

Publications

Publications for the year 2003 are classified in the following manner:

- J Papers describing original research in refereed journals.
- R Critical reviews in journals, book chapters and reviews in books - providing each has been edited externally.
- P Published proceedings of contributions to conferences or learned societies (including published abstracts).
- T Technical reports, other publications.
- O Popular articles, other publications.

Akhond, M.A.Y., Aziz, N. & Machray, G.C. 2003. Gene targeting using haploid higher plant tissue. *ISPMB Abstract*, Barcelona, June 2003. P

Allcroft, D.J. & Glasbey, C.A. 2003. A simulation-based method for model evaluation. *Statistical Modelling: An International Journal* 3, 1-13. J

Allen, J.F. & Raven, J.A. 2003. Symbiosis, functional genomics and the evolution of cells. *Philosophical Transactions of the Royal Society of London B* 358, 3-4. J

Ashman, M.R., Brookes, P.C. & Hallett, P.D. 2003. Are the links between soil aggregate size class, soil organic matter and respiration simply artefacts of the fractionation procedure? *Soil Biology and Biochemistry* 35, 435-444. J

Avrova, A.O., Venter, E., Birch, P.R.J. & Whisson, S.C. 2003. Profiling and quantifying differential gene transcription in *Phytophthora infestans* prior to and during the early stages of potato infection. *Fungal Genetics and Biology* 40, 4-14. J

Basu, A., Ghosh, M., Meyer, R., Powell, W., Basak, S.L. & Sen, S.K. 2003. Analysis of genetic diversity in cultivated jute determined by means of SSR markers and AFLP profiling. *Crop Science* 44, 678-685. J

Baucher, M., Halpin, C., Petit-Conil, M. & Boerjan, W. 2003. Lignin: Genetic engineering and impact on pulping. *Critical Reviews in Biochemistry and Molecular Biology* 38, 305-350. J

Baumgartner, P., Harper, K., Raemaekers, R.J.M., Durieux, A., Gatehouse, A.M.R., Davies, H.V. & Taylor, M.A. 2003. Large-scale production and purification of recombinant *Galanthus nivalis* agglutinin (GNA) expressed in the methylotrophic yeast *Pichia pastoris*. *Biotechnology Letters* 25, 1281-1285. J

Beardall, J., Quigg, A. & Raven, J.A. 2003. Oxygen consumption: photorespiration and chlororespiration. In: Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). *Photosynthesis in Algae*. Kluwer, Dordrecht, 157-181. R

Begg, G.S., Young, M.W., Hawes, C., McNicol, J.W. & Squire, G.R. 2003. Modelling feral (volunteer) oilseed rape in relation to thresholds of impurity. *Proceedings of the 1st European Conference on the Co-existence of Genetically Modified Crops with Conventional Organic Crops*, Denmark, 13-14 November 2003, 169-171. P

Bengough, A.G. 2003. Root growth and function in relation to soil structure, composition and strength. In: de Kroon, H. & Visser, E.J.W. (eds). *Root Ecology*. Springer-Verlag, Berlin Heidelberg, 151-171. R

Bingham, I.J. & Bengough, A.G. 2003. Morphological plasticity of wheat and barley roots in response to spatial variation in soil strength. *Plant and Soil* 250, 273-282. J

Birch, A.N.E., Gordon, S.C., Fenton, B., Malloch, G., Mitchell, C., Jones, A.T., Griffiths, D.W., Brennan, R.M., Graham, J. & Woodford, J.A.T. 2003. Developing a sustainable IPM system for high value *Rubus* crops (raspberry, blackberry) for Europe (Poster). *COST 836 Final Workshop*, Ancona, 9-11 October 2003. P

Birch, A.N.E., Gordon, S.C., Woodford, J.A.T., Griffiths, D.W., Robertson, G. & Mitchell, C. 2003. Raspberry beetle monitoring and enhanced trapping using plant-derived volatile compounds from host flowers (Poster). *I Symposium on Raspberry*, Cacak, Serbia and Montenegro, 28-30 October 2003. P

Birch, A.N.E., Jones, A.T., Malloch, G., Fenton, B. & Gordon, S.C. 2003. Resistance-breaking raspberry aphid biotypes: a challenge for plant breeding. *Integrated Protection of Fruit Crops (Soft Fruits)*, Dundee, 18-21 September 2001. *IOBCwpr Bulletin* 26, 51-54. P

Birch, P.R.J., Avrova, A.O., Armstrong, M., Venter, E., Taleb, N., Phillips, M.S., Gilroy, E. & Whisson, S.C. 2003. The potato-*Phytophthora infestans* interaction transcriptome. *Canadian Journal of Plant Pathology* 25, 226-231. J

Blackwell, A., Stuart, A.E. & Estambale, B.A. 2003. The repellent and antifeedant activity of oil of *Myrica gale* against *Aedes aegypti* mosquitoes and its enhancement by the addition of salicylic acid. *Proceedings of the Royal College of Physicians of Edinburgh* 33, 209-214. J

Blok, V.C. 2003. Development of tools for managing nematode pests of potatoes at the Scottish Crop Research Institute. *International Plant Protection Congress*, Beijing, China, July 6-11, 2003. P

Blok, V.C. 2003. Perspectives from molecular plant-nematode interactions. (abstract). *Quarantine Root-Knot Nematodes in Europe*, Wageningen, The Netherlands, 9-10 October 2003. P

Blok, V.C., Armstrong, M., Phillips, M.S., Paterson, A., Young, V., Avrova, A.O. & Birch, P.R.J. 2003. Expression of a WRKY-like transcription factor in potato roots in response to infection by potato cyst nematodes (PCN) (Abstract). *British Society of Plant Pathology*. P

Booth, A., Russell, J.R., Thomas, W.T.B. & Powell, W. 2003. Rapid identification of barley yellow mosaic virus resistance in cultivars using PyrosequencingTM technology. *Pyrosequencing*. O

Bos, J.I., Torto, T.A., Ochwo, M., Armstrong, M., Whisson, S.C., Birch, P.R.J. & Kamoun, S. 2003. Intraspecific comparative genomics to identify avirulence genes from *Phytophthora*. *New Phytologist* 159, 63-73. J

Boswell, G.P., Jacobs, H., Davidson, F.A., Gadd, G.M. & Ritz, K. 2003. Growth and function of fungal mycelia in

heterogeneous environments. *Bulletin of Mathematical Biology* 65, 447-477. J

Boswell, G.P., Jacobs, H., Ritz, K., Gadd, G.M. & Davidson, F.A. 2003. A mathematical approach to studying fungal mycelia. *Mycologist* 17, 165-171. J

Boutsika, K., Phillips, M.S., MacFarlane, S.A., Brown, D.J.F., Blok, V.C. & Holeva, R. 2002. Molecular diagnostics of trichodroid nematodes and their associated Tobacco rattle virus (TRV). *Plant Pathology* 53, 110-116. J

Bradshaw, J.E., Bryan, G.J., Castelli, L., Dale, M.F.B., Phillips, M.S. & Ramsay, G. 2003. Progress in developing new resistance to PCN. *Crop Protection in Northern Britain 2004*, Dundee, 24-25 February 2004. P

Bradshaw, J.E., Dale, M.F.B. & Mackay, G.R. 2003. Use of mid-parent values and progeny tests to increase the efficiency of potato breeding for combined processing quality and disease resistance. *Theoretical and Applied Genetics* 107, 36-42. J

Brandizzi, F., Hanton, S., Pinto da Silva, L., Boevink, P., Evans, D., Oparka, K.J., Denecke, J. & Hawes, C. 2003. ER quality control can lead to retrograde transport from the ER lumen to the cytosol and the nucleoplasm in plants. *Plant Journal* 34, 269-281. J

Brendel, O., Handley, L.L. & Griffiths, H. 2002. Differences in $\delta^{13}\text{C}$ and diameter growth among remnant Scots pine populations in Scotland. *Tree Physiology* 22, 983-992. J

Brendel, O., Handley, L.L. & Griffiths, H. 2003. The $\delta^{13}\text{C}$ of Scots pine (*Pinus sylvestris* L.) needles: Spatial and temporal variations. *Annals of Forest Science* 60, 97-104. J

Brennan, R.M. & Gordon, S.L. 2003. Future perspectives in blackcurrant breeding. *Conference Proceedings for Rubus-Ribes Symposium, Acta Horticulturae* 585, 39-46. P

Brennan, R.M., Hunter, E.A. & Muir, D.D. 2003. Relative effects of cultivar, heat-treatment and sucrose content on the sensory properties of blackcurrant juice. *Food Research International* 36, 1015-1020. J

Brewer, M.J. 2003. Discretisation for Inference on Bayesian Mixture Models. *Statistics and Computing* 13, 209-219. J

Brewer, M.J., Elston, D.A. & Nolan, A.J. 2003. Spatial mixture models for ordinal responses: grazing impacts in Scotland, UK. *Proceedings of the 18th International Workshop on Statistical Modelling*, Leuven, Belgium. P

Brooks, D.R., Bohan, D.A., Champion, G.T., Hawes, C., Heard, M.S., Houghton, A.J., Birchall, C., Clark, S.J., Dewar, A.M., Firbank, L.G., Perry, J.N., Rothery, P., Scott, R.J., Skellern, M., Woiwod, I.P., Baker, P., Bell, D., Browne, E., Fairfax, C.M., Garner, B., Haylock, L., Horne, S., Hulmes, S., Mason, N., Nuttal, P., Randle, Z., Sands, R., Singer, E. & Walker, J. 2003. Invertebrate responses to the management of genetically modified herbicide-tolerant and conventional spring crops. I. Soil surface active invertebrates. *Philosophical Transactions of the Royal Society of London B* 358, 1847-1862. J

Brown, D.J.F., Neilson, R. & Karanastasi, E. 2003. Virus-vector and non-vector longidorids and trichodroids - a current perspective (abstract). *16th Symposium of the Nematological Society of Southern Africa*, South Africa, 30 June to 4 July 2003. P

Brown, J.W.S., Echeverria, M., Qu, L.-H., Lowe, T.M., Bachellerie, J.-P., Hüttenhofer, A., Kastenmayer, J.P.,

Green, P.J., Shaw, P. & Marshall, D.F. 2003. Plant snoRNA database. *Nucleic Acids Research* 31, 432-435. J

Bruce, A., Stewart, D.D., Verrall, S.R. & Wheatley, R.E. 2003. Effects of volatiles from bacteria and yeast on the growth and pigmentation of sapstain fungi. *International Biodeterioration and Degradation* 51, 101-108. J

