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60/W/B/4 Green Manuring

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60/B/4.1

GREEN MANURING EXPERIMENT

Woburn Stackyard - 1960, the 7th 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 1959 (for early potatoes 1960): Trefoil at 30 lb per acre, ryegrass at 40 lb per acre, undersown: May 12, 1959, failed and resown: Aug 7. Varieties: Trefoil - English; Ryegrass - Western Wolths.

Early potatoes: Straw applied ("fallow" plots): Aug 31, 1959. "Fallow" plots ploughed: Sept 2 and Nov 24. Straw applied (green manure plots): Feb 11, 1960. All plots ploughed: Feb 23. Basal fertiliser applied: Apr 4. 'Nitro-Chalk' applied, potatoes mechanically planted: Apr 5. Earthed up: June 13. Sprayed with copper fungicide at 5 lb in 40 gallons per acre: July 16. Haulm destroyed mechanically: July 25. Lifted: July 26 and Aug 2. Variety: Ulster Chieftain.

Green manures after early potatoes 1959 (for barley 1960): Ground chalk applied at 15 cwt per acre: July 22, 1959. Trefoil at 30 lb per acre, ryegrass at 40 lb per acre, sown: Aug 1. Varieties: Trefoil - English; Ryegrass - Western Wolths.

Barley: "Fallow" plots and "early" green manure plots ploughed: Nov 23. "Late" green manure plots ploughed: Feb 10, 1960. 'Nitro-Chalk' applied: Mar 10. Seed drilled at $2\frac{1}{2}$ bushels per acre: Mar 18. Trefoil and ryegrass undersown: Apr 27. Combine harvested: Aug 18. Variety: Herta.

Standard errors per plot.

Potatoes. Total tubers: 0.944 tons per acre or 8.7% (18 d.f.)
Barley. Grain (at 85% D.M.): 2.65 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		2.6 (7.9)	0.085 (0.146)
	Ryegrass		10.3 (4.1)	0.160 (0.077)
<u>For barley</u>	Trefoil	Early	15.9	0.494
	Ryegrass	Early	11.6	0.312
	Trefoil	Late	15.3	0.408
	Ryegrass	Late	13.0	0.286

Note. The figures in brackets are additional amounts derived from self-sown barley.

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Summary of ResultsEarly 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	0.6	1.2	None	10	

Excluding plots fallow under old scheme

Undersown green manures for potatoes	(±0.334)		(±0.334)		(±0.334)		(±0.236)
None	10.43	11.12	10.20	11.34	9.92	11.63	10.78
	(±0.472)		(±0.472)		(±0.472)		(±0.334)
Trefoil	11.65	10.41	10.66	11.40	10.56	11.51	11.03
Ryegrass	10.76	11.48	10.52	11.72	10.26	11.98	11.12
Straw: tons per acre			(±0.334)		(±0.334)		(±0.236)
None			10.34	11.29	9.81	11.83	10.82
1½			10.46	11.61	10.52	11.55	11.03
N: cwt per acre (including basal)							
0.6					9.58	11.21	10.40
1.2					10.74	12.16	11.45
Mean (±0.236)					10.16	11.69	10.92

Plots fallow under old scheme

Straw: tons per acre	(±0.667)		(±0.667)		(±0.472)
None	10.49	10.25	9.94	10.80	10.37
1½	9.80	10.61	9.60	10.81	10.20
N: cwt per acre (including basal)					
0.6			9.60	10.69	10.14
1.2			9.94	10.92	10.43
Mean (±0.472)			9.77	10.80	10.28

Undersown green manures for potatoes

Old scheme	None Fallow	None	Trefoil Excluding fallow	Ryegrass	Mean
	10.28 (±0.334)	10.78 (±0.236)	11.03 (±0.334)	11.12	10.79

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

	Green manures In barley for potatoes		N: cwt per acre (including basal)		Dung to cabbages 1953: tons per acre	
	Under- sown	Trefoil Rye- grass	0.23	0.46	None	10
	None					Mean
	Excluding plots fallow under old scheme					
	Green manures ploughed in		N: cwt per acre (including basal)		Dung to cabbages 1953: tons per acre	
	Early	Late	0.23		0.46	
	None	Undersown	0.23		0.46	
	Green manures after potatoes for barley		0.23		0.46	
	Trefoil	Ryegrass	0.23		0.46	
	N: cwt per acre (including basal)		0.23		0.46	
	0.23		0.23		0.46	
	0.46		0.23		0.46	
	Mean (± 0.66)		0.23		0.46	
	Green manures after potatoes for barley		N: cwt per acre (including basal)		Dung to cabbages 1953: tons per acre	
	None	Fallow	0.23		0.46	
	Old scheme		0.23		0.46	
	21.3	27.4	0.23		0.46	
	(± 0.937)	(± 0.66)	0.23		0.46	
	Mean dry matter % as harvested: 81.0		0.23		0.46	
	Plots fallow under old scheme		N: cwt per acre (including basal)		Dung to cabbages 1953: tons per acre	
	Mean		0.23		0.46	
	24.9		0.23		0.46	
	Mean (± 1.33)		0.23		0.46	
	22.2		0.23		0.46	
	20.3		0.23		0.46	
	Mean (± 1.33)		0.23		0.46	
	21.3		0.23		0.46	