ROTHAMSTED RESEARCH

Yields of the Field Experiments 1966

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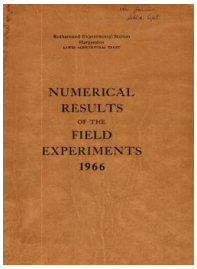

66/R/B/2 and 66/W/B/2 Reference Plots (Ra, Rg, Wra, Wrf)

Rothamsted Research

Rothamsted Research (1967) *66/R/B/2 and 66/W/B/2 Reference Plots (Ra, Rg, Wra, Wrf) ;* Yields Of The Field Experiments 1966, pp 55 - 64 **- DOI: https://doi.org/10.23637/ERADOC-1-158**

REFERENCE PLOTS

ROTHAMSTED (R) GREAT FIELD IV AND HIGHFIELD IX

AND

WOBURN (W) STACKYARD SERIES C, 1966

(RA, RG, WRA and WRF)

For details of previous year's results and for rates of fertilisers, etc., see 'Results' 58/Bc/1, 59/Bc/1, 60/B/3, 61/B/2, 62/B/2, 63/B/2, 64/B/2, 64/B/11 and 65/B/2. For conifer seedbeds and transplants see 63/B/2, 64/B/2 and 65/B/2.

Great Field IV:
Variety of wheat now Champlein and variety of barley Deba Abed on all plots.

Highfield IX:
P is now applied as granular superphosphate on all blocks.

Woburn:
Variety of oats now Maris Quest and variety of barley Maris Badger. Each plot of sugar beet was split for a test of 0 v 2 cwt sulphate of magnesia applied in May (with 2 cwt v 0 applied after lifting to balance the total dressings).

Woburn Forestry Reference Plots:
Bed 1: All plots with N received 4 topdressings of 4.5g.N as 'Nitro-Chalk', i.e. one more topdressing than in previous years. No formalin was applied.
Bed 2: All manured plots received 4 topdressings of 'Nitro-Chalk' (4.5g.N per occasion for seedbeds, 3g.N per occasion for transplants) compared with only 3 topdressings in 1965.

Cultivations, etc.:-
Great Field IV (R):-
Winter wheat: Dug by hand: Oct 6, 1965. P,K,Mg, Ca and S applied, seed drilled: Oct 8. First N dressings applied (excluding additional plots): Mar 7, 1966. Second N dressings applied, all N applied to additional plots: Apr 30. Trace element spray applied: May 9. Harvested: Aug 18.
Kale: Dung applied, plots dug by hand: Nov 4, 1965. P,K, Mg, Ca and S applied: Mar 7, 1966. First N dressings applied to additional plots, all N to remainder, plots rotary cultivated, seed drilled: Mar 17. Plots resown because of poor take: Apr 28. Second N dressing applied to additional plots: May 31. Trace element spray applied: June 10. Harvested: Oct 26.

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Barley: Plots dug by hand: Nov 12, 1965. P, K, Mg, Ca and S applied: Mar 7, 1966. All N applied, plots rotary cultivated, seed drilled: Mar 15. Trace element spray applied: May 31. Harvested: Aug 19.

Grass-clover ley: Undersown in barley: Mar 1, 1965. P and K applied (excluding additional plots): Feb 23, 1966. P, K, Mg, Ca and S applied to additional plots: Mar 7, All N applied: Mar 17. Trace element spray applied: May 9. Cut four times: Oct 20, 1965, May 27, 1966, July 8, Sept 16.

Potatoes: Dung applied, plots dug by hand: Nov 10, 1965. P, K, Mg, Ca and S applied: Mar 7, 1966. First N dressings applied to additional plots, all N applied to remaining plots, plots rotary cultivated, potatoes planted: Mar 23. Trace element spray applied: June 10. Earthed up: June 13. Sprayed four times with triphenyltin acetate at 6 oz in 120 gals: June 29, July 13, July 28, Aug 12. Lifted: Plots with neither K nor dung (where haulm died early): Aug 5, remainder: Sept 14.

Permanent grass: Dung applied: Feb 15, 1966. P and K applied: Feb 23. N applied - first dressing: Mar 14, second: May 5, third: July 8. Cut 3 times: May 5, July 8 and Sept 28.

NOTES: (1) Yields of dry matter were obtained from each crop.
(2) The percentages of N, P and K were measured in each crop.

Stackyard Series C (W):-

Oats: Plots dug by hand: Sept 27, 1965. P and K applied, seed drilled: Oct 19. First N dressing applied: Mar 8, 1966. Second N dressing applied: May 2. Harvested: Aug 17.