Brunt, A.A. & Mayo, M.A. 2003. Plant Virus Taxonomy 2003. *Proceedings of the 8th International Conference of Plant Pathology (abstract)*, Christchurch, New Zealand, 2-7 February, 2003. P

Bryan, G.J. 2003. Genomics and molecular breeding for crop plant improvement. *The BCPC International Congress - Crop Science & Technology 2003*, SECC, Glasgow, 3rd - 5th November 2003. P

Burford, E.P., Fomina, M. & Gadd, G.M. 2003. Fungal involvement in bioweathering and biotransformation of rocks and minerals. *Mineralogical Magazine* 67, 1127-1155. J

Burford, E.P., Kierans, M. & Gadd, G.M. 2003. Geomycology: fungal growth in mineral substrata. *Mycologist* 17, 98-107. J

Cacciola, S.O., Raudino, F., Cooke, D.E.L., Duncan, J.M. & Magnano di San Lio, G. 2003. *Phytophthora* species infecting typical plants of the Mediterranean region. In: McComb, J.A., Hardy, G.E.S. & Tommerup, I.C. (eds). *Phytophthora in Forests and Natural Ecosystems. Proceedings of the 2nd International IUFRO Working Party*, 7.02.09 Meeting, Albany, W. Australia, 2001. R

Campbell, C.D., Chapman, S.J., Cameron, C.N., Davidson, M.S. & Potts, J.M. 2003. A rapid microtiter plate method to measure carbon dioxide evolved from carbon substrate amendments so as to determine the physiological profiles of soil microbial communities by using whole soil. *Applied and Environmental Microbiology* 69, 3593-3599. J

Canto, T. 2003. Enhancing transient expression of genes from agrobacterium-delivered T-DNAs in *Nicotiana benthamiana* in the absence of viral suppressors of gene silencing. "Epigenetics" Annual Meeting of the German Genetics Society, Kassel, September 26-29, 2003. P

Castelli, L., Ramsay, G., Bryan, G.J., Neilson, S.J. & Phillips, M.S. 2003. New sources of resistance to the potato cyst nematodes *Globodera pallida* and *G. rostochiensis* in the Commonwealth Potato Collection. *Euphytica* 129, 377-386. J

Champion, G.T., May, M.J., Bennett, S., Brooks, D.R., Daniels, R.E., Firbank, L.G., Houghton, A.J., Hawes, C., Heard, M.S., Perry, J.N., Randle, Z., Rossall, M., Rothery, P., Skellern, M., Scott, R.J. & Squire, G.R. 2003. Crop management and agronomic context of the Farm Scale Evaluations of genetically modified herbicide-tolerant crops. *Philosophical Transactions of the Royal Society of London B* 358, 1801-1818. J

Chapman, S., Dawson, W.O., Donson, J., Kumagai, M.H., Lewandowski, D.J., Lindbo, J.A. & Shivprasad, S. 2003. Method of enhancing RNA or protein production using non-native 5' untranslated sequence in recombinant viral nucleic acids. *US Patent Application*. 09/008,186 CIP. T

Chen, Q., Brown, D.J.F., Curtis, R.H. & Jones, J.T. 2003. Development of the magnetic capture system for recovery of *Xiphinema americanum*. *Annals of Applied Biology* 143, 283-289. J

Chen, Q., Curtis, R.H., Lamberti, F., Mones, M., Brown, D.J.F. & Jones, J.T. 2002. Using monoclonal

antibodies to discover parasitism proteins from the virus-vector nematode *Xiphinema index*. *Fourth International Congress of Nematology. Programme and Abstracts*, June 8-13, 2002 Tenerife, Canary Islands, Spain. P

Chen, W.M., James, E.K., Prescott, A.R., Kierans, M. & Sprent, J.I. 2003. Nodulation of *Mimosa* spp. by the beta-proteobacterium *Ralstonia taiwanensis*. *Molecular Plant Microbe-Interactions* 16, 1051-1061. J

Christie, W.W. 2003. 13-Phenyltridec-9-enoic and 15-phenylpentadec-9-enoic acids in *Arum maculatum* seed oil. *European Journal of Lipid Science and Technology* 105, 779-780. J

Christie, W.W. 2003. Analysis of conjugated linoleic acid - an overview. In: Sebedio, J.L., Christie, W.W. & Adlof, R.O. (eds). *Advances in Conjugated Linoleic Acid Research. Volume 2*. AOCS Press, Champaign, Illinois, 1-12. R

Christie, W.W. (ed). 2003. *Lipid Analysis. 3rd ed.* The Oily Press, Bridgewater, 416pp. R

Christie, W.W. 2003. Solid-phase extraction columns in the analysis of lipids. *Lipid Technology* 15, 16-19. O

Christie, W.W. 2003. The biological activity of glycerophospholipids. *Lipid Technology* 15, 105-108. O

Collins, H.M., Swanston, J.S., Rossnagel, B.G. & Logue, S.J. 2003. An investigation of the relative rates of protein and carbohydrate modification of a number of international malting varieties, grown in three countries. *9th International Barley Genetics Symposium*, Brno, Czech Republic, 20-26 June 2004. P

Comber, A.J., Birnie, R.V. & Hodgson, M.F.A. 2003. A retrospective analysis of land cover change using a polygon shape index. *Global Ecology and Biogeography* 12, 207-215. J

Cooke, D.E.L., Lees, A.K. & Duncan, J.M. 2003. New tools for tracking late blight. *Crop Protection in Northern Britain 2004*, Dundee, 24-25 February 2004. P

Cooke, D.E.L., Williams, N.A. & Duncan, J.M. 2003. The reliability of rDNA internal transcribed spacer sequence analysis in *Phytophthora* identification and taxonomy. In: McComb, J.A., Hardy, G.E.S. & Tommerup, I.C. (eds). *Phytophthora in Forests and Natural Ecosystems. Proceedings of the 2nd International IUFRO Working Party 7.02.09 Meeting*, Albany, W. Australia, 2001, 159-166. R

Cooke, D.E.L., Young, V., Birch, P.R.J., Toth, R., Gourlay, F., Day, J.P., Carnegie, S. & Duncan, J.M. 2003. Phenotypic and genotypic diversity of *Phytophthora infestans* populations in Scotland (1995-1997). *Plant Pathology* 52, 181-192. J

Cooke, D.E.L., Young, V. & Duncan, J.M. 2003. The validation and exploitation of a PCR-based diagnostic test for detecting *Phytophthora fragariae* in strawberry and raspberry (poster). *1 Symposium on Raspberry*, Cacak, Serbia and Montenegro, 28-30 October 2003. P

Cooke, D.E.L., Young, V., Guy, D. & Duncan, J.M. 2003. Validation and exploitation of a PCR-based diagnostic for detecting *Phytophthora* in strawberry and raspberry (Poster). *COST 836 Final Workshop*, Ancona, 9-11 October 2003. P

Crawshaw, W.M. & Brocklehurst, S. 2003. An abortion epidemic in a dairy herd associated with horizontally transmitted *Neospora caninum* infection. *Veterinary Record* 152, 201-206. J

Cross, J.V. & Gordon, S.C. 2003. Raspberry beetle and cane midge. *Ashford Fruit Conference*, Ashford, Kent. P

Cullen, D.W., Lees, A.K., Toth, I.K. & Duncan, J.M. 2002. Detection of *Colletotrichum coccodes* from soil and potato tubers by conventional and quantitative real-time PCR. *Plant Pathology* 51, 281-292. J

Dale, M.F.B. & Bradshaw, J.E. 2003. Progress in improving processing attributes in potato. *Trends in Plant Science* 8, 310-312. J

Dale, M.F.B. & Griffiths, D.W. 2003. Potatoes as a source of Vitamin C in our diets: germplasm and environmental effects. *EAPR, Conference on DSS and General Physiology*, Scottish Crop Research Institute, Dundee, March 2003. P

Dale, M.F.B., Griffiths, D.W. & Todd, D. 2003. Effects of genotype, environment and post-harvest storage on the total ascorbate content of potato (*Solanum tuberosum*) tubers. *Journal of Agricultural and Food Chemistry* 51, 244-248. J

Daniell, T.J., Squires, J. & Nunan, N. 2003. Rhizoplane diversity of nitrate reductase in upland pasture. *FEMS Congress of European Microbiologists*, Ljubljana, Slovenia, June 2003. P

Dawson, L.A., Grayston, S.J., Murray, P.J., Cook, R., Gange, A.C., Ross, J.M., Pratt, S.M., Duff, E.I. & Treonis, A. 2003. Influence of pasture management (nitrogen and lime addition and insecticide treatment) on soil organisms and pasture root system dynamics in the field. *Plant and Soil* 255, 121-130. J

Dennis, P., Evans, D.M., Skartveit, J., Stephen, L., Pakeman, R.J., Pearce-Higgins, J., Redpath, S., Mayes, R.W., McCracken, D., Gordon, I.J., Grant, M., Elston, D.A., Kunaver, A., Quinn, S., Benton, T., Bryant, D. & Marquiss, M. 2003. Effects of grazing management on upland bird populations: disentangling habitat structure and arthropod food supply. *British Ecological Society Annual Meeting*, 52, Manchester Metropolitan University, Manchester. P

Di Matteo, A., Hancock, R.D., Ross, H.A., Frusciante, L. & Viola, R. 2003. Characterisation of *Chlorella pyrenoidosa* L-ascorbic acid accumulating mutants: Identification of an enhanced biosynthetic enzyme activity and cloning of the putative gene from *Arabidopsis thaliana*. (Poster). *Proceedings of SEB 2003*, Southampton. *Comparative Physiology and Biochemistry* 134, S155. P

Dobson, G. 2003. Gas chromatography - mass spectrometry of conjugated linoleic acids and metabolites. In: Sebedio, J.L., Christie, W.W. & Adlof, R.O. (eds). *Advances in Conjugated Linoleic Acid Research, Volume 2*. AOCS Press, Champaign, Illinois, Chapter 2, 13-36. R

Douglas, A.E. & Raven, J.A. 2003. Genomes at the interface between bacteria and organelles. *Philosophical Transactions of the Royal Society of London B* 358, 5-12. J

Douglas, S., Raven, J.A. & Larkum, A.W.D. 2003. The algae and their general characteristics. In: Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). *Photosynthesis in Algae*. Kluwer, Dordrecht, 1-10. R

Duncan, J.M. 2003. Diseases and pests of raspberry: prospects for integrated control. *Invited plenary paper, 1 Symposium on Raspberry*, Cacak, Serbia and Montenegro, 28-30 October 2003. P

