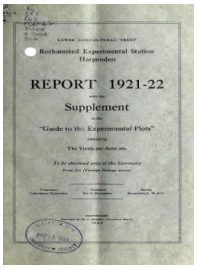
Report 1921-22 With the Supplement to the Guide to the Experimental Plots Containing the Yields per Acre Etc.



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Rothamsted Research

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ROTATION PLOTS.

Little Hoos Field, 1921 and 1922.

Arranged to test the RESIDUAL VALUE of VARIOUS MANURES in year of application and one, two, and three years after.

Produce per acre.

Plot.	Manure per Acre from 1919 onwards.	Year of Last Dressing.	1921 (18th Season), Barley.						1922 (19th Season), Barley.					
			Dressed Grain.		Offal Grain per Acre.	Straw per Acre.	Total Straw per Acre.	Proportion of Total Grain to 100 of Total Straw.	Dressed Grain.		Offal Grain per Acre.	Straw per Acre.	Total Straw per Acre.	Proportion of Total Grain to 100 of Total Straw.
			Yield per Acre.	Weight per Bush.					Yield per Acre.	Weight per Bush.				
			Bush.	lb.	lb.	lb.	cwt.		Bush.	lb.	lb.	lb.	cwt.	
A 1	Control	—	*19·6*	*57·1*	*88*	*640*	*10·0*	*107·7*	*20·9*	*51.6*	*63*	*820*	*10·6*	*96·1*
2		1920	39·4	58·8	76	1512	19·9	107·4	[*38·4*]	52·9	94	1404	[*19·2*]	[*98·9*]
3	Ordinary Dung, 16 tons	1921	**37·7**	**58·9**	**57**	**1388**	**18·5**	**110·0**	35·7	53·0	82	1284	16·5	106·5
4		1922	25·9	58·0	67	844	13·5	103·8	**38·2**	**52·7**	**90**	**1372**	**17·8**	**105·9**
5		1915	31·2	57·4	85	1020	16·6	101·2	32·9	53·1	75	1232	15·3	106·7
B 1	Cake fed dung, 16 tons	1920	42·5	58·2	95	1804	21·3	107·7	38·1	52·7	84	1384	18·8	99·6
2	Control	—	*18·8*	*56·6*	*71*	*688*	*10·4*	*97·3*	*26·9*	*52·8*	*76*	*1004*	*13·1*	*101·6*
3		1921	**40·4**	**58·6**	**66**	**1628**	**20·0**	**108·9**	[*39·7*]	52·8	97	1484	[*20·2*]	[*97·0*]
4	Cake fed dung, 16 tons	1922	32·2	57.4	93	1236	16·3	106·2	[*44·2*]	**53·2**	**109**	**1660**	[*22·5*]	[*97·5*]
5		1915	30·9	57·8	72	1196	15·7	105·8	35·7	53·0	86	1364	17·3	102·0
C 1	Shoddy; Superphosphate; Sulphate of Potash ...	1920	22·0	56·0	118	940	12·1	99·9	16·6	51.9	95	696	9·9	86·8
2		1921	**30·8**	**56·3**	**166**	**1276**	**16·0**	**106·0**	19·2	52·5	79	816	11·2	87·0
3	Control	—	*19·7*	*56·0*	*113*	*880*	*11·2*	*96·9*	*22·8*	*52·5*	*72*	*918*	*11·8*	*96·1*
4	Shoddy; Superphosphate; Sulphate of Potash ...	1922	21·1	56·0	117	1164	13·8	84·1	**39·9**	**52·5**	**75**	**1448**	**18·4**	**105·3**
5		1919	23·2	56·4	102	1068	13·2	95·4	28·4	52·9	86	1132	14·5	97·6

D 1	Guano; Sulphate of Ammonia; Sulphate of Potash	1920	28·4	56·0	118	1252	15·4	99·3	17·9	52·5	80	732	10·7	85·0
2		1921	**27·9**	**55·7**	**188**	**1348**	**17·1**	**90·8**	21·0	52·6	71	924	12·1	86·9
3		1922	18·7	56·3	112	888	11·6	89·9	**35·6**	**53·0**	**113**	**1408**	**19·0**	**93·9**
4	Control	—	*14·7*	*54·5*	*122*	*772*	*9·9*	*83·5*	*17·9*	*51·8*	*87*	*788*	*12·2*	*74·5*
5	Guano; Sulphate of Ammonia; Sulphate of Potash	1919	19·1	54·9	131	992	12·6	83·7	18·4	52·1	84	824	11·9	78·0
E 1	Rape Dust; Superphosphate; Sulphate of Potash	1920	25·5	55·8	111	1092	13·4	102·5	19·4	50·6	83	872	11·0	86·6
2		1921	**36·1**	**54·7**	**152**	**1524**	**17·3**	**109·8**	25·5	53·6	70	1068	13·8	93·1
3		1922	13·1	56·0	123	588	7·8	97·6	**34·8**	**52·6**	**85**	**1328**	**17·0**	**100·8**
4		1919	15·4	55·8	127	688	9·4	93·3	16·5	50·9	75	764	10·2	79·9
5	Control	—	*21·4*	*55·9*	*134*	*872*	*11·9*	*99·8*	*19·7*	*53·1*	*63*	*824*	*11·8*	*84·2*
F 1	Control	—	*10·3*	*52·3*	*84*	*476*	*7·1*	*78·1*	*20·3*	*52·3*	*87*	*1048*	*13·1*	*77·8*
2	Superphosphate; Sulphate of Ammonia; Sulphate of Potash	1920	22·1	55·5	94	896	11·9	98·5	23·6	52·6	73	960	12·1	96·9
3		1921	**33·5**	**55·9**	**177**	**1480**	**17·8**	**102·9**	23·4	53·8	68	992	12·8	92·5
4		1922	17·6	53·0	115	808	10·5	89·5	**37·8**	**52·5**	**97**	**1616**	**19·7**	**94·5**
5		1919	16·4	55·5	122	896	11·7	78·7	19·6	52·0	70	892	12·0	81·3
G 1	Bone Meal; Sulphate of Ammonia; Sulphate of Potash	1920	20·4	53·7	115	844	11·6	93·5	22·6	53·7	96	1076	14·3	81·9
2		1921	**24·1**	**54·6**	**123**	**1208**	**14·1**	**90·8**	28·0	52·8	76	1228	15·1	91·7
3	Control	—	*22·9*	*54·9*	*93*	*1068*	*13·9*	*86·4*	*29·2*	*52·8*	*69*	*1292*	*15·3*	*93·9*
4	Bone Meal; Sulphate of Ammonia; Sulphate of Potash	1922	22·8	54·5	91	1004	12·6	94·1	**36·2**	**53·8**	**103**	**1696**	**20·6**	**88·6**
5		1919	20·8	53·8	100	944	13·2	82·3	25·5	52·3	79	1208	14·6	86·3
H 1	Basic Slag; Sulphate of Ammonia; Sulphate of Potash	1920	30·8	56·8	88	1184	14·8	111·2	28·1	52·7	87	1148	14·4	97·1
2		1921	**34·1**	**55·8**	**150**	**1672**	**20·1**	**91·0**	29·5	53·2	82	1292	15·6	94·4
3		1922	24·6	56·5	91	1040	13·9	94·9	**40·3**	**53·2**	**100**	**1844**	**22·0**	**90·8**
4		1919	30·3	55·9	88	1236	15·2	104·5	30·4	53·8	64	1252	15·1	100·7
5	Control	—	*27·8*	*55·4*	*106*	*1301*	*16·3*	*90·3*	*20·8*	*53·4*	*82*	*1020*	*12·5*	*85·6*