Sugar beet: Dung applied, plots dug by hand: Dec 7, 1965. P and K applied: Feb 28, 1966. First N dressing applied, plots rotary cultivated, seed drilled: Mar 22. Sprayed with 3 oz DDT in 40 gals: May 2. Mg fertiliser applied to half plots: May 26. Singled, second N dressing applied: June 2. Sprayed 4 times with dimethoate and DDT mixture at 1 pt in 40 gals: June 2, June 21, July 7, July 26. Harvested: Oct 10. Mg applied to other half plots: Oct 10.

Barley: Plots dug by hand: Dec 7, 1965. P and K applied: Feb 28, 1966. First N dressing applied, rotary cultivated, seed drilled: Mar 8. Second N dressing applied: May 2. Harvested: Aug 17.

Grass-clover ley: Undersown in barley: Mar 25, 1965. P and K applied: Feb 28, 1966. All N applied: Mar 8. Cut four times: Oct 19, 1965, May 8, 1966, July 6, Sept 13.

Potatoes: Dung applied, plots dug by hand: Dec 14, 1965. P and K applied: Feb 28, 1966. First N dressing applied, plots rotary cultivated, setts planted: Mar 31. Second N dressing applied: May 26. Earthed up: June 2. Sprayed twice with

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Bordeaux mixture at 5 lb in 40 gals: June 30, July 26. Sprayed with triphenyltin acetate at 6 oz in 124 gals: July 13. Lifted: Plots with neither K nor dung: Aug 4. Remaining plots: Sept 13.

Permanent grass: Dung, P and K applied: Feb 28, 1966. First N dressing applied: Mar 8. Second N dressing applied: May 9. Third N dressing applied: June 21. Cut four times: May 9, June 21, Aug 22, Oct 17.

NOTES: (1) Samples were taken for determination of dry matter for each crop, and the percentage N, P and K.
(2) A determination of the percentage of sugar in sugar beet, and the percentage of Mg leaves of sugar beet was carried out.
(3) Surface soil samples were taken from each block for a determination of soil pH.

Errata: To 'Results' 61/B/2 N1, N2 to potatoes 0.75, 1.50 cwt N per acre (formerly 0.6, 1.2), N1, N2 to permanent grass 1.5, 3.0 cwt N per acre (formerly 1.0, 2.0).
To 'Results' 63/B/2 N1, N2 to ley 0.25, 0.5 cwt N per acre (formerly 0.15, 0.3), to oats 0.5, 1.0 cwt N per acre (formerly 0.3, 0.6), to barley 0.5, 1.0 cwt N per acre (formerly 0.45, 0.9), to fruit 0.5, 1.0 cwt N per acre (formerly 0.6, 1.2). The potash rates for all crops, nil, 2.0 cwt K_2O per acre (formerly nil, 1.0).

Grazed Reference Plots (Highfield IX (R)):-
Cultivations, etc.: P and K fertilisers applied, ground chalk applied to appropriate plots: Dec 20, 1965. First N dressings applied: Mar 4, 1966. Sample cuts taken 4 times: May 3, June 27, Aug 25, Oct 31. Sampling cages moved after each cut. N dressing applied after each cut except the last.

NOTES: (1) The percentage of N, P and K in the dry grass were measured.
(2) Visual estimates were made of the percentage surface area covered by clover leaves.

Conifer seedbeds and transplants:
Bed 1: All manures (other than N) dug in: Mar 17, 1966. Seed sown: Mar 23. T.V.O. pre-emergent spray: Apr 21. N topdressed: June 22, July 12, Aug 10, Sept 9.
Bed 2: Seedbeds as for Bed 1. Transplant plots lined out: Mar 28. All manures (other than N) as for seedbeds. N topdressed on transplants: May 10, June 22, July 12, Aug 10.

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NOTES: (1) Height assessments and samples for analysis as in 1965.
(2) Plots lacking N, K and Mg had typical deficiency symptoms.

Standard errors per plot.

Highfield IX (R), Dry Matter:

1st cut:	3.31 or 22.8% (39 d.f.)
2nd cut:	5.06 or 10.3% (39 d.f.)
3rd cut:	3.96 or 10.1% (39 d.f.)
4th cut:	3.77 or 16.0% (38 d.f.)
Total of 4 cuts:	9.08 or 7.2% (38 d.f.)

Stackyard Series C (W), Sitka Spruce Bed 1:

Mean height:	0.219 or 8.8% (11 d.f.)
Plant number:	168.4 or 16.5% (11 d.f.)

