

Pest Management

CONSERVATION MANAGEMENT SHEET – AGRONOMY SERIES

595



Natural Resources Conservation Service



Michigan



Definition

Pest management is utilizing environmentally sensitive prevention, avoidance, monitoring, and suppression strategies, to manage weeds, insects, diseases, animals and other organisms that directly or indirectly cause damage or annoyance.

Purposes

Pest management is applied as part of a Conservation System to:

- Enhance the quantity and quality of agricultural commodities.
- Minimize the negative impacts of pest control on soil resources, water resources, air resources, plant resources, animal resources and/or humans.

Pest Management Includes:

- Environmental risk analysis of pest management alternatives.

- Mitigation alternatives to minimize environmental risks. Adoption of Integrated Pest Management (IPM).
- Implementation of a pest management component of an overall conservation plan.

Benefits

The goals of a Pest Management system are to:

- Minimize environmental risks.
- Improve food, water, soil and air quality.
- Integrate all aspects of pest management within the agricultural production system.

Conservation System

Pest management is a component of a Conservation System. It should be used in conjunction with conservation practices such as a filter strip, conservation crop rotation, irrigation water management and/or nutrient management on a site-specific basis to address both natural resource concerns and the landowner's objectives.

General Criteria

- Methods of pest management must comply with Federal, State, and local regulations, including management plans for invasive pest species, noxious weeds and disease vectors.
- Utilize Integrated Pest Management (IPM) practices that strive to balance economics, efficacy, and environmental risks.
- Implement mitigation techniques planned to address the environmental risks of pest management activities. Mitigation techniques include conservation practices like a filter strip or conservation crop rotation, and management techniques like application method and timing. Examples of mitigation techniques are given at the end of the attached Pest Management Worksheet.
- All methods of pest management must be integrated with other components of the conservation plan.
- Pay special attention to all warning statements listed in the Environmental Hazards section of the pesticide label, and any other site-specific application criteria listed on pesticide labels and contained in MSU Extension and Crop Consultant recommendations.

Operation, Maintenance & Safety

- Review and update the plan periodically in order to incorporate new IPM technology, respond to cropping system and pest complex changes, and avoid the development of pest resistance. Maintain mitigation techniques identified in the plan in order to ensure continued effectiveness.
- Develop a safety plan for individuals exposed to chemicals including telephone numbers and addresses for emergency treatment centers and the telephone number for the nearest poison control center. **For human exposure questions, the local center is:**

Name: _____

Location: _____

Phone: _____

The National Pesticide Information Center (NPIC) telephone number in Corvallis, Oregon for non-emergency information is:

1-800-858-7378

Monday - Friday

6:30 a.m. to 4:30 p.m. Pacific Time

The Michigan Department of Agriculture has a toll-free, 24-hour hotline available for reporting agrichemical spills as part of their Spill Response Program. The MDA Agriculture Pollution Emergency (APE) Hotline number is:

1-800-405-0101

The national 24-hour CHEMTREC[®] telephone number for emergency assistance is:

1-800-424-9300

- Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds and lakes, or reservoirs. Mix chemicals a minimum of 150 feet from a private or public well and a minimum of 200 feet from a surface water body. (Refer to MI Practice Standard 702, Agrichemical Containment Facility, for more information on mixing and loading requirements.)
- Post signs according to label directions and/or Federal, State, and local laws around sites that have been treated. Follow restricted entry intervals.
- Dispose of pesticides and pesticide containers in accordance with label directions and adhere to Federal, State, and local regulations.
- Read and follow label directions and maintain appropriate Material Safety Data Sheets (MSDS).
- Calibrate application equipment according to Extension and/or manufacturer recommendations before each seasonal use and with each major chemical change.
- Replace worn nozzle tips, cracked hoses, and faulty gauges.

- Maintain records of pest management for at least three years and preferably five years. In order to comply with federal record keeping requirements and the Michigan GAAMPs for Pesticide Utilization and Pest Control, the following information must be documented:
 - Month/Day and Date/Year of Application
 - Time of Application
 - Pesticide Brand/Product Name
 - Pesticide Formulation
 - EPA Registration Number
 - Active Ingredient(s)
 - Restricted Entry Interval (REI)
 - Rate per Acre or Unit
 - Carrier Volume per Acre
 - Crop, Commodity, Stored Product or Site that Received the Application
 - Total Amount of Pesticide Applied
 - Size of Area Treated
 - Applicator's Name
 - Applicator's Certification Number
 - Target Pest
 - Location of the Application
 - Method of Application

Additional Specifications and Notes: _____

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Pest Management Worksheet

The pest management worksheet can be used to fulfill the minimum documentation requirements of the Pest Management Standard 595. Other documentation includes the grower pesticide application records, and pest management recommendations developed by MSU Extension or by private consultants. Results of resource assessment tools such as soil erosion calculations, Win-PST, Orchard-A-Syst or other tools should be attached to this worksheet. Conservation practices included in the mitigation techniques should be referenced in the Conservation Plan as well as in this worksheet.