NOTES.—Since 1919 the manure for each plot (except of series A and B) has been rationed at 40 lb. Nitrogen, 100 lb. Calcium Phosphate, and 50 lb. Potash per acre. Each plot has been supplied with as much of its particular manure (shoddy, guano, &c.) as possible without exceeding the receipt in any of the three rationed ingredients. Any deficit in either of these three has then been made good by adding the necessary quantity of Sulphate of Ammonia, Superphosphate, or Sulphate of Potash.

Figures in italics denote unmanured plots. The yields on the plots to which the manure was applied in a given year are printed in heavy type.

Figures in square brackets are estimated yields.

STRAW EXPERIMENT, 1921.

Potatoes (Arran Chief). Sawpit Field.

Manure per Acre.	Yield per Acre. 1st Plot	2nd Plot	3rd Plot
	Tons	Tons	Tons
8 tons Rotted Straw Manure—Single Nitrogen ...	2·30	2·18	1·96
16 ,, ,, ,, ,, ,, ,, ...	2·48	2·63	2·16
32 ,, ,, ,, ,, ,, ,, ...	1·73	2·39	2·29
2 cwt. Sulphate of Ammonia	1·20	1·48	1·13
4 ,, ,, ,, ...	1·66	1·57	1·48
8 ,, ,, ,, ...	1·52	1·71	1·38
16 ,, ,, ,, ...	1·41	1·55	1·27
8 tons Rotted Straw Manure—Double Nitrogen ...	2·09	2·20	1·86
16 ,, ,, ,, ,, ,, ,, ...	3·32	2·59	2·50
32 ,, ,, ,, ,, ,, ,, ...	2·16	2·68	2·04
Control—No Manure	1·39	1·61	1·41
,, ,, ,, ...	1·52	1·45	1·39

Single Nitrogen represents 1 cwt. Sulphate of Ammonia added to 1 ton of straw.
Double Nitrogen represents 2 cwt. Sulphate of Ammonia added to 1 ton of straw.

RESIDUAL VALUE OF SLUDGE, 1921.

Long Hoos Field.

Treatment of Plots in 1920. Manure per Acre.	Dressed Grain. Yield per Acre. Bush.		Weight per Bushel. lb.		Offal Grain per Acre. lb.		Straw per Acre. Straw. lb.		Total Straw. cwt.		Proportion of Total Grain to 100 of Total Straw.	
	1st Plot.	2nd Plot.	1st Plot.	2nd Plot.	1st Plot.	2nd Plot.	1st Plot.	2nd Plot.	1st Plot.	2nd Plot.	1st Plot.	2nd Plot.
1921, Wheat (Red Standard) after Potatoes (1920).*												
Activated Sewage Sludge, 13·3 tons	29·8	27·9	64·0	64·1	371	406	2925	2624	32·7	30·8	62·2	63·6
Farmyard Dung 15 tons ...	34·8	31·6	64·0	64·1	296	371	2461	2600	30·3	29·7	74·5	72·0
Control	26·0	26·9	63·3	63·0	342	325	2299	1997	26·2	26·6	67·6	67·7
1921, Wheat (Red Standard) after Barley (1920).†												
Sulph. of Ammonia 1·45 cwt. ...	24·1		63·0		387		2738		31·1		54·6	
Activated Sewage Sludge, 2·7 tons	30·1		63·0		351		2857		31·4		64·1	
Control	27·2		62·5		405		2738		29·4		63·9	
Control	27·4		63·0		435		2333		30·3		63·7	

* In 1920 this set received a basal dressing of 6 cwt. Super. and 1 cwt. Nitrate of Ammonia per acre. No manure was given in 1921.

† In 1921 this set was manured as farm, *viz.*, 1 cwt. Sulphate of Ammonia and 1 cwt. Superphosphate per acre.

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TOP DRESSING EXPERIMENTS.

