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# Guide to the Classical and Other Long-term Experiments, Datasets and Sample Archive



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## References

### Rothamsted Research

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## References

- Avery, B. W. & Catt, J. A. (1995). The soil at Rothamsted. *Lawes Agricultural Trust Co. Ltd, Harpenden UK*, 44 + map. eERAdocID: [Soils1995-2-44](#)
- Beaumont, D., Macdonald, A. & Goulding, K. (2016). The U.K. Environmental Change Network, Rothamsted. North Wyke, The First 20 years (1993-2012). Lawes Agricultural Trust, 41 pp. ISBN 978-0-9564424-2-0. (<https://www.rothamsted.ac.uk/sites/default/files/PDF-Booklet-1-ECNNorthWykeFirst20yr.pdf>).
- Bell, J. R., Alderson, L., Izera, D., Kruger, T., Parker, S., Pickup, J., Shortall, C. R., Taylor, M. S., Verrier, P. & Harrington, R. (2015). Long-term phenological trends, species accumulation rates, aphid traits and climate: five decades of change in migrating aphids. *Journal of Animal Ecology*, **84**, 21-34.
- Catt, J. A., King, D. W. & Weir, A. H. (1975). The Soils of Woburn Experimental Farm. I. Great Hill, Road Piece and Butt Close. *Rothamsted Experimental Station Report for 1974*, Part 2, 5-28. DOI: [10.23637/ERADOC-1-33157](#)
- Catt, J. A., Weir, A. H., King, D. W., Le Riche, H. H., Pruden, G. & Norrish, R. E. (1977). The Soils of Woburn Experimental Station. II. Lansome, White Horse and School Fields. *Rothamsted Experimental Station Report for 1976*, Part 2, 5-32. DOI: [10.23637/ERADOC-1-34445](#)
- Catt, J. A., Weir, A. H., Norrish, R. E., Rayner, J. H., King, D. W., Hall, D. G. M. & Murphy, C. P. (1980). The soils of Woburn Experimental Farm. III. Stackyard. *Rothamsted Experimental Station Report for 1979*, Part 2, 5-39. DOI: <https://doi.org/10.23637/ERADOC-1-34287>
- Clark, I.M. & Hirsch, P.R. (2008). Survival of bacterial DNA and culturable bacteria in archived soils from the Rothamsted Broadbalk experiment. *Soil Biology & Biochemistry*, **40**, 1090–1102.
- Clark, I. M., Buchkina, N., Jhurreea, D., Goulding, K. W. T. & Hirsch, P. R. (2012). Impacts of nitrogen application rates on the activity and diversity of denitrifying bacteria in the Broadbalk Wheat Experiment. *Philosophical Transactions of the Royal Society B-Biological Sciences*, **367**, 1235-1244.
- Defra (2010). Fertiliser Manual (RB 209). 8th Edition, pp. 1–250 ([www.defra.gov.uk](http://www.defra.gov.uk)). London, UK: *The Stationery Office* ([www.tsoshop.co.uk](http://www.tsoshop.co.uk)).
- Dyke, G. V., George, B. J., Johnston, A. E., Poulton, P. R. & Todd, A. D. (1983). The Broadbalk wheat experiment 1968-78: yields and plant nutrients in crops grown continuously and in rotation, *Rothamsted Experimental Station Report for 1982*, Part 2, 5-44. DOI: <https://doi.org/10.23637/ERADOC-1-34179>
- Fox, R., Parsons, M. S., Chapman, J. W., Woiwod, I. P., Warren, M. S. & Brooks, D. R. (2013). The state of Britain's larger moths 2013. Wareham, Dorset, UK: Butterfly Conservation.
- Glendining, M. J., Poulton, P. R., Powlson, D. S. & Jenkinson, D. S. (1997). Fate of N-15-labelled fertilizer applied to spring barley grown on soils of contrasting nutrient status. *Plant and Soil*, **195**, (1), 83-98.
