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Yields of the Field Experiments 1964

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Classical Experiments

Rothamsted Research

Rothamsted Research (1965) *Classical Experiments ; Yields Of The Field Experiments 1964*, pp 13 - 40 - DOI: <https://doi.org/10.23637/ERADOC-1-160>

64/A/1.1

WHEAT - BROADBALK 1964

(BK)

The 121st year

For history, treatments, etc. see 'Details' 1962.

All sections except VA are now sprayed annually with weedkillers.

Cultivations, etc.:

CROPPED SECTIONS. Ground chalk applied to section VA (first half of 5 ton dressing): Sept 19, 1963. Ground chalk applied to plot 19, Section IV at 5 tons: Sept 23. Normal annual dressing of ground chalk applied to plots: Sept 23 and Oct 1. Dung applied: Sept 24. Ploughed: Sept 25 - Oct 2. Ground chalk applied to Section VA (remainder of 5 ton dressing): Oct 11. Autumn fertilisers applied: Oct 15. Seed drilled at 3 bushels: Nov 30. Spring fertilisers applied: Apr 13, 1964. Second dressing of nitrate of soda applied to plot 16: Apr 17. All sections except VA sprayed with dicamba/MCPA ('Banlene' at 4 pints in 40 gals): May 7. Combine harvested: Aug 27. Variety: Squarehead's Master 13/4 (Rothamsted seed from Broadbalk).

FALLOW SECTION. (IV) Ploughed: Sept 25 - Oct 2, 1963, May 4, 1964, July 9.

BROADBALK WILDERNESS. Cultivations etc.:

Ungrazed meadow (north): Shrubs grubbed out: Dec 18 - 31, 1963.

Grazed meadow (centre): Grazed by sheep: Apr 28 - May 7, 1964, June 4 - 9, July 8 - 13, Aug 14 - 18. Grass topped: May 8, June 13, July 13, Aug 18, Nov 12.

64/A/1.2

SUMMARY OF RESULTS

GRAIN

Section Years after fallow	VA	II	IB	III	VB	IA	Mean
	1	2	3	4	6	13	
2A	15.9	30.1	24.3	23.3	24.9	20.1	24.3
2B	22.7	24.9	21.1	20.9	21.6	19.7	22.3
3	17.7	12.9	13.0	13.8	8.2	7.8	12.8
5	14.7	17.0	15.0	18.5	15.1	7.6	16.0
6	16.1	20.8	17.0	21.4	18.3	14.4	19.1
7	15.1	26.1	23.9	23.6	13.6	23.4	22.1
8	18.5	27.9	27.4	27.3	29.5	25.4	26.5
9	17.8	19.2	15.0	16.4	12.3	14.9	16.5
10	17.4	24.4	17.8	19.7	10.6	10.2	18.7
11	27.7	22.1	6.0	18.6	14.4	21.6	18.6
12	9.5	21.3	19.8	20.9	13.0	17.4	18.3
13	9.6	21.0	18.0	20.2	14.9	19.7	18.2
14	10.9	21.2	18.3	18.8	14.4	18.3	17.9
15	19.5	22.1	19.7	21.9	11.3	14.6	19.6
16	17.6	21.2	20.1	21.4	17.9	18.3	20.1
17	20.7	23.1	20.1	22.9	13.8	15.7	20.7
18	6.1	7.5	4.6	6.7	6.6	4.0	6.3
19	19.5	18.8	16.4	17.9	15.0	14.2	17.5
20	20.0	16.8				10.4	17.2