Treatment of Plots and Quantities per Acre.	Dressed Grain: Yield per Acre Bushels.			Dressed Grain: Weight per Bushel lb.			Offal Grain per Acre. lb.			Straw per Acre: Straw. lb.			Straw per Acre: Total Straw. cwt.			Proportion of Total Grain to 100 of Total Straw.		
	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3
Oats (Grey Winter).* Great Knott Field, 1921.																		
Super. 1½ cwt.	52·1	57·4	54·7	44·1	43·0	43·6	420	490	460	1900	2600	2540	31·8	37·5	40·2	76	71	63
Super. 1½ cwt.; Sul./Amm. 1½ cwt., applied March 4	45·0	43·6	44·2	43·3	45·0	43·0	380	485	380	2020	1920	2620	31·6	35·5	37·9	66	61	54
Super. 1½ cwt.; Mur./Amm. 144 lb., applied March 4	48·4	57·3	44·0	44·0	44 0	44·6	435	590	485	2280	2980	2480	37·1	47·0	36·4	62	59	60
No Manure	47·1	48·6	47·9	43·6	44·0	43 5	410	475	420	2060	2340	2200	31·1	36·1	33·4	71	65	67
Wheat (Red Standard). Great Harpenden Field, 1921.																		
Super. 200 lb.; Sul./Amm. 100 lb., applied March 2-3	19·4	16·9	—	62·5	62·5	—	565	430	—	2350	1660	—	30·0	22·9	—	53	58	—
Super. 200 lb.; Sul./Amm. 200 lb., applied March 2-3	20·3	15·4	—	62·5	62·5	—	540	443	—	2060	1900	—	27·1	25·6	—	60	49	—
Super. 200 lb.; Sul./Amm. 100 lb., applied March 2-3 and Sul./Amm. 100 lb., applied May 2	21·3	13·8	—	62·5	62·5	—	495	350	—	2080	1450	—	27·2	20·7	—	60	52	—
Super. 200 lb.; Mur./Amm. 86 lb., applied March 2-3	17·7	15·7	—	62·0	62·0	—	430	370	—	1960	1700	—	24·4	22·8	—	56	53	—
Super. 200 lb.; N./Soda 140 lb ., applied March 2-3	15·2	16 9	—	62·5	62·0	—	355	415	—	1750	1980	—	21·4	24·0	—	54	55	—
Super. 200 lb.; Sul./Amm. 100 lb., applied May 2	23·1	16·1	—	62·3	62·0	—	500	385	—	2660	1800	—	30·4	21·9	—	57	56	—
Super. 200 lb.; Sul./Amm. 200 lb., applied May 2	23·8	17·4	—	62·5	62·5	—	500	485	—	2620	1900	—	30·6	22·6	—	58	62	—
Super. 200 lb.; Mur./Amm. 86 lb., applied May 2	17·5	18·2	23·6	62·0	62·0	63·0	338	405	465	1700	1710	2500	21·3	22·6	27·8	60	61	63
Super. 200 lb.; Sul./Amm. 100 lb., applied April 4	17·1	—	—	62·5	—	—	365	—	—	1780	—	—	24·0	—	—	53	—	—
No Manure	13·5	17·6	—	63·5	61·5	—	375	368	—	1320	1880	—	17·6	22·2	—	63	58	—
Super. 200 lb.	19·0	12·2	22·0	62·5	62·5	62·5	415	385	525	1830	1260	2540	22·7	17·1	28·1	63	60	60
Super. 200 lb.	—	16·6	—	—	61·0	—	—	360	—	—	1840	—	—	22·6	—	—	54	—
Wheat (Red Standard).† Foster's Field, 1922.																		
1 cwt. Sul./Amm. applied March 18	14·4	18·4	18·5	59·5	60·0	60·0	425	391	400	1425	1650	1650	17·0	19·2	19·9	67	70	68
1 cwt. Sul./Amm., applied April 20	18·3	21·3	15·8	59·5	60·3	60·0	394	394	353	1750	1850	1475	21·2	23·0	17·6	62	65	66
1 cwt. Sul./Amm., applied May 18	17·2	21·9	16·4	60 0	60·5	60·3	372	409	406	1625	1750	1425	19·4	21·4	17·9	65	72	70
93 lb. Mur./Amm., applied March 18	17 8	19·6	16·4	60·0	60·3	60·5	362	400	300	1550	1875	1375	19·2	22·8	18·0	66	62	64
186 lb. Mur./Amm., applied March 18	19 7	21·2	20·2	59·5	60·0	60·3	350	409	362	1700	1650	1800	21·0	20·8	21·7	65	72	65
2 cwt. Sul./Amm., applied March 18	20·0	20·8	18·3	60·3	60·0	60·0	438	503	369	1800	1950	1725	22·5	25·2	22·1	65	62	59
2 cwt. Sul./Amm., applied April 20	20·1	18·4	13·2	60·8	60·0	55 5	394	525	369	1700	1775	1475	21·4	24·3	19·0	67	60	52
2 cwt. Sul./Amm., applied May 18	19·4	17·9	17·2	60·0	60·5	60·0	425	506	441	1700	1675	1525	21·2	23·0	20·1	67	62	65
Basal Manuring only	13·4	15·0	11·9	59·8	60·0	60·0	328	391	297	1250	1325	1225	15·2	17·4	14·7	67	66	61
No Manure	12·9	16·7	13·2	60·0	60·3	59·5	378	328	331	1325	1525	1350	15·6	18·5	16·5	66	64	60
Barley (Plumage Archer). Long Hoos, 1922.																		
2 cwt. Super.; 1 cwt. Sul./Amm., applied May 9	34·5	30·1	—	51·3	51·8	—	281	238	—	1650	1325	—	22·5	18·0	—	81	89	—
2 cwt. Super.; 2 cwt. Sul./Amm., applied May 9	31·2	35·3	—	51·8	51·6	—	369	287	—	1600	1775	—	21·4	23·0	—	83	82	—
2 cwt. Super.; 98 lb. Mur./Amm., applied May 9	27·7	30·4	—	51·0	51 3	—	256	263	—	1475	1500	—	20·5	21·4	—	73	76	—
2 cwt. Super.; 1 cwt. Mur./Amm., applied May 9	25·7	32·3	—	52·0	54·3	—	250	350	—	1175	1575	—	18·5	23·0	—	77	82	—
2 cwt. Super.; 51½ lb. Urea, applied May 9	32·1	34·7	—	51·8	52·3	—	287	356	—	1575	1675	—	21·0	22·5	—	83	86	—
2 cwt. Super.	23·8	26·6	—	51·0	52·3	—	184	200	—	1175	1250	—	16·3	17·2	—	77	83	—
No Manure	23·6	31·2	—	52·0	51·3	—	200	244	—	1100	1650	—	16·5	22·1	—	77	75	—

* A luxuriant crop of mustard was ploughed in previous to the sowing of the Oats; hence the high yields on these plots.
† All plots (except the unmanured), received a basal dressing of 2 cwt. Super.; 1 cwt. S./Pot. per Acre.

Top Dressing Experiments—*contd.*

Root Crops. Great Harpenden Field, 1922.

Manuring per Acre.		Yield per Acre. 1st Plot. Tons.	Yield per Acre. 2nd Plot. Tons.
Potatoes (Kerr's Pink).			
Dunged Series: 15 tons Farmyard Dung per Acre—			
Super. 4 cwt., Sul./Pot. 1½ cwt.		6·73	5·41
Super. 4 cwt., Sul./Pot. 1½ cwt., Sul./Amm. 3 cwt. (half as Top Dressing)		7·92	9·17
Super. 4 cwt., Sul./Pot. 1½ cwt., Sul./Amm. 1½ cwt. ...		7·91	8·06
Super. 4 cwt., Sul./Pot. 1½ cwt., Sul. Amm. 4½ cwt.		10·54	9·62
Super. 4 cwt., Sul./Pot. 1½ cwt., Sul./Amm. 3 cwt. ... (1½ cwt. as Top Dressing)		10·08	9·37
Super. 4 cwt., Sul./Pot. 1½ cwt., Mur./Amm. 290 lb.		10·66	10·74
Undunged Series:			
Super. 6 cwt., Sul./Pot. 2 cwt.		6·10	4·90
Super. 6 cwt., Sul./Pot. 2 cwt., Sul./Amm. 3 cwt. (half as Top Dressing)		7·99	7·89
Super. 6 cwt., Sul./Pot. 2 cwt., Sul./Amm. 1½ cwt. ...		6·98	7·75
Super. 6 cwt., Sul./Pot. 2 cwt., Sul./Amm. 4½ cwt. (1½ cwt. as Top Dressing)		9·60	8·36
Super. 6 cwt.. Sul./Pot. 2 cwt., Sul./Amm. 3 cwt. ...		8·72	9·22
Super. 6 cwt., Sul./Pot. 2 cwt., Mur./Amm. 290 lb. ...		9·21	8·50
Swedes (Hurst's Monarch).			
589 lb. Slag,* 1 cwt. Sul./Pot.	R	**25·13**	**28·24**
	L	3·04	4·29
589 lb. Slag,* 1 cwt. Sul./Pot., 2 cwt. Sul./Amm. (as Top Dressing)	R	**27·48**	**30·65**
	L	3·82	4·87
589 lb. Slag,* 1 cwt. Sul./Pot., 10 tons Farmyard Dung	R	**28·75**	**32·37**
	L	4·22	4·12
589 lb. Slag,* 1 cwt. Sul./Pot., 10 tons Farmyard Dung, 2 cwt. Sul./Amm. (as Top Dressing)	R	**32·61**	**32·43**
	L	4·60	4·71

* Equivalent to 5 cwt. Super. R = Roots. L = Leaves.

