This work is licensed under a Creative Commons Attribution 4.0 International License.

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 readible, or you suspect there are some problems, please let us know and we will correct that.

Yields of the Field Experiments 1979

Full Table of Content

78/R/HB/2 Hoosfield - Barley

Rothamsted Research

Rothamsted Research (1980) *78/R/HB/2 Hoosfield - Barley ;* Yields Of The Field Experiments 1979, pp 13 - 16 **- DOI: https://doi.org/10.23637/ERADOC-1-45**

This work is licensed under a Creative Commons Attribution 4.0 International License.

79/R/HB/2

HOOSFIELD

Object: To study the effects of organic and inorganic manures on continuous spring barley. From 1968 to 1978 a rotation of potatoes, beans and barley was practised. In 1979 the rotation was discontinued and the experiment reverted to continuous barley.

The 128th year, barley.

For previous years see 'Details' 1967 & 1973, Station Report for 1966 and 74-78/R/HB/2.

Treatments: All combinations of:-

1. MANURE — Fertilisers, organic manures and frequency of barley cropping:

	Form of N 1852-1966	Additional treatments 1852-1979	Frequency of barley cropping since last non-cereal
---B12F	None	-	12th after fallow 1967
-P-B12F	None	P	12th after fallow 1967
--KB12F	None	K (Na) Mg	12th after fallow 1967
-PKB12F	None	P K (Na) Mg	12th after fallow 1967
A--B12F	A	-	12th after fallow 1967
AP-B12F	A	P	12th after fallow 1967
A-KB12F	A	K (Na) Mg	12th after fallow 1967
APKB12F	A	P K (Na) Mg	12th after fallow 1967
N--B12F	N	-	12th after fallow 1967
NP-B12F	N	P	12th after fallow 1967
N-KB12F	N	K (Na) Mg	12th after fallow 1967
NPKB12F	N	P K (Na) Mg	12th after fallow 1967
N--SB12F	N	Si	12th after fallow 1967
NP-SB12F	N	P Si	12th after fallow 1967
N-KSB12F	N	K (Na) Mg Si	12th after fallow 1967
NPKSB12F	N	P K (Na) Mg Si	12th after fallow 1967
N--B1BE	N	-	1st after beans 1978
NP-B1BE	N	P	1st after beans 1978
N-KB1BE	N	K (Na) Mg	1st after beans 1978
NPKB1BE	N	P K (Na) Mg	1st after beans 1978
N--SB1BE	N	Si	1st after beans 1978
NP-SB1BE	N	P Si	1st after beans 1978
N-KSB1BE	N	K (Na) Mg Si	1st after beans 1978
NPKSB1BE	N	P K (Na) Mg Si	1st after beans 1978
C--B12F	C	-	12th after fallow 1967
CP-B12F	C	P	12th after fallow 1967
C-KB12F	C	K (Na) Mg	12th after fallow 1967
CPKB12F	C	P K (Na) Mg	12th after fallow 1967
C--B2BE	C	-	2nd after beans 1977
CP-B2BE	C	P	2nd after beans 1977
C-KB2BE	C	K (Na) Mg	2nd after beans 1977
CPKB2BE	C	P K (Na) Mg	2nd after beans 1977
C--B1BE	C	-	1st after beans 1978
CP-B1BE	C	P	1st after beans 1978
C-KB1BE	C	K (Na) Mg	1st after beans 1978
CPKB1BE	C	P K (Na) Mg	1st after beans 1978

https://doi.org/10.23637/ERADOC-1-45

This work is licensed under a Creative Commons Attribution 4.0 International License.

C--B1PO	C	-	1st after potatoes 1978
CP-B1PO	C	P	1st after potatoes 1978
C-KB1PO	C	K (Na) Mg	1st after potatoes 1978
CPKB1PO	C	P K (Na) Mg	1st after potatoes 1978
D B12	None	D	12th after fallow 1967
(D) B12	(D)	-	12th after fallow 1967
(A) B12	(Ashes)	-	12th after fallow 1967
- B12	None	-	12th after fallow 1967

Form of N: A, sulphate of ammonia: N, nitrate of soda - each to supply 48 kg N
C, castor meal to supply 96 kg N
P: 35 kg P as single superphosphate (triple superphosphate in 1974)
K: 90 kg K as sulphate of potash
(Na): 16 kg Na as sulphate of soda until 1973
Mg: 35 kg Mg, as kieserite every third year, since 1974 (sulphate of magnesia annually until 1973)
Si: Silicate of soda at 450 kg
D: Farmyard manure at 35 tonnes. (D): until 1871 only
(Ashes): Weed ash 1852-1916, furnace ash 1917-1932, none since

2. N Nitrogen fertiliser (kg N), as 'Nitro-Chalk', since 1968 (cumulative N applications until 1973, on a cyclic system since 1974):

0
48
96
144

There are four extra plots testing all combinations of:-

1. MANURE Fertilisers other than magnesium:

551AN2PK	Plot 551 AN2PK	12th barley after fallow 1967
561--PK	Plot 561 --PK	12th barley after fallow 1967
571NN2--	Plot 571 NN2	12th barley after fallow 1967
581NN2--	Plot 581 NN2	12th barley after fallow 1967

N2: 96 kg N as 'Nitro-Chalk' since 1968. Other symbols as above.

2. MGNESIUM Magnesium fertiliser (kg Mg) as kieserite every third year since 1974:

0
35

NOTE: For a fuller record see 'Details' etc.