Durban, M., Hackett, C.A., McNicol, J.W., Newton, A.C., Thomas, W.T.B. & Currie, L.D. 2003. The practical use of semiparametric models in field trials. *Journal of Agricultural, Biological and Environmental Statistics* 8, 48-66. J

- Elliott, M.J., Trudgill, D.L., McNicol, J.W. & Phillips, M.S.** 2003. A Program to Investigate PCN Management Strategies. *EAPR, Third International Potato Modelling Conference*, Scottish Crop Research Institute, Dundee, March 2003. P
- Ellis, C.J., Crittenden, P.D., Scrimgeour, C.M. & Ashcroft, C.J.** 2003. The natural abundance of ^{15}N in mat-forming lichens. *Oecologia* 136, 115-123. J
- Elston, D.A., Duncan, A.J. & Ginane, C.** 2003. Estimating the effect of positive and negative stimuli on diet selection by goats: an analysis of some repeated-measures compositional data. *International Biometric Society British Region Conference 2003*, University of Reading, UK. 36. P
- Escobar, N.M., Haupt, S., Thow, G., Boevink, P., Chapman, S. & Oparka, K.J.** 2003. High-throughput viral expression of cDNA-GFP fusions reveals novel subcellular addresses and identifies unique proteins that interact with plasmodesmata. *Plant Cell* 15, 1507-1523. J
- Fauquet, C.M., Bisaro, D.M., Briddon, R.W., Brown, J.K., Harrison, B.D., Rybicki, E.P., Stenger, D.C. & Stanley, J.** 2003. Revision of taxonomic criteria for species demarcation in the family *Geminiviridae*, and an updated list of begomovirus species. *Archives of Virology* 148, 405-421. J
- Feeney, D., Daniell, T.J., Hallett, P.D., Ritz, K. & Young, I.M.** 2003. Fungi as habitat engineers. *BES Soil Biodiversity Meeting*, Lancaster, UK, March 2003. P
- Fenton, B., Malloch, G., Navajas, M., Hillier, J. & Birch, A.N.E.** 2003. Clonal composition of the peach-potato aphid *Myzus persicae* (Homoptera: Aphididae) in France and Scotland. *Annals of Applied Biology* 142, 255-267. J
- Fernie, C.E.** 2003. Conjugated linoleic acid. In: Caballero, B., Trugo, L. & Finglas, P. (eds). *Encyclopedia of Food Sciences and Nutrition*. Academic Press Ltd/Elsevier Science Ltd, London, 1581-1587. R
- Filipe, J.A.N. & Rodgers, G.J.** 2003. Exact solution of a generalized model for surface deposition. *Physical Review E* 68, art. no. 027102. J
- Firbank, L.G., Heard, M.S., Woiwod, I.P., Hawes, C., Houghton, A.J., Champion, G.T., Scott, R.J., Hill, M.O., Dewar, A.M., Squire, G.R., May, M.J., Brooks, D.R., Bohan, D.A., Daniels, R.E., Osborne, J.L., Roy, D.B., Black, H.I.J., Rothery, P. & Perry, J.N.** 2003. An introduction to the Farm Scale Evaluations of genetically modified herbicide-tolerant crops. *Journal of Applied Ecology* 40, 2-16. J
- Flavell, A.J., Bolshakov, V.N., Booth, A., Jing, R.-C., Russell, J.R., Ellis, T.H.N. & Isaac, P.** 2003. A microarray-based high throughput molecular marker genotyping method: the tagged microarray marker (TAM) approach. *Nucleic Acids Research* 31, e115. J
- Fomina, M., Ritz, K. & Gadd, G.M.** 2003. Nutritional influence on the ability of fungal mycelia to penetrate toxic metal-containing domains. *Mycological Research* 17, 861-871. J
- Fonseca, S., Wilson, I., Maltin, C.A. & Horgan, G.W.** 2003. Slow Fibre Cluster Pattern in Pig Longissimus Muscle: Implications for Myogenesis. *Journal of Animal Science* 81, 973-983. J
- Forster, B.P., Taeb, M. & Koebner, R.M.D.** 2003. The genetic control of salt tolerance in the *Triticeae*: the effect of *Vrn* and *Ppd* genes. In: Naqvi, S.S.M. (ed.). *New Genetical Approaches to Crop Improvement*. Atomic Energy Research Centre, Tando Jam 70060, Pakistan, 497-512. R
- Gadd, G.M., Burford, E.P. & Fomina, M.** 2003. Biogeochemical activities of microorganisms in mineral transformations: consequences for metal and nutrient mobility. *Journal of Microbiology and Biotechnology* 13, 323-331. J
- Gadd, G.M.** 2003. Toxic metal contamination treatment with microbes. In: Sasek, V., Glaser, J.A. & Baveye, P. (eds). *The Utilization of Bioremediation to Reduce Soil contamination: Problems and Solutions*. Kluwer Academic Publishers, Dordrecht, 75-94. R
- Gambling, L., Dunford, S., Wallace, D.I., Zuur, G., Solanky, N., Srai, K.S. & McArdle, H.J.** 2003. Iron deficiency during pregnancy affects post-natal blood pressure in the rat. *Journal of Physiology* 552, 603-610. J
- Geddes, A., Gimona, A. & Elston, D.A.** 2003. Estimating local variations in land use statistics. *International Journal of Geographic Information Science* 17, 299-319. J
- Gillespie, T.** 2003. Out-of-season raspberry production at SCRI: a brief overview of the long-cane system. *HDC Raspberry Trial Fruit Walk, July 2000*. T
- Giordano, M., Norici, A., Forssen, M., Eriksson, M. & Raven, J.A.** 2003. An anaplerotic role for mitochondrial carbonic anhydrase in *Chlamydomonas reinhardtii*. *Plant Physiology* 132, 2126-2134. J
- Goodman, B.A. & Cheshire, M.V.** 2002. Characterisation by Mössbauer spectroscopy of the forms of iron in sulfide-rich fulvic acid solutions. *Hyperfine Interactions* 142, 549-558. J
- Goodman, B.A., Muckenschnabel, I., Lyon, G.D., Deighton, N., Stewart, D. & Williamson, B.** 2003. Perturbation of redox processes in plant tissues as a result of attack by the necrotrophic pathogen, *Botrytis cinerea*. (Abstract). *Proceedings of the 36th Annual Meeting of the Electron Spin Resonance Group of the Royal Society of Chemistry*, University of Manchester, 10-11 April 2003. P
- Goodman, B.A., Palivan, C.G., Palivan, H. & Tomas, S.** 2003. Local structure is critical for superoxide dismutase activity in copper complexes: Relationship between EPR parameters, structure and activity in some sterically hindered copper(II) bis (hydrazono-triazine) complexes. *Applied Magnetic Resonance* 25, 13-28. J
- Goodman, B.A. & Reichenauer, T.G.** 2003. Formation of paramagnetic products in leaves of wheat (*Triticum aestivum*) as a result of ozone-induced stress. *Journal of the Science of Food and Agriculture* 83, 1248-1255. J
- Gordon, S.C.** 2003. Cooperative disease and pest control trials in cane and bush fruits (abstract). *Cost 836 Final Workshop* (http://www.agr.unian.it/ricerca/prog_ric/cost836.htm), Ancona, 9-11 October 2003. P
- Gordon, S.C., Birch, A.N.E., Brennan, R.M. & Graham, J.** 2003. Alternative control strategies for managing pests of cane and bush fruits in Europe (Abstract). *Advances in European Crop Protection*, John Innes Centre, Norwich, 19-20 May 2003. P
- Gordon, S.C., Birch, A.N.E., Woodford, J.A.T. & Mitchell, C.** 2003. Managing pests of raspberry using IPM techniques - European Experience (abstract). *1 Symposium on Raspberry*, Cacak, Serbia and Montenegro, 28-30 October 2003. P