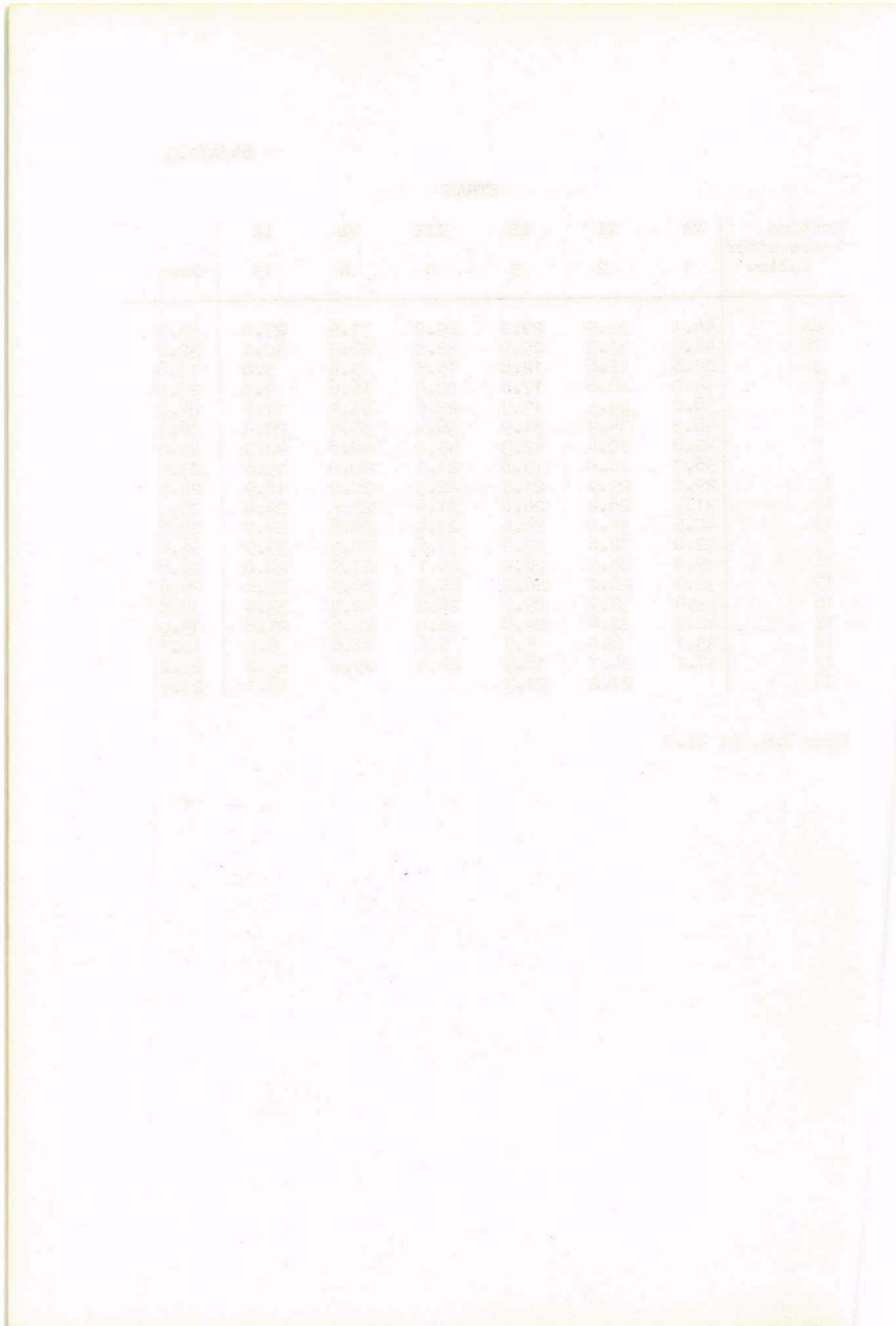
Mean D.M. %: 87.4

64/A/1.3

STRAW

Section Years after fallow	VA 1	II 2	IB 3	III 4	VB 6	IA 13	Mean
2A	44.1	32.9	29.9	29.2	31.9	27.0	32.3
2B	41.8	33.9	25.0	32.0	28.3	30.1	32.2
3	22.6	12.6	12.8	15.5	9.4	5.8	13.8
5	34.0	18.8	17.6	20.4	16.6	9.5	20.0
6	38.0	23.5	17.7	23.6	23.1	17.5	24.0
7	48.3	34.7	31.9	36.4	36.6	29.9	36.3
8	42.8	50.4	42.3	45.0	40.8	42.5	45.2
9	36.7	26.0	19.8	21.1	20.0	19.6	23.9
10	29.0	29.9	21.3	22.3	20.0	18.9	24.5
11	31.9	28.4	24.0	21.4	21.5	29.4	25.5
12	40.5	31.0	24.4	23.4	28.6	27.2	28.6
13	32.0	32.6	27.9	33.6	30.3	33.9	32.0
14	35.3	26.3	26.2	24.1	27.9	24.0	26.8
15	32.1	28.2	26.2	25.9	20.9	23.6	26.6
16	53.4	32.9	29.7	28.2	42.3	33.4	34.8
17	42.3	32.4	29.8	36.0	25.6	25.8	33.0
18	33.1	8.0	5.5	6.6	11.6	6.5	10.7
19	37.1	24.7	18.9	24.4	25.0	23.2	25.2
20		27.2	21.3			18.1	23.5

Mean D.M. %: 91.0



64/A/2.1

BARLEY - HOOSFIELD 1964

(HB)

For history, treatments, etc. see 'Details' 1962.

The plots are now split lengthways for a comparison of 2 varieties - Plumage Archer (PA) and Maris Badger (MB). For Maris Badger the rates of application of sulphate of ammonia, nitrate of soda and castor meal are doubled (each supplying 86 lb N). Rates of application of other fertilisers and dung are unchanged.

Cultivations, etc.: Sprayed with dalapon (Dowpon at 8 lb in 40 gals): Oct 7, 1963 and again (at 4 lb in 40 gals): Oct 21. Dung applied: Nov 2. Ploughed: Nov 4. Fertilisers applied: Apr 9, 1964. Seed drilled at 2.75 bushels: Apr 10. Sprayed with mecoprop/2,4-D (Methoxone Extra at 6 pints in 40 gals): May 28. Combine harvested: Aug 31.

