soils, irrigation, and a limited shaded area under the canopy for application. Economically, D. abbreviatus is capable of killing trees and destroying groves, and so grower pressure for demand effective control was high. Moreover, many chalcid hoverம்icides were eliminated due to increased prices and the lower pressures for demand. The relatively low cost of nematode application compared to the high value of the citrus crop was undoubtedly a key factor. However, certain citrus growing areas in Florida have a rich fauna of endemism, and these populations can be responsible for considerable natural biological control of D. abbreviatus. Moreover, applications of exotic EPN can have a suppressive effect on endemic EPN. Thus, determining the best approach for using EPN in conservation biological control, and when, where, and how often to apply EPN for inundative biological control at current research issues need to be faced in order to optimize use of D. abbreviatus.

MOLECULAR PHYLLOGENY OF THE ORDER TYLCHIDADA. ANALYSIS OF NUCLEAR RIBOSOMAL DNA. GENES. Subbotin, S. A.1, D. Sturhan, B. J. Adams, T. O. Powers, P. G. Mullins, V. N. Chizhov, N. Vovlas, and J. G. Baldwin.1 Department of Nematology, University of California, Riverside; 1Institute for Nematology and Wildlife, Vienna, Austria; 2Museum, Germany; 3Microbiology and Molecular Biology, Brigham Young University, Provo; 4Department of Plant Pathology, University of Nebraska, Lincoln; 5Institute of Nematology, Moscow, Russia; 6C.N.R. Institute for the Protection of the Plant, Rome, Italy.

To study the evolutionary relationships among more than 70 representatives of the order Tylchidae, datasets containing sequences of LSU, D2/D3 expansion segments, and partial sequences of the SSU were analyzed using maximum parsimony, maximum likelihood and Bayesian inference. Species included were selected to represent the known breadth of taxonomic and morphological diversity of the group. Phylogenetic analyses indicate that Tylchidae contains well-supported lineages that largely correspond to Siddiqui’s (2000) haplotyping and Cladoceratina. Several significant results also derived from the study include: (i) the basal position of groups that include clades of nematodes within the Acanthocephala; (ii) the paraphyly of the superfamily Dechlorosoridae; (iii) the paraphyly of Tylchidae; (iv) the paraphyly of the genus Didelphys; (v) evidence for a Purcellian, Ichthyophpterae and Malacoceridae clade; (vi) lack of support for traditional placement of Raphidophora within Parabasalia. Congruence and discordance of molecular phylogeny and traditional classifications and morphological-based hypotheses of phylogeny of tylchidae are discussed. It is suggested that in some cases phylogenetic recombination in Tylchidae using the SSU alone might be influenced by long branch attraction, resulting in an apparent reversal among independent tylchid lineages. The need for a better understanding of informative morphological characters, and the need for additional representatives, particularly of some basal groups, is discussed.

HETERODERA GLYCINES EFFECTS SOYBEAN INFECTION BY CADOPHORA REGATA. Tabor, G. M., C. P. Bronson and G. L. Tyler. Department of Plant Pathology, Iowa State University, Ames, Iowa 50011.

Growth chamber experiments were conducted to assess the effects of Heterodera glycines on infection of soybean. Glycines was, by Cadophora regata (formerly Philodorus regata), the fungus that causes brown spot necrosis of soybean in the family. Soybean cultivars with various combinations of resistance and susceptibility to H. glycines and C. regata were inoculated with C. regata alone or C. regata plus H. glycines (1,200 eggs/100 cm² soil). In most H. glycines-susceptible soybeans, incidence and severity of internal skin discoloration characteristic of ISR disease was greater with H. glycines thah without, regardless of the cultivars’ susceptibility to resistance to C. regata. The effects of H. glycines on soybean symptoms was less in cultivars resistant to both C. regata and H. glycines than cultivars only resistant to C. regata. Cadophora regata colonization of C. regata-resistant cultivars was increased by H. glycines, and stems of both C. regata-resistant and C. regata-susceptible soybean cultivars were colonized earlier by C. regata when the plants also were inoculated with H. glycines than when plants were only inoculated with the fungus. Additional growth-chamber experiments were conducted to determine the effect of H. glycines population densities on incidence and severity of stem colonization by C. regata. Soybean cultivars with three combinations of resistance and susceptibility to H. glycines and C. regata were inoculated with C. regata alone or with C. regata plus one of two H. glycines population densities (5,560 or 10,000 eggs/100 cm² soil). There was earlier colonization of stems of H. glycines-susceptible soybeans by C. regata with the higher H. glycines population density than in the lower density. Severity of C. regata stem colonization did not increase with increasing H. glycines population density in a C. regata-resistant R. glycines-resistant soybean cultivar. Microplot experiments were being conducted to study the interaction of these organisms in the field.

SUSTAINABLE MANAGEMENT OF NEMATODES IN EAST AND SOUTHERN AFRICA REQUIRES CAPACITY BUILDING IN THE REGION. Talwana, H. A. L.1, J. W. Kimenjia, Z. Shibanda, W. J. Wanjohi, S. R. Gowen, D. J. Hunt, and R. R. Kerry.2 Department of Crop Science, Makerere University, P. O. Box 7062, Kampala, Uganda; 1Faculty of Agriculture, University of Nairobi, Kenya; 2Sibanda Consulting, Harare, Zimbabwe; 3School of Pure and Applied, So. Reading, UK.

Method of soil survey in nematodes within the laboratory were conducted in the correct laboratory conditions (http://www.soil.org/main.asp). The vegetation further which are being undertaken.