- Gordon, S.C. & Williamson, B.** 2003. Review of current knowledge of disease and pest control trials in cane and bush fruits in Europe. *COST Action 836 Final Workshop*, Ancona, Italy, 9-11 October 2003. *Acta Horticulturae*. P
- Gordon, S.C., Woodford, J.A.T., Grassi, A., Zini, M., Tuovinen, T., Lindqvist, I. & McNicol, J.** 2003. Monitoring and importance of wingless weevils (*Otiorhynchus* spp.) in European red raspberry production. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC/wprs Bulletin* 26(2) 55. P
- Graham, J., Hein, I., Russell, J.R., Woodhead, M., Gordon, S.C. & Smith, K.** 2003. The use of genomics technologies in contemporary *Rubus* and *Ribes* breeding programmes. *Acta Horticulturae*, 649, 319-322. P
- Graham, J., Marshall, B. & Squire, G.R.** 2003. Genetic differentiation over a spatial environmental gradient in wild *Rubus idaeus* populations. *New Phytologist* 157, 667-675. J
- Graham, J., Russell, J.R., Hein, I. & Powell, W.** 2003. An integrated approach to mapping in *Rubus*. *Abstracts of the Annual Main Meeting of the Society for Experimental Biology*, 134/A (3/Suppl.) 5143-5144. P
- Graham, J., Squire, G.R. & Marshall, B.** 2003. Spatially distributed genetic similarity in wild *Rubus idaeus* populations. *Molecular Ecology* 15, 667-675. J
- Griffiths, B.S., Neilson, R. & Bengough, A.G.** 2003. Soil factors determined nematode community composition in a two year pot experiment. *Nematology* 5, 889-897. J
- Gunstone, F.D.** 2003. Fatty acids (c) Gamma-linolenic acid. In: Caballero, B., Trugo, L. & Finglas, P. (eds). *Encyclopedia of Food Science and Nutrition (2nd edition)*. Elsevier, Amsterdam, 2308-2311. R
- Gunstone, F.D.** 2003. Giants from the past - Thomas Percy Milditch 1886-1965. *INFORM* 14, 302-303. O
- Gunstone, F.D.** 2003. Lipid chemistry - a personal view of some developments in the last sixty years. *Biochimica et Biophysica Acta* 1631, 207-217. J
- Gunstone, F.D.** 2003. *Lipids for Functional Foods and Nutraceuticals*. Oily Press, Bridgwater, Somerset, 322pp. R
- Gunstone, F.D.** 2003. Market Focus. *Lipid Technology Newsletter* 9, 18-19, 42-43. O
- Gunstone, F.D.** 2003. Market Report. *INFORM* 14, 42-43, 72-73. O
- Gunstone, F.D.** 2003. Market Report. *Lipid Technology* 15, 28, 48, 72, 86, 120, 144. O
- Gunstone, F.D.** 2003. Market Report. *Lipid Technology Newsletter* 9, 20, 44, 68, 92, 116, 140. O
- Gunstone, F.D.** 2003. Research Highlights. *Lipid Technology* 15, 19-22, 42-45, 67-70, 90-93, 114-117, 139-142. O
- Gunstone, F.D.** 2003. Soy (soya) bean oil. In: Caballero, B., Trugo, L. & Finglas, P. (eds) *Encyclopedia of Food Science and Nutrition. 2nd edition*. Elsevier, Amsterdam, 5375-5379. R
- Gunstone, F.D., Yang, B. & Kallio, H.** 2003. Oils containing oleic, palmitoleic, γ -linolenic, and stearidonic acids. In: Gunstone, F.D. (ed.). *Lipids for Functional Foods and Nutraceuticals*. Oily Press, Bridgwater, Somerset, 263-290. R
- Guschina, I.A., Dobson, G. & Harwood, J.L.** 2003. Lipid metabolism in cultured lichen photobionts with different phosphorus status. *Phytochemistry* 64, 209-217. J
- Hackett, C.A., Pande, B. & Bryan, G.J.** 2003. Constructing linkage maps in autotetraploid species using simulated annealing. *Theoretical and Applied Genetics* 106, 1107-1115. J
- Haenni, A.-L., De Miranda, J.R., Falk, B.W., Goldbach, R., Mayo, M.A., Shirako, Y. & Toriyama, S.** 2003. Genus Tenuivirus. *International Committee on Taxonomy and Classification of Viruses VIII ICTV Report* 1-8. O
- Hallett, P.D.** 2003. Roots: An ecological solution for slope stabilisation. *Soil Bioengineering* (Leaflet). O
- Hallett, P.D., Gordon, D.C. & Bengough, A.G.** 2003. Plant influence on rhizosphere hydraulic properties: direct measurements using a miniaturised infiltrometer. *New Phytologist* 157, 597-603. J
- Hallett, P.D., Griffiths, B.S., Kuan, H.L., Pitkin, Y., Barton, A.P., Watts, C.W. & Whitmore, A.P.** 2003. Soil stability and resilience: the interplay between physical and biological recovery from stress. *EU PROLAND Workshop on Soil Physical Quality*, Pulawy, Poland, 2-4 October 2003. P
- Hallett, P.D., Zhang, B. & Newson, T.A.** 2003. Quantifying soil structural dynamics using fracture mechanics. *EU PROLAND Workshop on Soil Physical Quality*, Pulawy, Poland, 2-4 October 2003. P
- Hallett, P.D., Zhang, B. & Peng, X.H.** 2003. Subcritical water repellency: a fundamental mechanism in soil pore structure evolution. *2nd International Conference on Soil Quality Evolution Mechanisms*, Yingtan, China, 23-28 September 2003. P
- Halpin, C. & Boerjan, W.** 2003. Stacking transgenes in forest trees. *Trends in Plant Science* 8, 363-365. J
- Hancock, R.D., McRae, D., Jorna, C.S., Haupt, S. & Viola, R.** 2003. Synthesis of L-ascorbic acid in plant phloem. *BMC Plant Biology* 3, 7. J
- Hancock, R.D., Tedone, L., McRae, D., Jorna, C.S. & Viola, R.** 2003. Phloem L-ascorbic acid: synthesis or transport? *Proceedings of SEB 2003*, Southampton. *Comparative Physiology and Biochemistry* 134, S149. P
- Harris, K., Young, I.M., Gilligan, C., Otten, W. & Ritz, K.** 2003. Effect of bulk density on the spatial organisation of the fungus *Rhizoctonia solani* in soil. *FEMS Microbiology Ecology* 44, 45-56. J
- Haughton, A.J., Champion, G.T., Hawes, C., Heard, M.S., Brooks, D.R., Bohan, D.A., Clark, S.J., Dewar, A.M., Firbank, L.G., Osborne, J.L., Perry, J.N., Rothery, P., Roy, D.B., Scott, R.J., Woiwod, I.P., Birchall, C., Skellern, M., Walker, J., Baker, P., Browne, E., Garner, B., Haylock, L., Horne, S., Mason, N. & Sands, R.** 2003. Invertebrates responses to the management of genetically modified herbicide-tolerant and conventional spring crops. II. Within field epigeal and aerial arthropods. *Philosophical Transactions of the Royal Society of London B* 358, 1863-1877. J
- Hawes, C., Brooks, D.R., Bohan, D.A., Champion, G.T., Clark, S.J., Daniels, R.E., Dewar, A.M., Firbank, L.G., Haughton, A.J., Heard, M.S., Osborne, J.L., Parish, A.M., Perry, J.N., Rothery, P., Roy, D.B., Scott, R.J., Woiwod, I.P., Young, M.W. & Squire, G.R.** 2003. Responses of plants and invertebrate trophic groups to contrasting herbicide regimes in the Farm Scale Evaluations

of Genetically-Modified Herbicide-Tolerant crops. *Philosophical Transactions of the Royal Society of London B* 358, 1899-1913. J

Haynes, S., Darby, A.C., Daniell, T.J., Webster, G., Van Veen, F., Godfray, H.C., Prosser, J.I. & Douglas, A.E. 2003. Diversity of bacteria associated with natural aphid populations. *Applied and Environmental Microbiology* 69, 7216-7223. J

Heard, M.S., Hawes, C., Champion, G.T., Clark, S.J., Firbank, L.G., Haughton, A.J., Perry, J.N., Rothery, P., Scott, R.J., Squire, G.R. & Hill, M.O. 2003. Weeds in fields with contrasting conventional and genetically modified herbicide-tolerant crops. I. Effects on abundance and diversity. *Philosophical Transactions of the Royal Society of London B* 358, 1819-1832. J

Heard, M.S., Hawes, C., Champion, G.T., Clark, S.J., Firbank, L.G., Haughton, A.J., Perry, J.N., Rothery, P., Scott, R.J., Squire, G.R. & Hill, M.O. 2003. Weeds in fields with contrasting conventional and genetically modified herbicide-tolerant crops II. Effects on individual species. *Philosophical Transactions of the Royal Society of London B* 358, 1833-1846. J

Hilbeck, A. & Birch, A.N.E. 2003. The GMO Guidelines Project: Development of International Scientific Environmental Biosafety Guidelines for Transgenic Plants. In: Ehler, L.E., Sforza, R. & Mateille, T. (eds). *Genetics, Evolution and Biological Control*. CABI Publishing, Wallingford, Oxon, 207-218. R

Hillman, J.R. 2003. Biotechnology issues for the environment. *Biotech 2020: Crop Biotechnology in the World of 2020*, British Crop Protection Council, Elvetham Hall, Hartley Wintney, 24-25 February 2003. P

Horgan, G.W. & Stubbs, J. 2003. Predicting BMR in the obese is difficult. *International Journal of Obesity* 57, 335-340. J

Husmeier, D. 2003. Detecting Recombination in 4-Taxa DNA Sequence Alignments with Bayesian Hidden Markov Models and Markov Chain Monte Carlo. *Molecular Biology and Evolution* 20, 315-337. J

Husmeier, D. 2003. Reverse engineering of genetic networks with Bayesian networks. *Biochemical Society Transactions* 31, 1516-1518. J

Husmeier, D. 2003. Sensitivity and specificity of inferring genetic regulatory interactions from microarray experiments with dynamic Bayesian networks. *Bioinformatics* 19, 2271-2282. J

Hübschen, J., Oliveira, C.M.G., Auwerkerken, A., Barsi, L., Ferraz, L.C.C.B., Ipach, U., Lazarova, S., Liskova, M., Peneva, V., Robbins, R.T., Susulowsky, A., Tzortzakakis, M., Ye, W., Zheng, J., Tasheen, Q., Fourie, H., Lamberti, F., Brown, D.J.F. & Neilson, R. 2003. Phylogenetic analysis of selected longidoridae based on 18s rDNA gene sequences. *16th Symposium of the Nematological Society of Southern Africa*, South Africa, 30 June to 4 July 2003. P

Isidore, E., van Os, H., Andrzejewski, S., Bakker, J., Barrera, I., Bryan, G.J., Caromel, B., van Eck, H., Ghareeb, B., De Jong, W., van Koert, P., Lefebvre, V., Milbourne, D., Ritter, E., Rouppe van der Voort, J., Rousselle-Bourgeois, F., van Vliet, J. & Waugh, R. 2003. Toward a marker-dense meiotic map of the potato genome: Lessons from Linkage Group I. *Genetics* 165, 2107-2116. J

Ivandic, V., Thomas, W.T.B., Nevo, E., Zhang, Z. & Forster, B.P. 2003. Association of simple sequence repeats

with quantitative trait variation including biotic and abiotic stress tolerance in *Hordeum spontaneum*. *Plant Molecular Biology* 122, 300-304. J

Jarosz-Wilkolazka, A. & Gadd, G.M. 2003. Oxalate production by wood-rotting fungi growing in toxic metal-amended medium. *Chemosphere* 52, 541-547. J

Jaufeerally-Fakim, Y., Autrey, J.C., Toth, I.K., Daniels, M. & Dookun, A. 2002. Amplification polymorphism among *Xanthomonas albilineans* strains, using a single oligonucleotide primer. *European Journal of Plant Pathology* 108, 121-130. J

Jennings, N., Brennan, R.M. & Gordon, S.C. 2003. Commercial breeding for pest and disease resistance in cane and bush fruits. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC wpr Bulletin*, 26(2), 67. P

Johns, P.M. & Boag, B. 2003. The spread and distribution of terrestrial planarians (Turbellaria: Tricladida: Geoplanidae) within New Zealand. *New Zealand Journal of Ecology* 27, 201-206. J

Johnston, A.M., Scrimgeour, C.M., Kennedy, H.A. & Handley, L.L. 2003. Isolation of ammonium-N as 1-sulfonato-iso-indole for measurement of $\delta^{15}\text{N}$. *Rapid Communications in Mass Spectrometry* 17, 1099-1106. J

Johnstone, A.M., Faber, P., Gibney, E.R., Lobley, G.E., Elia, M., Horgan, G.W. & Stubbs, J. 2003. Effect of weight loss on psychometric and physiological characteristics. *12th European Congress on Obesity May 29-June 01, 2003*, Helsinki, Finland. P

Jones, A.T. 2001. Genus *Idaeovirus*. In: Tidona, A.A. & Durai, G. (eds). *The Springer Index of Viruses*. Springer Press, Berlin. R