64/A/2.2

SUMMARY OF RESULTS

Plot	GRAIN		Mean	STRAW		Mean
	PA	MB		PA	MB	
1 O	5.3	7.4	6.4	2.2	2.5	2.4
2 O	9.1	11.3	10.2	3.8	4.5	4.2
3 O	7.8	8.0	7.9	4.1	2.5	3.3
4 O	10.9	10.8	10.9	4.6	2.8	3.7
5 O	10.4	10.2	10.3	6.1	5.6	5.9
1 A	7.5	11.5	9.5	5.1	5.9	5.5
2 A	17.4	24.4	20.9	10.6	16.0	13.3
3 A	15.3	24.9	20.1	10.6	12.9	11.8
4 A	24.2	37.6	30.9	14.5	22.3	18.4
5 A	24.6	36.5	30.6	18.9	25.7	22.3
1 AA	7.8	10.4	9.1	6.3	8.2	7.3
2 AA	20.1	28.7	24.4	14.5	20.2	17.4
3 AA	13.0	21.9	17.5	10.2	13.7	12.0
4 AA	21.3	40.0	30.7	14.4	28.0	21.2
1 AAS	18.4	18.4	18.4	12.4	14.1	13.3
2 AAS	24.6	28.7	26.7	16.1	20.2	18.2
3 AAS	18.4	31.3	24.9	12.0	19.6	15.8
4 AAS	24.9	37.5	31.2	19.1	26.4	22.8
1 C	19.6	31.6	25.6	10.9	16.1	13.5
2 C	21.3	38.1	29.7	12.8	22.9	17.9
3 C	21.3	37.4	29.4	12.9	22.6	17.8
4 C	23.8	38.8	31.3	16.2	23.8	20.0
7 - 1	11.3	7.6	9.5	5.1	3.2	4.2
7 - 2	33.2	37.0	35.1	22.0	22.9	22.5
6 - 1	4.9	4.4	4.7	2.5	1.6	2.1
6 - 2	6.6	5.1	5.9	3.9	2.2	3.1
1 N	6.0	4.0	5.0	5.3	7.4	6.5
2 N	11.2	17.4	14.3	8.0	11.4	9.7
Mean	15.7	22.2	18.9	10.2	13.8	12.0
Mean D.M.%:	87.4			89.4		

64/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1964

(HWF)

For history, treatments, etc. see 'Details' 1962.

Area of each plot: Squarehead's Master 13/4 - 0.0690.
Rothwell Perdix - 0.0552. Area harvested: 0.0365.

Cultivations, etc.:

Cropped plots. Ploughed: Sept 24, 1963. Seed drilled at
3 bushels: Oct 16. Combine harvested: Aug 28, 1964.
Fallowed plots. Ploughed 3 times: Sept 24, 1963,
May 30, 1964, July 27.

NOTE. Counts of straw number and estimates of eyespot (*Cercosporaella herpotrichoides*) and take-all (*Ophiobolus graminis*) were made.

SUMMARY OF RESULTS

Plot No. of years of fallow	A2	A3	A4	Mean
GRAIN				
Variety				
Squarehead's Master 13/4	6.7	6.1	6.3	6.4
Rothwell Perdix	12.6	12.3	11.0	12.0
Mean	9.6	9.2	8.6	9.2
STRAW				
Squarehead's Master 13/4	9.8	10.8	10.5	10.4
Rothwell Perdix	13.4	11.0	10.3	11.6
Mean	11.6	10.9	10.4	11.0

Mean D.M. %: Grain 83.0 Straw 91.2

DATA

DOOR GUNNENBERG - WILHELM REINHOLD BAUMANN

(1901)

1901 feilteidt een vaste gescreven geschiedenis
van de historie van de Duitse en Engelse volkeren
vanaf de begin tot heden tot de dag van 1901
in drie delen.

Deel 1: De geschiedenis van de Duitse volkeren
vanaf de begin tot heden tot de dag van 1901
in drie delen.

Deel 2: De geschiedenis van de Engelse volkeren
vanaf de begin tot heden tot de dag van 1901
in drie delen.

DEEL 1: DE DUITSE VOLKEREN

JAAR	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900
1000	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1200	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1300	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1400	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1500	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1600	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1700	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1800	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1900	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

1000-1900

64/A/4.1

GRASS - AGDELL 1964

For history, treatments etc., see 'Details' 1962.

The Cocksfoot leys sown in 1960 were ploughed out and resown with Timothy S51.

The areas in grass and fallow are now each divided into 8 sub plots, which receive PK treatments:-

P205: 0 (P0), 4.0 (P1), 8.0 (P2), 16.0 (P4) cwt with basal K

K20: 0 (K0), 2.5 (K1), 5.0 (K2), 10.0 (K4) cwt with basal P

All P205 as triple superphosphate, all K20 as muriate of potash.

Basal dressings: To P plots: as treatment K4.

To K plots: as treatment P4.

The grass areas also received 0.8 cwt N as 'Nitro-Chalk' in seedbed.

Area of each microplot: 0.0180. Area harvested: 0.0084.

Cultivations, etc.: Ploughed: Nov 27 - Dec 2, 1963. PK fertilisers applied: Mar 11, 1964.

Grass: Old grass. Sprayed with dalapon at 11 lb a.e. in 40 gals:

Oct 17, 1963. Seed sown at 30 lb, seedbed 'Nitro-Chalk'

applied: May 8, 1964. Sprayed with 2,4-D butoxyethylester at 0.44 lb a.e. in 40 gals: June 10. Cut for silage: Aug 20.

Fallow: Rotary cultivated: July 27, 1964.

64/A/4.2

SUMMARY OF RESULTS

1ST AND ONLY CUT: DRY MATTER

Plot

P K	5	6	3	4	1	2	Mean
0 4	0.0	0.0	0.9	2.0	7.0	3.5	2.2
1 4	6.3	7.8	8.6	8.0	13.2	12.2	9.3
2 4	6.0	6.1	9.1	10.5	15.9	15.3	10.5
4 4	8.6	8.2	11.5	10.4	18.7	18.9	12.7
4 0	3.0	3.2	4.0	6.6	8.8	8.8	5.7
4 1	7.1	8.3	7.4	11.9	16.7	16.6	11.3
4 2	5.4	11.7	13.3	15.3	16.3	16.4	13.1
4 4	7.5	10.0	7.2	14.7	16.2	19.6	12.5
Mean	5.5	6.9	7.7	9.9	14.1	13.9	9.7

Mean D.M. %: 32.1

64/A/5.1

MANGOLDS AND POTATOES - BARNFIELD 1964

(BN)

For history, treatments etc., see 'Details', and 'Results'
62/A/5.