Producer _____ Date _____ Consultant _____

Tract and Field(s) _____ Soils _____

Is there karst topography or other site conditions that contribute to risk to groundwater? (specify) _____

Crop Sequence/Rotation _____ (Circle current crop)

Assessment Completed For: _____ Win-PST _____ Erosion (RUSLE) _____ Other (specify tool(s))* _____

** Other tools include Orchard-A-Syst, Field-A-Syst, or other risk assessment tools.*

Sketch a map showing the field location(s), acreage and location of sensitive resource concerns. Sensitive areas include: streams (permanent or intermittent), drains, wetlands, or other surface waters; location of known karst sinkholes, wells, or other ground water risk features; windbreaks, grassed waterway, and other existing buffer practices; location of forests, wetlands, food plots, or other offsite sensitive wildlife habitat; residences, schools, gardens, livestock, organic farms, notification registry addresses, and other sensitive areas in a potential off-target drift area. Note the prevailing wind direction and/or possible direction of off-target drift, where applicable. **NOTE:** FSA aerial photos in the Conservation Plan can be used in lieu of this sketch. Reference the plan maps to this conservation sheet.

Note: Not to Scale

Pest Management Worksheet (continued)

Are Fields Monitored Regularly for Pests?

Weeds	Yes	No	By Whom? _____	How Often? _____
Insects	Yes	No	By Whom? _____	How Often? _____
Diseases	Yes	No	By Whom? _____	How Often? _____

Do You Have Any Pesticide Applicator Licenses? Yes No Describe: _____

Do You Calibrate Your Sprayer? Yes No When? _____

How are Pesticides Handled on Your Farm? (briefly describe)

Storage: _____

Mixing and Loading: _____

Transportation to Farm: _____

Application: _____

Disposal (excess chemical and containers): _____

Pest Concerns

Pests	Crop(s) and/or Fields		
	Level of Concern (H-High M-Moderate L-Low)		
<u>Weeds:</u>			
<i>Grasses</i>			
<i>Broadleaves</i>			
<i>Perennials</i>			
<u>Insects:</u>			
<i>Soil-dwelling</i>			
<i>Internal plant feeders (borers, miners)</i>			
<i>External plant feeders (on leaves, stem, fruit)</i>			
<u>Diseases:</u>			
<i>Soil-borne</i>			
<i>Foliar</i>			

Baseline Pest Control Practices

Crop _____

Weed Control Practices

Herbicides Used

Application Information

Trade Name/Formulation	Common Name	RUP? (Y/N)	Rate	Timing	Method*

* Specify Method: band, broadcast, spot spray, aerial applied, etc.

RUP - Restricted Use Pesticide

Cultural Practices

Cultivation? ____ Yes ____ No Crop Rotation? ____ Yes ____ No

Biological control agents (i.e., weed-feeding organisms)? ____ Yes ____ No

Other? _____

Notes

Insect Control Practices

Insecticides Used

Application Information

Trade Name/Formulation	Common Name	RUP? (Y/N)	Rate	Timing	Method*

* Specify method of application: band, broadcast, spot spray, aerial applied, etc.

RUP - Restricted Use Pesticide

Insect Control Practices (continued)

Cultural Practices

Crop Rotation? ___Yes___No

Biological Control agents used? (specify) _____

Cultivation? ___ Yes ___ No

Resistant Variety Selection? Yes ___ No ___

Notes _____

Disease Control Practices

Chemical Control

Application Information

Trade Name/Formulation	Common Name	RUP? (Y/N)	Rate	Timing	Method*

* Specify Application Method: band, broadcast, spot spray, aerial applied, etc.

