

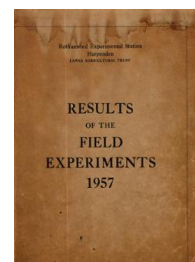
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Yields of the Field Experiments 1957

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57/R/BA/3 and 57/W/BA/3 Six-course Rotation

Rothamsted Research

Rothamsted Research (1958) *57/R/BA/3 and 57/W/BA/3 Six-course Rotation* ; Yields Of The Field Experiments 1957, pp 24 - 27 - DOI: <https://doi.org/10.23637/ERADOC-1-177>

57/Ba/3.1

SIX COURSE ROTATION EXPERIMENT

The 28th year

Seasonal effects of fertilizers - Rothamsted Long Hoos IV and Woburn Stackyard 1957.

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

Area of each plot: Rothamsted, 0.0250 acres; Woburn, 0.0266 acres.

Cultivations, etc.:

Rothamsted

Sugar beet.

Ploughed twice: Sept 21, 1956 and Nov 12. Fertilizers applied: Apr 13, 1957. Seed drilled at 12 lb per acre: Apr 16. Sprayed with miscible DDT, 3 pints in 20 gallons per acre: May 29. Singled: June 14 - 19. Sprayed with methyl demeton, 12 oz in 80 gallons per acre: July 9. Lifted: Nov 4 - 13. Variety: Klein E.

Barley.

Sugar beet tops spread: Dec 6, 1956. Ploughed: Jan 12, 1957. Ground chalk applied at 20 cwt per acre: Feb 21. Fertilizers applied: Mar 16. Seed drilled at $2\frac{3}{4}$ bushels per acre: Mar 18. Clover seed undersown: May 20. Harvested: Aug 8. Variety: Plumage Archer.

Clover.

Seed undersown in barley at 40 lb per acre: Apr 23, 1956. Autumn fertilizers applied: Nov 16. Sulphate of ammonia applied: Mar 30, 1957. Cut: July 9. Variety: S123 Late Flowering Red.

Wheat.

Ploughed twice: July 27, 1956 and Sept 21. Seed drilled at $2\frac{3}{4}$ bushels per acre: Oct 25. Autumn fertilizers applied: Oct 26. Sulphate of ammonia applied: Apr 24, 1957. Harvested: Aug 8. Variety: Yeoman.

Potatoes.

Ploughed 3 times: Sept 21, 1956, Nov 12, Jan 22, 1957. Ridged, fertilizers applied: May 3. Potatoes planted: May 4. Earthed up: July 6. Sprayed with copper fungicide, 5 lb in 40 gallons per acre: July 31 and Aug 21. Sprayed with sulphuric acid, 15% BOV at 100 gallons per acre: Sept 19. Lifted: Sept 30. Variety: Majestic.

Rye.

Ground chalk applied at 20 cwt per acre, ploughed: Oct 15, 1956. Seed drilled at 3 bushels per acre: Oct 25. Autumn fertilizers applied: Oct 26. Sulphate of ammonia applied: Apr 24, 1957. Harvested: Aug 7. Variety: King II.

57/Ba/3.2

Woburn

Sugar beet.

Ploughed twice: Sept 1, 1956 and Nov 14. Fertilizers applied: Apr 11, 1957. Seed drilled at 12 lb per acre: Apr 12. Sprayed with miscible DDT, 3 pints in 20 gallons per acre: May 22. Singled: June 12 - 13. Sprayed with methyl demeton, 12 oz in 60 gallons per acre: July 8. Lifted: Nov 12. Variety: Klein E.

Barley.

Ploughed: Nov 14, 1956. Fertilizers applied: Mar 12, 1957. Seed drilled at $2\frac{1}{2}$ bushels per acre: Mar 16. Harvested: Aug 2. Variety: Herta.

Clover.

Ploughed twice: Aug 24, 1956 and Nov 13. Fertilizers applied: Mar 23, 1957. Seed broadcast at 40 lb per acre: Mar 26. Cut: July 5. Variety: Crimsen clover.

Wheat.

Ploughed twice: July 24, 1956 and Sept 29. Autumn fertilizers applied: Oct 15. Seed drilled at $2\frac{1}{2}$ bushels per acre: Oct 20. Sprayed with MCPP at 7 pints in 40 gallons per acre: Apr 6, 1957. Sulphate of ammonia applied: May 1. Harvested: Aug 7. Variety: Yeoman.

