REPORT OF THE NEMATODE MANAGEMENT COMMITTEE - 2001

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The primary activity of the Nematode Management Committee in 2001 was to develop a workshop for the 2002 Beltwide Cotton Conference in Atlanta, GA. The workshop was developed and coordinated by Richard Davis (USDA-ARS, Tifton, GA) and Kathy McLean (Auburn University, Auburn, AL). The program for the workshop is given below.

Thursday Afternoon, January 10
Workshop: Nematode Management
Marriott Marquis Salon IV
1 - 5 pm
Coordinators: Kathy S. McLean, Auburn University and Richard F. Davis, University of Georgia
Plant-parasitic nematodes cause millions of dollars in lost profits to cotton farmers each year. Researchers and producers share management tools used routinely and those still under development.

1. HISTORY –Donald J. Blasingame, Mississippi
Historical incidence, yield loss and annual expenditures for nematode control. When and where did the reniform arrive in the United States? How far has it spread? What is it costing the producer?

2. ROOT-KNOT NEMATODE –Terrence L. Kirkpatrick, University of Arkansas
Where can you expect to find the root-knot nematode? What symptoms are expressed on the plant? What yield losses can be expected when your field is infested with the root-knot nematode? Are there economical management options?

3. RENIFORM NEMATODE –Gary W. Lawrence, Mississippi State University
Where can you expect to find the reniform nematode? What symptoms are expressed on the plant? What yield losses can be expected when your field is infested with the reniform nematode? Are there economical management options?

4. COLUMBIA LANCE NEMATODE –John D. Mueller, Clemson University
Where does Columbia lance nematode occur? What symptoms are expressed above and below ground? How does the nematode affect plant growth and yield? Are there economical management options?

5. NEMATODE DIAGNOSTIC LABORATORIES –Richard F. Davis and Clifford L. Brewer, University of Georgia
Find out what really happens to those soil samples when you send them to a diagnostic lab. Are there "good samples" and "bad samples"? What can you do to ensure the best sample possible? What do nematodes look like? Why does it sometimes take so long to get the results? How accurate are the results? Should every field be sampled every year? How can sampling save you money?

6. ECONOMICS & ECOLOGY PUT TO USE –ACTION THRESHOLDS –Stephen R. Koenning, North Carolina State University
Predicting crop damage from nematodes relies on knowledge of life cycle, population changes over time, the crop, cropping system, soil texture, and soil water relations. Action thresholds (decision to treat with nematicide) include economic factors: cost of nematicides, value of the crop, and potential for profit. Thresholds for treatment differ from region to region because of variation in sampling, efficiency of extraction, local climate, cropping systems, and varieties of cotton.

7. RENIFORM/ROOT-KNOT COMPETITION & REPRODUCTION –Charles Overstreet and Edward C. McGawley, Louisiana State University
What happens when reniform nematode moves into a field where root-knot is already present? Can you manage nematodes to favor development of one type over the other? If reniform nematode is different in how it reproduces on cotton from one area to another, what are the implications for management options?

8. NEMATODE INTERACTIONS WITH FUNGI – Kathy S. McLean, Auburn University
Root-knot nematode's interaction with Fusarium wilt is well known. But are you aware of the interactions of reniform with the seedling disease organisms, *Rhizoctonia solani*, *Thielaviopsis basicola*, and other *Fusarium* species? Symptoms and signs of reniform and root-knot interactions with various fungal disease will be available for viewing.

9. PRECISION AGRICULTURE FOR NEMATODE MANAGEMENT – Terry A. Wheeler, Texas Agricultural Experiment Station
Variable rate applications of nematicides (Temik 15G and Telone) were tested in producers' fields as a means of controlling nematodes. Applications were based on within-field variation in nematode population density. When are variable rate nematicide applications cost effective? How frequently must a field be intensively sampled for nematodes to be able to use variable rate technology? How can remote sensing be used to identify nematode variation and replace or reduce sampling?

10. ROOT-KNOT & RENIFORM RESISTANCE BREEDING – James L. Starr, Texas A&M University
Find out what resistant cultivars are available? What steps are needed to develop nematode resistant cultivars? How soon can we expect some new commercial lines? Why will root-knot be easier to tackle than reniform?

11. DISTANCE DIAGNOSTICS – Robert C. Kemerait, Jason H. Brock, Julian R. Beckwith, University of Georgia
How can county agents and consultants reduce the time required to receive assistance from university staff in nematode disease diagnosis? This distance imaging system allows county extension agents to submit agricultural problem samples to university specialists using digital images and the internet. In the first 24 months of operation, distance diagnostics saved farmers in Georgia approximately $17.7 million in rapid diagnositc turnaround time.

12. CROP CONSULTANTS' ROLE IN NEMATODE MANAGEMENT – Carl R. Hobbs, H. Jay Holder, Timothy G. Kelly, Paul H. Brown, Danny R. Bennett, Georgia Association of Professional Agricultural Consultants
How do you identify nematode problems on a farm or in a field? How do you tell nematode problems from fertility, compaction, or other problems? What species do you have? What management options are best? How do you deal with nematodes on a farmer by farmer, farm by farm, field by field basis? Part of the year-round role of crop consultants is to help farmers diagnose and manage nematode problems, and deal with the economics of yield reduction versus treatment. Learn some practical ways consultants are dealing with nematode problems on Georgia farms.

13. CONTROL OF NEMATODES IN COTTON WITH TEMIK – Samuel B. Garris, Lee S. Hall, P. Chris Kleyla, Phillip N. Odom, J. Malone Rosemond, Richard A. Shaw, Aventis CropScience
What are the benefits of nematode control? Hidden Enemies – An Interactive Nematode Tutorial. When, how and why to apply Temik as a side dress application for extended control of nematode and other pests in cotton. Technical bulletins for the control of reniform, rootknot and Columbia Lance nematodes in cotton.

14. USING TELONE TO CONTROL NEMATODES – Stan Childers, Tim Martel, Anthony W. Weiss, Dow AgroSciences; Robert Godwin, No-till Producer, Alabama
Nematodes are difficult to understand because we can't see them. What are the best sampling techniques to determine if there is a problem? Visit with a no-till cotton producer using Telone. How do you use Telone in a no-till cotton operation with success? What equipment best fits your needs in applying Telone in cotton? Look through a catalog of application equipment used for Telone. What is the best way to get the most value out of your Telone? Are you properly sealing the product in the soil? Answer your questions and fine-tune your nematode management system.

15. VYDATE CONTROL OF NEMATODES – Glenn G. Hammes, DuPont
What kind of yield increases can you expect from using Vydate? What rates, application techniques and timing have produced the best yield increases across the Cotton Belt?