

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

# The Brimstone Farm Experiment

[Full Table of Content](#)



## List of Published Papers Relating to Brimstone Farm

### Rothamsted Research

Rothamsted Research (1997) *List of Published Papers Relating to Brimstone Farm ; The Brimstone Farm Experiment*, pp 55 - 58 - DOI: <https://doi.org/10.23637/ERADOC-1-273>

**LIST OF PUBLISHED PAPERS RELATING TO BRIMSTONE FARM**  
(in chronological order)

1. Howse, K.R. and Goss, M.J. (1982). Installation and evaluation of permanent access pits which permit continuity of measurement in cultivated soils. *Experimental Agriculture* 18, 267-276.
2. Goss, M.J., Harris, G.L. and Howse, K.R. (1983). Functioning of mole drains in a clay soil. *Agricultural Water Management* 6, 27-30.
3. Goss, M.J. and Youngs, E.G. (1983). The use of horizontal piezometers for in-situ measurements of hydraulic conductivity below the watertable. *Journal of Soil Science* 34, 659-664.
4. Belford, R.K., Christian, D.G., Cannell, R.Q. and Goss, M.J. (1984). Drainage, cultivation and the growth of winter cereals on clay soils. In: *Comptes Rendus du Colloque 'Fonctionnement Hydrique et Comportement des Sols'*. AFES, Plaisir, 167-174.
5. Cannell, R.Q., Goss, M.J., Harris, G.L., Jarvis, M.G., Douglas, J.T., Howse, K.R. and Le Grice, S. (1984). A study of mole drainage with simplified cultivation for autumn-sown cereals on a clay soil. I. Background, experiment and site details, drainage systems, measurement of drainflow and summary of results 1978-80. *Journal of Agricultural Science, Cambridge* 102, 583-594.
6. Colbourn, P., Iqbal, M.M. and Harper, I.W. (1984). Estimation of the total gaseous nitrogen losses from clay soils under laboratory and field conditions. *Journal of Soil Science* 35, 11-22.
7. Harris, G.L., Goss, M.J., Dowdell, R.J., Howse, K.R. and Morgan, P. (1984). A study of mole drainage with simplified cultivation for autumn sown crops on a clay soil. 2. Soil water regimes, waterbalances and nutrient loss in drain water, 1978-80. *Journal of Agricultural Science* 102, 561-581.
8. Ellis, F.B., Christian, D.G., Bragg, P.L., Henderson, F.K.G., Prew, R.D. and Cannell, R.Q. (1984). A study of mole drainage with simplified cultivation for autumn sown crops on a clay soil. 3. Agronomy, root and shoot growth of winter wheat, 1978-80. *Journal of Agricultural Science, Cambridge* 102, 583-594.
9. Goss, M.J., Ehlers, W., Boone, F.R., White, I. and Howse, K.R. (1984). Effects of soil management practice on soil physical conditions affecting root growth. *Journal of Agricultural Engineering Research* 30, 131-140.
10. Goss, M.J. and Howse, K.R. (1984). Drainage, techniques culturales et comportement hydrique en sols argileux. In: *Comptes Rendus du Colloque 'Fonctionnement Hydrique et Comportement des Sols'*. AFES, Plaisir, 191-202.
11. Goss, M.J., Howse, K.R., Vaughan-Williams, J.M., Ward, M.A. and Jenkins, W. (1984). Water use by winter wheat as affected by soil management. *Journal of Agricultural Science, Cambridge* 103, 189-199.
12. Cannell, R.Q., Christian, D.G. and Henderson, F.K.G. (1986). A study of mole drainage with simplified cultivation for autumn sown crops on a clay soil. 4. A comparison of direct drilling and mouldboard ploughing on drained or undrained land on root and shoot growth, nutrient uptake and yield. *Soil and Tillage Research* 7, 251-272.
13. Goss, M.J., Howse, K.R., Colbourn, P. and Harris, G.L. (1986). Nitrate in water draining from arable land under autumn sown crops and the influence of cultivation. In: *Hydraulic Design in Water Resources Engineering: Land Drainage. Proceedings 2<sup>nd</sup> International Conference, Southampton University 1986* (eds K.V.H. Smith and D.W. Rycroft). Springer Verlag, Berlin, 457-464.

