

Annual ANR Nematology Workgroup Meeting, March 2006

The UCANR Nematology Workgroup met in Riverside, CA on the afternoon and evening of March 27, 2006, the day preceding the 38th Annual California Nematology Workshop. The meeting was attended by approximately 32 individuals, including many of the Nematology faculty, staff and students from both UC Davis and UC Riverside, extension specialists from both campuses and UC Kearney, a farm advisor, representatives from CDFA, diagnostic services, and the California Association of Nurserymen. The chairs of both departments of nematology attended and participated actively in the workgroup discussions. We were honored by the attendance and counsel of two senior emeritus faculty, Seymour Van Gundy and Ivan Thomason.

After self introductions of all attendees, reports were presented on ongoing projects and activities of mutual interest. Dr. John Chitambar reported on progress with the grid survey of nematodes in California that is conducted by CDFA in conjunction with the Cooperative Agricultural Pest Survey of USDA-APHIS. The workgroup was interested to learn that the survey targets nematodes that do not generally occur in California and, in many cases, are unlikely to be pests of California crops. However, the survey is part of a Homeland Security program to document a baseline in terms of potential pest introductions by malicious agencies. The survey is, of course, providing valuable information on other nematode species in the state.

Drs. Mike McKenry and Irma DeLey reported on the ring nematode project that has been funded through the Nematology Workgroup over the last several years. There are marked differences in virulence among populations from various sources, and some distinguishing molecular markers have been identified.

Drs. Becky Westerdahl, Antoon Ploeg and Ole Becker agreed to update the information contained in the on-line nematode study guide provided for PCA certification.

Dr. Jim Stapleton proposed that the group consider meeting on alternate years with a soil fungus and solarization group since that group was lacking in enthusiasm and vitality. However, given the long history, vitality, collegiality and productivity of the Nematology Workgroup, the consensus opinion was that we should not deviate from our successful model.

The next portion of the meeting was dedicated to reports by individual PIs, grouped by subject matter area. Using subject areas suggested after our last meeting, we discussed current activities in Nematology in California in the areas of: animal-parasitic nematodes; marine nematodes; organism interactions and soil ecology; nematode biology, life history strategies and behavior; cropping systems design for nematode management; nematocides; systematics and evolutionary biology; diagnostics and regulatory procedures.

The last major item on the agenda was to review the Statewide Master Plan for Nematology. The Master Plan is termed that for want of a better word to describe a

common philosophy regarding "Where we need to be going". The group discussed current program areas and the gaps that anticipated retirements would leave in areas of research, formal instruction, and extension. We discussed, for each department, new directions and priorities in the areas of nematode biology and genomics, ecology, systematics and diagnostics, and management. An emerging theme was that, given the enormous workload in applied nematode management and outreach in the north and central part of the state, the creation of a nematology extension specialist position affiliated with the Davis department but located at UC Kearney, is a high priority. The withdrawal of nematicides, the focus on cropping systems design for nematode management, and the recent discovery of the potato cyst nematode in Idaho, all reinforce this need.

Howard Ferris was elected Workgroup Chair for another year.

Ole Becker agreed to continue his service as UCANR Nematology webmaster.

The workgroup dinner was attended by almost all of the participants and discussions continued.

Planning for the 2007 ANR Nematology Workgroup meeting, in conjunction with the 39th Annual California Nematology Workshop, was initiated in December, 2006. Based on our rotation of meeting sites to provide exposure to the broadest possible range of clientele, the Workgroup Meeting will be held on March 26 and the Workshop on March 27, 2007, both at the UC Kearney Agricultural Center.

The 2007 ANR Nematology Workgroup meeting is dedicated to reports on current activities, planning of collaborative projects and statewide coordination of the nematology program. There will be a report on the updated nematode study guide and further discussion of necessary programmatic response to the discovery of the potato cyst nematode in Idaho.

The goal of the 39th Annual California Nematology Workshop is to provide practical information on alternatives to the nematicides Nemacur and methyl bromide which are being removed from the market. Topics will include the use of Abamectin seed treatments and other biological agents, bionematicides, alternative postplant nematicides, new nematocidal materials, and the use of nematode resistant rootstocks. There will also be a report on the newly-discovered potato cyst nematode in Idaho and the potential impact on California. The afternoon session will include a tour of nine field trials to evaluate a range of nematode management approaches.

Accomplishments

1. Update and awareness of the grid survey of nematodes in California that is conducted by CDFA in conjunction with the Cooperative Agricultural Pest Survey of USDA-APHIS. The survey is providing valuable information on other nematode species in the state that will be available to all ANR personnel and to our clientele.

2. The ANR funded ring nematode project reveals that there are marked differences in virulence among populations of ring nematodes from various sources, and some distinguishing molecular markers have been identified.
3. All nematology personnel were updated on current activities in California regarding animal-parasitic nematodes; marine nematodes; organism interactions and soil ecology; nematode biology, life history strategies and behavior; cropping systems design for nematode management; nematocides; systematics and evolutionary biology; diagnostics and regulatory procedures.
4. The Statewide Master Plan for Nematology was revisited and programmatic gaps associated with anticipated retirements were reviewed in areas of research, formal instruction, and extension. For both UC Nematology departments, new directions and priorities in the areas of nematode biology and genomics, ecology, systematics and diagnostics, and management were discussed. Particularly apparent was the need for more activity in applied nematode management and outreach in the north and central part of the state. The creation of a nematology extension specialist position affiliated with the UC Davis department but located at UC Kearney, was determined to be a high priority.
5. The 38th Annual California Nematology Workshop held the day after the Workgroup meeting was its usual outreach success. Attended by around 150 industry and extension personnel and growers, the Workshop provided information on existing and emerging nematode problems throughout the state, new approaches in nematode management, both chemical and biological, perspectives on nematode management from the standpoint of research, industry and diagnostic laboratories. It included breakout sessions on nematode identification, sampling for nematodes and the biological control of insect pests using entomopathogenic nematodes. A poster session provided opportunities for students to discuss research activities and directions.

Outcomes and Impacts

1. Controlled experiments reveal marked differences in virulence among populations of ring nematodes from various sources. The nematodes are not distinguishable on a morphological basis but some potentially distinguishing molecular markers have been identified. The ring nematode is widely distributed in perennial plantings and appears to be associated with severe damage to crops in some cases. The new information opens the door for distinguishing among variants of the nematode in determining the need for their management.

2. Important program planning activities were accomplished. These lay the groundwork for more detailed program planning during 2007.
3. New information on nematode management and pest management strategies was delivered to attendees of the 38th Annual California Nematology Workshop.
4. The ANR Nematology website is kept current and provides access to current advice and information.
5. Research activities are reported in detail in peer-reviewed journal articles and in annual Experiment Station project reports of individual researchers. A full listing of peer-reviewed journal articles is provided in the AES reports.