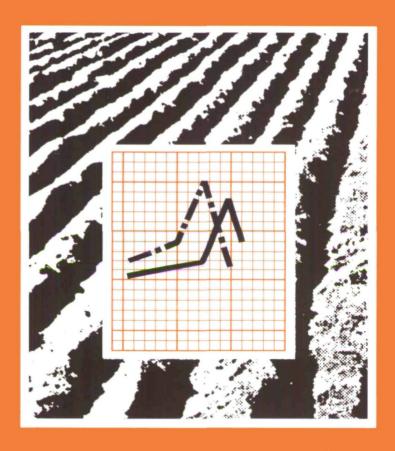
The Journal of Agricultural Science



CAMBRIDGE UNIVERSITY PRESS

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Dabney, S. M., Breitenbeck, G. A., Griffin, J. L. & Hoff, B. J. (1989). Subterranean clover cover crop used to increase rice yield. *Agronomy Journal* 81, 483-487.

FIRMAN, D. M. (1987). Leaf growth and senescence of the potato. PhD thesis, University of Cambridge.

Jones, L. (1990). White clover understorey as a supply of nitrogen to cereals. In *Proceedings of the 13th General Meeting of the European Grassland Federation, Volume I* (Eds N. Gáborčik, V. Krajčovič & M. Zimkova), pp. 154-158. Banksá Bystrica, Czechoslovakia: Grassland Research Institute.

KIRBY, E. J. M. & APPLEYARD, M. (1984). Cercal development and its relation to crop management. In *Cercal Production* (Ed. E. J. Gallagher), pp. 161-173. London: Butterworths.

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