NE IPM Mini-grant Report

A. Grant Data
Today's date: May 16, 2008
Type of Project: MINIGRANT
Title: Organizing a meeting addressing wireworm management in the mid-Atlantic States
Project Director (name, title, institution, address, phone, fax, email):
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State(s) involved: New Jersey, Delaware, Pennsylvania, Virginia, North Carolina, and South Dakota
Funding Start Date: March 1, 2007
Funding Amount: $3,000

B. Nontechnical Summary. A one-paragraph overview, briefly outlining the project's context and purpose, *written to a lay audience.*
As a crop pest group, wireworms have been difficult pests for farmers to manage since the late 1800s. In particular, Melanotus communis has been the most important wireworm pest species in the Mid-Atlantic Region. Since wireworms live in the soil and only sporadically severely injure crops, little is known about their biology and why they are so destructive some years and not destructive in others. The purpose of this meeting was to review what is already known about wireworm biology and management, identify potential areas of research and collaboration and organize a body of information for developing effective pest management practices for M. communis in the Mid-Atlantic Region.

C. Objectives. Restate your project objectives.
Objective 1: Review the draft of an unsubmitted grant proposal that had been produced in the fall of 2006.
The review was completed with the realization that many of the draft's objectives were actually background material that should have already been acquired to lay the groundwork for specific research.

Objective 2: Review the biology of Melanotus wireworms with the assistance of Dr. Paul Johnson, South Dakota State University
According to Dr. Johnson, less is really known about the biology of Melanotus (Elateridae: Coleoptera) than the group had supposed, including dietary preferences, ovispostion sites, soil movement, etc. Even estimates of the longevity of the larvae (wireworms) in the soil were in doubt because of the manner in which that information had origanlly been obtained.

Objective 3: Determine a strategy for future management efforts
After reviewing the comments made by the meeting participants, it was decided that the best way to proceed would be for the group's university faculty to take on graduate students who could devote their thesis work to determining different aspects of wireworm biology.

D. Approach. Describe your approach, the methods used, and the overall design of your project.
Researchers, extension personnel and agribusiness representatives from the mid-Atlantic region, especially those who had been involved in development of the grant draft in 2006, were invited to the informal meeting. Dr. Paul Johnson was invited to attend because of his taxonomic and biological expertise in the Elateridae. The meeting date was purposely set coincident with the annual meeting of the Eastern Branch of the Entomological Society of America to help encourage attendance and to keep expenses to a minimum.

E. Results. Provide a brief explanation of your results *in 1-2 paragraphs*. Include a discussion of any unexpected events that seem noteworthy.
Results:
1. The effort to follow-up and submit the grant draft of 2006 was discontinued when it was realized that considerable data including grower damage estimates due to wireworms, confirmation of the identification of the species over the region and other basic biological information was needed in order to proceed on any regional grant proposal.
2. Despite numerous field observations, development of sampling procedures for detection of wireworm presence and insecticide trials conducted in the region and elsewhere, very little consistent biological research has been done on Melanotus communis so that even basic biological information is unavailable.
3. The afternoon-long discussion of the participants helped define a direction of investigation on Melanotus communis in that those researchers who were interested and able would be in the best position of conducting research on wireworm management through the guidance of graduate students.

F. Impacts.
A. Describe and assess any impacts of your work that you can.
This grant funded meeting was the third meeting regarding wireworm management to be held in the mid-Atlantic area. Two previous meetings were held: Harrisburg, PA, 2003, which included only regional researchers and others interested in wireworm management; and Charlottesville, 2006, which included wireworm researchers from outside the region.

The impact of this meeting is not yet fully realized, but has generally helped to focus peoples' interests and priorities regarding wireworm management. In the past year, there has been a reduction in white potato acreage in the mid-Atlantic region, one of the primary crops subject to wireworm feeding. New classes of insecticides are being registered and will be available this growing season which will likely diminish interest in wireworm research beyond insecticide trials. One positive aspect of this meeting is that we involved a taxonomist with applied entomologists in trying to resolve wireworm management problems. This goes beyond the usual status of taxonomists as being used solely for identification of specimens.

B. Has your project served as a springboard for additional projects *or funds*? If so, explain.

This meeting is one part of a larger effort in wireworm management. As a result of this general movement, we now have two geographic areas of research interest in wireworm management – the mid-Atlantic area with Tom Kuhar and Rod Youngman of Virginia Tech, and Mark Abney of North Carolina as the principal researchers and in the Pacific Northwest, Juan Alveraz, University of Idaho, Richard Novy, USDA ARS, and Bob Vernon, Agriculture Canada, along with others interested in wireworm management, Paul Johnson, South Dakota State University, and Joe Ingerson-Mahar, Rutgers University.

C. Has your project enhanced collaboration among stakeholders interested in the development and implementation of IPM strategies? Please provide details.
Although stakeholders have not been present at these meetings (i.e. growers), the results of these meetings have been discussed with them at the state level vegetable meetings of at least Delaware, Virginia, New Jersey and Pennsylvania. In the short term it has enhanced the collaboration of researchers and extension personnel which will be key in developing and implementing new IPM strategies for wireworm management for the region.