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SUMMARY OF RESULTS

GREAT FIELD IV (R): ORIGINAL PLOTS

Treatment	Winter wheat: GRAIN	STRAW	Kale: TOTAL WEIGHT	Barley: GRAIN	STRAW	Ley: DRY MATTER 1st cut	2nd cut	3rd cut	4th cut	Total of 4 cuts	Potatoes: TOTAL TUBERS	Permanent grass: DRY MATTER 1st cut	2nd cut	3rd cut	Total of 3 cuts
None	33.3	37.5	11.64	29.9	26.2	8.0	19.0	18.3	15.2	60.5	3.79	3.4	21.3	18.6	43.3
N1	28.4	32.9	14.58	38.8	31.5	5.1	17.9	16.0	14.9	53.9	3.90	8.4	21.6	24.0	54.0
P	33.5	40.6	14.93	34.9	25.8	5.8	16.4	11.9	10.2	44.3	6.78	3.0	16.9	14.8	34.7
N1P	22.1	36.1	19.10	35.2	30.8	3.2	23.0	10.1	6.5	42.8	3.60	9.3	23.4	24.4	57.1
K	33.4	37.8	6.94	29.6	23.5	10.7	24.5	26.3	23.7	85.2	15.88	2.9	15.7	19.2	37.8
N1K	38.9	45.2	10.59	33.8	28.1	10.6	28.1	31.5	23.1	93.3	17.80	8.2	29.6	32.9	70.7
PK	40.7	56.9	9.55	38.5	28.5	14.5	34.1	33.8	23.1	105.5	17.45	4.2	20.5	20.2	44.9
N1PK	53.2	75.4	15.62	51.2	40.5	11.6	36.7	31.9	24.2	104.4	16.76	10.0	30.9	27.1	68.0
N2PK	55.1	71.9	20.32	54.9	47.8	9.9	39.3	26.9	25.9	102.0	21.27	19.7	30.4	31.2	81.3
D	44.7	56.8	13.37	50.0	41.5	16.6	31.8	31.6	21.6	101.6	19.36	23.0	26.9	31.4	81.3
N1PKD	54.2	84.7	20.84	57.4	51.4	14.0	40.4	37.3	34.7	126.4	25.87	25.8	38.3	32.4	96.5
N2PKD	51.2	80.7	21.53	61.8	54.5	11.0	39.7	31.9	26.8	109.4	26.74	29.5	29.3	37.4	96.2
Mean D.M.%:	83.6	67.8		76.8	50.9	19.2	17.0	17.3	19.6	18.3		21.7	23.4	25.4	23.5

66/B/2.5

GREAT FIELD (R): ADDITIONAL PLOTS

Treatment	Winter wheat GRAIN	Winter wheat STRAW	Kale: TOTAL WEIGHT	Barley GRAIN	Barley STRAW	Ley: DRY MATTER 1st cut	Ley: DRY MATTER 2nd cut	Ley: DRY MATTER 3rd cut	Ley: DRY MATTER 4th cut	Total of 4 cuts	Potatoes TOTAL TUBERS
None	35.8	39.8	17.71	41.2	31.1	7.0	20.5	15.2	15.9	58.6	3.26
N2PK	46.8	62.9	30.90	56.8	54.1	10.8	35.3	15.7	22.9	84.7	20.23
N2 PK Mg Ca	51.5	72.2	27.26	56.0	53.5	9.7	35.9	14.2	22.2	82.0	19.54
N2 PK Mg S	54.4	74.6	30.56	55.8	44.6	8.8	37.6	10.6	27.4	84.4	21.10
N2 PK Ca S	49.9	73.5	29.00	55.2	51.9	10.0	39.2	17.3	26.1	92.6	16.41
N2 PK Mg Ca S	54.1	77.8	30.38	56.2	52.9	10.5	37.0	19.7	24.6	91.8	19.36
N2 PK Mg Ca S TE	49.6	64.2	30.38	57.2	48.8	9.2	37.4	16.2	21.6	84.4	20.06
Mean D.M. %:	85.3	69.2		84.1	65.4	19.4	19.1	19.2	19.0	19.2	

66/B/2.6

STACKYARD SERIES C (W)

