ROTHAMSTED RESEARCH

Yields of the Field Experiments 1965

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65/R/C/22 N P K - Old Grass (Park Grass Microplots)

Rothamsted Research

Rothamsted Research (1966) *65/R/C/22 N P K - Old Grass (Park Grass Microplots) ;* Yields Of The Field Experiments 1965, pp 197 - 207 **- DOI: https://doi.org/10.23637/ERADOC-1-159**

65/C/22.1

PARK GRASS MICROPLOTS

(PGM 81 - 160)

Effect of NPK on old grass, plots 5/1 (unmanured 1898 - 1964, unlimed) and 5/2 (PK 1898 - 1964, unlimed), 1965.

Design: Each of plots 5/1 and 5/2 - single replicate of 2 x 4 x 4 in 2 blocks of 8 plots each, with 4 additional plots per block.

Area of each plot: 0.0045. Area harvested: 0.0021.

Treatments:-

2 x 4 x 4: All combinations of:-

1. N*: 200 (N1), 400 lb (N2) as 'Nitro-Chalk', in 6 equal dressings, one for each cut.
2. P: None (P0), 15 (P1), 30 (P2), 60 lb (P4) as superphosphate.
3. K: None (K0), 100 (K2), 200 (K4), 400 lb (K8) as potassium chloride.

Additional plots (per block): All combinations of:

1. N*: 200 (N1), 400 lb (N2) as 'Nitro-Chalk'.
2. K: 50 (K1), 300 lb (K6) as potassium chloride, all receiving P2.

*In 1965, 3 cuts were taken on plot 5/1 and 4 on plot 5/2, the first cut being taken on plots 5/2 on May 18. Following this cut 'Nitro-Chalk' was applied on both plots, so that in all 4 dressings of N were applied on each plot. The actual rates of N applied were 133 (N1) and 267 lb (N2).

Basal applications: Ground chalk, 92 cwt to plot 5/2, 102 cwt to plot 5/1.

Cultivations, etc.: Ground chalk applied: Feb 2, 1965. PK dressings applied: Feb 22. 'Nitro-Chalk' applied: Mar 9. Cut: May 18 (5/2 only), June 23, Aug 9, Oct 27. 'Nitro-Chalk' applied to all plots after every cut except the last.

Standard errors per plot, dry matter.

Plot 5/1. 1st cut: 3.48 or 13.5% (11 d.f.)
2nd cut: 1.64 or 13.0% (11 d.f.)
3rd cut: 2.45 or 13.3% (11 d.f.)
Total of 3 cuts: 6.10 or 10.7% (11 d.f.)

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Standard errors per plot, dry matter.

Plot 5/2.	1st cut:	1.94 or 12.7%	(11 d.f.)
	2nd cut:	2.20 or 11.2%	(11 d.f.)
	3rd cut:	1.41 or 6.0%	(11 d.f.)
	4th cut:	1.12 or 5.5%	(11 d.f.)
Total of 4 cuts:		4.68 or 5.9%	(11 d.f.)

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SUMMARY OF RESULTS

PLOT 5/1: DRY MATTER

1ST CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±1.23)	15.9	24.6	27.7	31.7	25.0
			(±2.46)		(±1.23)
K0	16.9	24.8	26.7	30.6	24.8
K2	16.2	25.3	31.3	31.3	26.0
K4	16.9	26.4	28.6	32.8	26.2
K8	13.9	22.0	24.3	32.0	23.0
			(±1.74)		(±0.87)
N1	15.5	21.7	23.3	27.2	21.9
N2	16.4	27.6	32.2	36.2	28.1

	K0	K2	K4	K8
			(±1.74)	
N1	21.2	23.5	22.5	20.5
N2	28.3	28.5	29.9	25.6

K1 and K6 plots

	K1	K6	Mean
	(±2.46)		(±1.74)
N1	24.4	22.8	23.6
N2	32.4	33.9	33.2
Mean (±1.74)	28.4	28.4	28.4

