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Yields of the Field Experiments 1971

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71/R/HB/2 Hoosfield - Potatoes, Beans, Barley

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71/R/HB/2

HOOSFIELD

Object: To study the effects of organic and inorganic manures on continuous spring barley. Since 1968 a rotation of potatoes, beans and barley has been included.

The 120th year, potatoes, beans, barley. The 4th year of revised scheme.

For previous years see 'Details' 1967, Station Report for 1966, 68/A/2(t), 69/R/HB/2(t) and 70/R/HB/2.

Standard applications:

Potatoes: Weedkillers: Paraquat at 0.28 kg ion in 225 l.
Linuron at 1.68 kg in 427 l. Fungicide: Mancozeb at 1.34 kg in 438 l.

Spring beans: Weedkiller: Paraquat at 0.28 kg ion in 225 l.
Insecticide: Demeton-s-methyl at 245 g in 427 l.

Barley: Weedkillers: Paraquat at 0.28 kg ion in 225 l. Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l).

Cultivations, etc.: Fertilisers, except N, applied: 16 Oct, 1970.
FYM applied: 21 Oct. Ploughed: 22 Oct.

Potatoes: Paraquat applied: 19 Sept, 1970. N applied, plots rotary cultivated, potatoes machine planted: 2 Apr, 1971.
Linuron applied: 15 Apr. Grubbed: 3 June. Rotary ridged: 4 June. Fungicide applied: 13 Aug. Haulm destroyed mechanically: 8 Sept. Lifted: 15 Sept. Variety: King Edward.

Spring beans: Paraquat applied: 19 Sept, 1970. Seed drilled at 224 kg: 24 Feb, 1971. Insecticide applied: 1 July. Combine harvested: 2 Sept. Variety: Maris Bead.

Barley: Paraquat applied: 19 Sept, 1970. Seed drilled at 157 kg: 24 Feb, 1971. N applied: 23 Mar. 'Oxytril P' applied: 10 May. Combine harvested, large combine plots: 11 Aug, small combine plots: 18 Aug. Variety: Julia.

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- NOTES: (1) Strip 3 (K Na Mg) received an overdose of 72.8 kg of total mineral fertiliser to the strip.
- (2) Equisetum infestation was greatest on certain plots without N. In places the edge of a patch of Equisetum coincided with the boundary of a plot receiving N.
- (3) After barley harvest, shed grain sprouted in patches, apparently where the combine stopped at the end of each yield strip. The patches were larger at the South than the North ends, and were absent or very slight on the small combine plots. A rough calculation from one plot indicated a loss of about 100 kg per ha from the area taken for yield.

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SUMMARY OF RESULTS

BARLEY

N: KG/HA

Treatment**		0	48	96	144	Mean
		GRAIN: TONNES/HECTARE				
1852-1971	1852-1966					
-	-	1.36	2.63	3.15	2.91	2.51
-	N	1.74	1.94	2.17	1.96	1.95
P	-	1.66	3.11	3.35	3.46	2.89
P	N	1.96	2.69	2.36	1.41	2.10
K Na Mg	-	0.98	3.23	3.86	4.59	3.17
K Na Mg	N	1.75	2.64	2.38	2.82	2.40
P K Na Mg	-	1.48	3.94	5.45	6.08	4.24
P K Na Mg	N	2.53	3.74	6.30	5.79	4.59
	D	5.02	5.55	4.76	4.67	5.00
	(D)	1.04	2.76	4.20	4.19	3.05
	(Ashes)	1.98	3.87	4.11	4.73	3.67
	-	1.22	2.80	2.47	3.90	2.60
		STRAW: TONNES/HECTARE				
-	-	0.57	1.42	1.84	1.85	1.42
-	N	0.58	1.13	1.28	1.14	1.03
P	-	0.84	1.84	2.28	2.42	1.84
P	N	0.73	1.72	1.88	1.43	1.44
K Na Mg	-	0.41	1.96	3.13	3.45	2.24
K Na Mg	N	0.71	1.73	1.84	2.12	1.60
P K Na Mg	-	0.55	2.34	3.95	5.39	3.06
P K Na Mg	N	1.16	2.46	3.59	1.90	2.28
	D	4.18	5.18	5.50	5.47	5.08
	(D)	1.06	2.42	4.22	4.51	3.05
	(Ashes)	0.72	2.25	2.99	3.21	2.29
	-	0.55	1.52	2.06	2.63	1.69

** For explanation of symbols see 'Details' 1967

Mean D.M. % (all plots): Grain: 81.4
 Straw: 89.8

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BARLEY

N: KG/HA

Treatment**			0	48	96	144	Mean
			GRAIN: TONNES/HECTARE				
1852-1971	1852-1966						
-	N*		2.17	2.36	2.55	2.56	2.41
	Si	N*	2.31	4.62	5.34	4.34	4.15
P		N*	2.12	3.74	3.93	3.54	3.33
P	Si	N*	2.59	4.83	5.14	6.03	4.65
	K Na Mg	N*	1.28	3.18	3.59	3.41	2.86
	K Na Mg Si	N*	2.33	4.43	5.28	5.99	4.51
P K Na Mg		N*	1.90	4.47	5.56	5.84	4.44
P K Na Mg Si		N*	2.11	4.90	6.70	6.04	4.94
-		R(c)	2.42	4.58	5.64	6.12	4.69
-		R(r)	3.92	5.06	5.82	5.86	5.17
P		R(c)	2.85	4.66	5.19	4.39	4.28
P		R(r)	3.85	5.21	5.40	5.01	4.87
	K Na Mg	R(c)	2.67	4.29	5.19	6.23	4.60
	K Na Mg	R(r)	3.44	4.46	5.43	5.72	4.76
P K Na Mg		R(c)	2.76	4.41	6.22	5.96	4.84
P K Na Mg		R(r)	4.19	5.61	5.92	6.30	5.50

