

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Botanical Composition of the Park Grass Plots at Rothamsted 1856-1976



[Full Table of Content](#)

References

Rothamsted Research

Rothamsted Research (1978) *References ; Botanical Composition Of The Park Grass Plots At Rothamsted 1856-1976*, pp 16L - 17R - DOI: <https://doi.org/10.23637/ERADOC-1-156>

Acknowledgments

I am deeply indebted to Mrs Hilary Harding for her patient and persevering help throughout the course of these investigations, to Miss Heather Pellant for help with the 1975 and 1976 analyses and for typing the manuscript and to Miss Joan Thurston for helpful discussions and editorial comments. I am also grateful to Mr A.E. Johnston for providing unpublished data for Table 3 and to Dr K. Warington for many helpful comments.

References

- ARNOLD, P.W., HUNTER, F. & GONZALEZ-FERNANDEZ, P. (1976). Long-term grassland experiments at Cockle Park. *Annales agronomique*, 27 (5-6), 1027-1042.
- BRENCHLEY, W.E. (1918). Buried weed seeds. *Journal of Agricultural Science*, 9, 1-31.
- BRENCHLEY, W.E. (1924) *Manuring of grassland for hay*. The Rothamsted Monographs on Agricultural Science, 144 pages, London : Longmans.
- BRENCHLEY, W.E. (1925). The effect of light and heavy dressings of lime on grassland. *Journal of the Ministry of Agriculture & Fisheries*, 32, 504-512.
- BRENCHLEY, W.E. (1930). The varying effect of lime on grassland with different schemes of manuring. *Journal of the Ministry of Agriculture & Fisheries*, 37, 663-673.
- BRENCHLEY, W.E. (1935). The influence of season and of the application of lime on the botanical composition of grassland herbage. *Annals of Applied Biology*, 22, 183-207.
- BRENCHLEY, W.E. (1937). Correlation of manuring and botanical composition of continuous hay crops. *Report of the Fourth International Grassland Congress, Aberystwyth, Great Britain*. 441-445.
- BRENCHLEY, W.E. & HEINTZE, S.G. (1933). Colonisation of *Epilobium angustifolium*. *Journal of Ecology*, 21, 101-102.
- BRENCHLEY, W.E. & WARINGTON, K. (1958). *The Park Grass Plots at Rothamsted 1856-1949*. Reprinted 1969. Rothamsted Experimental Station, Harpenden, Herts.
- CASHEN, R.O. (1947). The influence of rainfall on the yield and botanical composition of permanent grass at Rothamsted. *Journal of Agricultural Science, Cambridge*. 37, 1-10.
- CASTLE, M.E. & HOLMES, W. (1960). The intensive production of herbage for crop-drying. VII. The effect of further continued massive applications of nitrogen with and without potash on the yield of grassland herbage. *Journal of Agricultural Science, Cambridge*. 55, 251-260.
- CLAPHAM, A.R., TUTIN, T.G. & WARBURG, E.F. (1962). *Flora of the British Isles*. 2nd Edition Cambridge University Press.
- DAVIES, M.S. (1975). Physiological differences among populations of *Anthoxanthum odoratum* L. collected from the Park Grass Experiment, Rothamsted. IV Response to potassium and magnesium. *Journal of Applied Ecology*, 12, 953-964.