Jones, A.T. 2003. Important virus diseases of cane fruit crops and their control. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC/wpr Bulletin*, 26, 169-175. P

Jones, A.T. & McGavin, W.J. 2003. Resurgence of virus problems in *Rubus* in the United Kingdom: possible effects on crop production and certification. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC/wpr Bulletin*, 27, 73-78. P

Jones, H.G., Archer, N., Rotenberg, E. & Casa, R. 2003. Radiation measurement for plant ecophysiology. *Journal of Experimental Botany* 54, 1-11. J

Jones, J.T. 2002. Nematode sense organs. In: Lee, D.L. (ed.). *The Biology of Nematodes*. Taylor and Francis, London, 353-368. R

Jones, J.T., Furlanetto, L., Bakker, E., Banks, B., Blok, V.C., Chen, Q., Phillips, M.S. & Prior, A. 2003. Characterisation of a chorismate mutase from the potato cyst nematode *Globodera pallida*. *Molecular Plant Pathology* 4, 43-50. J

Jung, T., Nechwatal, J., Cooke, D.E.L., Hartmann, G., Blaschke, M., Osswald, W., Duncan, J.M. & Delatour, C. 2003. *Phytophthora pseudosyringae* sp. nov., a new species causing root and collar rot of deciduous trees in Europe. *Mycological Research* 107, 772-789. J

Kalinina, N., Roberts, I., Ryabov, E., Robinson, D.J., Oparka, K. & Taliansky, M. 2003. An umbraviral long-distance movement protein forms unique, protective ribonucleoprotein complexes. *XI Congress of International*

Society for Molecular Plant-Microbe Interactions, St Petersburg, Russia, 18-27 July 2003. P

Kim, S.-H., Ryabov, E., Brown, J.W.S. & Taliany, M.E. 2003. The intracellular trafficking of the ORF3 protein of *Groundnut rosette umbravirus* (GRV). *Advances in Plant Virology*, AAB Conference. P

Krivtsov, V., Liddell, K., Bezginova, T., Salmond, R., Garside, A., Thompson, J., Palfreyman, J.W., Staines, H.J., Watling, R., Brendler, A. & Griffiths, B.S. 2003. Ecological interactions of heterotrophic flagellates, ciliates and naked amoebae in forest litter of the Dawyck Cryptogamic Sanctuary (Scotland, UK). *European Journal of Protistology* 39, 183-198. J

Kulkarni, N.K., Kumar, P.L., Muniyappa, V., Jones, A.T. & Reddy, D.V.R. 2003. Studies on the natural and experimental host range of *Pigeonpea sterility mosaic virus*. *Journal of Mycology and Plant Pathology* 33, 141-145. J

Kulkarni, N.K., Reddy, A.S., Kumar, P.L., Vijaynarasimha, J., Rangaswamy, K.T., Muniyappa, V., Reddy, L.J., Saxena, K.B., Jones, A.T. & Reddy, D.V.R. 2003. Broad-based resistance to *Pigeonpea sterility mosaic disease* in the accessions of *Cajanus scarabaeoides*. *Indian Journal of Plant Protection* 31, 6-11. J

Kumar, P.L., Jones, A.T. & Reddy, D.V.R. 2003. A novel mite-transmitted virus with a divided RNA genome closely associated with *Pigeonpea sterility mosaic disease*. *Phytopathology* 93, 81-91. J

Kustka, A., Sanudo-Wilhelmy, S., Carpenter, E.J., Capone, D.G. & Raven, J.A. 2003. A revised estimate of the Fe use efficiency of nitrogen fixation with special reference to the N₂ fixing cyanobacterium *Trichodesmium* (Cyanophyta). *Journal of Phycology* 39, 12-25. J

Lacomme, C., Hrubikova, K. & Hein, I. 2003. Enhancement of virus induced gene silencing through viral-based production of inverted-repeats. *The Plant Journal* 34, 543-553. J

Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). 2003. *Photosynthesis in Algae*. Kluwer, Dordrecht, 479pp. R

Laskin, A.I., Bennett, J.W. & Gadd, G.M. (eds). 2003. *Advances in Applied Microbiology. Volume 52*. Academic Press, New York, 412pp. R

Laskin, A.I., Bennett, J.W. & Gadd, G.M. (eds). 2003. *Advances in Applied Microbiology. Volume 53*. Academic Press, New York, 453pp. R

Lee, L., Liang, D., Palukaitis, P. & Gray, S.M. 2003. Biologically active regions of the *Potato leafroll virus* coat protein involved in particle assembly, virus movement and aphid transmission. *Abstracts American Society for Virology*. P

Legorburu, F.J., Font, I., Jordá, M.C., Keller, H., Schots, A., Harper, K., Liney, M., Serra, C., Pereira, L.C., Formica, L., Dell'Orco, M., Saldarelli, P., Minafra, A., Boscia, D., Gallitelli, D. & Mayo, M.A. 2003. Cloned antigens as no risk, standardized positive controls in ELISA. *Proceedings of the 8th International Congress of Plant Pathology (abstract)*, Christchurch, New Zealand, 2-7 February 2003, 90. P

Leigh, F., Lea, V., Law, J., Wolters, P., Powell, W. & Donini, P. 2003. Assessment of EST and genomic microsatellite markers for variety discrimination and genetic diversity studies in wheat. *Euphytica* 133, 359-366. J

Liu, J. & Marshall, D.F. 2003. Complex dynamics and system co-ordination in coupled enzymatic systems.

Dynamic Day's Conference, Palma, Majorca, September 2003. P

Liu, J. & Marshall, D.F. 2003. Sufficient conditions for coordination of coupled non-linear biochemical systems: analysis of a simple, representative example. *Journal of Biological Systems* 11, 275-291. J

Lopez, S., Bastida, J., Viladomat, F., Armand-Ugon, M., Este, J., Codina, C. & Stewart, D. 2003. Anti-human immunodeficiency virus type 1 (HIV-1) activity of lectins from *Narcissus* species. *Planta Medica* 69, 109-112. J

Lund, B., Ortiz, R., Skovgaard, I., Waugh, R. & Andersen, S.B. 2003. Analysis of potential duplicates in barley gene bank collections using re-sampling of microsatellite data. *Theoretical and Applied Genetics* 106, 1129-1138. J

Lyon, G.D., Newton, A.C., Marshall, B., Ball, L., Houston, A. & Natanson, L. 2003. Drastic: A database resource for the analysis of signal transduction in cells. *Proceedings of the 8th International Congress of Plant Pathology (abstract)*, Christchurch, New Zealand, 2-7 February 2003. P

MacConnell, C.B., Murray, T.A., Burrows, C.L., Gordon, S.C., Birch, A.N.E. & Tanigoshi, L. 2003. Adopting Integrated Pest Management for the Raspberry Beetle *Byturus unicolor* Say (Coleoptera: Byturidae), for Washington State Red Raspberries. *IOBC Workshop on Integrated Soft Fruit Production*, Conthey, Switzerland. P

MacFarlane, S.A. 2003. Molecular determinants of the transmission of plant viruses by nematodes. *Molecular Plant Pathology* 4, 211-215. J

Mansur, M., Mahrup, S., Kusnarta, V.C.D., Gill, J.S., McKenzie, B.M., Borrell, A.K. & Tisdall, J.M. 2003. Management of the short and unreliable water supply for crops on tropical-semi-arid Vertisols of West Nusa Tenggara, Eastern Indonesia. *International Conference of Cambodian Agricultural Research and Development Institute (CARDI)*, Cambodia, 25-28 November 2003. P

Marshall, B. & Young, M.W. 2003. Automated on-farm assessment of tuber size distribution. *EAPR, Third International Potato Modelling Conference*, Scottish Crop Research Institute, Dundee, March 2003. P

Marshall, E.J.P., Brown, V.K., Boatman, N.D., Lutman, P.J., Squire, G.R. & Ward, L.K. 2003. The role of weeds in supporting biological diversity within crop fields. *Weed Research* 43, 77-89. J

Martin, D.M.A., Hill, P., Barton, G.J. & Flavell, A.J. 2003. Visual representation of database search results: the RHIMS plot. *Bioinformatics* 19, 1037-1038. J

Martino, E., Perotto, S., Parsons, R. & Gadd, G.M. 2003. Solubilization of insoluble inorganic zinc compounds by ericoid mycorrhizal fungi derived from heavy metal polluted sites. *Soil Biology and Biochemistry* 35, 133-141. J

Matus, I., Corey, A., Filichkin, T., Hayes, P.M., Vales, M.I., Kling, J., Riera-Lizarazu, O., Sato, K., Powell, W. & Waugh, R. 2003. Development and characterisation of recombinant chromosome substitution lines (RCSLs) using *Hordeum vulgare* subsp. *spontaneum* as a source of donor alleles in a *Hordeum vulgare* subsp. *vulgare* background. *Genome* 46, 1010-1023. J

Mayo, M.A. 2002. A summary of taxonomic changes recently approved by ICTV. *Archives of Virology* 147 (8), 1655-1656. J