STRAW: TONNES/HECTARE

-	N*	0.99	0.98	0.99	1.45	1.10
Si	N*	0.95	2.99	3.47	2.94	2.59
P	N*	1.02	2.49	2.45	2.52	2.12
P	Si	N*	1.00	3.60	3.89	4.48
	K Na Mg	N*	0.96	1.91	2.37	2.24
	K Na Mg Si	N*	0.97	2.96	3.77	4.80
P K Na Mg		N*	0.90	3.04	4.11	4.57
P K Na Mg Si		N*	0.92	3.40	5.02	5.10
-		R(c)	1.01	3.08	4.12	4.53
-		R(r)	1.96	3.02	4.03	4.04
P		R(c)	1.50	3.07	3.59	3.61
P		R(r)	2.01	3.57	3.60	3.08
	K Na Mg	R(c)	0.99	2.92	4.08	5.09
	K Na Mg	R(r)	1.49	3.03	4.05	4.97
P K Na Mg		R(c)	1.48	3.02	4.07	4.56
P K Na Mg		R(r)	2.49	3.52	4.53	4.85

** For explanation of symbols see 'Details' 1967

NOTE: (c) = continuous (i.e. barley after barley)
 (r) = rotational (i.e. barley after beans)

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BARLEY

Plots	Treatment**			GRAIN: TONNES/ HECTARE	STRAW: TONNES/ HECTARE
	1852-1971	1852-1966			
551	N2	PK	N	4.30	3.20
561	-	PK	-	1.19	0.58
571	N2	-	N*	3.89	2.41
581	N2	-	N*	2.87	1.77

** For explanation of symbols see 'Details' 1967

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BEANS

1969

N: KG/HA

Treatment**		0	48	96	144	Mean
GRAIN: TONNES/HECTARE						
1852-1971	1852-1966					
-	R	1.79	1.28	2.37	1.62	1.77
P	R	1.08	1.39	1.64	1.69	1.45
K Na Mg	R	1.71	1.67	1.66	1.60	1.66
P K Na Mg	R	2.04	2.47	2.39	2.54	2.36
Mean		1.66	1.70	2.01	1.86	1.81

STRAW: TONNES/HECTARE

-	R	1.37	0.72	1.30	0.99	1.10
P	R	0.69	1.23	0.90	1.08	0.98
K Na Mg	R	2.16	1.13	1.56	1.39	1.56
P K Na Mg	R	2.06	2.28	2.67	3.27	2.57
Mean		1.57	1.34	1.61	1.69	1.55

Mean D.M. %: Grain: 81.5
Straw: 52.7

** For explanation of symbols see 'Details' 1967

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POTATOES

Treatments**	N: KG/HA 1970				Mean
	0	48	96	144	

TOTAL TUBERS: TONNES/HECTARE

1852-1970 1852-1966

-	N*	8.3	9.0	7.4	8.1	8.2
Si	N*	7.4	7.5	8.1	8.3	7.8
P	N*	7.8	7.2	6.6	8.1	7.4
P	Si	N*	7.2	7.1	7.2	8.2
K Na Mg	N*	23.1	23.8	21.0	22.1	22.5
K Na Mg Si	N*	27.7	25.9	26.5	26.3	26.6
P K Na Mg	N*	35.5	34.8	38.4	35.0	35.9
P K Na Mg Si	N*	38.7	37.0	32.0	36.0	35.9
-	R	18.3	20.1	18.4	18.4	18.8
P	R	13.4	11.6	10.2	16.6	13.0
K Na Mg	R	26.6	26.2	25.9	30.0	27.2
P K Na Mg	R	38.1	34.1	35.8	38.3	36.6

% WARE: 3.81 (1.5 INCH) RIDDLE

-	N*	67.3	69.6	62.0	77.9	69.2
Si	N*	63.4	66.4	68.8	67.1	66.4
P	N*	45.3	34.3	28.8	36.1	36.1
P	Si	N*	39.4	35.3	44.2	44.6
K Na Mg	N*	89.1	89.6	87.0	87.9	88.4
K Na Mg Si	N*	91.1	89.9	90.1	90.2	90.3
P K Na Mg	N*	79.3	77.7	75.4	82.9	78.8
P K Na Mg Si	N*	79.3	78.5	76.8	80.1	78.7
-	R	79.1	79.9	80.9	81.5	80.4
P	R	53.1	46.6	36.9	59.0	48.9
K Na Mg	R	82.1	80.2	84.2	82.5	82.3
P K Na Mg	R	80.4	76.6	75.7	77.2	77.5

** For explanation of symbols see 'Details 1967'