- DAVIES, M.S. & SNAYDON, R.W. (1973a). Physiological differences among populations of *Anthoxanthum odoratum* L. collected from the Park Grass Experiment, Rothamsted. I. Response to calcium. *Journal of Applied Ecology*, 10, 33-45.
- DAVIES, M.S. & SNAYDON, R.W. (1973b). Physiological differences among populations of *Anthoxanthum odoratum* L. collected from the Park Grass Experiment, Rothamsted. II. Response to aluminium. *Journal of Applied Ecology*, 10, 47-55.
- DAVIES, M.S. & SNAYDON, R.W. (1974). Physiological differences among populations of *Anthoxanthum odoratum* L. collected from the Park Grass Experiment, Rothamsted. III. Response to phosphate. *Journal of Applied Ecology*, 11, 699-707.
- DAVIES, M.S. & SNAYDON, R.W. (1976). Rapid population differentiation in a mosaic environment. III. Measurements of selection pressures. *Heredity*, London, 36, 59-66.
- DONY, J.G., PERRING, F. & ROB, C.M. (1974). *English Names of Wild Flowers*. A list recommended by the Botanical Society of the British Isles. Butterworths, London.
- DUFFEY, E.A., MORRIS, M.G., SHEAIL, J., WARD, L.K., WELLS, D.A., & WELLS, T.C.E. (1974). *Grassland Ecology and Wildlife Management*, Chapman & Hall, London.
- EDWARDS, C.A. & LOFTY, J.R. (1975). The invertebrate fauna of the Park Grass Plots. I. Soil Fauna. *Rothamsted Experimental Station, Report for 1974*, Part 2, 133-154.
- EDWARDS, C.A., BUTLER, C.G. & LOFTY, J.R. (1976). The invertebrate fauna of the Park Grass Plots. II. Surface fauna. *Rothamsted Experimental Station, Report for 1975*, Part 2, 63-89.
- ELLIOTT, F.J. & THOMAS, B. (1934). On the yields and composition of meadow hay from certain of the Palace Leas plots at Cockle Park. *Journal of Agricultural Science, Cambridge*, 24, 379-389.
- ELLIOTT, J.G., OSWALD, A.K., ALLEN, G.P. & HAGGAR, R.J. (1974). The effect of fertiliser and grazing on the botanical composition and output of an *Agrostis/Festuca* sward. *Journal of the British Grassland Society* 29, 29-35.
- HAGGAR, R.J. (1976). The seasonal productivity, quality and response to nitrogen of four indigenous grasses compared with *Lolium perenne*. *Journal of the British Grassland Society*, 31, 197-207.
- HEDDLE, R.G. (1967). Long-term effects of fertilisers on herbage production. I. Yields and botanical composition. *Journal of Agricultural Science, Cambridge*, 69, 425-431.
- HEWITT, E.J. (1952). A biological approach to the problem of soil acidity. *Transactions of the International Society of Soil Science*, 1, 101-118.
- JOHNSTON, A.E. (1972). Changes in soil properties caused by the new liming scheme on Park Grass. *Rothamsted Experimental Station Report for 1971*, Part 2, 177-180.
- LAWES, J.B. & GILBERT, J.H. (1859). Report of experiments with different manures on permanent meadow land. *Journal of the Royal Agricultural Society of England*, 1st Series, 19, 552-573; 20, Part II, 228-246, III 246-272; IV 398-441.
- LAWES, J.B. & GILBERT, J.H. (1863). The effect of different manures on the mixed