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SLAG EXPERIMENTS

(Details of the Slags used are given on p. 97.)

No. of Plot.	Treatment of Plot and Quantities per Acre.	1921 Yield per Acre. cwt. Series A	1921 Yield per Acre. cwt. Series B	1921 Dry Matter per Acre. lb. Series A	1921 Dry Matter per Acre. lb. Series B	1922 Yield per Acre. cwt. Series A	1922 Yield per Acre. cwt. Series B	1922 Dry Matter per Acre. lb. Series A	1922 Dry Matter per Acre. lb. Series B
	Hay. Great Field, 1921 and 1922								
1	High Grade Slag No. 12, 1170 lb.	23·6	24·9	1981	2108	17·9	16·8	1154	1130
2	Open Hearth Slag No. 13, 1925 lb. (High Soluble)	20·1	27·8	1669	2262	13·2	20·0	876	1353
3	Open Hearth Slag No. 14, 1930 lb. (Low Soluble)	25·5	27·5	2024	2304	15·8	26·4	1064	1653
4	Gafsa Phosphate, 750 lb.	25·7	25·1	2016	2149	19·1	26·0	1268	1677
6	No Manure	23·6	29·2	1984	2323	16·3	23·9	1140	1583
	Hay. Little Knott Field, 1921 and 1922								
1	High Grade, High Soluble Slag No. 15, 536 lb.	13·9		1342		14·3		1139	
3	Low Grade, High Soluble Slag No. 16, 1113 lb.	16 8		1602		17·1		1378	
4	High Grade Slag No. 17, 522 lb.	17·1		1650		15·2		1198	
6	High Soluble Slag No. 18, 1113 lb.	15·7		1508		15·0		1117	
7	Low Soluble Slag No. 19, 1104 lb.	14·5		1386		14·8		1184	
2	Control. No Manure	15·7		1509		16·8		1308	
5	Control. No Manure	16·1		1542		15·4		1233	
	Hay. Little Knott Field, 1922								
1	High Grade, High Soluble Slag No. 15, 536 lb.					13·5		1047	
3	Low Grade, High Soluble Slag No. 16, 1113 lb.					12·9		1067	
4	High Grade Slag No. 17, 522 lb.					12·8		1005	
6	High Soluble Slag No, 18, 1113 lb.					13·2		1020	
7	Low Soluble Slag No. 19, 1104 lb.					13·1		1070	
2	Control. No Manure.					13·2		1086	
5	Control. No Manure.					13·8		1083	
8	Gafsa Phosphate, 422 lb.					22·6		1867	
9	Nauru Phosphate, 280 lb.					20.9		1645	
	Hay. Great Field, 1922								
HL.1	High Soluble, Low Grade Slag No. 1, 872 lb.					16·7		1113	
9	High Soluble, Low Grade Slag No. 1, 872 lb.					29·1		1741	
3	Low Soluble, Low Grade Slag No. 2, 872 lb.					17·7		1197	
6	Low Soluble, Low Grade Slag No. 2, 1225 lb.					23·0		1600	
4	Gafsa Phosphate, 347 lb.					20·4		1399	
7	Gafsa Phosphate 174 lb, Low Soluble, Low Grade Slag No. 2, 612 lb.					22·3		1499	
2	Control. No Manure					17·0		1119	
5	,, ,, ,,					22·7		1524	
8	,, ,, ,,					22·6		1534	
	Hay. Great Field, 1922								
1C	High Soluble Slag No. 1, 872 lb					16·5		1095	
2C	Low Soluble Slag No. 2, 1225 lb.					18·7		1301	
3C	Gafsa Phosphate, 347 lb.					18·8		1284	
4C	Tunisian Phosphate, 336 lb.					16·0		1086	
5C	Florida Phosphate, 292 lb.					15·8		1042	
7C	Nauru Phosphate, 263 lb.					15·2		1020	
7D	,, ,, ,, ,,					15·5		985	
8C	Nauru Phosphate Low Grade Slag No. 8, 411 lb.					15·4		1012	
8D	,, ,, ,, ,, ,, ,, ,,					20·0		1287	
C	Control. No Manure					10·9		730	
D	,, ,, ,,					15·7		1013	

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Slag Experiments—*contd.*

Clover. West Barnfield, 1921 and 1922.

No. of Plot.	Treatment of Plots and Quantities per Acre.	1921				1922			
		Yield per Acre.		Dry Matter per Acre.		Yield per Acre.		Dry Matter per Acre.	
		Series A	Series B	Series A	Series B	Series A	Series B	Series A	Series B
		cwt.	cwt.	lb.	lb.	cwt.	cwt.	lb.	lb.
1	High Grade Slag No. 12, 1170 lb.	40·8	40·4	3521	3567	10·5	16·1	941	1418
2	Open Hearth, High Soluble Slag No. 13, 1925 lb. ...	43·0	38·7	3629	3470	18·5	13·7	1644	1183
3	Open Hearth, Low Soluble Slag No. 14, 1930 lb. ...	42·4	40·4	3720	3567	18·6	15·6	1679	1374
4	Gafsa Phosphate, 750 lb.	41·7	39·4	3654	3502	17·6	18·3	1604	1681
C	No Manure	43·6	39·4	3812	3593	16·3	18·3	1486	1630
C	,, ,, ...	40·8		3563		17·1		1490	

Barley (Plumage Archer). Long Hoos Field, 1922.

Treatment of Plots.	Dressed Grain.						Offal Grain per Acre. lb.			Straw per Acre.						Proportion of Total Grain to 100 of Total Straw.		
	Yield per Acre in Bushels.			Weight per Bushel in lb.						Straw. lb.			Total Straw. cwt.					
	Slag No. 20.	Slag No. 2.	Slag No. 1.	Slag No. 20.	Slag No. 2.	Slag No. 1.	Slag No. 20.	Slag No. 2.	Slag No. 1.	Slag No. 20.	Slag No. 2.	Slag No. 1.	Slag No. 20.	Slag No. 2.	Slag. No. 1.	Slag No. 20.	Slag No. 2.	Slag No. 1.
Basal Manuring, Slag, full quantity	36·0	26·0	28·7	51·3	51·4	51·8	197	162	231	1375	1175	1250	18·5	16·9	19·3	99	80	80
	35·1	31·7	25·5	52·8	52·0	51·0	200	172	213	1375	1238	1238	19·3	18·0	19·1	95	91	71
Basal Manuring, Slag, half quantity	29·9	25·5	32·5	51·9	51·8	51·5	194	169	241	1238	1113	1438	18·5	16·9	20·3	84	79	84
Gafsa Phosphate, 87 lb.	26·2	36·4	29·2	51·3	51·4	51·3	163	181	200	*875	1500	1275	*11·7	19·6	18.3	*115	93	83
Basal Manuring, Gafsa Phosphate, 174 lb.	34·8	25·2	27·5	51·6	52·3	52·0	231	162	200	1488	1088	1213	19·6	16·5	18·2	92	80	80
Basal Mauuring only	25·7	33·7	34·1	52·0	52·0	51·5	178	178	203	1063	1363	1388	15·8	18·3	18·9	85	94	93
No Manure	30·1	24·7	27·0	51·8	50·8	51·1	188	203	228	1363	1100	1263	19·2	15·9	18·8	81	82	77

