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, 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.

Conditions Where Enhancement Applies
This enhancement applies to all crop, pasture, or range land uses in an organic system where pesticide environmental risks are present that need mitigation options to meet or exceed the criteria detailed below.

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. If available, Land Grant University guidance should be followed for acceptable prevention, avoidance, monitoring and suppression techniques. Components of a high level Organic IPM include proactive cultural and biological controls.

High level IPM requires:

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, etc.
   c. Monitoring techniques such as pest scouting, degree-day modeling, weather forecasting, etc. to help target suppression strategies and avoid routine preventative treatments.
   d. Suppression techniques such as cultural, biological and low risk chemical control methods, used judiciously 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.
4. A minimum mitigation index score of $\geq$ 35 for the identified environmental risk but not less than specified by NRCS Agronomy Technical Note #5.
5. Mitigation index scores are quantified using NRCS Agronomy Technical Note #5, Pest Management in the Conservation Planning Process.

Adoption Requirements

This enhancement is considered adopted when a management system has been implemented on the land use acreage that meets or exceed the minimum mitigation index criteria.

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. Map showing location of fields, acreage, beneficial insect habitat, etc., and
   h. 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.

References

Ignazi,J.C. 1991. Prevention of Water Pollution by Agriculture and Related Activities. Proceedings of the FAO Expert Consultation – Water Report 1, pp 247-261.

Mohler, C.L. and S.E. Johnson, editors. 2009. Crop Rotation on Organic Farms: A Planning Manual. Natural Resource, Agriculture, and Engineering Service. Cooperative Extension. IV. Series: NRAES (Series); 177.

USDA-AMS. 2011. Organic Production and Handling Standards. National Organic Program http://www.ams.usda.gov/AMsv1.0/getfile?dDocName=STELDEV3004445

USDA-NRCS. 2010. Conservation Practice Standard: Integrated Pest Management-Code 595

USDA-NRCS. 2011. Agronomy Technical Note No. 5 – Pest Management in the Conservation Planning Process.