General mean: 25.7

Mean D.M. %: 18.3

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65/C/22.4

PLOT 5/1: DRY MATTER

2ND CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.58)	7.4	12.4	14.0	15.6	12.4
			(±1.16)		(±0.58)
K0	5.9	11.7	13.7	12.5	11.0
K2	8.5	11.8	14.3	15.9	12.6
K4	8.0	13.6	13.8	15.5	12.8
K8	7.2	12.6	14.2	18.3	13.1
			(±0.82)		(±0.41)
N1	7.5	11.5	12.0	13.1	11.0
N2	7.4	13.4	16.0	18.0	13.7

	K0	K2	K4	K8
			(±0.82)	
N1	9.6	11.3	11.0	12.1
N2	12.3	13.9	14.5	14.1

K1 and K6 plots

	K1	K6	Mean
	(±1.16)		(±0.82)
N1	9.8	12.9	11.4
N2	17.1	14.9	16.0
Mean (±0.82)	13.4	13.9	13.7

General mean: 12.6

Mean D.M. %: 19.5

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PLOT 5/1: DRY MATTER

3RD CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.87)	12.3	17.5	20.2	21.9	18.0
			(±1.73)		(±0.87)
K0	12.0	16.6	17.7	18.9	16.3
K2	11.9	18.7	21.9	22.6	18.8
K4	11.5	17.4	20.2	23.9	18.2
K8	13.7	17.2	21.1	22.3	18.6
			(±1.23)		(±0.61)
N1	11.8	15.6	17.3	19.7	16.1
N2	12.7	19.4	23.1	24.2	19.9

	K0	K2	K4	K8
			(±1.23)	
N1	14.8	16.4	16.9	16.3
N2	17.8	21.2	19.6	20.9

K1 and K6 plots

	K1	K6	Mean
	(±1.73)		(±1.23)
N1	18.2	17.4	17.8
N2	19.8	25.5	22.6
Mean (±1.23)	19.0	21.4	20.2

General mean: 18.4

Mean D.M. %: 24.5

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PLOT 5/1: DRY MATTER

TOTAL OF 3 CUTS

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±2.15)	35.6	54.6	62.0	69.2	55.3
			(±4.31)		(±2.15)
K0	34.8	53.2	58.2	62.1	52.0
K2	36.6	55.8	67.5	69.8	57.4
K4	36.4	57.4	62.6	72.3	57.2
K8	34.8	51.8	59.6	72.6	54.7
			(±3.05)		(±1.52)
N1	34.8	48.8	52.6	59.9	49.0
N2	36.5	60.3	71.3	78.4	61.6

	K0	K2	K4	K8
			(±3.05)	
N1	45.6	51.2	50.4	48.8
N2	58.4	63.6	63.9	60.6

K1 and K6 plots

	K1	K6	Mean
	(±4.31)		(±3.05)
N1	52.4	53.1	52.7
N2	69.2	74.3	71.8
Mean (±3.05)	60.8	63.7	62.2

General mean: 56.7

Mean D.M. %: 20.8

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PLOT 5/2: DRY MATTER

1ST CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.68)	15.7	14.3	16.2	15.1	15.3
			(±1.37)		(±0.68)
K0	15.5	13.2	18.8	13.7	15.3
K2	16.2	13.2	14.0	16.7	15.0
K4	15.0	16.7	16.5	15.8	16.0
K8	16.2	14.1	15.7	14.1	15.0
			(±0.97)		(±0.48)
N1	12.6	11.3	12.2	11.1	11.8
N2	18.9	17.3	20.3	19.1	18.9

	K0	K2	K4	K8
			(±0.96)	
N1	12.0	12.4	11.6	11.1
N2	18.6	17.6	20.4	18.9

K1 and K6 plots

	K1	K6	Mean
	(±1.37)		(±0.97)
N1	11.2	13.6	12.4
N2	18.7	14.6	16.7
Mean (±1.37)	15.0	14.1	14.5