Basal Manuring is 1 cwt. Sulphate of Potash; 1 cwt. Sulphate of Ammonia. Full Quantity Slag represents 636 lb. Slag No. 20, 602 lb. Slag No. 2 and 436 lb. Slag No. 1 per acre.

*There was a high wind blowing when this plot was threshed, hence the low figure for the yield of straw.

Slag Experiments—*contd.*

Swedes (Hurst's Monarch) Produce per Acre.
Great Harpenden Field, 1922.

Manuring per Acre.	Roots.			Leaves.		
	Slag No. 20.	Slag No. 2.	Slag No. 1.	Slag No. 20.	Slag No. 2.	Slag No. 1.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., Slag full quantity ...	25·92	27·92	30·40	4·89	3·82	4·16
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., Slag full quantity ...	32·08	30·31	30·40	4·01	5·04	4·20
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., Slag half quantity, Gafsa Phosphate, 175 lb.	27·19	28·04	31·88	4·18	3·53	4·10
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., Slag half quantity, Gafsa Phosphate, 175 lb.	28·21	29·78	28·82	4·28	4·16	4·27
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., No. 7 Nauru Phosphate, 262½ lb.	30·96	26·43	26·50	4·49	4·00	3·98
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt., No. 3 Gafsa Phosphate, 350 lb.	27·83	31·12	28·46	3·95	4·58	4·66
Sulphate Ammonia 2 cwt., Sulphate Potash 1 cwt.	27·21	31·45	25·74	4·16	5·02	3·99
No Manure	25·67	27·23	22·70	3·54	3·67	3·19

NOTE.—"Full Quantity" Slag is No. 20, 1275 lb. per Acre.
No. 2, 1225 ,, ,,
No. 1, 875 ,, ,,

Description of Slags Used.

No.	Type.	Total Phosphate as $Ca_3(PO_4)_2$	Solubility %
1	Open Hearth, L.G., H.S.	25·0	90·4
2	,, ,, L.G., L.S.	18·0	35·7
8	Phosphate, Slag Mixture	53·1	25·5
12	Talbot Process, H.G., H.S.	37·3	80·7
13	Open Hearth, L.G., H.S.	22·7	91·5
14	,, ,, L.G., L.S.	22·6	29·0
15	Talbot Process, H.G., H.S.	40·0	72·5
16	Open Hearth, L.G., H.S.	21·3	88·3
17	Bessemer, H.G., H.S.	42·5	77·2
18	Open Hearth, L.G., H.S.	20·8	67·0
19	,, ,, L.G., L.S.	20·2	21·0
20	,, ,, L.G., H.S.	17·2	78·8

L.G. = Low Grade. L.S. = Low Soluble.
H.G. = High Grade. H.S. = High Soluble.

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POTASH EXPERIMENTS.

Manuring per Acre.	Dry Matter per Acre. 1st Plot	2nd Plot	3rd Plot	Yield per acre. 1st Plot	2nd Plot	3rd Plot
Clover. West Barn Field, 1922.	lb.	lb.	lb.	cwt.	cwt.	cwt.
Control	1369	1273	1507	15·2	15·7	18·6
Sulphate of Potash, 210 lb.	1533	1929	2123	18·6	25·0	26·4
Cement Works' Dust, 511 lb.	1381	1710	1729	17·5	21·8	21·4
Potatoes (Arran Chief). Sawpit Field, 1921. With Dung, 12 tons per Acre.				Tons.	Tons.	Tons.
3 cwt. Super., 1½ cwt. Sulphate Ammonia, 470 lb. Sylvenite ...				3·57	*3·15	3·71
3 cwt. Super., 1½ cwt. Sulphate Ammonia, ...				3·55	*3·18	3·72
3 cwt. Super., 1½ cwt. Sulphate Ammonia, 1½ cwt. Sulphate Potash				3·67	4·27	3·88
3 cwt. Super., 1½ cwt. Sulphate Ammonia, 1½ cwt. Sulphate Potash, 95 lb. Sulphate Magnesium				*3·07	3·92	3·87
No Manure. Control				*2·28	3·48	3·18
3 cwt. Super., 1½ cwt. Sul. Amm., 1½ cwt. Muriate Potash				*2·31	4·24	3·97
3 cwt. Super., 1½ cwt. Sul. Amm., 1½ cwt. Muriate Potash, 84 lb. Sul. Magnesium				*2·43	3·90	4·15
Without Dung.						
4 cwt. Super., 2 cwt. Sul. Amm., 625 lb. Sylvenite				3·49	4·04	3·11
4 cwt. Super., 2 cwt. Sul. Amm.				1·43	1·48	1·15
4 cwt. Super., 2 cwt. Sul. Amm., 2 cwt. Sul. Potash				3·48	4·28	3·52
4 cwt. Super., 2 cwt. Sul. Amm., 2 cwt. Sul. Pot., 127 lb. Sul. Mag.				3·85	4·26	3·25
No Manure. Control				1·24	1·72	1·65
4 cwt. Super., 2 cwt. Sul. Amm., 2 cwt. Muriate Potash				4·15	4·20	4·00
4 cwt. Super., 2 cwt. Sul. Amm., 2 cwt. Muriate Potash, 111 lb. Sul. Magnesium				4·27	3·95	3·63
Potatoes (Arran Chief). Sawpit Field, 1921.						
4 cwt. Super., 2 cwt. Sulphate Ammonia, 232 lb. Sul. Potash ...				3·00	2·46	2·82
4 cwt. Super., 2 cwt. Sulphate Ammonia				1·16	0·98	0·89
4 cwt. Super., 2 cwt. Sulphate Ammonia, 5·4 cwt. Sylvenite ...				*1·93	3·36	3·04
Control. No Manure.				*0·73	1 10	1·16
Potatoes (Kerr's Pink). Great Harpenden Field, 1922. With Dung 15 tons per Acre.						
Basal Manuring (=Super. 4 cwt., Sul. Amm. 1·5 cwt. per Acre) ...				8·78	7·72	7·60
Sulphate Potash 183 lb. + Basal Manuring				9·49	9·72	9·45
Muriate Potash 148 lb. + Basal Manuring				9·22	9·60	8·82
Muriate Potash 148 lb. + Salt 497 lb. + Basal Manuring				9·84	9·49	9·14
Without Dung.						
Basal (=Super. 6 cwt., Sulphate Ammonia 2 cwt. per Acre) ...				2·11	2·75	2·57
Sulphate Potash 244 lb. + Basal				7·88	8·96	8·06
Muriate Potash 197 lb. + Basal				8·62	8·73	7·62
Muriate Potash 197 lb. + Salt 662 lb. + Basal				8·45	8·27	8·43
Muriate Potash 197 lb. Sulphate Magnesium, 344 lb. + Basal ...				8·68	8·90	7 62
Muriate Potash 197 lb. Salt 662 lb. + Basal				8·66	8·02	7·51
No Manure				3·23	2·87	2·83
Sulphate Potash 244 lb. Sulphate Magnesium 344 lb. + Basal ...				9·25	8·79	7·11
Cement Works' Dust 614 lb. + Basal				7·47	6 66	6·38
Sylvenite 541 lb. + Basal				8·38	7·92	6 90

