

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

PEST MANAGEMENT

(Acre)
CODE 595

DEFINITION

Manage weeds, insects, diseases, animals and other pests, utilizing prevention, avoidance, monitoring and suppression techniques.

PURPOSES

This practice is applied as part of a Resource Management System to support one or more of the following purposes:

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

CONDITIONS WHERE PRACTICE APPLIES

Wherever pests will be managed.

CRITERIA

General Criteria Applicable to All Purposes

A pest management component of a conservation plan shall be developed.

All methods of pest management must comply with Federal, State, and local regulations, including management plans for invasive pest species, noxious weeds and disease vectors. Compliance with the Food Quality Protection Act (FQPA), Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), Worker Protection Standard (WPS) and Interim Endangered Species Protection Program (H7506C) is required for chemical

controls. *The Wyoming* Department of Agriculture administers the rules and regulations that govern pesticide use in Wyoming.

Where available, Integrated Pest Management principles shall be incorporated into planning alternatives. IPM is an approach to pest control that combines biological, cultural and other alternatives to chemical control, with the judicious use of pesticides, while balancing economics, efficacy and the environmental risk. The objective of IPM is to maintain pest populations below economically damaging levels while minimizing harmful effects of pest control on human health and environmental resources.

An appropriate set of mitigation techniques must be designed and implemented to reduce the environmental risks of pest management activities in accordance with quality criteria in the local Field Office Technical Guide. Mitigation techniques include practices like filter strips and crop rotation, and management techniques like application method and timing.

All methods of pest management must be integrated with other components of the conservation plan.

Clients shall be instructed to pay special attention to all environmental hazards and site-specific application criteria listed on pesticide labels and contained in Extension and Crop Consultant recommendations.

When developing pest management alternatives that include chemical controls, the following shall apply:

- Wyoming NRCS employees should hold a current Wyoming Commercial Pesticide

Certification and have the proper Job Approval Authority in order to approve the Pest Management component of a conservation plan. NRCS employees will not originate specific instructions, specifications, formulations, or recommendations regarding pesticides. If such information is required, it is to be derived and cited from official publications and documents of the USDA or its cooperating agencies.

- Pesticide label instructions **and** University of Wyoming Extension Service recommendations shall be followed. All recommendations should follow the current Montana – Utah – Wyoming Weed Management Handbook and the High Plains Integrated Pest Management Guide for Colorado, Western Nebraska and Wyoming.

Additional Criteria to Protect Quantity and Quality of Commodities

As an essential component of both commodity-specific IPM and IPM general principles, clients shall be encouraged to use the minimum level of pest control necessary to meet their objectives for commodity quantity and quality.

Additional Criteria to Protect Soil Resources

In conjunction with other conservation practices, the number, sequence and timing of tillage operations shall be managed to maintain soil quality and maintain soil loss at or below the soil loss tolerance (T) or any other planned soil loss objective. Acceptable soil loss levels shall be quantified using currently approved erosion prediction technology. Soil quality parameters shall be quantified using currently approved technology.

Clients shall be encouraged to pay special attention to pesticide label instructions for limiting pesticide residues in soil that may impact non-target plants, animals and humans.

Additional Criteria to Protect Water Resources

Pest management environmental risks, including the impacts of pesticides in ground and surface water on non-target plants, animals and humans, must be evaluated for all identified water resource concerns. Planners shall identify fields or areas that are susceptible to surface or ground water contamination. A site-specific evaluation shall be made for each field or Conservation Treatment Unit. Pesticide risk evaluations **shall** be done using the latest version of the Windows Pesticide Screening Tool (Win-PST). The latest version of the WinPST program is available on the World Wide Web at:

<http://www.wcc.nrcs.usda.gov/water/quality/frame/pestmgt.html>

Evaluation procedures other than Win-PST **must** be approved by the State Conservation Agronomist.

County-specific information can be found on the maps labeled “Ground Water Vulnerability to Pesticides.” The maps can be found in the “Wyoming Ground Water Vulnerability Assessment Handbook”, or on the Worldwide Web at: <http://www.sdvc.uwyo.edu>

A chosen alternative may have significant potential to negatively impact important water resources. Where Win-PST evaluations result in “Extra High”, “High” or “Intermediate” risk ratings, appropriate mitigating practices should be put in place to address potential risks to humans and non-target aquatic and terrestrial plants and wildlife.

Mitigating practices to limit potential groundwater contamination by a pesticide are those that reduce or eliminate exposure or infiltration of the product. Examples include reduced application rates, foliar applications, proper Irrigation Water Management, or the use of alternative pesticides.