- Mayo, M.A.** 2002. ICTV at the Paris ICV: Results of the plenary session and the binomial ballot. *Archives of Virology* 147, 2254-2260. J
- Mayo, M.A.** 2003. Base-pairing in RNA virus replication and host plant defence. *Microbiology Today* 30, 12-13. J
- Mayo, M.A., Fauquet, C.M. & Maniloff, J.** 2003. Taxonomic proposals on the web: new ICTV consultative procedures. *Archives of Virology* 148, 609-611. J
- Mesfin, A., Smith, K.P., Dill-Macky, R., Evans, C.K., Waugh, R., Gustus, C.D. & Muehlbauer, G.J.** 2003. Quantitative trait loci for *Fusarium* head blight resistance in barley detected in a two-rowed by six-rowed population. *Crop Science* 43, 307-318. J
- Mirabolfathy, M., Alizadeh, A., Cooke, D.E.L., Duncan, J.M., Rahimian, H. & Ershad, D.** 2003. Detection of the causal agents of pistachio gummosis by the polymerase chain reaction. *Iranian Journal of Plant Pathology* 38, 29-34. J
- Mitchell, C., Gordon, S.C., Birch, A.N.E. & Hubbard, S.F.** 2003. Developing a 'lure and kill' system for raspberry beetle, *Byturus tomentosus*, in *Rubus* production. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC/wprs Bulletin*. P
- Mitchell, S., Wheatley, R.E., Squires, J. & Daniell, T.J.** 2003. Spatial linkage between *NIRK* diversity and denitrification of activity in three arable fields. *FEMS Congress of European Microbiologists*, Ljubljana, Slovenia, June 2003. P
- Molina-Cano, J.-L., Simiand, J.P., Sopena, A., Perez-Vendrell, A.M., Dorsch, S., Rubiales, D., Swanston, J.S. & Jahoor, A.** 2003. Mildew-resistant mutants induced in North American two- and six-rowed malting barley cultivars. *Theoretical and Applied Genetics* 107, 1278-1287. J
- Morris, W.L., Ducreux, L., Griffiths, D.W., Stewart, D., Lacomme, C., Davies, H.V. & Taylor, M.A.** 2003. Characterisation and transgenic modification of carotenogenesis during tuber development and storage in potato. *Gordon Conference - Carotenoids 2004*, California, USA, 4-9 January 2004. P
- Motta, E., Annesi, T., Pane, A., Cooke, D.E.L. & Cacciola, S.O.** 2003. A new *Phytophthora* sp. infecting beech in Italy. *Plant Disease* 87, 1005. J
- Muckenschnabel, I., Lyon, G.D., Deighton, N., Goodman, B.A., Stewart, D. & Williamson, B.** 2003. *Botrytis cinerea* perturbs redox processes as an attack strategy in plants. *Proceedings of the 8th International Congress of Plant Pathology (Abstract 15.76)*, Christchurch, New Zealand, 2-7 February 2003. P
- Muckenschnabel, I., Schulze Gronover, C., Deighton, N., Goodman, B.A., Lyon, G.D., Stewart, D. & Williamson, B.** 2003. Oxidative effects in uninfected tissue in leaves of French bean (*Phaseolus vulgaris*) containing soft rots caused by *Botrytis cinerea*. *Journal of the Science of Food and Agriculture* 83, 507-514. J
- Naylor, S.W., Low, J.C., Besser, T.E., Mahajan, A., Gunn, G.J., Pearce, M.C., McKendrick, I.J., Smith, D.G.E. & Gally, D.L.** 2003. Lymphoid follicle-dense mucosa at the terminal rectum is the principal site of colonization of enterohemorrhagic *Escherichia coli* O157:H7 in the bovine host. *Infection and Immunity* 71(3), 1505-1512. J
- Neilson, R., Karanastasi, E., Duarte, I.M., Almeida, M.T.M. & Brown, D.J.F.** 2003. Trichodorids and 'spraying' disease (abstract). *16th Symposium of the Nematological Society of Southern Africa*, South Africa, 30 June-4 July 2003. P
- Newton, A.C.** 2002. Cereal Rusts and Powdery Mildews Bulletin (Foreword/Editorial/Introduction/ Information/ Contents). *Cereal Rusts and Powdery Mildews Bulletin* 30, 1. O
- Newton, A.C. & Guy, D.C.** 2003. Genotype and phenotype deployment strategies to enhanced durability and efficacy of cultivar mixtures. *Proceedings of the Crop Protection in Northern Britain Conference 2004*, Dundee, 24-25 February 2004. P
- Newton, A.C., Guy, D.C., Campbell, E. & Thomas, W.T.B.** 2003. The effect of variable environment on powdery mildew resistance expression in barley. *Journal of Plant Diseases and Protection* 110, 113-119. J
- Newton, A.C., Lyon, G.D., Holmes, K., Smith, W. & Osnes, K.** 2003. Agricultural composition and method for treatment of plants therewith. *European Patent No: 28.07.00/NOA 200003865*. T
- Newton, A.C. & Swanston, J.S.** 2003. Winter barley cultivar mixtures: why isn't everybody growing them? *9th International Barley Genetics Symposium*, Brno, Czech Republic, 20-26 June 2004. P
- Newton, A.C., Swanston, J.S., Begg, G.S., McNicol, J.W. & Hoad, S.** 2003. Barley cultivar mixtures in theory and practice. *Proceedings of the 8th International Congress of Plant Pathology (abstract)*, Christchurch, New Zealand, 2-7 February 2003. P
- Newton, A.C., Swanston, J.S. & Guy, D.C.** 2003. Enhanced durability and utility of genes for resistance by deployment in cultivar mixtures. *XI Congress of International Society for Molecular Plant-Microbe Interactions*, St Petersburg, Russia, 18-27 July 2003. P
- Nikolova-Damyanova, B., Dobson, G., Momchilova, S. & Christie, W.W.** 2003. Cyclohexanediol fatty acid diesters as model compounds for mechanistic studies in silver ion high performance liquid chromatography. *Journal of Liquid Chromatography and Related Technologies* 26, 1905-1912. J
- Nunan, N., Wu, K., Young, I.M., Crawford, J.W. & Ritz, K.** 2003. Spatial distribution of bacterial communities and their relationships with the micro-architecture of soil. *FEMS Microbiology Ecology* 44, 203-215. J
- Oliveira, C.M.G., Hübschen, J., Brown, D.J.F., Monteiro, A.R., Ferraz, L.C.C.B., Wright, F. & Neilson, R.** 2003. Taxonomic relationships of selected *Xiphinema* and *Xiphidurus* nematode species from Brazil. *16th Symposium of the Nematological Society of Southern Africa*, South Africa, 30 June-4 July 2003. P
- Palfreyman, J.W., Gartland, J.S., Sturrock, C.J., Lester, D., White, N.A., Low, G.A., Bech-Andersen, J. & Cooke, D.E.L.** 2003. The relationship between 'wild' and 'building' isolates of the dry rot fungus *Serpula lacrymans*. *FEMS Microbiology Letters* 228, 281-286. J
- Palukaitis, P. & Garcia-Arenal, F.** 2003. Cucumoviruses. *Advances in Virus Research* 62, 241-323. J
- Palukaitis, P., Kim, S.-H., Taliansky, M.E., Andreev, I., Fitzgerald, A.G., Kalinina, N.O. & Ryabov, E.V.** 2003. Effects of deletion of the C-Terminal 33 amino acids of the *Cucumber mosaic virus* 3a protein on movement, RNA binding and inhibition of infection and translation. *American Society for Virology*. P

- Palukaitis, P. & Shi, B.-J.** 2003. Recombination between cucumoviruses: The 2B gene determines the nature of the 3' terminal sequence. *Abstracts for EMBO Meeting*, May 2003. P
- Peng, X.H., Zhang, B., Qiguo, Z., Hallett, P.D. & Horn, R.** 2003. Influence of types of restorative vegetation influences on the wetting properties of degraded clayey Ultisol in subtropical China. *Geoderma* 115, 313-324. J
- Perera, L., Russell, J.R., Provan, J. & Powell, W.** 2001. Levels and distribution of genetic diversity of coconut (*Cocos nucifera* L., var. *Typica* form *typica*) from Sri Lanka assessed by microsatellite markers. *Euphytica* 122(2), 381-389. J
- Perera, L., Russell, J.R., Provan, J. & Powell, W.** 2003. Studying genetic relationships among coconut varieties/populations using microsatellite markers. *Euphytica* 132, 121-128. J
- Perry, J.N., Rothery, P., Clark, S.J., Heard, M.S. & Hawes, C.** 2003. Design, analysis and power of the Farm-Scale Evaluations of genetically modified herbicide-tolerant crops. *Journal of Applied Ecology* 40, 17-31. J
- Pirker, K.F., Reichenauer, T.G., Pascual, E.C., Kiefer, S., Soja, G. & Goodman, B.A.** 2003. Steady state levels of free radicals in tomato fruit exposed to drought and ozone stress in a field experiment. *Plant Physiology and Biochemistry* 41, 921-927. J
- Potts, J.M.** 2003. Basic concepts. In: Jolliffe, I.T. & Stephenson, D.B. (eds). *Forecast Verification: A Practitioner's Guide in Atmospheric Science*. Wiley, Chichester. R
- Potts, J.M., Hirst, D.J., Miller, J.D., Edwards, A.C. & Elston, D.A.** 2003. Comparison of trends in stream water quality. *Hydrological Processes* 17, 2449-2462. J
- Ramos, M.L.G., Parsons, R., Sprent, J.I. & James, E.K.** 2003. Effect of water stress on nitrogen fixation and nodule structure of common bean. *Pesquisa Agropecuaria Brasileira* 38, 339-347. J
- Ramsay, G., Squire, G.R., Thompson, C.E., Cullen, D., Anderson, J.N. & Gordon, S.C.** 2003. Understanding and predicting landscape-scale gene flow in oilseed rape. *Proceedings of the 1st European Conference on the Co-existence of Genetically Modified Crops with conventional Organic Crops*, Denmark, 13-14 November 2003, pp.102-104. P
- Rao, S.J., Iason, G.R., Hulbert, I.A.R., Elston, D.A. & Racey, P.A.** 2003. The effect of sapling density, heather height and season on browsing by mountain hares on birch. *Journal of Applied Ecology* 40, 626-638. J
- Raven, J.A.** 2003. Biochemistry and physiology of photosynthesis. In: Norton, T.A. (ed.). *Out of the Past*. British Phycological Society, London, 19-29. R
- Raven, J.A.** 2003. Can plants rely on nitrate? *Trends in Plant Science* 8, 314-315. J
- Raven, J.A.** 2003. Carboxysomes and peptidoglycan walls of cyanobacteria: possible physiological functions. *European Journal of Phycology* 38, 47-53. J
- Raven, J.A.** 2003. Cycling silicon – the role of accumulation in plants. *New Phytologist* 158, 419-421. J
- Raven, J.A.** 2003. Inorganic carbon concentrating mechanisms in relation to the biology of algae. *Photosynthesis Research* 77, 151-171. J
- Raven, J.A.** 2003. Long-distance transport in non-vascular plants. *Plant Cell and Environment* 26, 73-85. J
- Raven, J.A. & Allen, J.F.** 2003. Genomics and chloroplast evolution: what did the cyanobacteria ever do for plants? *Genome Biology* 4, 209(1)-209(5). J
- Raven, J.A. & Beardall, J.** 2003. Carbohydrate metabolism and respiration in algae. In: Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). *Photosynthesis in Algae*. Kluwer, Dordrecht, 205-224. R
- Raven, J.A. & Beardall, J.** 2003. Carbon acquisition mechanisms in algae: carbon dioxide diffusion and carbon dioxide concentrating mechanisms. In: Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). *Photosynthesis in Algae*. Kluwer, Dordrecht, 225-244. R
- Raven, J.A. & Geider, R.D.** 2003. Adaptation, acclimation and regulation of photosynthesis in algae. In: Larkum, A.W.D., Douglas, S.E. & Raven, J.A. (eds). *Photosynthesis in Algae*. Kluwer, Dordrecht, 385-412. R
- Raven, J.A., Handley, L.L. & Andrews, M.** 2002. Optimising carbon-nitrogen budgets: perspectives for crop improvement. In: Foyer, C.H. & Noctor, G. (eds). *Photosynthetic Nitrogen Assimilation and Associated Carbon Metabolism*. Kluwer Academic Press, Dordrecht. R
- Raven, J.A., Johnston, A.M., Kübler, J.E.K.R., McInroy, S.G., Handley, L.L., Scrimgeour, C.M., Walker, D.I., Beardall, J., Clayton, M.N., Chudek, J.A., Vanderklift, M., Fredricksen, S. & Dunton, K.H.** 2002. Seaweeds in cold seas: evolution and carbon acquisition. *Annals of Botany* 90, 525-536. J
- Raven, J.A. & Skene, K.R.** 2003. Chemistry of the oceans: the environment of early life. In: Rothschild, L. & Lister, A. (eds). *Evolution on Plant Earth: The Impact of the Physical Environment*. Academic Press, London, 55-64. R
- Raven, J.A. & Taylor, R.** 2003. Macroalgal growth in nutrient-enriched estuaries: a biogeochemical perspective. *Water, Air and Soil Pollution: Focus* 3, 7-26. J
- Read, D.B., Bengough, A.G., Gregory, P.J. & Scrimgeour, C.M.** 2003. Plant roots release phospholipid surfactants that modify the physical and chemical properties of soil. *New Phytologist* 157, 315-326. J
- Rehmany, A.P., Grenville, L.J., Gunn, N.D., Allen, R.L., Paniwnyk, Z., Byrne, J., Whisson, S.C., Birch, P.R.J. & Beynon, J.L.** 2003. A genetic interval and physical contig spanning the *Peronospora parasitica* (*At*) avirulence gene locus *ATR1Nd*. *Fungal Genetics and Biology* 38, 33-42. J
- Reichenauer, T.G. & Goodman, B.A.** 2003. Free radicals in wheat flour change during storage in air and are influenced by the presence of ozone during the growing season. *Free Radical Research* 37, 523-528. J
- Ritchie, M.R., Morton, M.S., Deighton, N., Blake, A. & Cummings, J.H.** 2003. Plasma and urinary phytoestrogens as biomarkers of intake: validated by duplicate diet analysis. *Food, Nutrition and Cancer Conference, USA*. (Poster). P
- Ritchie, M.R., Morton, M.S., Deighton, N., Blake, A., Thompson, A.M., Cummings, J.H. & Steel, C.M.** 2003. Derivation and validation of a biological marker for phytoestrogen intake. *Journal of Nutrition* 133(Suppl.), 3862S. J
- Roberts, A.G. & Oparka, K.J.** 2003. Plasmodesmata and the control of symplastic transport. *Plant Cell and Environment* 26, 103-124. J
- Roberts, I.M.** 2002. Iso-butanol saturated water: a simple procedure for increasing staining intensity of resin sections