RUP - Restricted Use Pesticide

Cultural Control:

Crop Rotation? ___Yes___No

Resistant Variety Selection? ___Yes ___No

Cultivation? ___ Yes ___ No

Other? _____

Notes _____

Environmental Hazards - Pesticide Label Restrictions

Review the Precautionary Statements normally found in the Environmental Hazards section of the pesticide label. Note information concerning the impact of surface water contamination on fish, aquatic organisms, and wildlife. An example of a statement may include, "The pesticide is toxic to fish and aquatic invertebrates." Note actions to mitigate entry into surface waters, such as, "Do not apply to turf sites that border lakes, ponds or streams," or "If the product is applied to highly erodible land, the 66-foot buffer or set-back from runoff points must be planted to a crop or seeded with grass or other suitable crop." Likewise, the Environmental Hazards section of the pesticide label may contain warning statements related to ground water risk: "This chemical is known to leach through soil into ground water under certain conditions as a result of agricultural use. Use of this chemical in areas where soil is permeable, particularly where the water table is shallow, may result in ground water contamination."

Notes on Environmental Hazards (Found on Pesticide Labels):

Mitigation Techniques Recommended:

A change in Pest Management procedures is recommended because of one or more of the following Risk Assessment Results:

1. _____ Erosion potential has been determined by using the NRCS erosion calculations for water and wind erosion (see attached calculations). A high potential for current or proposed pesticides to move off-site with soil particles has been found.
2. _____ Pesticide movement potential has been determined by using the Windows-based Pesticide Screening Tool (Win-PST) (see attached report). The risk of toxicity to _____ aquatic life and/or _____ human health has been found to be high or very high for one or more of the pesticides currently used.
3. _____ The risk of off-site movement of pesticides has been determined using _____.
Worksheet results show a very high to high risk of pesticide impact on surface and/or ground water. (Attach pest management sections of Orchard-A-Syst, Field-A-Syst, or other tool used to document risks identified.)

Notes: _____

Mitigation Techniques Recommended (continued)

Mitigation Techniques Include One or More of the Following:

(NOTE CONSERVATION PRACTICES ON PLAN MAP AND IN CONSERVATION PLAN)

_____ Substituting a pesticide with a lower risk rating _____ Changing pesticide formulation or using adjuvants

_____ Using the low end of label rates

_____ Timing applications to reduce potential for movement in runoff, leaching or drift

_____ Using partial treatments: _____ band application _____ spot treatments _____ directed application

_____ Using: _____ companion crops _____ cover crops _____ crop residues (ex: mulching, residue mgt.)

_____ Adjusting: _____ planting date _____ plant populations _____ row width

_____ Changing crop rotation _____ Using resistant varieties

_____ Using crop cultivation/shallow tillage operations to control weed seedlings or to suppress soil-borne insects and pathogens.

_____ Installing additional erosion and runoff control practices to minimize off-site movement of applied pesticides.

_____ Establishing vegetative buffer areas and setback zones that separate treated lands from sensitive areas.

_____ Adopting biological control practices: _____ pest monitoring (traps, scouting) _____ use of a biological agent**

** Examples of biological agents include biological pesticides (BT, ladybugs, pyrethrins), trap crops, beneficial enemies, etc. Refer to MSUE bulletins for more information on biological pest control methods.

Other (specify) _____

Drift Management Plan

Michigan Regulation 637 requires that each applicator use a written Drift Management Plan when pesticide off-target drift is anticipated. The applicator must secure informed consent of the owners or residents in the affected area before making the pesticide application. Those using the Drift Management Plan must review the plan annually. A record of the sites where the plan was implemented and a copy of the plan must be retained for one (1) year for general use pesticides and three (3) years for restricted use pesticides (RUP).

Before making a pesticide application:

Read the pesticide label(s) to identify drift management requirements.

Is off-target drift likely? yes or no

What is the possible direction of off-target drift? (mark on map of Pest Management Worksheet)

Are there sensitive areas that may receive off-target drift? (mark on map)

Adjust your schedule to spray when winds are calm, such as early morning or late afternoon.

DATE AND TIME OF APPLICATION:

WIND SPEED AND DIRECTION:

If off-target drift is possible:

Check the following drift-reducing practices you use.

- Obtain informed consent of those likely to be affected by off-target drift.

DATE CONSENT WAS GIVEN: _____

- Use larger nozzles to produce larger droplet size.
- Use a drift-reducing nozzle type.
- Reduce spray pressure.
- Increase spray volume.
- Use spray additives or thickeners.
- Lower application speed.
- Use the lowest effective rates of the pesticide.
- Use a no-spray buffer strip.
- Other (specify)

If off-target drift was not anticipated but did occur, notify affected persons either verbally or in writing before leaving the site.

WHO WAS CONTACTED?

DATE AND TIME:

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