

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD  
INTEGRATED PEST MANAGEMENT (IPM)**

(Ac.)

CODE 595

**DEFINITION**

A site-specific combination of pest prevention, pest avoidance, pest monitoring, and pest suppression strategies.

**PURPOSE**

Prevent or mitigate off-site pesticide risks to water quality from leaching, solution runoff and adsorbed runoff losses.

Prevent or mitigate off-site pesticide risks to soil, water, air, plants, animals and humans from drift and volatilization losses.

Prevent or mitigate on-site pesticide risks to pollinators and other beneficial species through direct contact.

Prevent or mitigate cultural, mechanical and biological pest suppression risks to soil, water, air, plants, animals and humans.

**CONDITIONS WHERE PRACTICE APPLIES**

On all lands where pests will be managed.

**CRITERIA**

**General Criteria Applicable to All Purposes**

IPM strategies (Prevention, Avoidance, Monitoring and Suppression or “PAMS”) shall be employed to prevent or mitigate pest management risks for identified natural resource concerns.

A comprehensive IPM plan utilizing PAMS strategies will be developed in accordance with this standard to document how specific pest management risks will be prevented or

mitigated. The IPM plan must be crop and/or land use specific and adhere to applicable elements and guidelines accepted by the University of Maine Extension. If a comprehensive IPM system is not feasible, utilize appropriate IPM techniques to adequately prevent or mitigate pest management risks for identified natural resource concerns.

**Additional Criteria to Prevent or Mitigate Off-site Pesticide Risks to Water Quality from Leaching, Solution Runoff and Adsorbed Runoff Losses**

For identified water quality concerns related to pesticide leaching, solution runoff and adsorbed runoff, the current version of the USDA-NRCS WIN-PST program will be used to evaluate potential risks to humans and/or fish, as appropriate, for each pesticide to be used.

The minimum level of mitigation required for each resource concern is based on the final risk ratings in the “WIN-PST Soil/Pesticide Interaction Hazard Ratings” Table below:

WIN-PST Identified Hazard Rating	Minimum Mitigation Index Score Level Needed
Low or Very Low	None Needed
Intermediate	20
High	40
Extra High	60

Use Agronomy Technical Note 4, Pest Management in the Conservation Planning Process - Table II to determine if planned

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service. Contact Alice Begin, NRCS Resource Conservationist at 207-990-9568 or email comments and concerns to [alice.begin@me.usda.gov](mailto:alice.begin@me.usda.gov)

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conservation practices provide adequate mitigation. If they do not, use Agronomy Technical Note 4 - Table I to apply appropriate IPM techniques with this practice is at [http://efotg.sc.egov.usda.gov/references/public/ME/Tech\\_Note\\_4.docx](http://efotg.sc.egov.usda.gov/references/public/ME/Tech_Note_4.docx)

**Additional Criteria to Prevent or Mitigate Off-site Pesticide Risks to Soil, Water, Air, Plants, Animals and Humans from Drift and Volatilization Losses**

For identified natural resource concerns related to pesticide drift, use Agronomy Technical Note 4, Pest Management in the Conservation Planning Process – Table II to determine if planned conservation practices provide adequate mitigation. If they do not, use Agronomy Technical Note 4 - Table I to apply appropriate IPM techniques with this practice. The minimum level of mitigation required for drift is an index score of 20.

For Volatile Organic Compound (VOC) emission concerns, apply at least one IPM mitigation technique from the Pesticide Volatilization section of Agronomy Technical Note 4 - Pest Management in the Conservation Planning Process.

**Additional Criteria to Prevent or Mitigate On-site Pesticide Risks to Pollinators and Other Beneficial Species through Direct Contact**

For direct contact pesticide risks to pollinators and other beneficial species in the application area, apply at least two IPM mitigation techniques from the Pesticide Direct Contact section of Agronomy Technical Note 4 - Pest Management in the Conservation Planning Process.

**Additional Criteria to Prevent or Mitigate Cultural, Mechanical and Biological Pest Suppression Risks to Soil, Water, Air, Plants and Animals**

For identified natural resource concerns related to cultural, mechanical and biological pest suppression, (e.g. air quality concerns with burning for weed control or soil erosion concerns with tillage for weed

control), natural resource concerns shall be addressed to FOTG quality criteria levels.

**CONSIDERATIONS**

IPM strategies that keep pest populations below economically damaging levels and minimize pest resistance should be utilized because they also help prevent unnecessary pest management risks to natural resources and humans.

For noxious weed and invasive species control, the minimum level of pest suppression necessary to meet natural resource objectives should be used, however, for the eradication of invasive species, the acceptable pest threshold may be zero.

IPM Prevention, Avoidance, Monitoring, and Suppression (PAMS) techniques include:

Prevention – Activities such as cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, and irrigation scheduling to limit situations that are conducive to disease development.

Avoidance – Activities such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, and refuge management.