for light and electron microscopy. *Journal of Microscopy* 207, 97-107. J

Robinson, D.J. & Dale, M.F.B. 2003. Factors affecting the incidence of potato spraing disease caused by *Tobacco rattle virus*. *Proceedings, Crop Protection in Northern Britain 2004*, Dundee, 24-25 February 2004. P

Robinson, D.J., Dale, M.F.B., Bryan, G.J. & McLean, K. 2003. The inheritance of resistance to *Tobacco rattle virus* in potato. *AAB Advances in Plant Virology Conference*, (abstract). P

Rodger, S., Bengough, A.G., Griffiths, B.S., Stubbs, V. & Young, I.M. 2003. Does the presence of detached root border cells from *Zea mays* alter the activity of the pathogenic nematode *Meloidogyne incognita*? *Phytopathology* 93, 1111-1114. J

Ross, H.A., Sungurtas, J., Ducreux, L., Swanston, J.S., Davies, H.V. & McDougall, G.J. 2003. Limit dextrinase in barley cultivars of differing malting quality: activity, inhibitors and limit dextrin profiles. *Journal of Cereal Science* 38, 325-334. J

Rostoks, N., Cardle, L., Mudie, S., Ramsay, L., Hedley, P.E., Russell, J.R., Caldwell, D., Marshall, D.F. & Waugh, R. 2003. Single nucleotide polymorphism discovery in barley genes differentially expressed during abiotic stresses. *Plant and Animal Genome Conference (PAG) XII Proceedings*, San Diego, California, 10-12 January 2004. P

Rostoks, N., Mudie, S., Cardle, L., Marshall, D.F. & Waugh, R. 2003. Single nucleotide polymorphism mapping of the barley genes involved in abiotic stresses. *9th International Barley Genetics Symposium*, Brno, Czech Republic, 20-26 June 2004. P

Roy, D.B., Bohan, D.A., Haughton, A.J., Hill, M.O., Osborne, J.L., Clark, S.J., Perry, J.N., Rothery, P., Scott, R.J., Brooks, D.R., Champion, G.T., Hawes, C., Heard, M.S. & Firbank, L.G. 2003. Invertebrates and vegetation of field margins adjacent to crops subject to contrasting herbicide regimes in the Farm Scale Evaluations of genetically modified herbicide-tolerant crops. *Philosophical Transactions of the Royal Society of London B* 358, 1879-1898. J

Russell, J.R., Booth, A., Fuller, J., Baum, M., Ceccarelli, S., Grando, S. & Powell, W. 2003. Patterns of polymorphism detected in the chloroplast and nuclear genomes of barley landraces sampled from Syria and Jordan. *Theoretical and Applied Genetics* 107, 413-421. J

Schmidt, O., Dyckmans, J. & Scrimgeour, C.M. 2003. Isotopic labelling of earthworms: comments on the paper by Whalen and Janzen (2002). *Soil Biology and Biochemistry* 35, 875-876. J

Scrimgeour, C.M. 2003. Book review: Food Lipids - Chemistry, Nutrition and Biotechnology, 2nd edition. Akoh, C.C. & Min, D.B. (eds). *European Journal of Lipid Science and Technology*. 105, 381. O

Scrimgeour, C.M. & Robinson, D. 2003. Stable isotope analysis and applications. In: Smith, K.A. & Cresser, M.S. (eds.). *Soil and Environmental Analysis: Modern Instrumental Techniques*. Marcel Dekker Inc., New York. 381-431. R

Shepherd, T., Dobson, G., Marshall, R., Verrall, S.R., Conner, S., Griffiths, D.W., Stewart, D. & Davies, H.V. 2003. Analysis of metabolites from *Solanum* species using gas chromatography-(Time-of-Flight) mass spectrometry

and automated data analysis. *16th International Mass Spectrometry Conference*, Edinburgh, 31 August-5 September 2003. (Poster) P

Shepherd, T. 2003. Wax pathways. In: Thomas, B., Murphy, D.J. & Murray, B.G. (eds). *Encyclopedia of Applied Plant Sciences*. Academic Press, 1204-1225. R

Shepherd, T., Dobson, G., Marshall, R., Verrall, S.R., Conner, S., Shepherd, L.V.T., McNicol, J.W., Deighton, N., Stewart, D. & Davies, H.V. 2003. Can metabolite profiling be used to identify unintended effects in transgenic tubers? *16th International Mass Spectrometry Conference*, Edinburgh, 31 August-5 September 2003. P

Shi, B.-J., Palukaitis, P. & Symons, R.H. 2003. Stable and unstable mutations in the 5' non-translated regions of *Tomato aspermy virus* RNAs 1 and 2 generated from infectious cDNA clones containing a cauliflower mosaic virus 35S promoter. *Virus Genes* 28, 277-283. J

Soulsby, C., Petry, J., Brewer, M.J., Dunn, S.M., Ott, B. & Malcolm, I.A. 2003. Identifying and assessing uncertainty in hydrological pathways: a novel approach to end member mixing in a Scottish agricultural catchment. *Journal of Hydrology* 274, 109-128. J

Sprent, J.I. 2003. Mutual sanctions. *Nature* 422, 672-674. J

Squire, G.R., Brooks, D.R., Bohan, D.A., Champion, G.T., Daniels, R.E., Haughton, A.J., Hawes, C., Heard, M.S., Hill, M.O., May, M.J., Osborne, J.L., Perry, J.N., Roy, D.B., Woiwod, I.P. & Firbank, L.G. 2003. On the rationale and interpretation of the Farm-Scale Evaluations of genetically modified herbicide-tolerant crop. *Philosophical Transactions of the Royal Society of London B* 358, 1779-1799. J

Squirrell, J., Hollingsworth, P.M., Woodhead, M., Russell, J.R., Lowe, A., Gibby, M. & Powell, W. 2003. How much effort is required to isolate nuclear microsatellites from plants? *Molecular Ecology* 12, 1339-1348. J

Stamati, K., Blackie, S., Brown, J.W.S. & Russell, J.R. 2003. A set of polymorphic SSR loci for sub-arctic willow (*S. lanata*, *S. lapponum* and *S. herbacea*). *Molecular Ecology Notes* 2, 280-282. J

Steffenson, B.J., Thomas, W.T.B., Meyer, R.C. & Webster, R.K. 2003. Mapping of quantitative trait loci conferring resistance to the rice blast pathogen *Pyricularia grisea* in barley. *ICPP*, 2002. P

Stewart, D. 2003. Berries - Nature's functional foods. *The Caledonian Grower - The Journal of the Royal Caledonian Horticultural Society* 43-46. O

Stewart, D. 2003. Effect of high O₂ and N₂ atmospheres on strawberry quality. *Acta Horticulturae*, 600, 567-570. P

Stewart, D. 2003. Role of berries in human health. *COST 836 Workshop: Towards an Organisation of Integrated Research in Berries*, Ancona, Italy, 9-11 October 2003. P

Stewart, H.E., Bradshaw, J.E. & Pande, B. 2003. The effect of the presence of R-genes for resistance to late blight (*Phytophthora infestans* (Mont. de Bary) of potato (*Solanum tuberosum*) on the underlying level of field resistance. *Plant Pathology* 52, 193-198. J

Swanston, J.S. & Newton, A.C. 2003. Do components of barley variety mixtures converge for malting quality attributes? *9th International Barley Genetics Symposium*, Brno, Czech Republic, 20-26 June 2004. P

