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Numerical Results of the Field Experiments 1968

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68/B/7 Intensive Cereals - Ley, Potatoes, Wheat, Barley

Rothamsted Research

Rothamsted Research (1970) *68/B/7 Intensive Cereals - Ley, Potatoes, Wheat, Barley* ; Numerical Results Of The Field Experiments 1968, pp 111 - 118 - DOI:

<https://doi.org/10.23637/ERADOC-1-58>

68/B/7.1

INTENSIVE CEREALS

(WIC)

Woburn Stackyard Classical Site 1968 - the third year

For treatments, and previous years' results, see 'Results' 66/B/9 and 67/B/9.

Area of each sub-plot: 0.0103. Area harvested: Ley - 0.0022, wheat - 0.0033, barley - 0.0066, potatoes - 0.0034.

Wheat blocks only: A test of magnesium was introduced on eighth plots: None (0), 162 lb MgO as Epsom salts (MG).

Basal applications:

All crops: 1.0 cwt P2O5, 2.0 cwt K2O, half ploughed in, half worked into the seedbed.

Potatoes: 1.2 cwt N as 'Nitro-Chalk'.

Ley: 0.4 cwt N as 'Nitro-Chalk'.

Cultivations, etc.:

All plots: Half PK applied: 14 Sept, 1967. Ploughed: 15 - 16 Sept.

Ley: Mg and remaining PK applied, seeds sown at 29 lb: 20 Sept.

'Nitro-Chalk' applied: 27 Mar, 1968. Cut twice: 5 June, 6 Aug.

Potatoes: Sprayed with paraquat at 0.5 lb in 33 gals on the permanent barley blocks: 2 Mar. Remaining PK, 'Nitro-Chalk', and Mg applied: 26 Mar. Rotary cultivated, potatoes planted: 27 Mar. Earthed up: 22 May. Grubbed, rotary ridged: 13 June. Sprayed with mancozeb at 1.2 lb plus demeton-s-methyl at 3.5 oz in 38 gals on the permanent wheat blocks only: 12 July. Sprayed with mancozeb at 1.2 lb in 38 gals: 18 July, 30 July. Sprayed with undiluted BOV at 15 gals: 4 Sept. Lifted: 24 Sept.

Wheat: Remaining PK and Mg applied, seed drilled at 170 lb: 13 Oct, 1967. 'Nitro-Chalk' applied: 9 Apr, 1968. Sprayed with ioxynil/mecoprop (Actril C at 6 pints in 25 gals): 25 Apr. Combine harvested: 22 Aug.

Barley: Sprayed with paraquat at 0.5 lb in 33 gals: 2 Mar. Remaining PK applied: 4 Mar. Seed drilled at 140 lb: 6 Mar. 'Nitro-chalk' applied 15 Mar. Sprayed with ioxynil/mecoprop (Actril C at 5 pints in 25 gals): 26 Apr. Combine harvested: 20 Aug.

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NOTE: (1) Estimates of eyespot (*Cercospora herpotrichoides*) and take-all (*Ophiobolus graminis*) were made in May and June on barley and in April and July on wheat.

Standard errors per plot:

Ley, dry matter: Wheat blocks 1/4 plot

1st cut: 4.56 or 11.1% (4 d.f.)

2nd cut: 1.06 or 8.6% (4 d.f.)

Total of 2 cuts: 4.28 or 8.0% (4 d.f.)

Wheat, grain:

1/4 plot: 2.02 or 8.4% (12 d.f.)

1/8 plot: 1.63 or 6.8% (16 d.f.)

Barley, grain:

1/4 plot: 2.16 or 7.7% (12 d.f.)

Potatoes, total tubers: Wheat blocks

1/4 plot: 1.528 or 14.3% (4 d.f.)

