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Numerical Results of the Field Experiments 1969

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69/R/HB/2 - Hoosfield - Barley, Potatoes & Beans

Rothamsted Research

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HOSFIELD

(69/R/HB/2)

The 118th year, 2nd year of revised scheme

For history, treatments, etc., see 'Details' 1967, Station Report for 1966 and 'Results' 68/A/2.

The four sub plots of the FYM plot (721 to 724) now receive 'Nitro-Chalk' at the 4 rates tested elsewhere on the experiment.

Standard applications:

Barley: Weedkillers: Paraquat at 0.75 lb ion in 20 gals in autumn 1968 to all non-rotational barley. MCPA, mecoprop and dicamba ('Banlene Plus' at 4 pints in 20 gals) to all barley.

Spring beans: Insecticide: Demeton-s-methyl at 3.5 oz in 37 gals.

Potatoes: Weedkiller: Paraquat at 0.75 lb ion in 20 gals in autumn 1968. Paraquat at 0.375 lb ion plus linuron at 0.75 lb in 37 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on 3 occasions. Insecticide: Demeton-s-methyl at 3.5 oz applied with second spray of mancozeb.

Cultivations, etc.: Fertilisers applied: 4 Dec, 1968. FYM applied: 6 Dec. Ploughed: 5 - 6 Dec.

Barley: Paraquat applied: 5 Sept, 1968. Seed drilled at 140 lb: 24 Mar, 1969. 'Nitro-Chalk' applied: 1 Apr. MCPA/mecoprop/dicamba applied: 20 May. Combine harvested large combine plots: 22 Aug, small combine plots: 23 Aug.

Spring beans: Seed drilled at 200 lb: 24 Mar, 1969. Insecticide applied: 19 May. Combine harvested: 10 Sept.

Potatoes: Paraquat applied: 5 Sept, 1968. 'Nitro-Chalk' applied 9 Apr, 1969. Plots rotary cultivated, potatoes machine planted: 10 Apr. Paraquat and linuron applied: 12 May. Grubbed: 18 June. Rotary ridged: 23 June. Mancozeb applied: 15 July, 4 Aug, 22 Aug, Insecticide applied: 4 Aug. Haulm destroyed mechanically: 2 Oct. Lifted: 3 Oct.

NOTE: In autumn 1968 all plots of Strip 3 received extra fertiliser in error - 12 lb K, 2 lb Na, 1.5 lb Mg.

SUMMARY OF RESULTS

BARLEY

Treatment**	N				Mean	
	0	1	2	3		
GRAIN: CWT						
1852-1969	1852-1966					
-	-	9.3	19.3	24.9	30.1	20.9
-	N	12.3	17.9	20.5	25.3	19.0
P	-	13.5	23.8	31.6	35.5	26.1
P	N	15.6	25.2	31.7	31.1	25.9
K Na Mg	-	5.4	19.5	30.7	38.6	23.6
K Na Mg	N	12.4	21.9	26.1	30.5	22.7
P K Na Mg	-	9.0	23.2	36.0	45.3	28.4
P K Na Mg	N	14.4	27.6	39.4	41.6	30.8
	D	17.6	33.5	43.2	39.4	33.4
	(D)	8.8	14.1	39.3	38.3	25.1
	(Ashes)	10.0	22.3	29.0	34.7	24.0
	-	3.0	17.6	21.4	31.3	18.3

STRAW: CWT

-	-	3.6	9.9	13.1	18.8	11.4
-	N	3.6	8.2	10.8	15.1	9.4
P	-	7.3	10.8	20.1	20.2	14.6
P	N	7.3	13.2	18.6	20.9	15.0
K Na Mg	-	2.4	9.9	18.9	21.9	13.3
K Na Mg	N	4.9	10.6	18.0	20.6	13.5
P K Na Mg	-	2.3	15.1	25.2	33.8	19.1
P K Na Mg	N	5.8	17.1	28.5	29.1	20.1
	D	13.8	23.4	36.6	32.8	26.6
	(D)	3.2	9.4	24.7	27.9	16.3
	(Ashes)	4.8	11.5	17.7	19.1	13.3
	-	2.1	8.6	11.4	19.1	10.3

