

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1979

[Full Table of Content](#)



79/W/CS/181 Green Manure - Barley, Potatoes

Rothamsted Research

Rothamsted Research (1980) *79/W/CS/181 Green Manure - Barley, Potatoes ; Yields Of The Field Experiments 1979*, pp 173 - 176 - DOI: <https://doi.org/10.23637/ERADOC-1-45>

79/W/CS/181

GREEN MANURE

Object: To study the effects of a green manure sown at different dates and interactions with fertiliser nitrogen on the following crop - Woburn Great Hill III, Lansome III.

Sponsors: G.V. Dyke, G.E.G. Mattingly.

The fourth year, barley and potatoes.

For previous years see 76-78/W/CS/181.

Design: 3 series, each a single replicate of 24 plots.

Whole plot dimensions: 4.26 x 6.10.

Treatments:

Series I (barley 1979 after barley 1977 & 1978), Series II (potatoes 1979 after potatoes 1977, barley 1978): All combinations of:-

1. TREFOIL(768) Trefoil to barley in 1976 and 1978:

NONE	None
US	Undersown in spring
US+SS	Undersown in spring, sown into stubble after harvest
OS/SS	Oversown in July before harvest and/or sown into stubble after harvest

2. N Amounts of nitrogen fertiliser (kg N) cumulative in 1977 and 1979 (given basal N at 63 kg in 1978):

Series I to Barley	Series II to Potatoes	Series I to Barley	Series II Potatoes
0	0	0	0
50	100	50 to seedbed	100 to seedbed
100	200	100 to seedbed	200 to seedbed
150	300	150 to seedbed	300 to seedbed
50+50	100+100	50 to seedbed + 50 in May	100 to seedbed + 100 in June
100+50	200+100	100 to seedbed + 50 in May	200 to seedbed + 100 in June

Series IV (barley): All combinations of:-

1. TREFOIL(768) Trefoil to barley in 1976, 1977, 1978 and 1979 (only US in 1979):

NONE	None
US	Undersown in spring
US+SS	Undersown in spring and sown into stubble after harvest
OS/SS	Oversown in July and/or sown into stubble after harvest

79/W/CS/181

2. N Amounts of nitrogen fertiliser (kg N):

	1977, 1978 & 1979	1976
0	0	(0)
50	50 to seedbed	(30)
100	100 to seedbed	(60)
150	150 to seedbed	(90)
50+50	50 to seedbed + 50 in May	(120)
100+50	100 to seedbed + 50 in May	(150)

NOTES: (1) N to Series IV in 1976 was all applied to the seedbed.
 (2) Series III has been abandoned.
 (3) English common trefoil, inoculated with Rhizobium, at 26 kg, undersown in spring: 5 June, 1979.

Standard applications:

Barley, Great Hill III, Series I & Lansome III, Series IV: Manures: (0:20:20) at 300 kg, combine drilled. Weedkillers: Bromoxynil with ioxynil ('Oxytril CM' at 2.1 kg in 250 l).

Potatoes, Great Hill III, Series IV: Manures: (0:14:28) at 1280 kg. Weedkillers: Linuron at 1.0 kg plus paraquat at 0.28 kg ion in 250 l. Fungicide: Mancozeb at 1.3 kg in 250 l on six occasions with insecticide on the first two. Insecticide: Pirimicarb at 0.14 kg on two occasions with fungicide. Haulm desiccant: Undiluted BOV at 170 l.

Seed: Barley: Porthos, dressed with ethirimol, sown at 160 kg.
 Potatoes: Pentland Crown.

Cultivations, etc.:-

Barley, Great Hill III, Series I: Ploughed: 3 Apr, 1979. Spring-tine cultivated with crumbler attached: 19 Apr. Seed sown: 30 Apr. Seedbed N applied: 2 May. Weedkiller applied: 4 June. Late N applied: 25 June. Combine harvested: 28 Aug.

Barley, Lansome III, Series IV: Ploughed: 6 Mar, 1979. Spring-tine cultivated with crumbler attached: 21 Apr. Seedbed N applied: 27 Apr. Seed sown: 30 Apr. Weedkiller applied: 4 June. Late N applied: 25 June. Combine harvested: 28 Aug.