In 1964 the rate of application of P2O5 was increased to 122.5 lb per acre, thus permitting the use of compound 0:14:28 on strips 2, 4 and 6. Granular superphosphate was applied to strips 5 and 7 (at 645 lb per acre, supplying 122.5 lb P2O5). Potash, sodium and magnesium were applied normally.

Cultivations, etc.: Dung applied: Dec 19, 1963. Ploughed: Jan 17 - Feb 5, 1964. Mineral fertilisers applied to strips: May 13.

Mangolds: N fertilisers applied: May 14, 1964. Seed drilled at 9 lb: May 15. Singled: June 16 - July 2. Sprayed with menazon at 0.38 lb in 35 gals: July 23. Lifted: Oct 8.

Potatoes: N fertilisers applied, all plots rotary cultivated: May 14, 1964. Rotary cultivated 2nd time, potatoes machine planted: May 15. Earthed up: June 29. Sprayed twice with mancozeb at 1.2 lb in 35 gals: July 1 and Aug 6. Haulm destroyed mechanically: Sept 22. Lifted: Sept 29.

Treatment symbols:

	N cwt per acre
N0 =	None
N1 =	0.6
N2 =	1.2
N3 =	1.8

64/A/5.2

SUMMARY OF RESULTS

MANGOLDS, ROOTS

Strip	N	O	N	A	AC	C
1	0	10.78	21.21	14.31	13.64	8.42
	1		25.51	23.23	14.90	16.33
	2		22.22	20.04	20.04	13.89
	3		22.39	24.92	20.88	27.95
2	0	13.86	21.05	23.57	15.15	15.57
	1		23.74	21.80	19.78	17.43
	2		26.10	17.01	20.54	18.69
	3		31.32	19.78	19.11	17.09
4	0	5.96	10.52	13.64	14.98	8.42
	1		15.49	10.86	16.67	19.36
	2		21.47	16.16	16.92	18.35
	3		22.73	15.57	13.30	19.28
5	0	5.70	7.58	10.78	12.38	8.59
	1		17.01	11.20	11.62	12.46
	2		17.34	11.28	14.82	11.11
	3		31.82	11.79	10.10	12.46
6	0	4.76	9.18	8.84	13.05	8.17
	1		17.59	12.71	12.96	15.74
	2		18.27	13.05	12.71	18.60
	3		20.79	12.96	19.36	19.11
7	0	4.78	14.31	13.55	13.13	11.95
	1		15.91	17.59	13.97	13.64
	2		17.26	14.82	14.31	20.54
	3		20.88	19.53	19.70	20.71
8	0	3.96	5.47	6.90	11.20	10.69
	1		11.20	9.01	11.36	13.30
	2		13.13	9.60	11.70	12.04
	3		17.93	8.08	12.21	12.12
9	0		8.42			
	1		13.97			
	2		16.75			
	3		16.50			

64/A/5.3

MANGOLDS, LEAVES

Strip	N	O	N	A	AC	C
1	0	4.20	7.74	4.80	5.89	4.04
	1		8.42	6.40	6.23	6.23
	2		7.58	5.81	7.07	5.56
	3		7.24	7.58	6.82	9.09
2	0	5.47	10.02	9.01	7.41	6.65
	1		8.25	7.66	8.33	6.82
	2		10.02	7.49	7.32	7.07
	3		11.11	8.17	8.08	7.32
4	0	2.21	4.88	4.29	5.98	4.04
	1		5.14	3.54	5.89	6.48
	2		7.58	4.97	6.82	6.23
	3		8.33	4.97	5.89	7.66
5	0	1.81	2.69	3.03	4.29	3.20
	1		5.14	3.20	4.80	3.62
	2		6.15	3.45	4.97	4.04
	3		9.43	3.70	3.87	4.38
6	0	1.78	3.45	2.95	4.80	2.78
	1		5.47	3.45	4.21	4.88
	2		6.40	4.13	4.46	5.72
	3		6.23	5.05	6.82	6.15
7	0	1.92	4.46	4.55	5.05	4.04
	1		5.05	5.14	5.30	3.96
	2		5.47	4.29	5.56	6.65
	3		6.73	5.64	6.57	6.99
8	0	1.81	2.53	2.10	4.13	3.62
	1		3.87	3.28	3.70	4.55
	2		4.04	3.62	3.96	3.70
	3		6.06	3.03	4.38	4.21
9	0		3.28			
	1		4.21			
	2		5.72			
	3		5.64			