General mean: 15.2

Mean D.M. %: 15.4

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PLOT 5/2: DRY MATTER

2ND CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.78)	19.7	19.2	19.4	19.2	19.4
			(±1.55)		(±0.78)
K0	18.2	20.5	18.2	21.6	19.6
K2	19.9	18.7	20.9	18.4	19.5
K4	22.4	18.2	20.1	18.1	19.7
K8	18.3	19.3	18.4	18.7	18.7
			(±1.10)		(±0.55)
N1	18.9	16.3	18.4	16.5	17.5
N2	20.5	22.0	20.4	22.0	21.2

	K0	K2	K4	K8
			(±1.10)	
N1	16.7	17.6	19.0	16.8
N2	22.6	21.4	20.5	20.5

K1 and K6 plots

	K1	K6	Mean
	(±1.55)		(±1.10)
N1	19.1	18.8	18.9
N2	22.5	23.0	22.7
Mean (±1.10)	20.8	20.9	20.8

General mean: 19.7

Mean D.M. %: 13.8

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PLOT 5/2: DRY MATTER

3RD CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.50)	23.2	23.4	23.5	23.5	23.4
			(±1.00)		(±0.50)
K0	22.8	23.8	25.0	24.5	24.0
K2	22.4	23.6	25.4	23.2	23.7
K4	23.2	22.9	21.9	22.8	22.7
K8	24.4	23.1	21.9	23.6	23.2
			(±0.70)		(±0.35)
N1	20.0	20.6	21.2	20.6	20.6
N2	26.5	26.1	25.9	26.4	26.2

	K0	K2	K4	K8
			(±0.70)	
N1	21.8	21.8	19.6	19.2
N2	26.2	25.6	25.9	27.3

K1 and K6 plots

	K1	K6	Mean
	(±1.00)		(±0.70)
N1	19.7	21.7	20.7
N2	27.4	26.7	27.1
Mean (±0.70)	23.6	24.2	23.9

General mean: 23.5

Mean D.M. %: 18.3

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PLOT 5/2: DRY MATTER

4TH CUT

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±0.40)	21.0	20.8	20.3	20.3	20.6
			(±0.80)		(±0.40)
K0	20.7	21.8	21.2	19.9	20.9
K2	20.7	19.4	20.6	20.0	20.2
K4	20.8	21.3	21.1	21.1	21.1
K8	21.7	20.6	18.2	20.0	20.2
			(±0.56)		(±0.28)
N1	19.3	18.2	18.9	17.8	18.5
N2	22.7	23.4	21.7	22.7	22.6

	K0	K2	K4	K8
			(±0.56)	
N1	19.4	18.8	18.2	17.7
N2	22.5	21.5	23.9	22.6

K1 and K6 plots

	K1	K6	Mean
		(±0.80)	(±0.56)
N1	19.3	18.5	18.9
N2	23.0	23.0	23.0
Mean (±0.56)	21.2	20.8	21.0

General mean: 20.6

Mean D.M. %: 21.1

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PLOT 5/2: DRY MATTER

TOTAL OF 4 CUTS

Excluding K1 and K6 plots

	P0	P1	P2	P4	Mean
Mean (±1.66)	79.6	77.6	79.5	78.1	78.7
			(±3.31)		(±1.66)
K0	77.3	79.3	83.2	79.8	79.9
K2	79.2	74.8	81.0	78.3	78.3
K4	81.4	79.1	79.6	77.9	79.5
K8	80.6	77.1	74.1	76.4	77.0
			(±2.34)		(±1.17)
N1	70.7	66.4	70.7	66.0	68.4
N2	88.5	88.7	88.3	90.2	88.9

	K0	K2	K4	K8
			(±2.34)	
N1	69.9	70.6	68.4	64.9
N2	89.9	86.0	90.6	89.2

K1 and K6 plots

	K1	K6	Mean
	(±3.31)		(±2.34)
N1	69.3	72.7	71.0
N2	91.7	87.2	89.5
Mean (±2.34)	80.5	80.0	80.2

General mean: 79.0

Mean D.M. %: 17.2

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