Basal applications: Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 kg) in 220 l. Fungicide: Tridemorph at 0.53 kg in 220 l.

Seed: Julia, sown at 160 kg.

Cultivations, etc.:- P, K and Na applied: 13 Nov, 1978. Chalk applied: 20 Nov. FYM applied: 23 Nov. Ploughed: 24 Nov. Spring-tine cultivated, seed sown: 6 Apr, 1979. N applied: 18 May. Weedkillers applied: 19 May. Fungicide applied: 18 June. Combine harvested: 27 Aug.

https://doi.org/10.23637/ERADOC-1-45

This work is licensed under a Creative Commons Attribution 4.0 International License.

79/R/HB/2

GRAIN TONNES/HECTARE

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

N MANURE	0	48	96	144	MEAN
---B12F	0.87	1.54	1.49	1.98	1.47
-P-B12F	1.18	3.16	4.25	4.76	3.34
--KB12F	0.55	2.44	2.48	2.80	2.07
-PKB12F	0.65	2.28	4.42	4.51	2.96
A--B12F	0.92	0.84	1.91	1.77	1.36
AP-B12F	1.52	3.44	3.70	3.38	3.01
A-KB12F	0.47	1.20	1.50	2.04	1.30
APKB12F	1.04	2.92	4.19	4.75	3.23
N--B12F	0.65	1.22	1.77	1.27	1.23
NP-B12F	1.89	4.00	4.45	4.58	3.73
N-KB12F	0.99	2.00	2.16	2.60	1.94
NPKB12F	0.40	3.81	4.47	4.63	3.33
N--SB12F	1.56	2.16	2.60	3.81	2.53
NP-SB12F	1.25	4.31	4.64	5.29	3.87
N-KSB12F	0.73	2.42	4.07	4.74	2.99
NPKSB12F	0.96	3.81	5.24	5.43	3.86
N--B1BE	1.69	2.93	4.45	3.74	3.20
NP-B1BE	2.25	5.07	5.86	5.70	4.72
N-KB1BE	2.11	3.70	4.41	4.36	3.64
NPKB1BE	1.87	4.81	6.00	6.46	4.78
N--SB1BE	3.09	3.81	4.55	5.30	4.19
NP-SB1BE	2.47	4.82	5.70	5.90	4.72
N-KSB1BE	1.91	4.38	5.28	5.17	4.18
NPKSB1BE	3.55	4.96	5.57	6.00	5.02
C--B12F	0.92	3.06	4.30	4.61	3.22
CP-B12F	1.42	3.81	5.29	5.18	3.92
C-KB12F	1.31	2.69	4.07	4.07	3.03
CPKB12F	1.77	3.97	5.01	5.24	4.00
C--B2BE	2.01	3.21	4.04	4.54	3.45
CP-B2BE	1.13	3.16	4.76	5.14	3.55
C-KB2BE	1.06	2.70	3.74	4.91	3.10
CPKB2BE	2.58	3.72	5.46	4.67	4.10
C--B1BE	1.68	3.35	4.97	5.18	3.79
CP-B1BE	2.19	4.39	5.74	5.35	4.42
C-KB1BE	2.05	3.55	4.85	4.96	3.85
CPKB1BE	3.16	5.15	4.74	5.57	4.65
C--B1PO	1.73	4.10	4.69	4.69	3.80
CP-B1PO	2.26	4.28	5.82	5.18	4.38
C-KB1PO	1.49	3.36	4.47	4.41	3.43
CPKB1PO	2.16	4.43	5.67	5.71	4.49
D B12	3.31	3.99	5.78	5.18	4.56
(D) B12	1.28	2.27	2.61	3.49	2.41
(A) B12	1.08	2.04	2.85	4.13	2.53
- B12	0.72	1.32	2.21	1.84	1.52
MEAN	1.59	3.29	4.23	4.43	3.38

GRAIN MEAN DM% 78.6

https://doi.org/10.23637/ERADOC-1-45

This work is licensed under a Creative Commons Attribution 4.0 International License.

79/R/HB/2

BARLEY

STRAW TONNES/HECTARE

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

N MANURE	0	48	96	144	MEAN
---B12F	0.40	0.60	0.80	0.96	0.69
-P-B12F	0.61	1.42	1.96	2.42	1.60
--KB12F	0.39	1.19	1.37	1.55	1.12
-PKB12F	0.39	1.19	2.77	2.61	1.74
A--B12F	0.40	0.40	0.81	0.82	0.61
AP-B12F	0.81	1.42	1.62	1.82	1.42
A-KB12F	0.40	0.59	0.80	1.18	0.74
APKB12F	0.40	1.43	2.44	3.41	1.92
D B12	1.31	2.39	3.42	4.25	2.84
(D) B12	0.52	1.04	1.54	1.81	1.23
(A) B12	0.26	0.80	1.08	2.16	1.08
- B12	0.26	0.80	1.05	1.05	0.79
MEAN	0.51	1.11	1.64	2.00	1.32

STRAW MEAN DM% 88.0

PLOT AREA HARVESTED 0.00007

GRAIN TONNES/HECTARE

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

MANURE MGNESIUM	551AN2PK	561--PK	571NN2--	581NN2--	MEAN
0	3.89	0.36	2.60	0.91	1.94
35	4.18	0.52	1.96	1.59	2.06
MEAN	4.04	0.44	2.28	1.25	2.00

GRAIN MEAN DM% 75.6

PLOT AREA HARVESTED 0.00306

https://doi.org/10.23637/ERADOC-1-45