

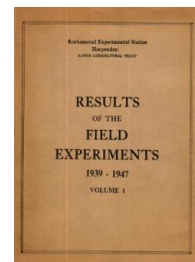
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BB/1 Long Period Cultivation

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Bb/1.1

LONG PERIOD CULTIVATION EXPERIMENT

Long Hoos V, 1934-39

This experiment was completed in 1939. The results were reported by E.W. Russell and B.A. Keen in "Studies in Soil Cultivation - X. The results of a six-year cultivation experiment". J. Agric. Sci., 31, (1941), 326.

The experiment was designed to compare the effects on crop yield and weed infestation of continued ploughing, rotary cultivation with the Simar implement and stirring the soil with a cultivator, and also to investigate the value of cyanamide as a weed-killer. The crops grown in rotation were wheat, mangolds, barley, there being four blocks of twelve plots each under each crop. The twelve treatments were made up of all combinations of:-

Ploughing (P), Simaring (S) or Cultivating (C)
Shallow cultivation (4 ins.) (Sh) or deep cultivation (8 ins.) (D)
Cyanamide (Cy) or Nitrochalk (N)

On two of the four blocks the treatments were continued on the same plots in successive years, while on the other two blocks cycles of cultivations and manuring were used.

Area of each plot, 0.015 acre.

A basal dressing of 0.75 cwt. P_2O_5 per acre (as superphosphate) and 1.0 cwt. K_2O per acre (as muriate of potash) was given to all plots growing mangolds.

Details of the experiment are as given in the 1934 Report, p. 175.

Crop Notes

	Wheat	Mangolds	Barley
Variety	Wilhelmina	Yellow Globe	Plumage Archer
Previous crop	Barley	Wheat	Mangolds
Date sown	24/10/38	April 25	March 20
Harvested	Aug. 18	Oct. 25	Aug. 29

Standard errors per plot:

Wheat Grain, 0.950 cwt. per acre or 3.6%, 11 d.f.

Mangolds Roots, 1.539 tons per acre or 6.6%, 11 d.f.

Barley Grain, 1.313 cwt. per acre or 6.9%, 11 d.f.

Bb/1.2

		Continuous			1939				Cycle B			
1938		P	S	C		C	P	S	S	C	P	
1939		P	S	C	Mean	P	S	C	P	S	C	Mean
Wheat Grain: cwt. per acre												
		±0.67			±0.39	±0.95			±0.95			±0.39
N	D	31.3	25.0	24.3	26.9	22.5	27.3	21.4	29.3	26.6	22.8	25.0
	Sh	28.6	26.5	22.8	26.0	27.6	26.6	24.7	27.5	25.0	22.3	25.6
Cy	D	29.8	23.8	23.6	25.7	27.6	25.9	26.6	29.5	23.7	25.8	26.5
	Sh	25.4	24.5	26.6	25.5	29.3	26.2	24.6	23.7	21.0	23.9	24.8
Wheat Straw: cwt. per acre												
N	D	45.4	36.5	34.0	38.6	52.9	51.6	41.9	46.7	40.7	34.6	44.7
	Sh	42.5	39.4	34.0	38.6	43.8	44.7	43.8	42.1	39.5	33.4	41.2
Cy	D	46.3	36.6	35.0	39.3	41.5	45.4	40.7	44.8	34.3	38.0	40.8
	Sh	43.7	35.6	40.7	40.0	45.0	39.3	42.7	34.3	31.3	38.8	38.6
Mangolds Roots: tons per acre												
		±1.09			±0.63	±1.54			±1.54			±0.63
N	D	24.98	22.29	23.56	23.61	25.30	25.19	23.85	28.26	23.21	27.16	25.50
	Sh	26.20	23.21	21.88	23.76	26.46	23.50	24.72	24.20	21.94	26.99	24.64
Cy	D	24.46	23.30	23.07	23.61	28.03	23.74	23.91	29.48	25.30	22.63	25.52
	Sh	24.93	21.13	19.01	21.69	24.72	26.99	24.96	22.87	21.12	24.61	24.21
Mangolds Tops: tons per acre												
N	D	5.72	5.37	6.15	5.75	6.27	5.57	6.04	5.80	5.28	6.62	5.93
	Sh	5.86	5.98	5.69	5.84	5.75	6.04	5.80	5.57	4.87	6.44	5.74
Cy	D	6.09	5.92	5.69	5.90	5.75	5.80	5.80	7.08	5.69	5.11	5.87
	Sh	6.56	5.51	5.40	5.82	5.46	6.04	5.98	5.80	4.99	5.57	5.64
Barley Grain: cwt. per acre												
		±0.93			±0.54	±1.31			±1.31			±0.54
N	D	19.8	22.6	17.1	19.8	23.6	21.5	19.2	23.6	22.6	18.8	21.6
	Sh	22.6	18.6	15.7	19.0	22.1	24.1	19.9	24.7	16.4	20.4	21.3
Cy	D	23.6	20.6	16.4	20.2	23.1	21.7	20.5	25.2	20.1	21.7	22.0
	Sh	21.5	16.2	14.1	17.3	22.5	19.2	16.8	19.3	18.0	20.8	19.4
Barley Straw: cwt. per acre												
N	D	24.3	26.2	22.0	24.2	25.1	23.7	23.8	28.6	25.0	24.1	25.0
	Sh	27.2	23.2	16.8	22.4	22.1	25.8	27.7	28.7	21.9	23.7	25.0
Cy	D	25.7	24.6	21.6	24.0	27.4	24.1	25.3	28.1	22.8	25.3	25.5
	Sh	25.2	20.0	17.5	20.9	25.1	22.6	21.5	24.8	18.6	22.8	22.6