Potatoes.

Ploughed twice: Sept 4, 1956 and Nov 13. Ridged, fertilizers applied and potatoes planted: Apr 26, 1957. Sprayed with miscible DDT, 3 pints in 20 gallons: May 22. Sprayed with copper fungicide, 5 lb in 40 gallons per acre: Aug 3, Aug 22 and Sept 4. Sprayed with arsenious compound, 1 gallon in 40 gallons per acre: Sept 16. Lifted: Oct 1. Variety: Majestic.

Rye.

Ploughed: Oct 6, 1956. Ground chalk applied at 20 cwt per acre: Oct 11. Seed drilled at $2\frac{1}{2}$ bushels per acre: Oct 20. Sprayed with MCPP at 7 pints in 40 gallons per acre: Apr 6, 1957. Sulphate of ammonia applied: Apr 18. Harvested: Aug 7. Variety: King II.

Note: In 1957 at Woburn, the nitrogen levels were doubled on all crops except clover.

57/Ba/3.3

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 | 7.71 | 14.15 | 26.7 | 28.4 |
| Response to: N | +2.55 | +2.27 | +12.9 | +9.9 |
| P | -0.80 | +0.48 | -12.4 | +13.6 |
| K | -0.31 | +2.75 | -4.9 | -1.0 |
| Mean dry matter % as harvested: | | | 83.3 | ** |
| Sugar Beet, sugar percentage | | | Barley, straw: cwt per acre | |
| Mean | 16.7 | 17.5 | 16.1 | 24.3 |
| Response to: N | +0.7 | -0.3 | +16.9 | +10.6 |
| P | +1.1 | 0.0 | -7.2 | +7.5 |
| K | +0.8 | +1.1 | +7.3 | +1.5 |
| Mean dry matter % as harvested: | | | 83.1 | ** |
| Sugar Beet, total sugar: cwt per acre | | | Clover, hay, dry matter: cwt per acre | |
| Mean | 25.7 | 49.8 | 25.1 | 8.9 |
| Response to: N | +9.5 | +7.1 | -14.0 | +14.8 |
| P | -0.8 | +1.7 | +8.7 | -5.7 |
| K | +0.1 | +12.9 | +4.0 | -2.1 |
| Mean dry matter % as cut: | | | 58.7 | 25.3 |
| Sugar Beet, tops: tons per acre | | | Wheat, grain: cwt per acre | |
| Mean | 9.26 | 10.09 | 32.1 | 10.0 |
| Response to: N | +5.43 | +6.35 | +9.4 | +2.5 |
| P | +0.69 | -0.19 | +0.9 | -17.6 |
| K | -1.08 | +0.13 | -4.2 | +9.3 |
| Mean dry matter % as harvested: | | | 83.7 | ** |
| Sugar Beet, plant number: thousands per acre | | | Wheat, straw: cwt per acre | |
| Mean | 29.6 | ** | 43.5 | 11.8 |
| Response to: N | -1.3 | | +21.3 | +2.2 |
| P | -0.3 | | -4.4 | -17.3 |
| K | +0.3 | | -8.2 | +4.0 |
| Mean dry matter % as harvested: | | | 84.9 | ** |

*(At 85% dry matter). ** Not recorded.

57/Ba/3.4

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

| | Rothamsted | Woburn | Rothamsted | Woburn |
|--|------------|--------|-----------------------------|--------|
| Potatoes, total tubers: tons per acre | | | Rye, grain: cwt per acre | |
| Mean | 7.38 | 12.16 | * | |
| Response to: N | +0.15 | +2.57 | 29.2 | 24.8 |
| P | +1.15 | -0.16 | +14.9 | +14.7 |
| K | +0.61 | +0.17 | -2.3 | +13.5 |
| Mean dry matter % as harvested: | | | -3.5 | -0.9 |
| | | | 82.0 | ** |
| Potatoes, percentage ware | | | Rye, straw: cwt per acre | |
| | (1) | (2) | * | |
| Mean | 80.0 | 90.5 | 32.9 | 28.9 |
| Response to: N | -4.4 | +3.1 | +7.2 | +10.6 |
| P | +8.3 | +2.4 | -3.1 | +15.5 |
| K | +5.6 | -3.0 | -5.8 | -1.4 |
| Mean dry matter % as harvested: | | | 84.7 | ** |

*(At 85% dry matter).

Riddle: (1) 1½"; (2) 1⅝"