cut.

The straw treatment due to be applied after harvest was given only to the "fallow" (i.e. not undersown) plots, the application of straw to the green manure plots being postponed until later.

Area of each plot: 0.0395 acres. Area harvested: Potatoes, 0.0237; barley, 0.0395 acres.

Cultivations, etc.:

Green manures after barley: Trefoil at 30 lb per acre, ryegrass at 40 lb per acre, resown: Sept 6, 1955. Varieties: Trefoil-English; Ryegrass-Western Wolths.

Early Potatoes: Straw applied to "fallow" plots only: Sept 27, 1955.

"Fallow" plots ploughed: Sept 28. Straw applied to trefoil and

ryegrass plots: Dec 8. "Fallow" plots ploughed: Jan 5, 1956.

All plots ploughed: Mar 6. Basal fertilizers applied: Mar 19.

'Nitro-Chalk' applied: Mar 21. Potatoes mechanically planted:

Mar 24. Earthed up: June 1. Lifted: July 25. Variety:

Ulster Chieftain.

Green manures after early potatoes: Trefoil at 30 lb per acre, ryegrass at 40 lb per acre, sown: July 29, 1955. Varieties: Trefoil-English; Ryegrass-Western Wolths.

Barley: "Fallow" and "early" green manure plots ploughed:

Nov 17, 1955 and Jan 7, 1956. All plots ploughed including

"late" green manure plots: Mar 7. Ground chalk at 20 cwt per

acre applied: Mar 9. 'Nitro-Chalk' applied: Mar 16. Seed

drilled at $2\frac{1}{2}$ bushels per acre: Mar 17. Trefoil and ryegrass

undersown: Apr 23. Harvested: Aug 15. Variety: Herta.

Standard errors per plot:

Potatoes, Total tubers: 0.967 tons per acre or 12.3% (18 d.f.)

Barley, Grain: 2.64 cwt per acre or 8.8% (20 d.f.)

56/Ba/1.2

Estimates of produce (roots and tops) of green manure crops:
cwt per acre

	Green manure	Ploughed in	Dry matter	Nitrogen
<u>For Early Potatoes</u>	Trefoil		5.9	0.187
	Ryegrass		6.9	0.153
<u>For Barley</u>	Trefoil	Early	17.4	0.572
	Ryegrass	Early	11.8	0.347
	Trefoil	Late	4.9	0.183
	Ryegrass	Late	7.2	0.218

Erratum to "Results of the Field Experiments" 1955 page 55/Ba/1.2.

Excluding plots fallow under old scheme:

S.E. of straw $\times$ N table should read (± 0.130) not (± 0.120).

56/Bd/1.3

Summary of Results

Early Potatoes, total tubers: tons per acre

Straw: tons per acre		N: cwt per acre (including basal)		Dung to cabbages 1952: tons per acre		Mean
None	1½	0.23	0.46	None	10	

Excluding plots fallow under old scheme

Undersown green manures for potatoes	(±0.342)		(±0.342)		(±0.342)		(±0.242)
None	7.69	7.94	7.88	7.74	6.94	8.69	7.81
	(±0.484)		(±0.484)		(±0.484)		(±0.342)
Trefoil	8.71	7.65	8.24	8.11	7.24	9.12	8.18
Ryegrass	8.25	7.61	7.83	8.03	7.16	8.70	7.93
Straw: tons per acre			(±0.342)		(±0.342)		(±0.242)
None			8.33	7.84	7.02	9.15	8.08
1½			7.60	7.97	7.12	8.45	7.78
N: cwt per acre (including basal)							
0.23					7.08	8.84	7.96
0.46					7.05	8.76	7.91
Mean (±0.242)					7.07	8.80	7.93

Plots fallow under old scheme

Straw: tons per acre			(±0.684)		(±0.684)		(±0.484)
None			7.14	7.88	6.60	8.42	7.51
1½			7.18	8.12	6.70	8.60	7.66
N: cwt per acre (including basal)							
0.23					6.14	8.19	7.16
0.46					7.16	8.84	8.00
Mean (±0.484)					6.65	8.52	7.58

Old scheme	Undersown green manures for potatoes				Mean
	None	None	Trefoil	Ryegrass	
	Fallow	Excluding Fallow			
	7.58	7.81	8.18	7.93	7.86
	(±0.342)	(±0.242)	(±0.342)		

Barley, grain: cwt per acre

	Green manures			N: cwt per acre (including basal)	Dung to cabbages 1953: tons per acre	Mean
	In barley for potatoes		None			
	Ploughed in Early	Late				
<u>Excluding plots fallow under old scheme</u>						
Green manures after potatoes for barley		(± 0.93)	(± 0.93)	(± 0.93)	(± 0.66)	
	29.1	30.3	28.3	28.4	29.7	
Trefoil	32.1	33.0	31.4	31.8	32.6	
Ryegrass			33.7	33.4		
Green manures ploughed in						
	Early	32.2	29.4	30.4	30.6	
Late	32.6	30.7	30.3	29.8	31.7	
Green manures in barley for potatoes						
	None	31.5	33.3	32.2	32.4	
Undersown		28.2	31.5	28.0	29.9	
N: cwt per acre (including basal)						
	0.23	28.3	31.4	28.3	29.9	
0.46		31.9	32.9	31.9	32.4	
Mean (± 0.66)		30.1	32.2	30.1	31.1	
<u>Plots fallow under old scheme</u>						
Green manures after potatoes for barley						
	None	N: cwt per acre (including basal)	(± 1.87)	(± 1.32)		
Trefoil	0.23	24.8	22.5	23.6		
Excluding fallow	0.46	28.2	26.8	27.4		
Mean		Mean (± 1.32)	26.5	24.6	25.6	
Old scheme	25.6	29.7	32.6			
	(± 0.93)	(± 0.66)				

Barley, straw: cwt per acre

	Green manures		In barley for potatoes	N: cwt per acre (including basal)	Dung to cabbages 1953: tons per acre		Mean
	Ploughed in Early	Late	None	0.23	0.46	None	10
<u>Excluding plots fallow under old scheme</u>							
Green manures after potatoes for barley	23.1	25.1	25.9	22.6	25.5	22.0	26.1
	25.3	26.7	27.0	25.5	26.5	25.4	26.7
Green manures ploughed in							
Green manures in barley for potatoes			26.2	23.0	25.4	23.5	24.9
			26.7	25.2	26.7	23.9	27.9
N: cwt per acre (including basal)				25.6	27.4	25.5	27.4
				22.6	24.7	21.9	25.4
Mean						22.3	25.9
						25.1	27.0
				<u>Plots fallow under old scheme</u>			
Green manures after potatoes for barley						23.7	26.4
None Fallow							
Trefoil							
Ryegrass							
Excluding fallow							
Mean							
Old scheme							
Mean							

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