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64/R/WAV/C/18 *Trefoil* and Ryegrass Green Manures - Sugar Beet

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64/C/18.1

SUGAR BEET AFTER GREEN MANURES

(WAV)

Effects of trefoil and ryegrass green manures and N - Woburn Great Hill
1964, sugar beet following barley.

Design: 2 replicates of 4 x 2 x 4 in 4 blocks of 16 plots each, with
restricted randomisation.

Area of each plot: 0.0159. Area harvested: 0.0106.

Treatments: All combinations of:-

1. Green manures undersown: None (O), trefoil (T), ryegrass (R),
ryegrass sown with 0.6 cwt N as 'Nitro-Chalk' (RN).
2. Time of ploughing: Nov 28, 1963 (A), Jan 30, 1964 (S).
3. Nitrogen: None (NO), 0.6 (N1), 1.2 (N2), 1.8 (N3) cwt N as
'Nitro-Chalk'.

Basal dressings. Barley: 3 cwt 21:14:14 combine drilled. Green
manures: None. Sugar beet: 5 cwt agricultural salt, 0.45 cwt K2O
as muriate of potash, 2.5 cwt 0:20:20.

Cultivations, etc.: Ploughed: Nov 12, 1962. Barley drilled at 2.25
bushels: Apr 8, 1963. Trefoil undersown at 30 lb and ryegrass at
40 lb: May 6. Barley combine harvested: Sept 9. 'Nitro-Chalk'
applied to RN plots: Oct 11. A plots ploughed: Nov 28. S plots
ploughed: Jan 30, 1964. Salt and muriate of potash applied:
Feb 4. Basal PK applied: Apr 6. 'Nitro-Chalk' treatments applied:
Apr 8. Seed drilled at 5 lb: Apr 14. Singled: May 19 - 27.
Lifted: Oct 14. Varieties: Barley - Proctor, trefoil - English,
ryegrass - English Leafy Italian, sugar beet - Klein E. Previous
crops: Barley 1961, potatoes 1962.

NOTE: The green manures were sampled just before ploughing for
estimates of dry matter and N (roots plus tops).

Standard errors per plot:

Roots (washed): 1.122 or 9.3% (29 d.f.)
Total sugar: 4.98 or 10.4% (29 d.f.)
Tops: 0.922 or 14.4% (29 d.f.)

64/C/18.2

SUMMARY OF RESULTS

	NO	N1	N2	N3	Mean
ROOTS					
(±0.281)					
Mean	8.55	12.50	13.82	13.26	12.03
(±0.561)					
O	8.56	13.14	13.69	13.32	12.18
T	8.88	11.85	14.68	13.51	12.23
R	7.88	12.28	13.07	13.89	11.78
RN	8.86	12.74	13.84	12.29	11.93
(±0.397)					
A	8.34	12.57	13.89	13.21	12.00
S	8.75	12.44	13.75	13.30	12.06
(±0.397)					
O T R RN					
(±0.397)					
A	12.12	12.18	11.93	11.78	
S	12.24	12.28	11.63	12.09	

64/C/18.3

	NO	N1	N2	N3	Mean
	SUGAR %				
Mean	20.2	20.4	19.9	18.9	19.8
O	19.8	20.6	20.1	18.8	19.9
T	20.4	20.6	19.7	18.7	19.8
R	20.4	20.2	20.0	19.4	20.0
RN	20.3	20.0	19.9	18.5	19.7
A	20.0	20.5	19.9	18.9	19.8
S	20.4	20.3	19.9	18.8	19.9
	O	T	R	RN	
A	19.8	19.8	20.1	19.6	
S	19.9	19.9	19.9	19.7	

64/C/18.4

	NO	N1	N2	N3	Mean
TOTAL SUGAR					
(±1.24)					
Mean	34.6	51.0	55.1	50.0	47.7
(±2.49)					
O	34.0	54.2	55.1	50.1	48.3
T	36.3	48.8	57.9	50.5	48.4
R	32.1	49.6	52.2	53.8	46.9
RN	36.0	51.2	55.0	45.7	47.0
(±1.76)					
A	33.4	51.5	55.3	49.9	47.5
S	35.8	50.5	54.8	50.1	47.8
(±1.76)					
	O	T	R	RN	
(±1.76)					
A	48.0	48.0	47.8	46.2	
S	48.7	48.7	46.1	47.7	

64/C/18.5

	NO	N1	N2	N3	Mean
	TOPS				
	(±0.231)				
Mean	3.73	6.00	7.66	8.15	6.38
	(±0.461)				(±0.231)
O	3.43	6.02	7.03	8.86	6.33
T	3.68	5.79	7.91	8.76	6.53
R	3.60	5.56	7.47	8.17	6.20
RN	4.21	6.63	8.21	6.82	6.47
	(±0.326)				(±0.163)
A	3.74	6.24	7.72	8.09	6.45
S	3.73	5.76	7.59	8.21	6.32
	O	T	R	RN	
	(±0.326)				
A	6.64	6.41	6.31	6.43	
S	6.03	6.66	6.08	6.50	