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Details of the Classical and Long-term Experiments Up to 1967

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Rothamsted Research

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INTRODUCTION

This book is for use with the *Numerical Results of the Field Experiments** published annually. It gives the present (1967) treatments of the Classical Experiments and of some of the modern long-term experiments at Rothamsted and Woburn. Summary tables of the yields obtained are given for most of the experiments together with a record of the more important changes in cropping, manuring and cultivations that have taken place since the experiments began.

Long-term experiments that were started in the lifetime of Lawes and Gilbert (i.e. in or before 1901) are designated "classical". In this book classical experiments that ended before 1901 are excluded. The choice of long-term experiments for inclusion is somewhat arbitrary, but, as a rough guide, modern experiments that have by 1967 given six or more years' data are included.

References are given to publications in which results are summarised and these may be consulted for details of minor changes in procedure not given in this book. The lists of references are for many experiments by no means exhaustive.

The standard publications giving in detail the results of the Classical Experiments from the beginning up to about 1900 are:

1. Gilbert, J. H. (1895). Agricultural investigations at Rothamsted, England. *Bull. U.S. Dep. Agric.*, No. 22, 316 pp.
2. Lawes, J. B. & Gilbert, J. H. (1895). The Rothamsted experiments. *Trans. R. Highld agric. soc. Scotl.*, 5th Series **7**, 354 pp.
3. Hall, A. D. (1917). *The book of the Rothamsted experiments*, 2nd edition revised by E. J. Russell. London: John Murray, 332 pp. (This contains a list of all important papers relating to the Rothamsted experiments from 1845 to 1910.)
4. Gilbert, J. H. (1901). *Memoranda of the origin, plan and results of the field and other experiments conducted on the farm and in the laboratory at Rothamsted.* 123 pp. (Detailed statement of the manurial treatments applied to the classical plots from 1843 to 1900. Yields and occasionally chemical analyses of the experimental produce. The yields are usually successive long-period means but in some experiments year-by-year yields are given.)
5. Russell, E. J. & Voelcker, J. A. (1936). *Fifty years of field experiments at the Woburn Experimental Station.* Rothamsted Monographs on Agricultural Science. London: Longmans, Green & Co., 392 pp.

Most of the Classical Experiments were reviewed by Watson and Russell in a series of papers published between 1938 and 1946 and again by Warren and Johnston in reviews in the *Rothamsted Reports for 1957* and

* From the first volume (1939–45) up to that for 1960 the title was *Results of the Field Experiments.*

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later years. A full review of Broadbalk has been published in Part 2 of the *Report for 1968*. As all these papers refer to single experiments they are listed in the appropriate section of this book.

Conventions

The following conventions are observed throughout:

(i) All years are harvest years, i.e. wheat sown in autumn 1843 is referred to as 'wheat 1844'. In a few cases where this usage might cause confusion (e.g. where a fertiliser was applied during a fallow year) an explanatory note has been inserted.

(ii) '1906–25' indicates a treatment first applied for the crop harvested in 1906 and last applied for the crop harvested in 1925.

(iii) 'Since 1885' or 'from 1885' indicates a treatment first applied for the crop harvested in 1885.

(iv) 'Until 1884' indicates a treatment last applied for the crop harvested in 1884.

(v) All yields, seed-rates, rates of application of fertilisers, sprays, etc., are per acre unless otherwise stated.

(vi) Different numbers of years' results are grouped in the various experiments. For example, for Broadbalk the period is five years (corresponding to one cycle of fallowing), for Park Grass eight years (two cycles of liming).

(vii) Unless otherwise indicated 'wheat' means winter wheat, 'barley' means spring barley, 'oats' means spring oats and 'potatoes' are main-crop.

(viii) Yields of grain and straw are calculated as at 85% dry matter. Grass, hay, etc., are expressed as dry matter. For potatoes yields of total fresh tubers are given and for the tops of root-crops yields are as harvested.

The present publication supersedes *Details of the Classical and Long-Term Experiments up to 1962* (published 1966).

This book is referred to in the (*Numerical*) *Results of the Field Experiments* as *Details 1967*, and it should also be consulted when reference is made in earlier volumes to *Appendix Y 1950*, *Details of the Classical and Long-Term Experiments 1956* and *Details 1962*.

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