68/B/7.3

SUMMARY OF RESULTS

LEY (C4)

PERMANENT WHEAT BLOCK

N in 1966

	N1	N2	N3	N4	Mean
1ST CUT					
	(±3.22)*				(±1.61)
O	35.2	42.4	43.1	42.2	40.7
MG	39.5	40.3	41.7	44.5	41.5
Mean	37.3	41.4	42.4	43.4	41.1

2ND CUT					
	(±0.75)*				(±0.38)
O	9.0	9.8	9.9	12.4	10.3
MG	14.3	14.2	14.1	14.4	14.3
Mean	11.7	12.0	12.0	13.4	12.3

TOTAL OF 2 CUTS					
	(±3.02)*				(±1.51)
O	44.2	52.3	53.0	54.6	51.0
MG	53.8	54.5	55.8	58.9	55.8
Mean	49.0	53.4	54.4	56.8	53.4

Mean D.M. %: 1st cut: 22.7
 2nd cut: 22.4
 Total of 2 cuts: 22.5

* For use in vertical and interaction comparisons only

68/B/7.4

LEY (C4)

PERMANENT BARLEY BLOCK

N in 1966

N1	N2	N3	N4	Mean
1ST CUT				
49.7	46.0	46.6	46.9	47.3
2ND CUT				
14.8	14.6	16.0	17.1	15.6
TOTAL OF 2 CUTS				
64.4	60.6	62.6	64.0	62.9

Mean D.M. %: 1st cut: 22.7
 2nd cut: 20.4
 Total of 2 cuts: 21.6

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WHEAT (C1, C2, C3, C6)

GRAIN

Crop in 1966 1967		N1	N2	N3	N4	O	MG	Mean
		$(\pm 1.43)^*$				$(\pm 0.58)^*$		(± 1.48)
L	P	28.2	34.5	32.6	29.0	31.2	31.0	31.1
P	W	21.8	27.2	28.4	28.9	25.7	27.4	26.6
W	W	13.2	18.5	24.5	22.1	19.2	19.9	19.6
W	W	17.2	17.7	20.3	20.7	18.0	19.9	19.0
						(1) and (2)		(± 0.71)
		N1				20.3	19.9	20.1
		N2				23.7	25.2	24.4
		N3				25.8	27.1	26.4
		N4				24.5	25.9	25.2
		Mean (± 0.29)				23.5	24.6	24.0

(1) (± 0.82) For use in vertical and diagonal comparisons only

(2) (± 0.58) For use in horizontal and interaction comparisons only

* For use in horizontal and interaction comparisons only

Mean D.M. %: 85.0

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WHEAT (C1, C2, C3, C6)

STRAW

Crop in 1966 1967		N1	N2	N3	N4	O	MG	Mean
L	P	31.9	40.0	39.0	36.6	36.5	37.2	36.9
P	W	26.4	36.6	36.0	37.6	33.2	35.1	34.1
W	W	19.3	27.0	32.6	31.0	27.3	27.7	27.5
W	W	20.5	24.8	28.3	26.7	24.3	25.8	25.1
				N1		23.9	25.1	24.5
				N2		31.6	32.6	32.1
				N3		33.6	34.4	34.0
				N4		32.2	33.7	33.0

Mean D.M. %: 80.2

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BARLEY (C1, C2, C3, C6)

PERMANENT BARLEY BLOCKS

GRAIN

Crop in 1966	1967	N1	N2	N3	N4	Mean
		(±1.53)*				(±1.56)
L	P	30.2	34.3	29.1	26.8	30.1
P	B	25.5	31.6	29.3	25.5	27.9
B	B	21.8	28.8	27.0	25.9	25.9
B	B	24.4	31.2	28.9	27.8	28.1
Mean (±0.76)		25.5	31.5	28.6	26.5	28.0

* For use in horizontal and interaction comparisons only

Mean D.M. %: 81.0

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POTATOES (C5)

PERMANENT WHEAT BLOCKS

N in 1967					
	N1	N2	N3	N4	Mean
TOTAL TUBERS					
	(±1.080)*				(±0.540)
□	11.17	9.51	12.02	9.23	10.48
MG	11.72	9.79	11.94	10.08	10.88
Mean	11.45	9.65	11.98	9.66	10.68
% WARE					
□	94.9	96.4	95.2	94.9	95.4
MG	96.2	96.2	96.9	96.1	96.3
Mean	95.6	96.3	96.0	95.5	95.9