- Glynne, M. D., Fitt, B. D. L. & Hornby, D. (1985). *Gibellina cerealis*, an unusual pathogen of wheat, *Transactions of the British Mycological Society*, **84**, 653-659.
- Goulding, K. W. T., Poulton, P. R., Webster, C. P. & Howe, M. T. (2000). Nitrate leaching from the Broadbalk Wheat Experiment, Rothamsted, UK, as influenced by fertilizer and manure inputs and the weather. *Soil Use and Management*, **16** (4), 244–250.
- Hansen, J. & Sato, M. (2016). Regional climate change and national responsibilities. *Environmental Research Letters*, **11** (034009).
- Hawkins, N. J., Cools, H. J., Sierotzki, H., Shaw, M. W., Knogge, W., Kelly, S. L., Kelly, D. E. & Fraaije, B. A. (2014). Paralog Re-Emergence: A Novel, Historically Contingent Mechanism in the Evolution of Antimicrobial Resistance. *Molecular Biology and Evolution*, **31**, 1793-1802.
- Heckrath, G., Brookes, P. C., Poulton, P. R. & Goulding, K. W. T. (1995). Phosphorus Leaching from Soils Containing Different Phosphorus Concentrations in the Broadbalk Experiment. *Journal of Environmental Quality*, **24** (5), 904-910.
- Hodge, C. A. H. (1972) The soils at Saxmundham Experimental Station. *Rothamsted Experimental Station Report for 1971*, Part 2, 143-148. DOI: <https://doi.org/10.23637/ERADOC-1-37291>
- Hutsch, B. W., Webster, C. P. & Powlson, D. S. (1993). Long-term effects of nitrogen fertilization on methane oxidation in soil of the Broadbalk wheat experiment. *Soil Biology & Biochemistry*, **25**, (10), 1307-1315.
- Jenkinson, D. S. (1990). The turnover of organic carbon and nitrogen in soil. *Philosophical Transactions of the Royal Society of London, Series B*, **329**, 361-368.
- Jenkinson, D. S. & Powlson, D. S. (1976). The effects of biocidal treatments on metabolism in soil – V. A method for measuring soil biomass. *Soil Biology and Biochemistry*, **8**, 209-213.
- Jenkinson, D. S., Poulton, P. R., Johnston, A. E. & Powlson, D. S. (2004). Turnover of nitrogen-15-labeled fertilizer in old grassland. *Soil Science Society of America Journal*, **68**, (3), 865-875.
- Johnston, A. E. (1973). The effects of ley and arable cropping systems on the amounts of soil organic matter in the Rothamsted and Woburn ley-arable experiment. *Rothamsted Experimental Station, Report for 1972*, Part 2, 131-159. DOI: <https://doi.org/10.23637/ERADOC-1-34692>
- Johnston, A. E. (1975). The Woburn Market Garden experiment, 1942-1969. II: The effect of the treatments on soil pH, soil carbon, nitrogen, phosphorus and potassium. *Rothamsted Experimental Station Report for 1974*, Part 2, 102-132. DOI: <https://doi.org/10.23637/ERADOC-1-33162>
- Johnston, A. E. & Penny, A. (1972). The Agdell experiment. *Rothamsted Experimental Station Report for 1971*, Part 2, 38-68. DOI: <https://doi.org/10.23637/ERADOC-1-37287>
- Johnston, A. E. & Wedderburn, R. W. M. (1975). The Woburn Market Garden experiment 1942-1969 I. A history of the experiment, details of the treatments and yields of the crops. *Rothamsted Experimental Station Report for 1974*, Part 2, 79-101. DOI: <https://doi.org/10.23637/ERADOC-1-33161>
- Johnston, A. E., Poulton, P. R. & White, R. P. (2013). Plant-available soil phosphorus. Part II: the response of arable crops to Olsen P on a sandy clay loam and a silty clay loam. *Soil Use and Management*, **29**, (1), 12-21.
- Johnston, A. E., Poulton, P. R., Coleman, K., Macdonald, A. J. & White, R. P. (2017). Changes in soil organic matter over 70 years in continuous arable and ley arable rotations on a sandy loam soil in England. *European Journal of Soil Science*, **68**, (3), 305-316.

