

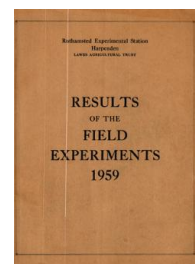
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Yields of the Field Experiments 1959

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59/R/BA/1 Six-course Rotation - Cereal Strips

Rothamsted Research

Rothamsted Research (1960) *59/R/BA/1 Six-course Rotation - Cereal Strips* ; Yields Of The Field Experiments 1959, pp 23 - 26 - DOI: <https://doi.org/10.23637/ERADOC-1-179>

59/Ba/1.3

Summary of ResultsMean yields per acre and responses in yield per cwt of N, P₂O₅ and K₂O

	Rothamsted	Woburn	Rothamsted	Woburn
Sugar Beet, roots (washed): tons per acre			Barley, grain: cwt per acre	
Mean	11.55	12.39	21.5*	28.6*
Response to: N	+2.67	+1.09	+20.0	+8.3
P	-0.99	+1.01	+0.9	+6.8
K	+0.17	-1.73	+1.7	-2.0
Mean dry matter % as harvested:			84.8	84.4
Sugar Beet, sugar percentage			Barley, straw: cwt per acre	
Mean	18.7	18.8	20.6*	18.3*
Response to: N	-0.5	-1.0	+23.5	+2.6
P	+1.1	+0.5	+2.7	+5.2
K	+0.4	-0.2	+1.4	-3.4
Mean dry matter % as harvested:			86.5	84.8
Sugar Beet, total sugar: cwt per acre			Clover, hay, dry matter: cwt per acre	
Mean	43.3	46.5	37.6	
Response to: N	+8.5	+1.8	+2.5	(Ploughed in)
P	-0.9	+4.9	-5.7	
K	+1.8	-7.2	+7.0	
Mean dry matter % as harvested:			81.4	
Sugar Beet, tops: tons per acre			Wheat, grain: cwt per acre	
Mean	6.10	6.52	30.6*	16.2*
Response to: N	+2.59	+3.21	+0.9	+17.5
P	-2.19	+0.55	+9.3	+1.2
K	-0.52	-0.77	+4.0	-1.7
Mean dry matter % as harvested:			85.2	86.4
Sugar Beet, plant number: thousands per acre			Wheat, straw: cwt per acre	
Mean	26.8	**	51.8*	20.0*
Response to: N	-3.7		+21.6	+19.8
P	+0.5		+3.4	+5.6
K	+0.3		+6.8	-4.4
Mean dry matter % as harvested:			88.4	92.3

*(At 85% dry matter).

** Not recorded.

59/Ba/1.4

Mean yields per acre and responses in yield per cwt of N, P_2O_5 and K_2O

	Rothamsted	Woburn		Rothamsted	Woburn
	Potatoes, total tubers: tons per acre			Rye, grain: cwt per acre	
		Without Mg	With Mg		
Mean	8.59	8.17	7.98	29.4*	27.1*
Response to: N	+4.42	+3.08	+3.82	+16.5	+19.6
P	+3.14	-1.88	-1.80	+0.9	-6.1
K	+0.31	+0.57	+0.48	+2.9	-0.4
Mean dry matter % as harvested:				84.6	86.3
	Potatoes, percentage ware			Rye, straw: cwt per acre	
	(1)	(2)			
Mean	90.5	77.1	77.9	40.2*	29.2*
Response to: N	+5.1	+8.0	+7.8	+36.3	+13.0
P	-3.5	+4.6	+12.2	+3.5	-8.7
K	-1.3	+3.6	+5.4	+1.0	+3.6
Mean dry matter % as harvested:				88.7	90.9

*(At 85% dry matter)

Riddle: (1) $1\frac{1}{2}$ "; (2) $1\frac{5}{8}$ ".

59/Bb/1.1

LEY AND ARABLE ROTATIONS

Highfield and Fosters Field 1959 - the 11th year.

For details of treatments, rotations, etc. see "Details of the Classical and Long Term Experiments" 1956.

The following addition should be made to the 1958 details:-

Sheep grazing: Live weight records were discontinued this year.