* On these plots the bouts were badly broken down due to extra hoeing on account of the growth of Wheatbind.

Mangolds (Prizewinner Yellow Globe). Great Harpenden Field, 1922.

Produce per Acre.

Manuring per Acre.	Roots. 1st Plot Tons.	2nd Plot Tons.	Leaves. 1st Plot Tons.	2nd Plot Tons.
No. 9 Slag 4 cwt., Sulphate Ammonia 2 cwt., Sulphate Potash 2 cwt.	17·64	14·12	5·57	5·13
No. 9 Slag 4 cwt., Sulphate Ammonia 2 cwt.	10·45	11·61	4·73	4·94
No. 9 Slag 4 cwt., Sulphate Ammonia 2 cwt., Cement Works' Dust	18·75	18·25	5·61	5·96
No Manure	10·88		4·25	

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POTATOES.

Relative Effects of Sulphates and Chlorides on different varieties.

Great Harpenden Field, 1922.

Variety.	Dunged Series.						Undunged Series.					
	Actual Weight of Potatoes.			Average Weight per Plant.			Actual Weight of Potatoes.			Average Weight per Plant.		
	Sulphate Row. lb.	Chloride Row. lb.	Basal Row. lb.	Sulphate Row. lb.	Chloride Row. lb.	Basal Row. lb.	Sulphate Row. lb.	Chloride Row. lb.	Basal Row. lb.	Sulphate Row. lb.	Chloride Row. lb.	Basal Row. lb.
Ajax	16	12¾	19¾	3·20	2·55	2·82	13½	17¾	4	2·25	2·54	1·00
	24	21¼	12¼	4·00	3·04	1·75	17¼	18	4½	2·46	3·00	0 64
	27	16½	33	3·86	4·13	4·71	7¼	23	4	2·42	3·29	0·67
Arran Comrade	15¾	11¾	7¼	2·25	1·96	2·42	11¼	8¾	3¼	2·25	1·46	0·65
	10¼	10¾	13	2·56	2·15	2 17	11¼	11¼	1½	1·88	2·25	0·30
	15½	10½	13	2·58	2·10	2·17	15	18	1¾	2 14	2·57	0·29
British Queen	19¼	19	19¼	3·21	2·71	2·75	10¼	13¾	7¾	1·46	1·96	1·11
	19¾	18¾	19¼	2·82	2·68	2·75	16½	11½	8¼	2·36	1·92	1·18
	26¾	25	23¼	3·82	4·17	3·32	11¾	15¾	3¾	1·96	2·63	0·75
Duke of York ...	7¾	11	11¼	1·11	1·57	1·61	9	8	1	1·80	1·60	0·33
	8¾	14	14	1·25	2·00	2·00	9¼	6½	2½	1·54	0·93	0·63
	13½	10½	14¾	2·25	1·75	2 46	6¼	10¼	1¼	1·04	1·46	0·42
Epicure ...	16½	14¾	10	2·36	2·11	1·43	12¼	9¾	1¾	2·04	1·63	0·35
	11½	13½	13½	1·64	1·93	2·25	13½	13¾	3¾	1·93	1·96	0·54
	16	18½	19½	2·29	2·64	2·79	11¾	12½	1	1·68	1·79	0·25
Great Scott ...	13½	19½	21½	3·38	2·79	3·07	21½	17¼	4½	3·07	2·46	0·75
	21½	24¾	19½	3·07	3·54	3·25	11¾	12¾	1¼	1·96	2·13	0·42
	27¼	29	24½	3·89	4·14	3·50	14¼	13¼	1	2·38	2·65	0·50
Iron Duke ...	24	20	21	3·43	3·33	3·50	16¾	19¼	4¾	2·79	2·75	0·68
	21	18½	16¼	3·00	3·08	2·32	10¾	20¼	4	1·79	2·89	1·00
	23¾	23¼	23	3·96	3·32	3·29	20	13	4½	2·86	3·25	0·64
K. of K. ...	26	23¾	20¼	3·71	3·39	2·89	21½	18½	7¼	3·07	3·08	1·04
	28½	27¾	21	4·07	4·63	4·20	—	—	—	—	—	—
	29½	29½	30¼	4·21	4·21	4·32	19¼	15½	5¾	2·75	3·10	0·82
Kerr's Pink ...	18¼	20¾	12	3·04	2·96	2·00	18¾	20¾	6½	2·68	2·96	0·93
	25	22¼	15	3·57	3·18	3·00	11½	19½	3¼	1·92	3·90	0·46
	26¾	30¼	15½	3·82	4·32	3·88	24¼	22	5	3·46	3·14	0·71
Nithsdale ...	18	14¼	30¾	2·57	2·04	1·96	9	9½	1¼	1·29	1·58	0·42
	15½	20½	20	2·21	2·93	2·86	12	15	1	2·00	2·14	0·33
	21½	26	14¼	3·58	3·71	3·56	14¼	14½	2½	2·04	2·07	0·63
Tin Perfection	20¾	17	12¾	3·46	2·83	2·55	20	19½	7½	2·86	2·79	1·07
	21¾	20¾	23¾	3·11	2·96	3·39	18¾	17¾	8½	2·68	2·54	1·21
	17½	19¼	23½	2·50	3·21	3·36	21¾	17	7	3·11	2·83	1·00
Up-to-Date ...	25¾	23¾	25¼	4·29	3·39	4·21	26¾	20¼	9¼	3·82	2·89	1·32
	20½	25¾	25½	2·93	3·68	3·64	20½	14¼	8¼	2·93	2·38	1·18
	29¾	28½	28¾	4·25	4·07	4·11	21¾	21	11	3·11	3·00	1·83

Note.—7 Plants were set in each Row.