64/A/5.4

MANGOLDS, PLANT NUMBER

Strip	N	O	N	A	AC	C
1	0	12.8	24.3	20.4	20.9	23.0
	1		23.0	24.1	20.4	22.6
	2		22.3	21.1	23.4	16.6
	3		21.9	22.3	23.4	22.6
2	0	21.3	22.8	22.3	18.5	19.0
	1		22.1	23.2	18.7	19.4
	2		21.5	18.5	18.7	18.9
	3		21.9	20.6	17.2	17.2
4	0	23.3	21.5	17.2	19.2	19.0
	1		21.1	20.4	18.7	15.7
	2		19.4	20.0	14.3	15.8
	3		20.9	19.2	9.6	14.0
5	0	20.7	21.5	19.0	21.9	23.8
	1		22.4	19.8	16.2	23.9
	2		23.4	20.0	23.2	20.9
	3		21.7	22.3	10.7	24.5
6	0	20.9	15.7	17.5	18.9	21.5
	1		21.9	17.3	17.5	22.4
	2		21.1	14.9	13.8	21.9
	3		20.2	12.3	21.1	22.1
7	0	22.0	23.2	19.2	21.3	22.8
	1		24.3	19.8	15.5	22.3
	2		22.1	18.1	15.1	22.4
	3		21.9	18.1	19.6	21.7
8	0	13.9	20.7	22.4	21.3	21.1
	1		20.9	21.9	20.4	23.4
	2		22.1	21.5	21.9	21.1
	3		22.1	21.5	21.3	22.4
9	0		20.0			
	1		20.6			
	2		21.3			
	3		20.9			

64/A/5.5

POTATOES, TOTAL TUBERS

Strip	N	O	N	A	AC	C
1	0	6.63	9.02	13.23	10.11	10.26
	1		8.37	11.49	10.23	9.44
	2		11.30	10.96	11.71	10.52
	3		10.23	9.38	11.61	11.46
2	0	6.54	8.94	8.71	9.05	9.60
	1		9.43	9.68	11.42	10.21
	2		10.50	10.75	11.33	13.09
	3		10.57	12.93	14.27	12.92
4	0	3.22	5.51	6.61	6.40	6.44
	1		7.81	6.29	7.51	7.86
	2		4.92	7.62	8.08	8.58
	3		6.06	7.60	7.89	8.33
5	0	2.95	3.22	2.78	3.91	3.70
	1		3.79	2.67	4.04	4.13
	2		4.34	3.64	4.36	4.08
	3		3.47	2.55	3.58	4.04
6	0	3.03	3.79	5.91	6.25	5.91
	1		5.43	5.98	7.03	5.85
	2		4.38	5.96	8.73	6.27
	3		4.52	6.67	7.99	6.65
7	0	3.53	4.21	2.15	2.97	3.18
	1		4.17	2.82	3.24	3.58
	2		3.11	3.09	3.51	4.48
	3		3.89	3.05	3.98	5.70
8	0	2.03	2.15	2.29	3.37	3.68
	1		3.37	2.29	3.68	4.65
	2		1.85	1.79	3.60	3.81
	3		3.51	2.06	3.81	3.01
9	0		3.94			
	1		5.09			
	2		4.04			
	3		4.00			

64/A/5.6

POTATOES % WARE

Strip	N	O	N	A	AC	C
1	0	86.8	91.6	94.5	87.5	89.2
	1		86.0	89.3	91.7	88.6
	2		90.5	89.6	92.7	91.3
	3		88.3	89.2	91.8	91.7
2	0	83.0	88.4	86.0	87.0	83.3
	1		89.1	85.2	84.3	84.7
	2		88.6	87.3	87.7	88.4
	3		86.4	90.4	86.7	88.9
4	0	80.2	85.1	88.5	83.2	89.9
	1		90.3	85.3	89.6	89.0
	2		87.2	88.1	87.0	86.8
	3		86.8	90.0	87.5	88.6
5	0	83.3	75.8	72.0	80.6	83.0
	1		80.6	73.2	81.8	82.1
	2		80.6	83.8	78.7	80.9
	3		73.3	69.4	80.0	82.3
6	0	77.4	86.7	88.3	87.2	85.4
	1		81.8	85.2	88.3	84.2
	2		81.3	86.2	86.5	91.6
	3		80.5	83.0	86.9	88.6
7	0	78.2	74.0	67.6	68.8	74.8
	1		77.3	73.1	79.2	78.2
	2		68.9	81.6	77.2	80.8
	3		75.1	72.4	77.8	83.4
8	0	76.0	80.4	75.2	81.9	85.7
	1		83.1	69.7	80.0	85.5
	2		70.5	71.8	77.8	86.2
	3		86.8	70.4	82.3	82.5
9	0		89.8			
	1		90.9			
	2		88.5			
	3		87.9			

64/A/6

HAY - THE PARK GRASS PLOTS 1964

(PG)

The 109th year

For history, treatments etc., see 'Details' 1956.

Cultivations, etc.: Ground chalk applied: Nov 28 - Dec 11, 1963.

Mineral fertilisers applied: Dec 18. Nitrogenous fertilisers applied: 1st dressing: Mar 3, 1964, 2nd dressing - Apr 10.

Cut twice: June 26 and Nov 5.