- herbage of grassland. *Journal of the Royal Agricultural Society of England*, 24, Part I, 1-36.
- LAWES, J.B. & GILBERT, J.H. (1871). Effects of the drought of 1870 on some of the experimental crops at Rothamsted. *Journal of the Royal Agricultural Society of England*, 7, Part I, 91-132.
- LAWES, J.B. & GILBERT, J.H. (1880). Agricultural, botanical and chemical results of experiments on the mixed herbage of permanent meadow, conducted for more than twenty years in succession on the same land. Part I. The agricultural results. *Philosophical Transactions of the Royal Society (A & B)* 171, 289-415.
- LAWES, J.B. & GILBERT, J.H. (1900). Agricultural, botanical and chemical results of experiments on the mixed herbage of permanent grassland, conducted for many years in succession on the same land. Part III. The chemical results. *Philosophical Transactions of the Royal Society (B)* 192, 139-210.
- LAWES, J.B. & GILBERT, J.H. & MASTERS, M.T. (1882). Agricultural, botanical and chemical results of experiments on the mixed herbage of permanent meadow, conducted for more than twenty years in succession on the same land. Part II. The botanical results. *Philosophical Transactions of the Royal Society (A & B)*. 173, 1181-1413.
- LOWDAY, J.E. & WELLS, T.C.E. (1977). The management of grassland and heathland in country parks. *Report of the Countryside Commission*. CCP 105. p.71
- MURPHY, W.E. (1960). Ecological changes induced in moorland pastures by different fertiliser treatments. *Proceedings of the Eight International Grassland Congress*, 86-89.
- RORISON, I.H. (1975). Nitrogen source and metal toxicity. *Journal of the Science of Food and Agriculture*, 26, 1426.
- SMITH, C.J., ELSTON, A.H. & BUNTING, A.H. (1971). The effects of cutting and fertiliser treatment on the yield and botanical composition. *Journal of the British Grassland Society*, 26, 213-219.
- SMITH, W.G. (1924). The manuring of grassland for hay at Rothamsted. *The Scottish Journal of Agriculture*, 7, 1-8.
- SNAYDON, R.W. (1970). Rapid population differentiation in a mosaic environment. I. Response of *Anthoxanthum odoratum* L. to soils. *Evolution*, 24, 257-269.
- SNAYDON, R.W. & DAVIES, M.S. (1972). Rapid population differentiation in a mosaic environment. II. Morphological variation in *Anthoxanthum odoratum* L. *Evolution*, 26, 390-405.
- SNAYDON, R.W. & DAVIES, M.S. (1976). Rapid population differentiation in a mosaic environment. IV. Populations of *Anthoxanthum odoratum* L. at sharp boundaries. *Heredity*, 36, 9-25.
- THOMAS, B., HOLMES, W.B. & CLAPPERTON, J.L. (1955a). A study of meadow hays from the Cockle Park plots. Part I. Proximate constituents and digestibility. *Empire Journal of Experimental Agriculture*, 23, 25-33.
- THOMAS, B., HOLMES, W.B. & CLAPPERTON, J.L. (1955b). A study of meadow hays from the Cockle Park plots. Part II. Ash constituents. *Empire Journal of Experimental Agriculture*, 23, 101-108.
- THURSTON, J.M., WILLIAMS, E.D. & JOHNSTON, A.E. (1976). Modern developments in an experiment on permanent grassland started in 1856 : effects of fertilisers and lime on botanical composition and crop and soil analyses. *Annales agronomiques*, 27, (5-6), 1043-1082.

172

- Unit of Comparative Plant Ecology NERC (1976)
Plant response to nitrogen source and aluminium at low pH, p12, *Annual Report of the Unit of Comparative Plant Ecology, (Natural Environment Research Council) University of Sheffield, U.K.*
- De VRIES, D.M., 'T HART, Ir. M.L. & KRUIJNE, A.A. (1942). Een waardeering van grasland op grond van de plantkundige samenstelling. *Uit het landbouwkundig tijdschrift, maandblad van het ned. genootschap voor landbouwwetenschap*. 54 ste Jaargang No. 663, 245-265.
- WARREN, R.G. & JOHNSTON, A.E. (1964). The Park Grass Experiment. *Rothamsted Experimental Station, Report for 1963*, 240-262.
- WARREN, R.G., JOHNSTON, A.E. & COOKE, G.W. (1965). Changes in the Park Grass experiment. *Rothamsted Experimental Station, Report for 1964*, 224-228.
- WARREN WILSON, J. (1960). Inclined point quadrats. *New Phytologist*, 59, 1-8.
- WAY, J.M. (1969). Road verges – research on management for amenity and wild life. In symposium proceedings on *Road verges, Their function and management*, 61-71, Edited by J.M. Way. BCPC and Monks Wood Experimental Station (the Nature Conservancy)
- WILLIAMS, E.D. (1974). Changes in yield and botanical composition caused by the new liming scheme on Park Grass. *Rothamsted Experimental Station, Report for 1973*, Part 2, 67-73.