

**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.

land use specific and adhere to applicable elements and guidelines accepted by the University of Tennessee. Refer to the UT Crops website at:

<http://www.utextension.utk.edu/fieldCrops/>

PURPOSE

1. Prevent or mitigate off-site pesticide risks to water quality from leaching, solution runoff and adsorbed runoff losses.
2. Prevent or mitigate off-site pesticide risks to soil, water, air, plants, animals and humans from drift and volatilization losses.
3. Prevent or mitigate on-site pesticide risks to pollinators and other beneficial species through direct contact.
4. Prevent or mitigate cultural, mechanical and biological pest suppression risks to soil, water, air, plants, animals and humans.

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.

CONDITIONS WHERE PRACTICE APPLIES

On all lands where pests will be managed.

For single pest treatments on non-cropland refer to Herbaceous Weed Control (315) and/or Brush Management (314).

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:

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 PAM's 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

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 5, 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 your Natural Resources Conservation Service [State Office](#) or visit the [Field Office Technical Guide](#).

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conservation practices provide adequate mitigation. If they do not, use Agronomy Technical Note 5 - Table I to apply appropriate IPM techniques with this practice.

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 5, 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 5 - 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 'Mitigation Requirements in the NRCS IPM conservation practice' section (page 6) of Agronomy Technical Note 5 - 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 'Mitigation Requirements in the NRCS IPM conservation practice' section (page 6) of Agronomy Technical Note 5 - 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 found in Section III.

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.

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

Utilize IPM prevention techniques of cleaning equipment and gear when leaving any infested field and using pest-free seeds and transplants.

Utilize IPM avoidance techniques such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, and refuge management.

Utilize IPM monitoring techniques such as pest scouting, degree-day modeling, and/or weather forecasting to help target suppression strategies.

Utilize IPM suppression techniques such as the proper 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.

Avoid routine preventative treatments.

ORGANIC: 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.

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

Enhancement Considerations

1. A more intensive level of IPM focused primarily on prevention and avoidance strategies can further minimize pest management risks to natural resources and humans.
2. 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 Agronomy Technical Note 5 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, if applicable (use conservation plan maps if available).
2. Location of sensitive resources and setbacks, if applicable (use conservation plan maps if available).
3. Interpretation of the environmental risk analysis (Win-PST Interaction Report).
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 5 - 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. Refer to the UT Crops website at: <http://www.utextension.utk.edu/fieldCrops/>

Note: Items 5, 6, 7 and 8 are required when applicable to document a comprehensive IPM system.

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

1. Monitoring or scouting results including the date, pest population/degree of infestation, and the crop or plant community condition.
2. When and where each pest suppression technique was implemented.
3. 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).

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 University of Tennessee 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. Pesticide application records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Recordkeeping Program and site specific requirements. Refer to:
www.ams.usda.gov/pestiderecords

REFERENCES

Agronomy Technical Note 5 located in the Technical Note section under Title 190 - Ecological Sciences, Agronomy:

<http://policy.nrcs.usda.gov/>

University of Tennessee Crops website at:

<http://www.utextension.utk.edu/fieldCrops/>

Tennessee Department of Agriculture – Pesticides and Agricultural Inputs:

<http://www.tn.gov/agriculture/regulatory/aip.shtml>

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

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

USDA-AMS National Organic Program, National List of Allowed and Prohibited Substances:

<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateN&navID=NationalListLinkNOPNationalOrganicProgramHome&rightNav1=NationalListLinkNOPNationalOrganicProgramHome&topNav=&leftNav=NationalOrganicProgram&page=NOPNationalList&resultType=&acct=nopgeninfo>

USDA-NRCS GM-190-404 Pest Management Policy:

<http://directives.sc.egov.usda.gov/RollupViewer.aspx?hid=17015>

Using Farming Bill Programs for Pollinator Conservation:

http://plants.usda.gov/pollinators/Using_Farm_Bill_Programs_for_Pollinator_Conservation.pdf