- Johnston, A. E., Poulton, P. R., White, R. P. & Macdonald, A. J. (2016). Determining the longer term decline in plant-available soil phosphorus from short-term measured values. *Soil Use and Management*, **32**, 151-161.
- Johnston, A. E., McEwen, J., Lane, P. W., Hewitt, M. V., Poulton, P. R. & Yeoman, D. P. (1994). Effects of one to 6-year-old ryegrass/clover leys on soil-nitrogen and on the subsequent yields and fertilizer nitrogen requirements of the arable sequence winter-wheat, potatoes, winter-wheat, winter beans (*Vicia faba*) grown on a sandy loam soil. *Journal of Agricultural Science*, **122**, 73-89.
- Köhler, I. H., Macdonald, A. and Schnyder, H. (2012). Nutrient supply enhanced the increase in intrinsic water-use efficiency of a temperate semi-natural grassland in the last century. *Global Change Biology*, **18**, (11), 3367-3376.
- Lawes, J. B. (1847). On agricultural chemistry. *Journal of the Royal Agricultural Society of England*, **8**, 226-260 (Series 1/1).
- Lu, C. G., Hawkesford, M. J., Barraclough, P. B., Poulton, P. R., Wilson, I. D., Barker, G. L. & Edwards, K. J. (2005). Markedly different gene expression in wheat grown with organic or inorganic fertilizer. *Proceedings of the Royal Society B-Biological Sciences*, **272**, (1575), 1901-1908.
- McEwen, J., Johnston, A. E., Poulton, P. R. & Yeoman, D. P. (1984). Rothamsted Garden Clover - Red clover grown continuously since 1854. Yields, crop and soil analyses. *Rothamsted Experimental Station Report for 1983*, Part 2, 225-237. DOI: <https://doi.org/10.23637/ERADOC-1-34111>
- McGrath, S. P. (1984). Metal concentrations in sludges and soil from a long-term field trial. *Journal of Agricultural Science*, **103**, 25-35.
- Perryman S.A.M., Castells-Brooke N.I.D., Glendining, M.J., Goulding K.W.T., Hawkesford M.J., Macdonald A.J., Ostler R.J., Poulton P.R., Rawlings C.J., Scott T. and Verrier P.J. (2018). The electronic Rothamsted Archive (e-RA): a unique online resource for data from the Rothamsted long-term experiments. *Nature Scientific Data*, in press.
- Poulton, P., Johnston, J., Macdonald, A., White, R. & Powelson, D. (2018). Major limitations to achieving "4 per 1000" increases in soil organic carbon stock in temperate regions: evidence from long-term experiments at Rothamsted Research, UK. *Global Change Biology*, in press. DOI: 10.1111/gcb.14066
- Poulton, P. R., Johnston, A. E. & White, R. P. (2013). Plant-available soil phosphorus. Part I: the response of winter wheat and spring barley to Olsen P on a silty clay loam. *Soil Use and Management*, **29**, (1), 4-11.
- Poulton, P. R., Pye, E., Hargreaves, P. R. & Jenkinson, D. S. (2003). Accumulation of carbon and nitrogen by old arable land reverting to woodland. *Global Change Biology*, **9**, (6), 942-955.
- Powlson, D. S., Glendining, M. J., Coleman, K. & Whitmore, A. P. (2011). Implications for Soil Properties of Removing Cereal Straw: Results from Long-Term Studies. *Agronomy Journal*, **103**, (1), 279-287.
- Powlson, D. S., Pruden, G., Johnston, A. E. & Jenkinson, D. S. (1986). The nitrogen cycle in the Broadbalk Wheat Experiment: recovery and losses of  $^{15}\text{N}$ -labelled fertilizer applied in spring and inputs of nitrogen from the atmosphere. *Journal of Agricultural Science*, **107**, (3), 591-609.