SUMMARY OF RESULTS

Plot	Not limed		Total	DRY MATTER		Limed 2nd crop	Total
	1st crop	2nd crop		1st crop	2nd crop		
1	10.0	0.0	10.0	17.7	0.0		17.7
2	13.3	0.0	13.3	18.6	0.0		18.6
3	11.8	0.0	11.8	18.7	0.0		18.7
4-1	28.0	0.0	28.0	28.7	0.0		28.7
4-2	26.0	0.0	26.0	33.2	0.0		33.2
5-1	13.9	0.0	13.9				
5-2	36.5	8.4	44.9				
6	39.3	10.1	49.4				
7	38.7	8.1	46.8	42.2	10.2		52.4
8	31.3	0.0	31.3	29.0	0.0		29.0
9	40.5	0.0	40.5	46.6	6.2		52.8
10	25.6	0.0	25.6	35.4	0.0		35.4
11-1	30.7	18.6	49.3	51.5	9.4		60.9
11-2	44.5	18.2	62.7	56.8	12.3		69.1
12	19.7	0.0	19.7				
13	34.2	8.5	42.7	31.3	12.3		43.6
14	40.5	9.0	49.5	41.3	6.1		47.4
15	22.7	9.0	31.7	34.5	9.5		44.0
16	32.6	10.7	43.3	38.3	8.0		46.3
17	19.2	10.5	29.7	21.6	5.0		26.6
18	14.6	0.0	14.6	24.9*	0.0		24.9*
				25.4+	0.0		25.4+
19	31.2	6.1	37.3	27.2*	4.1*		31.3*
				30.7+	7.2+		37.9+
20	37.1	9.9	47.0	40.5*	7.6*		48.1*
				36.1+	8.5+		44.6+

*Heavy liming. +Light liming.

Mean D.M.%: 1st crop 27.1: 2nd crop 41.7.

NOTE: Because of poor growth between the first and second cuts no second crop was taken on a number of plots, the grass being cut and left to lie.

What follows is a brief summary of the basic concepts and methods of the study. It is not intended to provide a detailed treatment of the statistical methodology used, which is described elsewhere (Bland & Altman 1994, Altman & Bland 1994). All the data presented have been derived from a previous study (Bland & Altman 1994), so the reader is advised to refer to that paper for further details.

The 'method' of data collection depends on whether the subject has been allocated to receive a treatment or placebo. If the subjects are randomised to receive a particular treatment, then it is usually best to collect all the data at one time point. This is called 'cross-sectional' data.

Cross-sectional data

Method	Cross-sectional data		Period data		Longitudinal data	
	Mean age	S.E. mean age	Mean age	S.E. mean age	Mean age	S.E. mean age
Initial	10.0	1.0	10.0	1.0	10.0	1.0
First	11.0	1.0	11.0	1.0	11.0	1.0
Second	12.0	1.0	12.0	1.0	12.0	1.0
Third	13.0	1.0	13.0	1.0	13.0	1.0
Fourth	14.0	1.0	14.0	1.0	14.0	1.0
Fifth	15.0	1.0	15.0	1.0	15.0	1.0
Sixth	16.0	1.0	16.0	1.0	16.0	1.0
Seventh	17.0	1.0	17.0	1.0	17.0	1.0
Eighth	18.0	1.0	18.0	1.0	18.0	1.0
Ninth	19.0	1.0	19.0	1.0	19.0	1.0
Tenth	20.0	1.0	20.0	1.0	20.0	1.0
Eleventh	21.0	1.0	21.0	1.0	21.0	1.0
Twelfth	22.0	1.0	22.0	1.0	22.0	1.0
Thirteenth	23.0	1.0	23.0	1.0	23.0	1.0
Fourteenth	24.0	1.0	24.0	1.0	24.0	1.0
Fifteenth	25.0	1.0	25.0	1.0	25.0	1.0
Sixteenth	26.0	1.0	26.0	1.0	26.0	1.0
Total	16.7	0.1	16.7	0.1	16.7	0.1
(n)	15		15		15	
(S.E.)	1.0		1.0		1.0	
(95% C.I.)	14.7–18.7		14.7–18.7		14.7–18.7	
(Mean–S.E.–C.I.)	16.7±1.0±1.0		16.7±1.0±1.0		16.7±1.0±1.0	

Table 1 shows the mean ages and standard errors of the mean for each period of the study. The mean age increased steadily over the period of follow-up. There was no evidence of any systematic bias between the data collected by different methods.

64/A/7

BARLEY - EXHAUSTION LAND HOOSFIELD 1964

(EX)

For history, treatments etc., see 'Details' 1962.

The basal manuring is now 0.7 cwt N as 'Nitro-Chalk' combine drilled. The variety is now Maris Badger.

Cultivations, etc.: Sprayed with dalapon at 5.9 lb in 40 gals: Sept 25, 1963, and again at 2.9 lb: Oct 14. Ploughed: Nov 1. Seed combine drilled at 2.75 bushels: Mar 6, 1964. Sprayed with mecoprop/2,4-D (Methoxone Extra at 6 pints in 40 gals): Mar 27. Combine harvested: Aug 21.

SUMMARY OF RESULTS

Plot		Grain	Straw
1	-	13.3	11.7
2	-	10.2	9.3
3	D	35.6	26.7
4	D	32.8	24.8
5	N2	12.5	10.2
6	N2'	11.9	8.9
7	N2PKNaMg	31.9	22.0
8	N2'PKNaMg	27.0	18.6
9	P	28.8	20.4
10	PK	28.4	16.8
Mean D.M.%:		82.0	87.8

2000 GRAMMEN TILL KÄRAMELLA - 2000

(20)

"2000 tillämnad" (see "Tillämnad" - Appendix) och

ekvivalent "Klämme-metall" är de två sätt man kan producera läder och
läderplättar som är vattenbeständiga och har goda tekniska egenskaper.