Manures were:—Dunged Series: Basal Row: Super. 4 cwt.; Sulphate of Ammonia 1½ cwt.; Dung 15 tons per Acre.
Sulphate Row: Basal Manuring; Sulphate of Potash 184 lb. per Acre.
Chloride Row: Basal Manuring; Muriate of Potash 147 lb. per Acre.
Undunged Series: Basal Row: Super. 6 cwt.; Sulphate of Ammonia 2 cwt. per Acre.
Sulphate Row: Basal Manuring; Sulphate of Potash 244 lb. per Acre.
Chloride Row: Basal Manuring; Muriate of Potash 197 lb. per Acre.

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Potatoes. Great Harpenden Field, 1922.

Comparison of Varieties.

	Ajax.	Arran Comrade.	British Queen.	Duke of York.	Epicure.	Great Scott.	Iron Duke.	K. of K.	Kerr's Pink.	Nithsdale.	Tin Perfection.	Up-to-Date
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
Average weight of Potatoes lifted per row	16·21	10·54	16·08	8·86	11·88	16·58	16·89	21·62	17·63	13·49	17·49	21·47
Average weight per plant ...	2·70	1·90	2·43	1·50	1·81	2·79	2·67	3·28	2·73	2·23	2·62	3·17

Comparison of Manurial Treatment.

	Dunged Series.			Undunged Series.		
	Sulphate Row.	Chloride Row.	Basal Row.	Sulphate Row.	Chloride Row.	Basal Row.
	lb.	lb.	lb.	lb.	lb.	lb.
Average weight of Potatoes lifted per row	20·12	19·82	18·62	15·17	15·41	4·40
Average weight per plant ...	3·08	3·03	2·94	2·36	2·37	0·80

PROFESSOR BLACKMAN'S ELECTRO CULTURE EXPERIMENTS.

Clover. Great Knott Field, 1921.

Plots.	Yield per Acre
	cwt.
Electro-Culture	42·0
Control	41·2

Cereal Crops.

Plots.	Dressed Grain.		Offal Grain per Acre.	Straw per Acre.		Proportion of Total Grain to 100 of Total Straw.
	Yield per Acre.	Weight per Bush.		Straw.	Total Straw.	
	Bushels.	lb.	lb.	lb.	cwt.	
Oats (Grey Winter). Foster's Field, 1921.						
Electro-Culture	40·7	43·4	241	1543	19·3	93·0
Control I.	33·1	42·0	298	1220	14·9	101·4
Control II.	31·6	42·2	234	1102	14·6	96·0
Wheat (Red Standard). Foster's Field, 1922.						
Electro-Culture	15·4	61·4	234	1229	15·8	66·9
Control, North East ...	16·5	60·6	249	1272	15·5	72·1
Control, South East ...	17·2	61·8	231	1196	14·2	81·5
Barley (Plumage Archer). Great Knott Field, 1922.						
Electro-Culture	34·1	49·1	273	1808	22·2	78·2
Control	32·4	48·6	244	1840	22·3	72·8

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BORON EXPERIMENT

Barley (Plumage Archer). Little Hoos, 1922.

Treatment of Plots.	Dressed Grain. Yield per Acre. Bushels.			Dressed Grain. Weight per Bushel. lb.			Offal Grain per Acre. lb.			Straw per Acre. Straw. lb.			Straw per Acre. Total Straw. cwt.			Proportion of Total Grain to 100 of Total Straw.		
	Series 1	Series 2	Series 3	Series 1	Series 2	Series 3	Series 1	Series 2	Series 3	Series 1	Series 2	Series 3	Series 1	Series 2	Series 3	Series 1	Series 2	Series 3
Boric Acid 20 lb. per acre ...	37·9	40·8	30·8	51·1	51·8	52·0	191	138	84	2025	1875	1850	24·6	23·2	22·1	77·4	86·5	68·2
Boric Acid 8 lb. per acre ...	36·5	40·0	41·3	51·5	52·0	52·0	169	113	150	1825	1800	1850	23·4	22·8	23·0	78·1	86·0	89·2
Control ...	34·9	40·8	38·6	50·9	52·4	52·5	156	134	119	1725	1775	1850	21·4	22·5	23·4	80·5	89·9	81·7

All plots received a basal dressing of Superphosphate 3 cwt.; Sulphate of Potash 1 cwt.; Sulphate of Ammonia 1½ cwt.

EXPERIMENTS WITH NITROGENOUS MANURES

Potatoes (Arran Chief). Sawpit Field, 1921.

Manure per Acre.	Yield per Acre. 1st Plot. Tons.	2nd Plot. Tons.	3rd Plot. Tons.
4 cwt. Super., 1 cwt. Sulphate Potash, 2 cwt. Sulphate Ammonia	2·27	2·24	2·43
4 cwt. Super., 1 cwt. Sulphate Potash	1·84	2·13	1·99
4 cwt. Super., 1 cwt. Sulphate Potash, 193 lb. Muriate Ammonia	2·18	2·67	2·61
Control	1·33	1·41	1·49
4 cwt. Super., 1 cwt. Sulphate Potash, 102 lb. Urea	*1·72	2·69	2·57

* The bouts on this plot were badly broken down due to extra hoeing on account of growth of Wheatbind.

Barley (Plumage Archer). Stackyard Field, 1921.

Manures per Acre.	Dressed Grain. Yield per Acre. Bushels.			Dressed Grain. Weight per Bushel. lb.			Offal Grain per Acre. lb.			Straw per Acre. Straw. lb.			Straw per Acre. Total Straw. cwt.			Proportion of Total Grain to 100 of Total Straw.		
	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3	Plot 1	Plot 2	Plot 3
1½ cwt. Super., 145lb. M./Amm.	40·4	34·8	—	54·7	55·5	—	197	135	—	2000	2000	—	23·5	25·9	—	91	71	—
1½ cwt. Super....	27·2	27·1	24·1	56·0	55·5	55·0	153	103	109	1325	1475	1350	17·1	18·4	17·2	88	78	75
1½ cwt. Super., 1½cwt. S./Amm.	38·3	36·5	30·2	55·7	55·2	54·2	144	175	194	1900	2050	1825	23·6	24·9	22·1	87	79	74
1½ cwt. Super., 76¾ lb. Urea ...	38·2	34·6	29·2	55·0	54·5	54·2	150	150	169	2000	2025	1775	24·2	24·7	21·3	83	74	73
No Manure ...	27·5	24·7	—	55·0	54·5	—	103	97	—	1400	1450	—	17·3	17·9	—	83	72	—

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MALTING BARLEY EXPERIMENT.

Plumage Archer. Long Hoos Field, 1922.

