

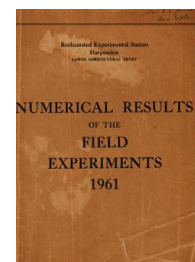
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61/W/B/3 Green Manuring

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61/B/3.1

GREEN MANURING EXPERIMENT

Woburn Stackyard - 1961, the 8th year of the revised scheme,

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

Area of each plot (acres): 0.0406. Area harvested: Potatoes - 0.0221; barley - 0.0295.

Cultivations, etc.:

Green manures after barley 1960 (for early potatoes 1961): Trefoil at 30 lb per acre, ryegrass at 40 lb per acre, undersown: Apr 27, 1960. Varieties: Trefoil - English; Ryegrass - Italian.

Early potatoes: Straw applied (green manure and "fallow" plots): Aug 26, 1960. "Fallow" plots ploughed: Sept 7 and Jan 11, 1961. All plots ploughed: Feb 13. Basal fertiliser and 'Nitro-Chalk' applied, potatoes mechanically planted: Mar 21. Earthed up: June 28. Lifted: July 11. Variety: Ulster Chieftain.

Green manures after early potatoes 1960 (for barley 1961): Ground chalk applied at 23 cwt per acre, trefoil at 30 lb per acre, ryegrass at 40 lb per acre, sown: Aug 4, 1960. Varieties: Trefoil - English; Ryegrass - Western Wolths.

Barley: "Fallow" plots and "early" green manure plots ploughed: Dec 13, 1960. "Late" green manure plots ploughed: Feb 7, 1961. 'Nitro-Chalk' applied: Mar 14. Seed drilled at $2\frac{1}{2}$ bushels per acre: Mar 15. Trefoil and ryegrass undersown: Apr 19. Combine harvested: Aug 10. Variety: Herta.

Standard errors per plot.

Potatoes. Total tubers: 0.200 tons per acre or 10.4% (18 d.f.)
Barley. Grain (at 85% D.M.): 2.57 cwt per acre or 10.6% (20 d.f.)

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

	Green manures	Ploughed in	Dry matter	Nitrogen
<u>For early potatoes</u>	Trefoil		22.0	0.625
	Ryegrass		25.9	0.323
<u>For barley</u>	Trefoil	Early	9.2	0.295
	Ryegrass	Early	22.4	0.312
	Trefoil	Late	7.8	0.231
	Ryegrass	Late	23.1	0.388

Note: The low yield of potatoes was due to severe frost damage.

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Summary of Results

Early potatoes, total tubers: tons per acre

	Straw: tons per acre		N: cwt per acre (including basal)		Dung to cabbages 1953: tons per acre		Mean
	None	1½	0.6	1.2	None	10	

Excluding plots fallow under old scheme

Undersown green manures for potatoes	(±0.071)		(±0.071)		(±0.071)		(±0.050)
None	1.88	1.81	1.77	1.92	1.88	1.80	1.84
	(±0.100)		(±0.100)		(±0.100)		(±0.071)
Trefoil	1.97	2.01	1.95	2.03	2.08	1.90	1.99
Ryegrass	2.15	2.15	2.15	2.16	1.94	2.36	2.15
Straw: tons per acre			(±0.071)		(±0.071)		(±0.050)
None			1.88	2.06	1.96	1.98	1.97
1½			1.93	1.95	1.94	1.95	1.94
N: cwt per acre (including basal)							
0.6					1.90	1.92	1.91
1.2					2.00	2.01	2.01
Mean (±0.050)					1.95	1.97	1.96

Plots fallow under old scheme

Straw: tons per acre	(±0.142)		(±0.142)		(±0.100)
None	1.88	1.63	1.66	1.85	1.75
1½	1.74	1.91	1.85	1.80	1.82
N: cwt per acre (including basal)					
0.6			1.67	1.95	1.81
1.2			1.84	1.70	1.77
Mean (±0.100)			1.75	1.82	1.79

Undersown green manures for potatoes

Old scheme	None Fallow	None Excluding fallow	Trefoil Excluding fallow	Ryegrass Excluding fallow	Mean
	1.79	1.84	1.99	2.15	1.93
	(±0.071)	(±0.050)	(±0.071)		

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Barley, Grain (at 85% dry matter): cwt per acre

	Green manures		N: cwt per acre (including basal)	Dung to cabbages 1952: tons per acre		Mean
	In barley potatoes	After potatoes for barley		None	10	
	Under-sown	Trefoil grass	0.23	0.46		
<u>Excluding plots fallow under old scheme</u>						
Green manures ploughed in	(± 0.91)		(± 0.91)		(± 0.64)	
Early	25.2	24.2	23.1	26.3	23.3	24.7
Late	25.8	26.0	24.3	27.4	24.3	25.9
Green manures in barley for potatoes						
None	26.4	24.6	23.7	27.3	24.2	25.5
Undersown	26.2	24.0	23.8	26.4	23.5	25.1
Green manures after potatoes for barley						
Trefoil			25.5	27.0	25.5	26.3
Ryegrass			21.9	26.7	22.2	24.3
N: cwt per acre (including basal)						
0.23					22.7	23.7
0.46					25.0	26.9
Mean (± 0.64)					23.8	25.3
<u>Plots fallow under old scheme</u>						
		N: cwt per acre (including basal)				
		0.23		(± 1.82)		(± 1.28)
		0.46		14.5		18.2
		Mean (± 1.28)		18.0		21.4
				16.3		19.8
<u>Green manures after potatoes for barley</u>						
		N: cwt per acre (including basal)				
		0.23		(± 0.91)		
		0.46		19.8		
		Mean (± 0.91)		26.3		
				24.3		
				24.3		
Mean dry matter % as harvested: 82.9						