14. Harris, G.L. and Goss, M.J. (1986). The effect of soil physical changes introduced by mole drainage and cultivation on the removal of rainfall. In: *Hydraulic Design in Water Resources Engineering: Land Drainage*. Proceedings 2<sup>nd</sup> International Conference, Southampton University 1986 (eds K.V.H. Smith and D.W. Rycroft). Springer Verlag, Berlin, 423-432.
15. Harris, G.L. and Colbourn, P. (1986). Effect of cultivations on removal of rainfall and nitrate from a mole drained site. In: *Effects of Land Use on Fresh Water-Agriculture, Forestry, Mineral Exploration and Urbanisation* (ed. J.F. de L.G. Solbe). Ellis Horwood Ltd, Chichester, for Water Research Centre, 528-532.
16. Dowdell, R.J., Colbourn, P. and Cannell, R.Q. (1987). A study of mole drainage with simplified cultivation for autumn sown crops on a clay soil. 5. Losses of nitrate-N in surface runoff and drain water. *Soil and Tillage Research* 9, 317-331.
17. Goss, M.J., Colbourn, P., Harris, G.L. and Howse, K.R. (1988). Leaching of nitrogen under autumn sown crops and the effects of tillage. In: *EEC Seminar Nitrogen Efficiency in Agricultural Soils*, Edinburgh, September 1987 (eds D.S. Jenkinson and K.A. Smith). Elsevier Applied Science, London, 269-282.
18. Goss, M.J., Howse, K.R., Colbourn, P. and Harris, G.L. (1988). Cultivation systems and the leaching of nitrates. Proceedings of 11<sup>th</sup> International Conference of the International Soil and Tillage Research Organisation, Edinburgh, July 1988, Volume 2, 679-684.
19. Harris, G.L., Pepper, T.J. and Goss, M.J. (1988). The effect of different tillage systems on soil water movement in an artificially drained clay soil. Proceedings of 11<sup>th</sup> International Conference of the International Soil and Tillage Research Organisation, Edinburgh, July 1988, Volume 2, 685-690.
20. Youngs, E.G. and Goss, M.J. (1988). Hydraulic conductivity profiles of two clay soils. *Journal of Soil Science* 39, 341-345.
21. Arrowsmith, R., Armstrong, A.C. and Harris, G.L. (1989). The role of sub-surface drainage in the generation of runoff from sloping clay land under different management regimes. Proceedings of the British Hydrological Society Symposium, Sheffield, 1.23-1.36.
22. Goss, M.J., Howse, K.R., Harris, G.L. and Colbourn, P. (1990). The leaching of nitrates after spring fertilizer application and the influence of tillage. In: *Fertilization and the Environment* (eds R. Merckx, H. Vereecken and K. Vlassak). Leuven University Press, Leuven, 20-26.
23. Goss, M.J. (1990). The effects of soil and crop management on the leaching of nitrates. In: *Nitrates, Agriculture, Eau* (ed. R. Calvert). INRA, Paris, 389-394.
24. Rose, S.C., Harris, G.L., Armstrong, A.C., Williams, J.R., Howse, K.R. and Tranter, N. (1991). The leaching of agrochemicals under different agricultural uses and its effects on water quality. In: *Sediment and Stream Water Quality in a Changing Environment: Trends and Explanation*. IAHS Publication 203, 249-257.
25. Goss, M.J. and Howse, K.R. (1991). The variation in nitrogen economy under different soil management systems. In: *Soil Tillage and Agricultural Sustainability*, Proceedings of the 12<sup>th</sup> International Conference of the International Soil and Tillage Research Organisation. Ohio State University Press, Columbus, 92-98.
26. Goss, M.J., Williams, B.L. and Howse, K.R. (1991). Organic matter turnover and nitrate leaching. In: *Advances in Soil Organic Matter Research: the Impact on Agriculture and the Environment* (ed. W.S. Wilson). Royal Society of Chemistry, Cambridge, 107-114.