Monitoring – Activities such as pest scouting, degree-day modeling, and weather forecasting to help target suppression strategies and avoid routine preventative treatments.

Suppression – Activities such as the judicious use of cultural, mechanical, biological and chemical control methods that reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms.

IPM guidelines from the University of Maine Extension may be supplemented with information from appropriately certified professionals.

When providing technical assistance to organic producers, the IPM approach to managing pests should be consistent with the USDA-Agricultural Marketing Service

National Organic Program standard which includes:

A diverse crop rotation that reduces habitat for major pests and increases habitat for natural enemies

Use of “farmscaping” principles to create borders of beneficial species habitat

Farming techniques to improve soil quality

Planting of locally adapted, pest resistant crop cultivars.

Adequate plant nutrients and soil moisture, including favorable pH and soil quality, can reduce plant stress, improve plant vigor and increase the plant's overall ability to tolerate pests.

On irrigated land, irrigation water management should be designed to avoid conditions conducive to disease development and minimize offsite contaminant movement.

Producers should be reminded that they are responsible for following all pesticide label instructions and complying with all applicable Federal, state and local regulations, including those that protect Threatened and Endangered Species.

#### Enhancement Considerations

A more intensive level of IPM focused primarily on prevention and avoidance strategies can further minimize pest management risks to natural resources and humans.

Precision pesticide application techniques in an IPM system can further minimize pesticide risks to natural resources and humans.

#### **PLANS AND SPECIFICATIONS**

The IPM plan shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

The IPM plan shall include at a minimum:

1. Plan map and soil map of site/affected area.

2. Location of sensitive resources or setbacks on plan map.
3. Interpretation of the environmental risk analysis. Note: all pesticide label requirements and federal, state, and local regulations must be followed for all pesticide applications.
4. Identification of appropriate mitigation techniques. See Agronomy Technical Note 4 - Table I for pesticide risk mitigation management techniques.
5. A list of pest prevention and avoidance strategies that will be implemented, if applicable.
6. A scouting plan and threshold levels for each pest, if applicable.
7. Other monitoring plans, if applicable, such as weather monitoring to indicate when pesticide application for prevention is warranted.
8. A list of accepted pest thresholds or methods to determine thresholds that warrant treatment, if applicable.

Note: Items 5, 6, 7 and 8 are required to document a comprehensive IPM system, but they may not be applicable when only a limited number of mitigation techniques are sufficient to address identified natural resource concerns.

**Record Keeping.** The following records, where applicable, shall be maintained by the producer:

- Monitoring or scouting results including the date, pest population/degree of infestation, and the crop or plant community condition.
- When and where each pest suppression technique was implemented.
- When and where special IPM techniques were implemented to mitigate site-specific risks (e.g. soil incorporation of a pesticide to

reduce its surface runoff to a nearby stream).

Note: Applicability will depend on the level of IPM adoption and mitigation requirements.

## OPERATION AND MAINTENANCE

The IPM plan shall include appropriate operation and maintenance items for the client. These may include:

- Review and update the plan periodically in order to incorporate new IPM strategies, 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.
- Calibrate application equipment according to Extension and/or manufacturer recommendations before each season of use and with each major chemical change.
- Maintain records of pest management for at least two years. Application records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Recording Keeping Program and site specific requirements.

## SAFETY

For Emergencies:

**Northern New England Poison Center**  
**22 Bramhall St.**  
**Portland, Maine 04102**  
**1-800-222-1222**

The national Chemical Transportation Emergency Center (CHEMTRAC) telephone number is: 1-800-424-9300

For non-emergency information: The National Pesticide Information Center (NPIC) telephone number in Corvallis, Oregon, **1-800-858-7384** Monday to Friday, 6:30 a.m. to 4:30 p.m. Pacific Time

Prior to use, inspect and replace worn nozzle tips, cracked hoses, and faulty gauges on spray equipment.

Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds and lakes, and reservoirs.

Post signs, according to label directions and/or federal, state, tribal, and local laws, around fields that have been treated. Follow restricted entry intervals.

Dispose of herbicide and herbicide containers in accordance with label directions and adhere to federal, state, tribal, and local regulations.

Read and follow label directions and maintain appropriate Material Safety Data Sheets (MSDS). MSDS and herbicide labels may be accessed on the Internet at: <http://www.greenbook.net/>

## REFERENCES

National Information System for the Regional IPM Centers – IPM Elements and Guidelines:

<http://www.ipmcenters.org/ipmelements/index.cfm>

New England Vegetable Management Guide: <http://www.nevegetable.org>

Cornell Guide for Integrated Field Crop Management: <http://ipmguidelines.org/fieldcrops/>

University of Maine Pest Management: <http://pmo.umext.maine.edu/>

Manage Insects on Your Farm, Sustainable Agriculture Network Series, Altieri, Nicholls, and Fritz:

<http://www.sare.org/publications/insect/insect.pdf>

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