Water Quality Enhancement Activity – WQL21 – Integrated pest management for organic farming

Enhancement Description
Managing pests on an organic farm, including farms transitioning to organic, with an Integrated Pest Management (IPM) system that relies on high level prevention, avoidance, monitoring, and suppression techniques that are based on an understanding of pest ecology. Organic IPM relies primarily on ecologically-based cultural and biological practices that result in healthy soil and habitat for beneficial organisms. Appropriate mitigation techniques are utilized to improve environmental risks from selected suppression techniques.

Land Use Applicability
Cropland, pastureland and rangeland

Benefits
Environmental benefits will be operation specific. Benefits may include but are not limited to improved water and air quality achieved through minimizing suppression risk to natural resources. This will include reducing pesticide risks in runoff, leaching, drift and volatilization, as well as impacts on pollinators, beneficial insects and wildlife. It may also include reduced soil erosion and sediment loss from tillage for weed control. Implementing IPM increases biodiversity on the farm while improving soil quality, resulting in a more stable farming system that helps to prevent pests from overwhelming the system.

Criteria
IPM is a sustainable approach to pest management that combines the use of prevention, avoidance, monitoring and suppression strategies, to maintain pest populations below economically damaging levels, to minimize pest resistance, and to minimize harmful effects of pest control on human health and environmental resources. Components of a high level Organic IPM include proactive cultural and biological controls.

High level Organic IPM includes:

1. A written IPM plan and implementation of activities that include:
    a. Prevention techniques such as cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, irrigation scheduling to avoid situations conducive to disease development, etc.
    b. Avoidance techniques such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, refuge management, strip cropping, interplanting, intercropping, multiple cropping, etc.

   c. Monitoring techniques such as pest scouting, degree-day modeling, weather forecasting, use of economic thresholds, etc. to help target suppression strategies and avoid routine preventative treatments.
   d. Suppression techniques such as cultural and biological methods to reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms.
2. Only those substances listed in the National Organic Program regulations §205.601 and §205.603 may be used in the IPM program.
3. Acreage must be certified organic or in the transition to organic process.

Documentation Requirements

1. A written organic IPM system plan for all of the offered acres. This plan should include each of the following items:
   a. Pest prevention techniques
   b. Pest avoidance techniques
   c. Pest monitoring (scouting) techniques
   d. Economic pest thresholds
   e. Pesticide environmental risk analysis tool that was used for pesticides selected from the NOP Prohibited and Allowed Substance list (e.g., the NRCS Windows Pesticide Screening Tool - WIN-PST)
   f. Approved pesticide application records with the specific management techniques that were utilized to reduce pesticide environmental risk (i.e., spot treatment, banding, pheromone traps, pesticide incorporation, etc.)
   g. Land Grant University guidance, if available, should be followed for acceptable prevention, avoidance, monitoring and suppression techniques.
   h. Map showing location of fields, acreage, beneficial insect habitat, etc.
   i. Environmental assessment of non-chemical suppression methods, e.g. cultivation, burning
2. Copies of scouting reports and other IPM records used to monitor and evaluate the plans effectiveness
3. If formal IPM Guidelines with a numeric scoring system have been developed and approved by Extension, a completed set of those guidelines can be substituted for the documentation requirements in number 1 above.

ALABAMA SUPPLEMENT TO ENHANCEMENT – WQL-21 INTEGRATED PEST MANAGEMENT FOR ORGANIC FARMING

Integrated Pest Management (IPM) is a long-standing process that is science based and aids in the environmentally-friendly decision-making process regarding pests and pest management. It coordinates the understood science regarding pests and modern technology to implement effective pest management while posing the least harm to people, property, resources and the environment.

The IPM strategy is based on four basic strategies; prevention, avoidance, monitoring and suppression. In this enhancement IPM actions must still adhere to National Organic Farming (NOP) guidelines. A high level of IPM will involve several practices within each of the basic strategies.

Prevention Strategies:

Examples:

- Use certified, pest-free seed or plants
- Prevent weeds from producing seed with cultural methods such as cultivation, mowing, hoeing, flaming
- Avoid spreading of pests and vectors by sanitizing equipment, work infected field last, etc.
- Evaluate nutrient levels for optimum plant health
- Use drip irrigation instead of overhead irrigation to prevent disease opportunities
- Burn thatch in grass fields

Avoidance Strategies:

Examples:

- Rotate crops that break pest cycles
- Choose pest resistant cultivars
- Adjust planting dates to avoid early or late season pests
- Use or manage trap crops to protect main crop

Monitoring Strategies:

Examples:

- Monitor for pests as recommended for each crop. Or if no guidelines monitor on regular basis, such as once a week or every two weeks in line with production needs. Map weeds in fall to develop strategies for the next crop or spring. Record findings and document extents of pests, locations. Record keeping required.
- Use on-farm weather monitoring devices to aid in prevention and control of plant diseases.
- Use pest-forecasting tools to aid in monitoring conditions for development of diseases or insect pressure.

Suppression:

Cultural and Physical Control:

Examples:

- Use cover crops to reduce weed and disease incidence and improve soil quality
- Plant using recommended row widths and plant densities to ensure rapid canopy closure.
- Use mulches such as plastic or reflective mulches for insect or weed control.
- Inter-seed cover crops between rows to suppress weeds.
- Use mechanical controls such as cultivation, mowing, hoeing
- Use exclusion devices for insects or wildlife such as synthetic row covers or wildlife fences

Biological Controls:

Examples:

- Release beneficial organisms such as predatory mites to control two-spotted spider mite or weevil's specific for musk thistle control.
- Establish or use attractant plants to increase beneficial insect populations.
- Use goats to manage weeds in pastures or woodlots.
- Use biological insecticides

Chemical Controls:

Examples:

- Any chemicals used must adhere to NOP guidelines
- Recommended protocols and pesticide(s) from land grant university or extension system after implementing prevention, avoidance, monitoring, and suppression efforts
- Pesticide environmental risk analysis conducted to determine human and environmental impact such as conducted with the software Win-Pst.

References:

The Integrated Pest Management Approach to Crop Production ANR-1038
http://www.aces.edu/pubs/docs/A/ANR-1038/

Alabama Pesticide Handbook Volume 1
http://www.aces.edu/pubs/docs/A/ANR-0500-A/

Alabama Pesticide Handbook Volume 2
http://www.aces.edu/pubs/docs/A/ANR-0500-B/

NOP Guidelines:
http://www.usda.gov/wps/portal/!ut/p/_s.7_0_A/7_0_1OB?navid=ORGANIC_CERTIFICATIO&navtype=RT&parentnav=AGRICULTURE

ALABAMA SUPPLEMENTAL INFORMATION FOR THIS ENHANCEMENT

WQL21 - Integrated Pest Management for Organic Farming

Documentation Form

Producer Name:	**Date:**
Tract Number(s):	**County:**
Prevention Techniques Used:	
Avoidance Techniques Used:	
Suppresion Techniques Used:	
Monitoring (scouting) Strategies Used:	

Attach an example copy of pestmanagement records documenting the above methods as well as the application of pesticides.

The attached documents accurately reflect implementation of this enhancement.

SIGNATURE: **DATE:**