Läder och läderplättar kan framställas med hjälp av en teknik som kallas
,tillämnad", där vatten och vattenlösningar med t.ex. tannin
är huvudmedlet för att få läderet till att bindas samman igen. Läderet
är inte förmöget att få vatten att rinna ur det utan att den vattenlösningen
är med i läderet så att vatten kan rinna ur det.

TABLETTEN MED VÄTE

VÄTE	MIN	MAX	MIN	MAX
0,00	0,00	0,00	0	1
0,01	0,01	0,01	0	2
0,02	0,02	0,02	0	3
0,03	0,03	0,03	0	4
0,04	0,04	0,04	0	5
0,05	0,05	0,05	0	6
0,06	0,06	0,06	0	7
0,07	0,07	0,07	0	8
0,08	0,08	0,08	0	9
0,09	0,09	0,09	0	10
0,10	0,10	0,10	0	11

64/A/8

CLOVER - ROTHAMSTED GARDEN 1964

(GC)

The 111th year

For history etc. see 'Details' 1962.

Cultivations, etc.: Cut: July 13, 1964. Hand dug, muriate of potash applied: July 23.

The growth of clover in the spring was poor and the stand irregular. The plot was also very grassy after the wet year of 1963. It was therefore decided to take a first-cut only and dig the plot, apply K fertiliser and resow.

The dry weather in July continued through August and resowing was therefore postponed until 1965.

SUMMARY OF RESULTS

DRY MATTER

Applied in 1963	Applied in 1961		Mean
	S0	S1	
K0	20.0	9.6	14.8
K2	66.0	45.3	55.6
Mean	43.0	27.4	35.2

Mean D.M. %: 21.0

Abbreviations used in this and future reports

Muriate of potash cwt per acre

None = K0
2 = K2

Sodium molybdate spray

None = S0
Sprayed = S1

8/1/08

Net media generation - revised

(2)

new media net

"Net generated" are new products and

the number of new "products" which start from scratch or
from scratch challenges existing products.

Generated media are the new media products that are created by users, and
the number of new and media products that are built off
existing and new media products is used to calculate generated media.
Users have been given 3 choices

the user can choose how many generated products they want
• 100% new generated products

generated media

generated media

media	100% new media	10%	100% existing
0.01	0.01	0.001	0.01
0.02	0.02	0.002	0.02
0.03	0.03	0.003	0.03

Media will then

attempt until has until no been generated media

new media has started to appear

0.0 = none

0.1 = 1

large number of media

0.0 = none

0.1 = 1000

64/A/9

SPRING BEANS, SITES OF CONTINUOUS WHEAT AND BARLEY EXPERIMENTS

WOBURN STACKYARD 1964

(WPW and WPB)

For history, treatments etc., see 'Details' 1962.

In 1964 all plots were sown with spring beans, except for the area carrying the microplot experiment on soil structure (see 'Results' 64/C/20).

Cultivations, etc.: Ploughed: Oct 22 - Nov 1, 1963. Seed drilled at 200 lb: Mar 13, 1964. Sprayed with simazine at 1 lb in 40 gals: Apr 1. Combine harvested - continuous wheat area: Aug 26, continuous barley area: Sept 1. Variety: Minor Tick.

SUMMARY OF RESULTS

Crop in old scheme 1877 - 1955	Continuous wheat		Continuous barley	
	Wheat	Barley	Wheat	Barley
BEANS, GRAIN				
Plot 1	19.0	17.3	20.6	21.8
2	16.0	18.0	17.0	21.4
3	18.3	15.6	24.9	19.8
4	20.1	14.4	18.4	16.0
5	14.4	16.7	15.2	13.7
6	16.4	18.4	27.5	24.8
7	18.3		19.2	
8	19.8		27.2	
9	21.2		30.2	
10 ax	16.6	21.6	24.8	21.6
10 bx	20.6	19.1	24.9	21.2
10 ay	15.9		22.6	
10 by	16.4		25.2	
11 ay		16.0		22.5
11 by		20.0		25.4
11 az	23.6		29.1	
11 bz	28.5		29.2	

Mean D.M. %: 86.2

All plots: 1962 - Oats, 1963 - Fallow

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64/A/10.1

SAXMUNDHAM

ROTATION I

(SA)

The long term effects of manuring on a poor clay-loam soil -
Harwoods Field 1964, the sixty fifth year. See Rothamsted
Report for 1964, pp 228-232.

Rotation: Mangolds and sugar beet, barley, peas, winter wheat.

Design: 4 blocks of 10 plots each, one block for each crop.

Area of each plot: 0.0546. Area harvested: Wheat and barley -
0.0500, sugar beet and mangolds - 0.0114.

Treatments: 6 tons dung (D), 4 cwt bone meal (B) and all
combinations of:-

1. Nitrate of soda (N): None, 2 cwt
2. Superphosphate (P): None, 2 cwt
3. Muriate of potash (K): None, 1 cwt.

Basal dressing: None.

Cultivations, etc.:-

Mangolds and sugar beet. Dung applied: Sept 17, 1963. Ploughed:
Oct 11. Bone meal applied: Mar 2, 1964. Superphosphate
applied: Mar 12. Seed drilled at 7 lb per acre: Apr 13.
Nitrate of soda applied: Apr 30. DDT applied at 14 lb
powder: May 6. Muriate of potash applied: May 7. Singled:
May 22. Sugar beet sprayed (no details): June 27.
Sugar beet sprayed with demeton methyl: July 24. Harvested:
Sept 30. Varieties: Mangolds - Golden Tankard, sugar beet -
Klein E.

