ROTHAMSTED RESEARCH

Yields of the Field Experiments 1961

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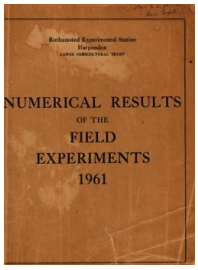

61/W/C/6 *Trefoil* and Ryegrass Green Manures - Sugar Beet (Test Crop)

Rothamsted Research

Rothamsted Research (1962) *61/W/C/6 Trefoil and Ryegrass Green Manures - Sugar Beet (Test Crop) ;* Yields Of The Field Experiments 1961, pp 99 - 100 **- DOI: https://doi.org/10.23637/ERADOC-1-182**

61/C/6.1

SUGAR BEET

Effects of trefoil and ryegrass green manures and N - Woburn Stackyard 1961.

Design: 3 randomised blocks of 16 plots each.

Area of each plot: 0.0180 acres. Area harvested: 0.0135 acres.

Treatments. All combinations of:-

Nitrogen: None; 0.5; 1.0; 1.5 cwt N per acre as 'Nitro-Chalk' in seedbed.

Green manures undersown in barley 1960: None; trefoil; ryegrass; ryegrass with 0.6 cwt N per acre in autumn as 'Nitro-Chalk'.

Basal dressing:

To barley:- 2½ cwt per acre compound fertiliser, 16% N; 9% P_2O_5; 9% K_2O combine drilled.

To sugar beet:- 5 cwt salt and 0.45 cwt K_2O as muriate of potash ploughed in; 0.45 cwt P_2O_5, 0.45 cwt K_2O as compound fertiliser, 20% P_2O_5, 20% K_2O in seedbed.

Cultivations, etc.: Trefoil undersown in barley at 30 lb per acre, ryegrass undersown at 40 lb per acre: Apr 27, 1960. Sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 6. Barley combine harvested: Aug 25. 'Nitro-Chalk' applied to ryegrass: Sept 2. "Fallow" plots ploughed: Sept 8 - 26, and Jan 18, 1961. Salt and potash applied; all plots ploughed: Feb 16. Seedbed fertilisers applied: Mar 24. Sugar beet drilled at 10 lb per acre: Apr 10. Sprayed against flea beetle with DDT emulsion (25% DDT) at 3 pints in 40 gallons per acre: May 20. Singled: May 24. Sprayed with demeton methyl at 12 fluid oz in 40 gallons per acre: June 10 and again on July 10. Sugar beet lifted: Oct 17. Varieties: Ryegrass-- S22 Italian; Sugar beet - Klein E. Previous crop: Barley

Standard errors per plot.

Roots (washed): 0.900 tons per acre or 7.0% (30 d.f.)
Total sugar: 3.71 cwt per acre or 8.5% (30 d.f.)

Notes: The trefoil made very poor growth. Estimates were made of dry matter and N per acre in green manures just before ploughing.

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Summary of Results

N: cwt per acre

Green manure undersown in barley	None	0.5	1.0	1.5	Mean
Roots (washed): tons per acre					
		(±0.520)			(±0.260)
None	9.30	11.43	11.36	12.97	11.27
Trefoil	10.77	12.95	15.02	14.78	13.38
Ryegrass	9.13	12.58	13.60	14.25	12.39
Ryegrass + N*	12.55	14.52	14.57	14.92	14.14
Mean (±0.260)	10.44	12.87	13.64	14.23	12.79
Sugar percentage					
None	18.0	16.9	16.0	15.9	16.7
Trefoil	17.8	18.0	17.5	16.3	17.4
Ryegrass	18.3	17.1	17.5	16.3	17.3
Ryegrass + N*	17.6	17.9	16.7	16.5	17.2
Mean	18.0	17.5	16.9	16.2	17.1
Total sugar: cwt per acre					
		(±2.14)			(±1.07)
None	33.6	38.5	36.3	41.3	37.4
Trefoil	38.3	46.7	52.6	48.2	46.5
Ryegrass	33.4	43.0	47.4	46.5	42.6
Ryegrass + N*	44.3	51.9	48.7	49.2	48.5
Mean (±1.07)	37.4	45.1	46.3	46.3	43.7
Plant number: thousands per acre					
None	24.2	17.3	16.3	18.1	19.0
Trefoil	21.6	19.2	21.1	23.1	21.3
Ryegrass	25.3	23.4	21.6	20.8	22.8
Ryegrass + N*	23.9	21.5	21.3	21.8	22.1
Mean	23.8	20.3	20.1	20.9	21.2

*0.6 cwt N per acre applied to ryegrass in autumn as 'Nitro-Chalk'

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