Potatoes, Great Hill III, Series II: Ploughed: 3 Apr, 1979. Spring-tine cultivated with crumbler attached: 19 Apr. PK applied: 7 May. Seedbed N applied, rotary cultivated, potatoes planted: 9 May. Weedkillers applied: 25 May. Rotary ridged: 19 June. Late N applied: 25 June. Fungicide applied: 26 June, 10 July, 23 July, 8 Aug, 25 Aug, 6 Sept. Insecticide applied: 26 June, 10 July. Haulm mechanically destroyed, haulm desiccant applied: 24 Sept. Lifted: 19 Oct.

NOTE: Samples of trefoil and weeds were dug in March, before ploughing, on Series I & IV for the determination of dry matter and N.

79/W/CS/181 BARLEY SERIES I

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N	0	50	100	150	50+50	100+50	MEAN
TREFOIL(768)							
NONE	1.02	3.07	3.39	3.84	3.20	5.22	3.29
US	0.91	2.68	3.78	3.39	3.29	3.49	2.92
US+SS	1.36	2.56	5.04	4.05	4.04	3.67	3.45
OS/SS	1.41	2.73	3.67	3.27	3.47	3.55	3.02
MEAN	1.18	2.76	3.97	3.63	3.50	3.98	3.17

GRAIN MEAN DM% 84.1

STRAW TONNES/HECTARE

***** TABLES OF MEANS *****

N	0	50	100	150	50+50	100+50	MEAN
TREFOIL(768)							
NONE	0.53	1.56	2.20	2.56	1.48	3.46	1.96
US	0.48	1.32	2.68	1.69	1.73	2.39	1.71
US+SS	0.53	1.25	3.27	3.17	2.19	2.49	2.15
OS/SS	0.58	1.61	2.55	1.95	1.87	2.22	1.80
MEAN	0.53	1.43	2.68	2.34	1.82	2.64	1.91

STRAW MEAN DM% 87.8 PLOT AREA HARVESTED 0.00173

79/W/CS/181 BARLEY SERIES IV

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N	0	50	100	150	50+50	100+50	MEAN
TREFOIL(768)							
NONE	0.11	2.10	2.22	2.45	1.67	3.19	1.96
US	0.17	1.50	2.28	2.90	1.66	2.71	1.87
US+SS	0.28	1.45	2.89	3.06	2.33	1.90	1.98
OS/SS	0.17	1.55	2.28	2.46	1.28	2.34	1.68
MEAN	0.18	1.65	2.42	2.72	1.74	2.53	1.87

GRAIN MEAN DM% 82.0

STRAW TONNES/HECTARE

***** TABLES OF MEANS *****

N	0	50	100	150	50+50	100+50	MEAN
TREFOIL(768)							
NONE	0.10	1.05	1.47	1.72	1.11	1.93	1.23
US	0.05	0.96	1.43	1.97	1.05	1.64	1.18
US+SS	0.15	0.94	1.78	1.63	1.34	1.86	1.28
OS/SS	0.16	0.94	1.55	1.69	0.98	1.64	1.16
MEAN	0.12	0.97	1.56	1.75	1.12	1.76	1.21

STRAW MEAN DM% 86.0 PLOT AREA HARVESTED 0.00173

79/W/CS/181

POTATOES SERIES II

TOTAL TUBERS TONNES/HECTARE

***** TABLES OF MEANS *****

N	0	100	200	300	100+100	200+100	MEAN
TREFOIL(768)							
NONE	9.5	20.0	20.5	38.4	19.5	18.2	21.0
US	8.9	27.6	25.3	35.6	24.1	17.1	23.1
US+SS	4.5	15.6	20.1	18.0	23.4	24.1	17.6
OS/SS	5.7	19.0	29.1	25.8	15.5	29.3	20.7
MEAN	7.1	20.5	23.7	29.5	20.6	22.2	20.6

PERCENTAGE WARE 3.81 CM (1.5 INCH) RIDDLE

***** TABLES OF MEANS *****

N	0	100	200	300	100+100	200+100	MEAN
TREFOIL(768)							
NONE	89.0	94.2	94.9	97.9	89.9	96.2	93.7
US	80.5	93.7	94.5	98.1	90.0	94.6	91.9
US+SS	61.5	93.3	96.6	91.0	92.1	93.3	88.0
OS/SS	85.7	95.8	94.0	94.2	88.1	94.5	92.0
MEAN	79.2	94.3	95.0	95.3	90.0	94.6	91.4

PLOT AREA HARVESTED 0.00087