Treatment	Oats GRAIN	Oats STRAW	Sugar beet ROOTS	Sugar %	Total sugar: cwt per acre	Barley GRAIN	Barley STRAW	Ley: DRY MATTER 1st cut	Ley: DRY MATTER 2nd cut	Ley: DRY MATTER 3rd cut	Ley: DRY MATTER 4th cut	Total of 4 cuts	Potatoes TOTAL TUBERS	Permanent grass: DRY MATTER 1st cut	Permanent grass: DRY MATTER 2nd cut	Permanent grass: DRY MATTER 3rd cut	Permanent grass: DRY MATTER 4th cut	Total of 4 cuts
None	16.2	15.1	9.41	14.5	27.3	10.2	8.2	6.5	14.4	23.6	17.2	61.7	4.22	9.0	11.3	10.6	4.7	35.6
N1	30.4	33.1	13.58	14.2	38.7	21.3	17.4	5.2	19.4	21.5	15.5	61.6	5.56	9.7	18.0	19.2	5.3	52.2
P	15.9	15.2	9.72	14.3	27.8	12.7	9.5	8.6	14.7	18.8	13.9	56.0	4.64	7.9	9.5	9.5	4.0	30.9
N1P	28.0	28.5	11.11	14.1	31.4	21.3	19.5	7.0	21.2	20.0	14.8	63.0	5.50	10.7	19.9	19.3	5.0	54.9
K	15.6	18.4	12.66	15.0	38.0	10.4	8.2	10.0	8.1	26.6	20.3	65.0	7.18	9.1	13.9	13.5	6.5	43.0
N1K	32.0	36.7	16.52	14.9	49.4	31.3	29.4	8.0	22.7	23.6	19.9	74.2	8.56	13.3	21.9	22.5	5.6	63.3
PK	17.1	17.8	11.88	14.9	35.4	9.6	7.8	10.8	6.0	32.2	21.1	70.1	6.56	10.6	14.2	13.1	7.1	45.0
N1PK	31.5	40.4	16.05	14.9	48.0	28.4	25.4	10.2	19.6	32.2	27.7	89.7	10.42	16.4	21.7	24.9	6.0	69.0
N2PK	36.6	53.6	16.98	14.7	50.0	35.2	39.8	5.8	27.4	21.3	17.3	71.8	14.12	9.4	22.2	30.3	9.4	71.3
D	19.2	20.2	18.52	15.2	56.2	11.1	8.8	10.1	10.6	30.1	22.4	73.2	14.12	12.4	15.1	13.7	7.6	48.8
N1PKD	35.4	47.2	23.30	15.1	70.5	35.1	34.0	8.6	23.5	22.8	20.3	75.2	17.20	12.3	21.0	25.3	7.9	66.5
N2PKD	37.4	54.5	22.07	14.6	64.6	39.6	44.7	7.0	28.3	26.1	21.2	82.6	19.91	12.0	23.8	30.4	10.9	77.1
Mean D.M.%:	83.1	63.5				81.4	57.3	17.9	18.9	23.9	23.2	21.0		20.4	23.8	20.0	21.6	21.4

66/B/2.7

66/B/2.8

STACKYARD C (W). Bed 1

SITKA SPRUCE

Treatment	MEAN HEIGHT: INCHES	PLANT NUMBER: PER SQ YARD
	(±0.155)	(±119.0)
None	1.83 (1)	960 (2)
PK Mg	1.72	1119
NK Mg	2.04	1008
NP Mg	2.45	654
NPK	2.66	1044
NPK Mg	2.76 (1)	1054 (2)
NPK Mg F	2.71	1248
C	2.65	939
C NPK Mg	3.37	1266
L NPK Mg	3.12	963
Mean	2.49	1023

(1) (±0.110) (2) (±84.2)

Bed 2 PLOTS 1 - 6

	O	A	B	Mean
	MEAN HEIGHT: INCHES			
SS	8.38	12.31	13.02	11.24
NS	6.41	8.36	8.39	7.72

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Bed 2 PLOTS 7 - 12

	C	A	B	Mean
	MEAN HEIGHT: INCHES			
SS	1.00	2.80	3.39	2.39
NS	1.35	2.42	2.59	2.12
	PLANT NUMBER: PER SQ YD			
SS	1374	1134	1284	1264
NS	1128	1122	1122	1124

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66/B/2.10

HIGHFIELD IX (R)

GRASS: DRY MATTER

	1st cut	2nd cut	3rd cut	4th cut	Total of 4 cuts
PK	(±1.65)	(±2.53)	(±1.98)	(±1.88)	(±4.54)
N0 00	7.7	33.6	32.8	18.9	93.1
N1 00	13.8	47.9	37.9	22.4	122.0
A1 00	15.4	46.8	37.4	25.9	125.5
N0 10	10.2	43.0	33.5	16.9	103.6
N1 10	16.0	50.0	40.9	24.1	128.7
A1 10	17.8	50.7	36.8	26.2	131.6
N0 01	10.1	39.0	36.9	16.9	103.0
N1 01	17.5	52.2	40.3	28.4	138.3
A1 01	15.3	50.8	38.2	22.2	126.6
N0 11	8.6	41.6	38.2	18.8	107.2
N1 11	19.8	56.3	44.1	28.8	149.0
A1 11	20.3	55.0	38.9	25.9	140.1
N2 11	15.0	60.4	48.8	28.1	152.3
A2 11	15.6	62.4	44.4	25.3	147.7
Mean	14.5	49.3	39.2	23.5	126.3

Mean D.M. %: 1st cut: 18.6
2nd cut: 18.1
3rd cut: 20.4
4th cut: 18.8
Total of 4 cuts: 19.0

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