Rates of application of supplementary (corrective) potash
(K₂O: cwt per acre)

Crop	Year of cycle	Field etc.	Rate	
Permanent grass	"1st treatment"	Highfield (blocks 6 & 7)	2.5	(2 previous hay crops taken)
Reseeded grass	"1st treatment"	Highfield (blocks 6 & 7) Fosters (blocks 8 & 9)	3.0	(2 previous hay crops taken)
Lucerne	"1st treatment"	Highfield Fosters	3.0 4.0	(3 years previous lucerne)
Cut grass	"1st treatment"	Highfield Fosters	3.5 4.0	(3 years previous cutting)

The following should be added to the list for 1957:

Permanent and reseeded grass	"2nd treatment"	Highfield (blocks 5 & 8) Fosters (blocks 5 & 7)	1.0	(1 previous hay crop taken)
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Cultivations, etc.:

HIGHFIELD

1st year Treatment Crops

Cut grass. Ploughed twice: Sept 4, 1958 and Nov 20. Supplementary K applied: Nov 24. Basal PK compound applied: Apr 8, 1959. 'Nitro-Shell' applied Apr 10. Seeds sown at 33 lb per acre: Apr 11. Sprayed with MCPB at 4 pints in 40 gallons per acre: May 28. Cut 3 times: June 26, Aug 8, Sept 16. 'Nitro-Shell' applied after every cut except the last.

Grazed ley. Ploughed twice: Sept 4, 1958 and Nov 20. Basal PK compound applied: Apr 8, 1959. 'Nitro-Shell' applied: Apr 10. Seed sown at 44 lb per acre: Apr 11. Sprayed with MCPB at 4 pints in 40 gallons per acre: May 28. 'Nitro-Shell' applied: July 16. Grazed: 4 circuits, June 5 - Aug 12.

Lucerne. Ploughed twice: Sept 4, 1958 and Nov 20. Supplementary K applied: Nov 24. Basal PK compound applied: Apr 8, 1959. Seed drilled at 28 lb per acre: Apr 13. Cut twice: July 22 and Sept 8. Variety: Du Puits.

59/Bb/1.2

Hay. Seeds undersown in barley at 28 lb per acre: Apr 24, 1958.
Basal PK compound applied: Feb 16, 1959. 'Nitra-Shell'
applied: Mar 25. Cut: June 9.

2nd year Treatment Crops

Cut grass. Basal PK compound applied: Feb 16, 1959. Nitrogen
and potash applied as compound fertilizer (16% N, 16% K₂O):
Apr 3 and after every cut, except the last. Cut 4 times:
May 25, June 25, Aug 8, Sept 16.
Grazed ley. Basal PK compound applied: Feb 14, 1959. 'Nitra-
Shell' applied: June 1 and July 16. Grazed: 5 circuits,
Apr 22 - Aug 8.
Lucerne. Basal PK compound applied: Feb 14, 1959. Cut 4 times:
June 9, July 9, Aug 31, Nov 12.
Potatoes. Ploughed twice: June 16 and Nov 20, 1958. Ridged:
Apr 14, 1959. Basal PK compound applied: Apr 23. Sulphate
of ammonia and dung applied, potatoes planted: Apr 25. For
later cultivations see Potato Test Crop.

3rd year Treatment Crops

Cut grass. Basal PK compound applied: Feb 16, 1959. Nitrogen
and potash applied as compound fertilizer (16% N, 16% K₂O):
Apr 3, and after every cut except the last. Cut 4 times:
May 25, July 3, Aug 10, Sept 8.
Grazed ley. Basal PK compound applied: Feb 14, 1959. 'Nitra-
Shell' applied: June 6 and July 16. Grazed: 7 circuits,
Apr 26 - Aug 30.
Lucerne. Basal PK compound applied: Feb 14, 1959. Cut 3 times:
June 9, July 9, Aug 31.
Oats. Ploughed: Oct 15, 1958. Seed drilled at 3½ bushels per
acre with basal PK compound: Mar 13, 1959. 'Nitra-Shell'
applied: Mar 14. First sowing damaged by birds. Resown: Apr 11.
Combine harvested: Aug 17. Variety: Sun II.

1st Test Crop, Wheat

Ploughed after oats: Sept 5 and Oct 20, 1958. Ploughed ley:
Oct 11. Seed combine drilled at 2¾ bushels per acre with
basal PK compound: Oct 27. 'Nitra-Shell' applied:
Mar 26, 1959. Sprayed with CMPP at 6 pints in 40 gallons
per acre: Apr 20. Combine harvested: Aug 15. Variety:
Cappelle.

2nd Test Crop, Potatoes

Ploughed: Sept 5 and Nov 20, 1958. Ridged: Apr 14, 1959. Basal
PK applied: Apr 23. Sulphate of ammonia, additional P and K
and dung applied, potatoes planted: Apr 25. Earthed up: June 30.
Sprayed with copper fungicide at 5 lb in 40 gallons per acre:
Aug 24. Sprayed with sulphuric acid, 15% BOV, at 100 gallons
per acre: Sept 18. Lifted: Sept 30. Variety: Majestic.

*Note: Plots 85 and 86 were also ploughed on June 16, 1958 owing to
failure of the lucerne.