

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

(Ac.)

CODE 595

DEFINITION

A process that utilizes prevention, avoidance, monitoring, and suppression techniques to efficiently manage pest populations while minimizing economic, health, and environmental risks.

PURPOSE

1. Manage pest populations below economically damaging levels while minimizing pest resistance and preventing risks to natural resources and humans.
2. Mitigate the risks of pest management activities to soil, water, air, plant and animal resources and/or humans.

CONDITIONS WHERE PRACTICE APPLIES

On all lands where pests will be managed. This practice is designed to apply IPM technology to prevent and/or mitigate pest management environmental risks. It is not designed to prescribe pest control.

CRITERIA

General Criteria Applicable to All Purposes

Resource concerns associated with pest management activities shall be mitigated to the resource criteria level specified in the Field Office Technical Guide. See Agronomy Technical Note XXX (Table 1) for appropriate pesticide risk mitigation management techniques. Appropriate analysis tools include the current erosion prediction and pesticide risk analysis tools.

Additional Criteria to Manage Pest Populations Below Economically Damaging Levels While Minimizing Pest Resistance and Risks to Natural Resources

and Humans.

IPM plans will be crop and/or land use specific and will adhere to applicable elements and guidelines accepted by Extension.

IPM strategies (Prevention, Avoidance, Monitoring and Suppression) will be employed to keep pest populations below economically damaging levels while minimizing pest resistance and risks to natural resources and humans.

CONSIDERATIONS

IPM information from 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 National Organic Program standards. (<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateA&navlD=NationalOrganicProgram&leftNav=NationalOrganicProgram&page=NOPNationalOrganicProgramHome&acct=AMSPW>)

Precision pesticide application techniques can help reduce pesticide use and its environmental impacts.

This standard should be implemented in combination with other NRCS Conservation Practices to more comprehensively protect natural resources from pesticide risks. See Agronomy Technical Note XXX (Table 2) for appropriate Conservation Practices.

Pest suppression activities should be evaluated for the protection of beneficials,, including pollinators, and their habitat.

A more intensive level of IPM, focused on prevention and avoidance techniques, can

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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further minimize pesticide risks to natural resources and humans.

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

- Prevention, 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.
- Avoidance, such as maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, refuge management, etc.
- Monitoring, such as pest scouting, degree-day modeling, weather forecasting, etc. to help target suppression strategies and avoid routine preventative treatments.
- Suppression, including cultural, biological and chemical control methods, should be used judiciously to reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms.

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.

Additional Considerations for Managing Noxious Weeds and Invasive Species

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.

Properly dispose of invasive plant species to ensure plants and their propagules will not repopulate the site or spread and colonize new areas.

Consider the impact of management activities on natural plant and/or animal communities. This includes timing operations to prevent negative impacts on nesting wildlife and

preventing changes to the structure and diversity of plants utilized by wildlife including pollinators and other beneficial species. Also, consider the restoration of impacted communities through the application of other Conservation Practices.

Early detection and management is essential to reduce costs and have effective control.

On non-cropland areas, consider choosing pest management activities that minimize soil disturbance which could lead to the germination of plant pests.

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(s).

The IPM plan shall include at a minimum:

[Note: Only items 1, 2, 3, and 4 are required for the purpose of mitigating the risks of pest management activities to soil, water, air, plant and animal resources and/or humans.]

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. Environmental risk analysis, with approved tools and/or procedures, for the planned suppression techniques.
4. Interpretation of the environmental risk analysis and identification of appropriate mitigation techniques. See Agronomy Technical Note XXX (Table 1) for pesticide risk mitigation management techniques.
5. A list of pest prevention and avoidance strategies for the typical pests associated with the land use, crop, or plant community.
6. A scouting plan for each pest.
7. Other monitoring plans, if applicable, such as weather monitoring to indicate

when pesticide application for prevention is warranted.

8. Listing of accepted pest thresholds or methods to determine thresholds before treatment is warranted. If pest thresholds are not available for a pest then general decision making guidelines shall be provided for each typical pest to assist in determining when treatment is warranted.

Record Keeping. The following records shall be maintained:

[Note: Only items 1 and 6 are required for the purpose of mitigating the risks of pest management activities to soil, water, air, plant and animal resources and/or humans]

1. The identity of each pest to be managed.
2. Prevention and avoidance strategies for each pest.
3. Threshold levels for each pest that indicates when a suppression technique is warranted.
4. Monitoring or scouting results including the date, pest population/degree of infestation, and the crop or plant community condition.
5. When and where each pest suppression technique is implemented, along with follow-up monitoring information to help evaluate the suppression technique (e.g. pest population before and after treatment or relative health of crop before and after treatment).

6. Documentation of special IPM techniques applied to mitigate site-specific risks (e.g. incorporating a pesticide to reduce its surface runoff to a nearby stream – see Agronomy Technical Note XXX (Table 1) for further guidance.

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 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.
- Calibrate application equipment according to Extension and/or manufacturer recommendations before each season 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 Recording Keeping Program and site specific requirements.

REFERENCES

The IPM Institute – IPM Elements and Guidelines:

http://www.ipminstitute.org/Fed_Agency_Resources/IPM_elements_guidelines.htm