Barley. Dung applied: Oct 28, 1963. Ploughed: Oct 29. Bone
meal applied: Mar 2, 1964. Superphosphate applied, seed
drilled at 2.75 bushels: Mar 11. Nitrate of soda applied:
Apr 30. Muriate of potash applied: May 7. Harvested:
Aug 13. Variety : Proctor.

Peas. Dung applied: Oct 28, 1963. Ploughed: Oct 29. Bone
meal applied: Mar 2, 1964. Superphosphate applied: Mar 12.
Nitrate of soda applied: Mar 23. Seed drilled at 12 stones:
Apr 9. Muriate of potash applied: Apr 30. Peas ploughed
up because of bird damage: June 23. Variety: Lincoln Blue.

Winter wheat. Dung applied: Sept 15, 1963. Ploughed: Sept 16.
Bone meal, superphosphate and muriate of potash applied:
Sept 26. Seed drilled: Sept 27. Nitrate of soda applied:
Mar 23, 1964. Harvested: Aug 5. Variety: Cappelle.

64/A/10.2

SUMMARY OF RESULTS

Former Treatment plot no.	1964	Mangolds		Sugar beet			Barley		Wheat		
		Roots + tops	Roots	Sugar %	Total sugar	Top	Grain Straw	Straw	Grain Straw	Grain Straw	
1	D	11.86	9.78	19.9	39.0	3.02	21.3	25.4	25.3	62.6	
2	B	3.97	3.20	18.9	12.1	1.26	7.4	8.2	18.2	33.0	
3	N	1.65	0.71	17.5	2.5	0.65	11.7	13.2	21.3	33.8	
4	P	3.85	3.10	19.0	11.8	1.10	5.2	6.1	19.7	28.5	
5	K	0.98	0.65	18.5	2.4	0.43	2.0	3.6	9.9	16.4	
6	O	1.41	1.10	18.5	4.1	0.67	2.8	5.9	13.9	21.6	
7	PK	2.55	2.28	19.6	8.9	0.94	3.1	6.1	18.1	27.9	
8	MK	1.10	0.92	19.6	3.6	0.47	11.1	20.2	20.8	36.3	
9	NP	7.62	5.48	19.5	21.4	1.49	14.4	15.5	27.4	38.4	
10	NPK	8.25	7.13	20.0	28.5	2.51	16.1	22.4	25.2	43.3	
		4.33	3.44	19.1	13.4	1.26	9.5	12.7	20.0	34.2	
		Mean		Mean D.M.%:							
		84.1		89.3		83.5		87.0			

64/A/11.1

SAXMUNDHAM

ROTATION II

(SB)

The long-term effects of manuring on a poor clay-loam soil -
Harwood's Field 1964, the sixty fifth year. See Rothamsted
Report for 1964, pp 228-232.

Rotation: Mangolds and sugar beet, barley, peas, winter wheat -
two courses present each year (1964 mangolds and sugar beet,
winter wheat).

Design: 2 blocks of 7 plots each, one block for each course present.

Area of each plot: 0.0545. Area harvested: Mangolds and sugar beet -
0.0114, winter wheat - 0.0500.

Treatments: 10 tons dung (D), 1.5 cwt nitrate of soda (N), 7.5 cwt
superphosphate (P) applied as follows:-

	Plot						
Crop	1	2	3	4	5	6	7
Roots	-	-	NP	D	D	P	P
Barley	-	-	-	-	-	-	N
Peas	-	-	-	-	P	-	-
Wheat	-	D	D	NP	N	DN	D

Basal dressing: None.

Cultivations, etc.:-

Mangolds and sugar beet. Dung applied: Sept 11, 1963. Ploughed:
Sept 12. Superphosphate applied: Mar 11, 1964. Seed drilled
at 7 lb: Apr 8. Nitrate of soda applied: Apr 30. DDT applied
at 14 lb powder: May 5. Singled: May 19 - 27. Sprayed (no
details): June 27. Sprayed with demeton methyl: July 24.
Harvested: Sept 28. Varieties: Sugar beet - Klein E, mangolds -
Golden Tankard.

Winter wheat. Nitrate of soda applied: Mar 23, 1964. Harvested:
Aug 5. Variety: Cappelle.

64/A/11.2

SUMMARY OF RESULTS

Plot no.	Treatment 1964	Mangolds	Roots	Sugar beet		
		Roots + tops		Sugar %	Total sugar	Tops
1	-	0.75	0.88	20.0	3.5	0.47
2	-	4.44	2.71	20.9	11.3	0.86
3	NP	12.96	7.78	21.2	32.9	2.20
4	D	7.70	4.42	20.9	18.5	1.18
5	D	10.88	6.13	20.9	25.7	1.81
6	P	9.07	6.76	20.7	28.0	2.00
7	P	8.05	7.03	20.6	29.0	2.16
Mean		7.69	5.10	20.7	21.3	1.53

		Wheat	
		Grain	Straw
1	-	10.6	18.4
2	D	26.7	43.2
3	D	28.0	40.5
4	NP	29.3	45.3
5	N	27.4	46.0
6	DN	33.3	55.6
7	D	30.2	45.2
Mean		26.5	42.0
Mean D.M.%:		83.2	80.2