Manures per Acre.	Dressed Grain. Yield per Acre. Bushels	Dressed Grain. Weight per Bushel. lb.	Offal Grain per Acre. lb.	Straw per Acre. Straw. lb.	Straw per Acre. Total Straw cwt.	Proportion of Total Grain to 100 of Total Straw.
Super. 3 cwt., Sul./Pot. 1½ cwt., Sul./Amm. 1 cwt.	36·0	50·8	163	1213	17·1	104
Super. 3 cwt., Sul./Pot. 1½ cwt., Mur./Amm. 93 lb.	35·7	51·0	169	1388	18·5	96
Super. 3 cwt., Sul./Pot. 1½ cwt. ...	31·0	50·8	188	1263	17·0	93
Super. 3 cwt., Sul./Amm. 1 cwt. ...	30·0	50·3	175	975	14·1	107
Super. 3 cwt., Sul./Amm. 1 cwt., Mur./ Pot. 1½ cwt.*	34·8	50·0	206	not	recor	ded.
Sul./Amm. 1 cwt., Sul./Pot. 1½ cwt.	36·8	50·3	191	1438	19·9	92
No Manure	28·6	50·5	184	1125	15·5	94

*Muriate of Potash applied on April 3rd. Other Manures on March 24th.

MISCELLANEOUS EXPERIMENTS.

Clover. Hoos Field, 1921 and 1922.

(Formerly Barley after Alsike).

Plot.	Manures per Acre.	Yield per Acre. 1921. cwt.	Yield per Acre. 1922. cwt.
1	Slag 8 cwt., Lime 10 cwt.	45·3	17·4
2	Farmyard Manure 14 tons, Super. 5 cwt., Lime 10 cwt.	53·8	17·9
3	Lime 10 cwt.	35·9	17·6
4	Super. 5 cwt., Lime 10 cwt., Sulph. Potash 1½ cwt. ...	40·6	19·6
5	Super. 5 cwt., Lime 10 cwt.	45·3	13·0
6	Lime 10 cwt.	41·1	13·0
7	Farmyard Manure 14 tons, Lime 10 cwt.	54·5	16·7
8	Slag 8 cwt.	42·9	11·4
9	Farmyard Manure 14 tons, Super. 5 cwt.	50·5	17·2
10	*Control*	*36·8*	*14·1*
11	Super. 5 cwt., Sulph. Potash 1½ cwt.	45·1	20·3
12	Super. 5 cwt.	49·1	14·3
13	*Control*	*36·6*	*9·4*
14	Farmyard Manure 14 tons	46·2	10·7
15	Horse Dung 14 tons, Lime 10 cwt.	35·3	6·7
16	*Control*	*35·5*	*7·1*
17	Horse Dung 14 tons	54·9	11·6
18	Super. 5 cwt.	39·7	6·3
19	Cattle Dung 14 tons, Lime 10 cwt.	50·5	13·0
20	*Control*	*33·3*	*3·6*
21	Cattle Dung 14 tons	41·5	5·8

Manures applied and Clover sown in 1920.

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Barley. Hoos Field. Leguminous Strips, 1921, 1922.

Description of Plot.	Manurial Treatment	1921. Dressed Grain. Yield per Acre. Bush.	1921. Dressed Grain. Weight per Bushel lb.	1921. Offal Grain per Acre. lb.	1921. Straw per Acre. lb.	1921. Total Straw per Acre. cwt.	1921. Proportion of Total Grain to 100 of Total Straw.	1922. Dressed Grain. Yield per Acre. Bush.	1922. Dressed Grain. Weight per Bush. lb.	1922. Offal Grain per Acre. lb.	1922. Straw per Acre. lb.	1922. Total Straw per Acre. cwt.	1922. Proportion of Total Grain to 100 of Total Straw.
After Lucerne ...	Sulphate Amm. 1½ cwt. ...	14·8	56·5	134	688	10·2	85·5	27·2	51·4	188	1921	22·7	62·3
	S. Amm. 1½ cwt. Super. 3 cwt.	37·8	57·3	154	1310	18·0	115·4	41·2	52·0	161	1884	22·2	92·6
After Red Clover	Sulphate Amm. 1½ cwt. ...	12·1	56·4	122	555	8·4	85·2	25·2	50·6	134	1556	18·1	69·3
	S. Amm. 1½ cwt.; Super. 3 cwt.	31·1	57·4	134	1037	15·7	109·0	35·4	51·5	109	1579	18·0	96·0
After Alsike ...	Sulphate Amm. 1½ cwt. ...	11·0	56·3	100	557	8·3	77·6	25·9	50·9	125	1481	17·2	74·8
	S. Amm. 1½ cwt.; Super. 3 cwt.	28·7	57·8	137	871	15·2	105·4	33·6	52·0	92	1421	16·5	99·6

Leguminous crops ploughed in November, 1911.

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OUTSIDE CENTRES—MALTING BARLEY EXPERIMENTS.

Yield in bushels per acre; nitrogen expressed as per cent. of dry matter; value in shillings per quarter assigned by the expert valuation committee.

Treatment.	Rothamsted.			Cawkwell.			Wellingore.			Barneyhill.			Milverton.			Dereham.		
	Bushels.	Per cent. Nitrogen.	Value.	Bushels.	Per cent. Nitrogen.	Value.	Bushels.	Per cent. Nitrogen.	Value.	Bushels.	Per cent. Nitrogen.	Value.	Bushels.	Per cent. Nitrogen.	Value.	Bushels.	Per cent. Nitrogen.	Value.
			s.			s.			s.			s.			s.			s.
No Manure	25·8	1·60	36	25·2	1·56	28	36·1	1·76	36	78·5	1·36	48	26·0	1·53	45	36·7	1·62	31
Complete Manure	32·6	1·64	31	30·9	1·57	30	39·0	1·80	36	89·0	1·47	48	—	—	—	41·0	1·67	31
No Potash	27·0	1·69	31	22·6	1·49	30	43·5	1·78	36	84·0	1·50	48	27·2*	1.64	48	42·0	1·62	31
No Phosphate	33·0	1·63	32	28·8	1·49	30	40·5	1·89	32	85·0	1·47	45	—	—	—	36·0	1·69	31
No Nitrogen	28·2	1·58	31	23·1	1·50	30	37·3	1·72	40	75·5	1·38	53	23·3	1·48	55	30·0	1·66	31
	Woburn.			Orwell Park.			Walcott.			Eyton.			Dunmow.			Eye.		
			s.			s.			s.			s.			s.			s.
No Manure	42·5	1·78	27	16·2	1·43	65	56·9	1·70	30	36·0	1·85	32	51·0	1·75	42	39·5	2·11	30
Complete Manure	44·7	2·09	27	21·6	1·52	65	60·3	1·88	30	28·0	1·90	32	49·5	1·75	42	43·5	2·17	30
No Potash	41·8	2·10	27	24·6	1·53	64	58·7	1·79	30	45·2	2·10	32	47·0	1·85	42	44·1	2·13	30
No Phosphate	39·9	1·91	27	27·9	1·55	64	61·3	1·88	30	44·5	1·87	40	49·0	1·75	42	50·9	2·23	30
No Nitrogen	45·0	1·87	27	18·2	1·51	60	60·8	1·72	30	48·0	1·90	40	45·0	1·78	42	59·1	2·02	30

* Superphosphate only given in this case.