** For explanation of symbols see 'Details 1967'

BARLEY

Treatment**	N				Mean
	0	1	2	3	

GRAIN: CWT

1852-1969	1852-1966					
-	N*	13.7	17.3	21.7	22.8	18.9
Si	N*	12.3	26.8	37.5	36.6	28.3
P	N*	15.6	28.2	35.1	38.5	29.4
P Si	N*	16.1	29.0	37.6	36.2	29.7
K Na Mg	N*	8.1	21.0	25.5	24.7	19.8
K Na Mg Si	N*	14.1	26.1	37.8	43.6	30.4
P K Na Mg	N*	10.7	27.6	38.5	38.2	28.8
P K Na Mg Si	N*	13.1	29.8	37.6	50.0	32.6
-	R(c)	14.9	33.1	43.4	45.9	34.3
-	R(r)	27.3	37.5	42.4	45.9	38.3
P	R(c)	20.6	31.6	41.2	48.6	35.5
P	R(r)	21.2	30.4	40.1	44.1	34.0
K Na Mg	R(c)	15.9	30.4	39.0	47.1	33.1
K Na Mg	R(r)	15.5	28.0	36.9	32.2	28.2
P K Na Mg	R(c)	21.9	33.0	43.4	43.1	35.3
P K Na Mg	R(r)	20.0	39.1	43.5	42.2	36.2

STRAW: CWT

-	N*	11.4	15.8	19.6	23.6	17.6
Si	N*	7.6	19.7	32.2	27.6	21.8
P	N*	11.6	27.2	32.7	41.4	28.2
P Si	N*	10.9	19.0	27.5	36.3	23.4
K Na Mg	N*	3.5	19.1	22.9	22.6	17.0
K Na Mg Si	N*	10.6	18.5	27.4	35.7	23.0
P K Na Mg	N*	7.1	24.0	36.6	49.3	29.2
P K Na Mg Si	N*	7.1	27.0	36.1	50.3	30.1
-	R(c)	3.5	23.5	28.6	37.3	23.2
-	R(r)	17.6	31.6	36.7	36.0	30.5
P	R(c)	6.9	19.3	31.8	36.2	23.5
P	R(r)	12.5	14.9	23.7	32.4	20.9
K Na Mg	R(c)	10.1	22.6	27.0	37.8	24.4
K Na Mg	R(r)	6.2	21.6	22.9	37.4	22.0
P K Na Mg	R(c)	8.0	29.7	34.7	35.7	27.0
P K Na Mg	R(r)	9.1	34.8	38.7	36.6	29.8

** For explanation of symbols see 'Details 1967'

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

* Estimated value. The recorded yield was very small and because the appearance of the crop had been normal this was treated as an erroneous record and an estimated value substituted.

BARLEY

Plots	Treatment**			GRAIN:CWT	STRAW:CWT
	1852-1969	1852-1966			
551	N2	PK	N	19.1	30.1
561		PK	-	7.7	4.4
571	N2	-	N*	28.3	12.9
581	N2	-	N*	28.6	13.8

** For explanation of symbols see 'Details 1967'

Mean D.M. %: Grain: 80.8
 Straw: 88.0

BEANS

Treatments**		GRAIN:CWT	STRAW:CWT
1852-1969	1852-1966		
-	N*	8.1	2.5
Si	N*	8.1	4.0
P	N*	4.2	3.3
P	Si	3.7	2.6
K Na Mg	N*	15.8	6.7
K Na Mg Si	N*	16.3	7.6
P K Na Mg	N*	24.0	14.7
P K Na Mg Si	N*	20.6	11.9
-	R	15.2	7.6
P	R	12.8	6.6
K Na Mg	R	20.0	10.8
P K Na Mg	R	29.9	17.7

Mean D.M. %: Grain: 72.0
 Straw: 64.1

** For explanation of symbols see 'Details 1967'

POTATOES

1968

Treatment**		NO	N1	N2	N3	Mean
TOTAL TUBERS: TONS						
1852-1969	1852-1966					
-	R	10.54	9.83	9.94	10.23	10.13
P	R	4.36	4.52	6.08	5.54	5.13
K Na Mg	R	14.64	14.99	15.43	16.19	15.31
P K Na Mg	R	18.96	17.88	18.68	19.09	18.65
% WARE						
1852-1969	1852-1966					
-	R	90.3	91.1	88.8	90.3	90.1
P	R	67.4	67.5	78.2	71.8	71.2
K Na Mg	R	93.3	91.2	92.7	93.1	92.6
P K Na Mg	R	90.9	92.0	92.7	90.4	91.5

** For explanation of symbols see 'Details 1967'