

PLANT NEMATOLOGY, EDUCATION AND TRAINING IN CHINA. **Liao¹, J. and H. Li²**. ¹Laboratory of Plant Nematology/Guangdong Province Key Laboratory of Microbial Signals and Disease Control, South China Agricultural University, Guangzhou 510642, People's Republic of China; ²Department of Plant Pathology, Nanjing Agricultural University, Nanjing 210095, People's Republic of China.

Due to the great losses caused by some parasitic nematodes on many crops in China, more and more researchers are involved in this area. Presently, there are about two hundred researchers located in different provinces in China. They focus on nematodes of agricultural importance, especially on species identification, basic biology, molecular aspects and disease management. In recent years, the Chinese government funded research on root-knot nematode, cyst nematode and pine wood nematode because of their serious damages on crops and forest. The interaction between nematodes and host plants and novel management techniques will be the "hot" research topics which attract Chinese nematologists. A good system for Nematology education and training has been developed through the efforts of Chinese nematologists. These include Bachelor, Master and PhD degree programmes. Incorporation of Nematology curriculums from USA and Europa at local universities is also a possibility.

THE GENOME SEQUENCE AND LIFE-STAGE SPECIFIC TRANSCRIPTOMES OF POTATO CYST NEMATODE. **Lilley¹, C.J., J.A. Cotton², V. Blok³, S. Eves-van den Akker^{1,3}, L.M. Jones¹, A.J. Reid², P. Thorpe^{1,3}, M. Berriman², J.T. Jones³ and P.E. Urwin¹**. ¹Centre for Plant Sciences, University of Leeds, Leeds LS2 9JT, UK; ²Wellcome Trust Sanger Institute, Hinxton, Cambridge CB10 1SA, UK; ³James Hutton Institute, Invergowrie, Dundee DD2 5DA, UK.

Potato cyst nematodes are major pathogens of potato crops in temperate regions, making them some of the most economically important plant parasitic nematodes. Research to develop novel approaches for control of these and other cyst nematodes will be significantly enhanced by a greater understanding of the molecular basis of the parasitic interaction and the key nematode genes required for this. A complete draft genome sequence of the white potato cyst nematode *Globodera pallida* has been assembled, together with transcriptomic data from most of the nematode life cycle, particularly focusing on the life cycle stages involved in root invasion and establishment of the biotrophic feeding site. Despite the relatively close phylogenetic relationship with root-knot nematodes, there is a very different gene family content between the two groups and in particular extensive differences in the repertoire of effectors, including an enormous expansion of the SPRY domain protein family in *G. pallida*, which includes the SPRYSEC family of effectors. This highlights the distinct biology of cyst nematodes compared to the root-knot nematodes that were, until now, the only sedentary plant parasitic nematodes for which genome information was available. The repertoires of genes likely to be important in understanding the unique biology of cyst nematodes and those that represent potential chemical targets and other targets for control have been analysed. A recently assembled draft genome for the closely related species *Globodera rostochiensis* will allow valuable comparative studies.

MOLECULAR CHARACTERIZATION OF RESISTANCE RESPONSES OF *COFFEA CANEPHORA* 'CLONE 14' UPON INFECTION WITH *MELOIDOGYNE PARANAENSIS*. **Lima^{1,2}, E.A., F.A. Carneiro², T.S. Costa², E.C.S. Rêgo², A. Jorge Júnior², C. Furlanetto¹, P. Marraccini^{2,3}, R.M.D.G. Carneiro² and A.C. Andrade²**. ¹Dep. Fitopatologia, Universidade de Brasília, 70910-900 Brasília, DF, Brazil; ²Embrapa Recursos Genéticos e Biotecnologia, 70770-917 Brasília, DF, Brazil; ³CIRAD UMR AGAP, 34398, Montpellier, France.

Coffee is one of the major commodities in the world and an important source of income for producing countries. However, biotic and abiotic stresses are great limiting factors to coffee yield. In Brazil, root-knot nematodes cause considerable yield reduction and the use of resistant plants is the most promising method to control *Meloidogyne* spp. The aim of this work was to characterize the molecular mechanism underlining the previously identified resistance to *M. paranaensis* in *C. canephora* 'Clone 14' by means of RNAseq experiments. Differential expression using RNA extracted from roots of plants from clones 14 and clone 22 of *C. canephora*, previously identified as resistant and susceptible to *M. paranaensis*, respectively, were grown in sand and inoculated. Root samples were collected at different time points post inoculation as well as roots from an uninfected plant. The RNA was treated with DNase and subsequently, a portion of the sample was lyophilized for RNAseq experiments and another portion kept for validation by qPCR experiments. Results of the identified candidate genes with differential expression among resistant (Clone 14) and susceptible (Clone 22) genotypes will be presented and discussed.

AGGRESSIVENESS OF *MELOIDOGYNE JAVANICA* POPULATIONS ON COMMERCIAL POTATO CULTIVARS. **Lima-Medina¹, I., J.T. Schafer², C.B. Gomes¹, M. Vizzoto¹, A.C. Krolow¹, R.M.D.G. Carneiro³ and V. Correa³**. ¹Embrapa Clima Temperado, Cx Postal 403, Pelotas/RS, Brazil; ²Graduated student in Plant Pathology, PPGFS/Universidade Federal de Pelotas, Campus Universitario s/n C. P. 354, Pelotas/RS, Brazil; ³Embrapa Recursos Genéticos e Biotecnologia, C.P. 02372, 70849-979, Brasília DF, Brazil.

The genus *Meloidogyne* is widely found in the different potato production regions of Brazil. However *Meloidogyne javanica* is the most frequent species that causes damage in potato crop. In order to study the aggressiveness of *M. javanica*, four populations (P1, P3 and P4: Est J3; P2: Est J2a) from southern Brazil was evaluated in two commercial potato cultivars (BRS Clara and Agata) in greenhouse conditions. Individual plants of the two cultivars, kept in pots with sterilized soil, were