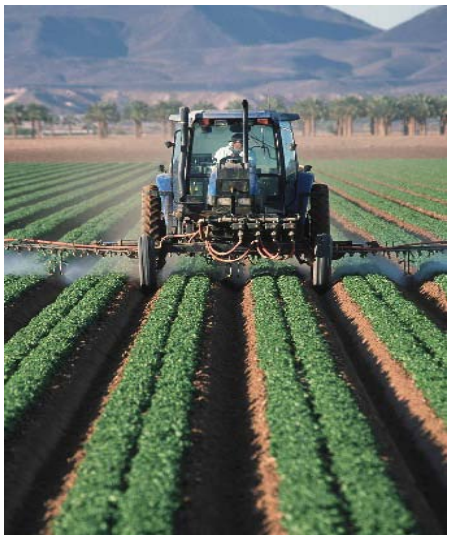
United States Department of Agriculture
Natural Resources Conservation Service

2014 Ranking Period 1

Water Quality Enhancement Activity – WQL13 – High level integrated pest management to reduce pesticide environmental risk



Enhancement Description
Utilize advanced Integrated Pest Management (IPM) prevention, avoidance, monitoring, and suppression techniques, and only apply the lowest risk pesticides available (or if higher risk pesticides are used appropriate mitigation techniques are used to ameliorate the risk) in an environmentally sound manner when monitoring indicates that an economic pest threshold has been exceeded. Pesticide applications must follow all label requirements.

Land Use Applicability
Crop, Pasture, Range, Forest

Benefits
This enhancement will improve water and air quality by reducing pesticide runoff, leaching, drift and volatilization; reducing pesticide impacts on pollinators and other beneficial insects; and reducing human health and safety risks.

Conditions Where Enhancement Applies
This enhancement applies to all land uses 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 control 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 material and practices on human health and environmental resources. High level IPM suppression systems include the combination of cost effective biological, physical, and cultural controls, and effective, low risk agro-chemicals that can sustain the cropping system when pests exceed economic thresholds.

High level IPM requires:

1. A written IPM plan and implementation of mitigation 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 soils and healthy, diverse plant communities, managing nutrients to reduce crop susceptibility, using pest resistant varieties, crop rotation, refuge management, strip cropping, intercropping, etc.

c. Monitoring techniques such as pest scouting, degree-day modeling, weather forecasting, etc. to help target suppression strategies and avoid routine treatments. Pest scouting protocols should include key natural enemies of each target pest species, as well as the pest themselves.
d. Suppression techniques such as cultural, biological, physical, and low risk chemical control methods, used judiciously to reduce or manage a pest population or its impacts while minimizing risks to non-target organisms.
e. Land Grant University guidance, if available, should be followed for acceptable prevention, avoidance, monitoring and suppression techniques.

2. A minimum mitigation index score of ≥ 45 for the identified environmental risk but not less than specified by NRCS Agronomy Technical Note #5.
3. 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 description of the high level IPM system that is utilized on all of the offered acres. This description should include each of the following items:
   a. Pest prevention techniques,
   b. Pest avoidance techniques,
   c. Pest and beneficial monitoring (scouting) techniques,
   d. Economic pest thresholds and records demonstrating applications occurred subsequent to an exceeded threshold,
   e. Pesticide environmental risk analysis tool that was utilized (e.g., the NRCS Windows Pesticide Screening Tool - WIN-PST), and
   f. 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, timing to avoid exposure of pollinators and other beneficial organisms, etc.).
   g. Map showing location of fields, acreage, beneficial insect habitat, management technique, etc.,
   h. Any measures implemented to ameliorate impact of non-chemical suppression methods.

2. 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.

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.

USDA NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Denver Federal Center
Bldg. 56, Rm. 2604
P.O. Box 25426
Denver, CO 80225-0426

Colorado Supplement

to

National CSP 2014 Enhancement Activity Job Sheet: WQL13

High level integrated pest management to reduce pesticide environmental risk

Criterion #2

Develop a Soil-Pesticide Interaction Hazard Report using the Windows Pesticide Screening Tool (WIN-PST), to evaluate water quality risks associated with probable pesticide applications. (http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/tools/?&cid=stelprdb1044769)

Assign minimum mitigation index scores for WIN-PST 3.1 soil-pesticide interaction risks to pesticide related resource concerns that are intermediate or greater, based on national Agronomy Technical Note 5, Pest Management in the Conservation Planning Process, Amendment 1, February 2014.

Determine if pesticide spray drift and or volatilization from probable pesticide applications are site-specific resource concerns, and assign minimum mitigation index scores based on national Agronomy Technical Note 5, Pest Management in the Conservation Planning Process, Amendment 1, February 2014.

Determine if probable pesticide applications pose a risk to pollinators using the WIN-PST bee toxicity database. For pesticide applications that are moderately or highly toxic to bees, assign a minimum mitigation index score of 20 per national Agronomy Tech Note 9, Preventing or Mitigation Potential Negative Impacts of Pesticides on Pollinators Using Integrated pest Management and Other Conservation Practices, February 2014.

Develop an IPM plan that provides the minimum mitigation index scores needed to address identified water quality, air quality and pollinator resource concerns based on national Agronomy Technical Note 5, Tables 1 and 2, and national Agronomy Tech Note 9, Tables 2 and 3.

Additional Documentation Requirements

Provide a copy of the WIN-PST Soil-Pesticide Interaction Hazard Report that includes all probable pesticide applications, to certify practice application.