- Rothamsted Experimental Station, Report for 1968, Part 2 (1969). The Broadbalk Wheat Experiment. Lawes Agricultural Trust, Harpenden, UK. pp.221. <https://doi.org/10.23637/ERADOC-1-2>
- Scott, T., Macdonald, A. & Goulding, K. (2015). The U.K. Environmental Change Network, Rothamsted. Physical and Atmospheric Measurements: The First 20 Years. Lawes Agricultural Trust, 32 pp. ISBN 978-0-9564424-1-3. (<https://www.rothamsted.ac.uk/sites/default/files/PDF-Booklet-2-ECNRothamstedFirst20yr-revised2015.pdf>).
- Silvertown J., Poulton P., Johnston E., Edwards G., Heard M., & Biss P. M. (2006). The Park Grass Experiment 1856–2006: its contribution to ecology. *Journal of Ecology*, **94**, 801–814.
- Storkey, J., Macdonald, A. J., Poulton, P. R., Scott, T., Köhler, I. H., Schnyder, H., Goulding, K. W. T. & Crawley, M. J. (2015). Grassland biodiversity bounces back from long-term nitrogen addition. *Nature*, **528**, (7582), 401-4.
- Sykes, J.M. (1996). Introduction. The United Kingdom Environmental Change Network: Protocols for standard measurements at terrestrial sites *The Stationery Office*.
- Vogel, T., Simonet, P., Jansson, J., Hirsch, P., Tiedje, J., Van Elsas, J., Bailey, M., Nalin, R. & Philippot, I. (2009). TerraGenome: a consortium for the sequencing of a soil metagenome. *Nature Reviews Microbiology*, **7**, 252-252.
- Warneke, T., Croudace, I. W., Warwick, P. E. & Taylor, R. N. (2002). A new ground-level fallout record of uranium and plutonium isotopes for northern temperate latitudes. *Earth and Planetary Science Letters*, **203**, (3-4), 1047-1057.
- Warren, R. G. & Johnston, A. E. (1962). Barnfield. *Rothamsted Experimental Station Report for 1961*, 227-247. DOI: <https://doi.org/10.23637/eradoc-1-1961227>
- Warren, R. G. & Johnston, A. E. (1967). Hoosfield Continuous Barley. *Rothamsted Experimental Station Report for 1966*, 320-338. DOI: <https://doi.org/10.23637/eradoc-1-1966320>
- Wilkinson, M. D. et al. (2016). The FAIR Guiding Principles for scientific data management and stewardship. *Scientific Data*, **3**:169918. DOI: 10.1038/sdata.2016.18.
- Williams, R. J. B. & Cooke, G. W. (1971). Results of the Rotation I experiment at Saxmundham, *Rothamsted Experimental Station Report for 1970*, Part 2, 68-97. DOI: <https://doi.org/10.23637/ERADOC-1-34801>
- Zhalnina, K., De Quadros, P. D., Gano, K. A., Davis-Richardson, A., Fagen, J. R., Brown, C. T., Giorgio, A., Drew, J. C., Sayavedra-Soto, L. A., Arp, D. J., Camargo, F. A. O., Daroub, S. H., Clark, I. M., McGrath, S. P., Hirsch, P. R. & Triplett, E. W. (2013). Ca. *Nitrosospaera* and *Bradyrhizobium* are inversely correlated and related to agricultural practices in long-term field experiments. *Frontiers in Microbiology*, **4**:104. DOI: 10.3389/fmicb.2013.00104.
- Zhalnina, K., Dias, R., De Quadros, P. D., Davis-Richardson, A., Camargo, F. A. O., Clark, I. M., McGrath, S. P., Hirsch, P. R. & Triplett, E. W. (2015). Soil pH Determines Microbial Diversity and Composition in the Park Grass Experiment. *Microbial Ecology*, **69**, 395-406.
- Zhao, F. J., Spiro, B., Poulton, P. R. & McGrath, S. P. (1998). Use of sulfur isotope ratios to determine anthropogenic sulfur signals in a grassland ecosystem. *Environmental Science & Technology*, **32**, (15), 2288-2291.