27. Catt, J.A. (ed.) (1991). The Brimstone Experiment. Proceedings of a Conference on collaborative work by ADAS Field Drainage Experimental Unit and Rothamsted Experimental Station, October 15-16, 1991. Lawes Agricultural Trust, Harpenden, 85 pp.
28. Catt, J.A., Christian, D.G., Goss, M.J., Harris, G.L. and Howse, K.R. (1992). Strategies to reduce nitrate leaching by crop rotation, minimal cultivation and straw incorporation in the Brimstone Farm Experiment, Oxfordshire. *Aspects of Applied Biology* 30, 255-262.
29. Harris, G.L., Turnbull, A.B., Gilbert, A.J., Christian, D.G. and Mason, D.J. (1992). Pesticide application and deposition - their importance to pesticide leaching to surface water. Brighton Crop Protection Conference - Pests and Diseases - 1992, 6A-3, 477-486.
30. Christian, D.G., Catt, J.A., Howse, K.R., Harris, G.L. and Goss, M.J. (1992). Evaluation of drainage, cultivation and crop management on the leaching of nitrate under arable crops on a clay soil. *Annales Geophysicae*, Supplement 11 to Volume 10, C304.
31. Bromilow, R.H. and Catt, J.A. (1992). Understanding pesticide behaviour in soil. AFRC Institute of Arable Crops Research Report for 1991, 59-62.
32. Harris, G.L., Hodgkinson, R.A., Brown, C., Rose, D.A., Mason, D.J. and Catt, J.A. (1993). The influence of rainfall patterns and soils on losses of isoproturon to surface waters. *Proceedings Crop Protection in N. Britain*, 1993, 247-252.
33. Nicholls, P.H., Evans, A.A., Bromilow, R.H. and Howse, K.R. (1993). Persistence and leaching of isoproturon and mecoprop in the Brimstone Farm plots. Brighton Crop Protection Conference - Weeds - 1993, 6D-11, 849-854.
34. Goss, M.J., Howse, K.R., Lane, P.W., Christian, D.G. and Harris, G.L. (1993). Losses of nitrate-nitrogen in water draining from under autumn-sown crops established by direct drilling or mouldboard ploughing. *Journal of Soil Science* 44, 35-48.
35. Harris, G.L., Nicholls, P.H., Bailey, S.W., Howse, K.R. and Mason, D.J. (1994). Factors influencing the loss of pesticides in drainage from a cracking clay soil. *Journal of Hydrology* 159, 235-253.
36. Christian, D.G., Bacon, E.T.G., Howse, K.R., Catt, J.A., Brockie, D. and Harris, G.L. (1994). The effect of ploughing, direct drilling and minimal cultivation on drained and undrained land on yield and nitrogen uptake of crops grown on clay soil, 1979-1992. *Proceedings of 13th International Conference of the International Soil Tillage Research Organisation*, Aalborg, Denmark, July 1994, Volume 1, 435-440.
37. Mason, D.J., Shirling-Rooke, D.A., Harris, G.L. and Catt, J.A. (1994). The use of commercial immunoassay kits for determining residues in drainage waters from field plot lysimeters. *Abstracts 8th International Congress of Pesticide Chemistry*, July 5-9 1994, Washington DC, Vol. 2, p. 810.
38. Armstrong, A.C., Portwood, A.M., Harris, G.L., Catt, J.A., Howse, K.R., Leeds Harrison, P.B. and Mason, D.J. (1995). Mechanistic modelling of pesticide leaching from cracking clay soils. In: *Pesticide movement to water* (eds. A. Walker, R. Allen, S.W. Bailey *et al.*), BCPC Monograph 62, 181-186.
39. Harris, G.L., Jones, R.L., Catt, J.A., Mason, D.J. and Arnold, D.J. (1995). Influence of agricultural management and pesticide sorption on losses to surface waters. In: *Pesticide movement to water* (eds. A. Walker, R. Allen, S.W. Bailey, *et al.*), BCPC Monograph 62, 305-310.
40. Catt, J.A., Harris, G.L. and Mason, D.J. (1995). Effects of drainflow restriction on losses of nitrate, phosphate and pesticides in the Brimstone Farm Leaching

- Experiment, Oxfordshire. New Horizons, New Challenges (Papers and Abstracts of Agricultural and Biological Engineering Conference, Newcastle, 20-23 September 1995, 83-84.
41. Howse, K.R., Catt, J.A., Brockie, D., Nicol, R.A.C., Farina, R., Harris, G.L. and Pepper, T.J. (1995). Phosphorus leaching in the Brimstone Farm Experiment, Oxfordshire. Phosphorus Loss to Water from Agriculture, International Workshop 27-29 September 1995, TEAGASC, Wexford, 51-52.
  42. Jones, R.L., Harris, G.L., Catt, J.A., Bromilow, R.H., Mason, D.J. and Arnold, D.J. (1995). Management practices for reducing movement of pesticides to surface water in cracking clay soils. Proc. Brighton Crop Protection Conf., Weeds 1995, 2, 489-498.
  43. Armstrong, A.C., Matthews, A.M., Portwood, A.M., Harris, G.L., Leeds Harrison, P.B. and Catt, J.A. (1996). Modelling pesticide and nitrate leaching from cracked clay soils using the CRACK-NP model. *Annales Geophysicae* 14, Supplement II, 317.
  44. Ragab, R., Cooper, D.M., Harris, G.L. and Catt, J.A. (1996). Simulated nitrate leaching under winter wheat grown on a structured clay soil considering bypass flow. *J. Hydrol.* 182, 157-173.
  45. Catt, J.A., Howse, K.R. and Harris, G.L. (1996). Effects of drainflow restriction on nitrate and nitrite leaching in the Brimstone Experiment, Oxfordshire, UK. Trans. 9th Nitrogen Workshop, Braunschweig, September 1996, 461-464.
  46. Armstrong, A.C., Portwood, A.M., Leeds Harrison, P.B., Harris, G.L. and Catt, J.A. (1996). The validation of pesticide leaching models. *Pesticide Science* 48, 47-55.
  47. Armstrong, A.C., Portwood, A.M., Harris, G.L., Leeds Harrison, P.B. and Catt, J.A. (1996). Multi-stage validation of pesticide leaching models. In: *The Environmental Fate of Xenobiotics* (eds. A.A.M. Del Re, E. Capri *et al.*), Proc. X Symposium Pesticide Chemistry, Piacenza, 1996, pp. 321-328.