Standard errors are based on 11 d.f.

Bb/1.3

Long Period Cultivation Experiment

Mean of Nitrochalk and Cyanamide
1939

1938 1939	Continuous				Cycle A			Cycle B			Mean
	P	S	C	Mean	C	P	S	S	C	P	
	P	S	C	Mean	P	S	C	P	S	C	Mean
Wheat Grain: cwt. per acre											
D		± 0.48		± 0.27		± 0.67			± 0.67		± 0.27
Sh	30.6	24.4	24.0	26.3	25.0	26.6	24.0	29.4	25.2	24.3	25.8
Mean	28.8	25.0	24.4	26.1	26.7	26.5	24.3	27.5	24.1	23.7	25.5
Wheat Straw: cwt. per acre											
D		± 0.34				± 0.48			± 0.48		
Sh	45.8	36.6	34.5	39.0	47.2	48.5	41.3	45.8	37.5	36.3	42.8
Mean	44.4	37.0	36.0	39.2	45.8	45.2	42.2	42.0	36.4	36.2	41.3
Mangolds: Roots: tons per acre											
D		± 0.77		± 0.44		± 1.09			± 1.09		± 0.44
Sh	24.72	22.80	23.32	23.61	26.66	24.46	23.88	28.87	24.26	24.90	25.50
Mean	25.14	22.48	21.88	23.17	26.12	24.85	24.36	26.20	22.90	25.35	24.96
Mangolds Tops: tons per acre											
D	5.90	5.64	5.92	5.82	6.01	5.68	5.92	6.44	5.48	5.86	5.90
Sh	6.21	5.74	5.54	5.83	5.60	6.04	5.89	5.68	4.93	6.00	5.69
Mean	6.06	5.69	5.73	5.83	5.80	5.86	5.90	6.06	5.20	5.93	5.79
Barley Grain: cwt. per acre											
D		± 0.66		± 0.38		± 0.93			± 0.93		± 0.38
Sh	21.7	21.6	16.8	20.0	23.4	21.6	19.8	24.4	21.4	20.2	21.8
Mean	21.8	19.5	15.8	19.0	22.8	21.6	19.1	23.2	19.3	20.4	21.1
Barley Straw: cwt. per acre											
D	25.0	25.4	21.8	24.1	26.2	23.9	24.6	28.4	23.9	24.7	25.3
Sh	26.2	21.6	17.2	21.7	23.6	24.2	24.6	26.8	20.2	23.2	23.8
Mean	25.6	23.5	19.5	22.9	24.9	24.0	24.6	27.6	22.0	24.0	24.5

Standard errors are based on 11 d.f.



Year of Observation and Distribution

Year	Group A			Group B			Group C		
	1	2	3	1	2	3	1	2	3
1921	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1922	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1923	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1924	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1925	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1926	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1927	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1928	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1929	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1930	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1931	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1932	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1933	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1934	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1935	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1936	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1937	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1938	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1939	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1940	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1941	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1942	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1943	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1944	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1945	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1946	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1947	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1948	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1949	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
1950	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0