Mitigating practices to limit potential surface water contamination by a pesticide are those that reduce or eliminate runoff and erosion. Examples include residue management, crop rotation, proper Irrigation Water Management,

the use of filter strips, or the use of alternative pesticides.

In addition, the transfer, loading, unloading and open mixing of chemicals shall not occur in the application field within 100 feet of a well or surface water body. All mixing should also be performed down-gradient of all wells.

The number, sequence and timing of tillage operations shall be managed in conjunction with other sediment control tactics and practices, in order to minimize sediment losses to nearby surface water bodies.

Additional Criteria to Protect Air

Resources

Clients shall be encouraged to pay special attention to pesticide label instructions for minimizing volatilization and drift that may impact non-target plants, animals and humans. Climatic considerations such as wind velocity and low/high pressure gradients should be considered in the planning process.

Additional Criteria to Protect Plant

Resources

Clients shall be encouraged to pay special attention to pesticide label instructions including those directed at:

- Preventing misdirected pest management control measures that negatively impact plants (e.g., removing pesticide residues from sprayers before moving to the next crop and properly adjusting cultivator teeth and flame burners).
- Appropriate climatic conditions, crop stage, soil moisture, pH, and organic matter in order to protect plant health.
- Limiting pesticide residues in soil that can carry over and harm subsequent crops.

Additional Criteria to Protect Animal

Resources

Clients shall be encouraged to pay special attention to pesticide label instructions that minimize negative impacts to animals.

Additional Criteria to Protect Humans

Clients shall be encouraged to pay special attention to pesticide label instructions that minimize negative impacts to humans.

CONSIDERATIONS

If commodity-specific IPM is not available, the following IPM methods and principles should be considered:

- Biological controls, such as insect predators and pathogens, can suppress pest populations.
- Cultural controls, such as crop rotation, tillage and mowing, can make the environment less suitable for pest survival.
- Chemical controls, such as herbicides, insecticides and fungicides, can reduce a pest population or its impacts. Chemical controls should be used judiciously in order to minimize environmental risk and pest resistance.
- Monitoring conditions conducive to pest outbreaks, scouting pest populations to help avoid routine preventative pest control, and utilizing spot treatments.
- A long-term, successful pest management system will usually include more than one control method. The goal of IPM is NOT pest eradication, rather the maintenance of pest populations below the economic threshold.

Cultural Control

The use of practices other than chemical and biological controls to reduce a pest population or its impacts. Cultural methods of pest control attempts to disrupt the infestation cycle by making the environment less suitable for pest survival. Cultural control practices can include:

- Crop rotation
- Pest-free seed
- Pest resistant varieties
- Proper sanitation practices

- Burning
- Scouting
- Mechanical pest control including cultivation, hoeing, hand weeding, and mowing.

Biological Control

The process of conserving, augmenting or introducing beneficial living organisms to reduce a pest population or its impacts.

Biological control agents can include:

- Insects
- Nematodes
- Mites
- Plant Pathogens
- Plants
- Vertebrates

Chemical Pest Control

The use of chemicals to reduce a pest population or its impacts. Chemical control can include:

- Herbicides
- Insecticides
- Fungicides

Adequate plant nutrients and soil moisture, including favorable pH and soil conditions, should be available to 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 minimize pest management environmental risk.

PLANS AND SPECIFICATIONS

The pest management component of a conservation 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.

WY, NRCS

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OPERATION AND MAINTENANCE

The pest management component of a conservation 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.
- Develop a safety plan that includes telephone numbers and addresses for emergency treatment centers for individuals exposed to chemicals and the telephone number for the nearest poison control center. The National Pesticide Telecommunications Network (NPTN) telephone number in Corvallis, Oregon is:

1-800-424-7378

Monday - Friday

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

The Wyoming Poison Control Number is:

1-800-955-9119

- Post signs according to label directions and/or Federal, State, and local laws around fields 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). Material Safety Data Sheets and product labels are available on the Worldwide Web at: <http://www.greenbook.net/free.asp>
- Calibrate application equipment according to Extension and/or manufacturer recommendations before each seasonal use and with each major chemical change. University of Wyoming

Extension Bulletins MP-93.3 and MP-93.4 (Agronomy Technical Note 16) provide information on sprayer calibration. These publications can be accessed at:

<http://www.uwyo.edu/ag/ces/plantsci.htm>

- Replace worn nozzle tips, cracked hoses, and faulty gauges.
- Maintain records of pest management for at least two years. Pesticide application

records shall be in accordance with USDA Agricultural Marketing Service's Pesticide Record Keeping Program and state specific requirements. University of Wyoming Extension Bulletin 93.1 (Agronomy Technical Note 16) provides information on maintenance of records. This publication can be accessed at:
<http://www.uwyo.edu/ag/ces/plantsci.htm>