- Talamé, V., Sanguinetti, M.C., Chiapparino, E., Bahri, H., Ben Salem, M., Ellis, R.P., Forster, B.P., Rhouma, S., Zoumarou, W. & Tuberosa, R. 2003. Advanced backcross QTL analysis for the identification of agronomically valuable alleles in wild barley (*Hordeum spontaneum*). *Abstracts of Conference "From the green revolution to the gene revolution"*, P
- Taliansky, M.E., Kim, S.-H., Ryabov, E.V., Robinson, D.J. & Brown, J.W.S. 2003. Involvement of the Nucleolus in Umbravirus Systemic Infection. *XI Congress of International Society for Molecular Plant-Microbe Interactions*, St Petersburg, Russia, 18-27 July 2003. P
- Taliansky, M.E., Kim, S.-H., Ryabov, E.V. & Brown, J.W.S. 2003. Is the nucleolus a gateway to umbravirus systemic infection? *Abstract, EMBO workshop*, Keszthely, Hungary 2003. P
- Taliansky, M.E., Mayo, M.A. & Barker, H. 2003. *Potato leafroll virus*: a classic pathogen shows some new tricks. *Molecular Plant Pathology* 4, 81-89. J
- Taliansky, M.E., Mayo, M.A., Barker, H., Kim, S.-H. & Kalinina, N. 2003. Effect of biotic and abiotic factors on escape of *Potato leafroll virus* from amplicon-mediated RNA resistance. *XI Congress of International Society for Molecular Plant-Microbe Interactions*, St Petersburg, Russia, 18-27 July 2003. P
- Taliansky, M.E., Robinson, D.J., Waterhouse, P.M., Murant, A.F., dr Zoeten, G.A., Falk, B.W. & GIBBS, M.J. 2003. Genus Umbravirus. *International Committee on Taxonomy and Classification of Viruses VIII ICTV Report*. O
- Tedone, L., Hancock, R.D. & Viola, R. 2003. Long-distance transport of L-ascorbic acid in potato plants. *EAPR Physiology Meeting*, Dundee, March 2003. P
- Teulat, B., Merah, O., Sirault, X., Borries, C., Waugh, R. & This, D. 2003. QTLs for grain carbon isotope discrimination in field-grown barley. *Theoretical and Applied Genetics* 106, 118-126. J
- Thangavelu, M., James, A., Bankier, A., Bryan, G.J., Dear, P. & Waugh, R. 2003. HAPPY mapping in a plant genome: reconstruction and analysis of a high-resolution physical map of a 1.9 Mbp region of *Arabidopsis thaliana* Chromosome 4. *Plant Biotechnology* 1, 23-33. J
- Thomas, W.T.B. 2003. Molecular Breeding for Barley Quality. *EUCARPIA Cereal Section Proceedings*. P
- Thomas, W.T.B. 2003. Prospects for molecular breeding of barley. *Annals of Applied Biology* 142, 1-12. J
- Thomas, W.T.B. 2003. QTLs for resistance to leaf spotting in barley. *EUCARPIA Cereal Section Proceedings*. P
- Titova, E.S., Chichkova, N.V., Kim, S.-H., Taliansky, M. & Vartapetyan, A.N. 2003. A Plant caspase-like protease activated in the course of the hypersensitive response. *XI Congress of International Society for Molecular Plant-Microbe Interactions*, St Petersburg, Russia, 18-27 July 2003. P
- Toth, I.K. 2002. Better understanding of *Erwinia* for detection and reduced spread. *British Potato Council Technical Bulletin* 2002/13. O
- Trewavas, A.J. & Stewart, D. 2003. Paradoxical effects of chemicals in the diet on health. *Current Opinion in Plant Biology* 6, 185-190. J
- Trudgill, D.L., Elliott, M.J., Evans, K. & Phillips, M.S. 2003. The white potato cyst nematode (*Globodera pallida*) - a critical analysis of the threat in Britain. *Annals of Applied Biology* 143, 73-80. J
- Tsevegsuren, N., Fujimoto, K., Christie, W.W. & Endo, Y. 2003. The occurrence of a novel *cis*-3-octadecatrienoic (*all-cis*-octadeca-3,9,12-trienoic) acid in *Chrysanthemum* (*Tanacetum*) *zawadskii* Herb (Compositae) seed oil. *Lipids* 38, 573-578. J
- Tsonev, T., Velikova, V., Georgieva, K., Hyde, P.F. & Jones, H.G. 2003. Low temperature enhanced photoinhibition or photosynthetic down-regulation in french bean (*Phaseolus vulgaris* L.) plants. *Annals of Botany* 92, 343-352. J
- Turner, S.P., Horgan, G.W. & Edwards, S.A. 2003. Assessment of sub-grouping behaviour in pigs (*Sus scrofa*) housed at different group sizes. *Applied Animal Behaviour Science* 83, 291-302. J
- Urquhart, K.A. & McKendrick, I.J. 2003. A survey of permanent wound tracts in the carcasses of culled wild red deer in Scotland. *Veterinary Record* 152, 497-501. J
- van de Graaf, P., Lees, A.K., Cullen, D.W. & Duncan, J.M. 2003. Detection and quantification of *Spongopora subterranea* in soil, water and plant tissue samples using real-time PCR. *European Journal of Plant Pathology* 109, 589-597. J
- Verrall, S.R., Deighton, N., Marshall, R., Sungurtas, J., Shepherd, T., Shepherd, L.V.T., Dobson, G., McNicol, J.W. & Davies, H.V. 2003. Can metabolomics identify unintended effects in transgenic tubers? *2nd International Conference on Plant Metabolomics*, Potsdam, Germany, 25-28 April 2003. P
- Viola, R. 2003. Handbook of Plant Growth: pH as the Master Variable. Z. Rengel. (ed.) Marcel Dekker Inc., New York (2002), pp. 446. (Book Review). *Experimental Agriculture* 39, 109-110. O
- von Post, R., von Post, L., Dayteg, C., Nilsson, M., Forster, B.P. & Tuveesson, S. 2003. A high throughput DNA extraction method for barley seed. *Euphytica* 130, 355-360. J
- Wei, W.X., Bilsborrow, P.E., Hooley, P., Fincham, D.A., Lombi, E. & Forster, B.P. 2003. Salinity induced differences in growth, ion distribution and partitioning in barley between the cultivar Maythorpe and its derived mutant Golden Promise. *Plant and Soil* 250, 183-191. J
- Werner, K., Friedt, W., Laubach, E., Waugh, R. & Ordon, F. 2003. Dissection of resistance to soil-borne yellow mosaic inducing viruses of barley (BaMMV, BaYMV, BaYMV-2) in a complex breeders cross by SSRs and simultaneous mapping of BaYMV/BaYMV-2 resistance of 'Chikurin Ibaraki 1'. *Theoretical and Applied Genetics* 106, 1425-1432. J
- Wheatley, R.E. 2003. A review of the possible effects of the cultivation of GM-crops on soil-ecosystem functioning. *International Joint Monte Verita Conference on "Biodiversity Implications of Genetically Modified Plants"*, 7-12 September 2003, Ascona, Switzerland. P
- Wheatley, R.E., Caul, S., Crabb, D., Daniell, T.J., Griffiths, B.S. & Ritz, K. 2003. Microbial population dynamics related to temporal variations in nitrification in three arable fields. *European Journal of Soil Science* 54, 707-714. J
- Whisson, S.C., Basnayake, S., Maclean, D.J., Irwin, J.A.G. & Drenth, A. 2003. *Phytophthora sojae* avirulence

genes *Avr4* and *Avr6* are located in a 24 kb, recombination-rich region of genomic DNA. *Fungal Genetics and Biology* 41, 62-74. J

White, C., Dennis, J.S. & Gadd, G.M. 2003. A mathematical process model for cadmium precipitation by sulphate-reducing bacterial biofilms. *Biodegradation* 14, 139-151. J

Windhovel, A., Hein, I., Dabrowa, R. & Stockhaus, J. 2001. Characterization of a novel class of plant homeodomain protein that bind to the C4 phosphoenolpyruvate carboxylase gene of *Flaveria trinervia*. *Plant Molecular Biology* 45, 201-214. J

Wood, N.T. 2002. First plant circadian phase mutant identified (Review). *Trends in Plant Sciences* 7, 482. O

Wood, N.T., MacLeod, M.R., Mayo, M.A., McGavin, W.J. & Jones, A.T. 2003. Some properties of the genome of raspberry bushy dwarf virus. *Proceedings of the 8th International Congress of Plant Pathology (abstract)* Christchurch, New Zealand, 2-7 February 2003, p.244. P

Woodford, J.A.T., Birch, A.N.E., Gordon, S.C., Griffiths, D.W., McNicol, J.W. & Robertson, G.W. 2003. Controlling raspberry beetle without insecticides. *Integrated Protection of Fruit Crops (Soft Fruits)* Dundee, 18-21 September 2001. *IOBC/wprs Bulletin* 26(2) 87. P

Woodhead, M., Russell, J.R., Squirrell, J., Hollingsworth, P.M., Cardle, L., Ramsay, L., Gibby, M.

& Powell, W. 2003. Development of EST-SSRs from the Alpine Lady Fern, *Athyrium distentifolium*. *Molecular Ecology Notes* 2, 287-290. J

Woodhead, M., Russell, J.R., Squirrell, J., Hollingsworth, P.M., Gibby, M. & Powell, W. 2003. Assessing genetic diversity in *Athyrium distentifolium* using EST-SSRs (Poster). *Ecological Genetics Group Meeting*. P

Woodhead, M., Russell, J.R., Squirrell, J., Hollingsworth, P.M., Gibby, M. & Powell, W. 2003. Examining population differentiation in the circumarctic fern species *Athyrium distentifolium* using markers derived from gene transcripts. *Plant Speciation Conference (Poster)*. P

Wright, K.M., Roberts, A.G., Martens, H.J., Sauer, N. & Oparka, K.J. 2003. Structural and functional vein maturation in developing tobacco leaves in relation to *AtSUC2* promoter activity. *Plant Physiology* 131, 1555-1565. J

Yeates, G.W. & Boag, B. 2002. Post-embryonic growth of longidorid nematodes. *Nematology* 4, 883-889. J

Yeates, G.W. & Boag, B. 2003. Growth and life histories in Nematoda, with particular reference to environmental factors. *Nematology* 5, 653-664. J

Yu, D., Fan, B., MacFarlane, S.A. & Chen, Z. 2003. Analysis of the involvement of an inducible *Arabidopsis* RNA-dependent RNA polymerase in antiviral defence. *Molecular Plant Microbe-Interactions* 16, 206-216. J