

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

PEST MANAGEMENT

(Acre)

CODE 595

DEFINITION

Utilizing environmentally sensitive prevention, avoidance, monitoring and suppression strategies to manage weeds, insects, diseases, animals and other organisms (including invasive and non-invasive species), that directly or indirectly cause damage or annoyance.

PURPOSES

This practice is applied to support the following purposes:

- To enhance the quantity and quality of agricultural commodities
- To minimize negative impacts of pest control on soil, water, air, plant, animal and/or human resources

Conditions Where Practice Applies

This practice applies wherever pests will be managed.

CRITERIA

General Criteria Applicable to All Purposes

Plan and integrate Pest Management activities with all other components of the Conservation Plan. 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, Federal Insecticide, Fungicide and Rodenticide Act, Worker Protection Standards and Interim Endangered Species Protection Program, is required for chemical pest control. Make pesticide applications according to label instructions including precautionary statements and Colorado State University recommendations.

Include Integrated Pest Management (IPM) strategies in the planning process.

If crop-specific IPM strategies are not available, use the following general IPM principles to maintain pest populations below economic levels, and minimize pest resistance and adverse effects of pesticides on human health and environment.

- Prevention - Includes the use of pest-free seeds and transplants, cleaning tillage and harvesting equipment between fields and application of Irrigation Water Management to avoid plant stress and disease.
- Avoidance - Use pest resistant varieties, transgenic crops, crop rotation and trap crops to avoid pest problems.
- Monitoring - Use pest scouting, soil testing and weather forecasting to target suppression activities and avoid routine pesticide applications.
- Suppression - Use cultural, biological and chemical controls to decrease pest populations. Use chemical controls judiciously to minimize environmental risk, pest resistance and expense.

Mitigation

Plan and apply appropriate mitigation techniques to address identified resource concerns in accordance with the Colorado Field Office Technical Guide, Section III, Quality Criteria.

Mitigation includes management techniques such as lower application rates and spot treatment or implementation of conservation practices such as Filter Strips, Terraces or Irrigation Water Management. Refer to the Colorado Pest Management, 595 Job Sheet for suggested mitigation alternatives.

Integrate all methods of pest management with other components of the conservation plan.

Instruct clients to review all environmental hazards and site-specific application criteria listed on pesticide labels and contained in Extension and Crop Consultant recommendations.

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 Minimize Negative Impacts of Pest Control on Soil, Water, Air, Plant, Animal and/or Human Resources

Soil

Apply pesticides according to label instructions including precautionary statements and CSU recommendations to limit soil pesticide residues and negative effects on non-target plants, animals and humans.

Use current approved erosion prediction technology to determine the number, sequence and timing of tillage operations to maintain soil loss at or below the soil loss tolerance (T) or any other planned soil loss objective.

Water

Evaluate the environmental risks of pesticide applications to surface and groundwater for humans and fish using the NRCS Windows Pesticide Screening Tool (WIN-PST 3).

If a WIN-PST 3 evaluation indicates that a pesticide application has an Extra High, High or Intermediate potential to affect water resources, implement appropriate mitigation techniques to address risks to humans and fish.

Make pesticide applications according to label instructions including precautionary statements and CSU recommendations regarding water resources to limit leaching and runoff of pesticide residues.

Manage the number, sequence and timing of tillage operations to minimize sediment transport to surface water resources.

Air

Make pesticide applications according to label instructions including precautionary statements and CSU recommendations regarding air resources to minimize volatilization and drift that may negatively affect non-target plants, animals and humans.

Plant

Make pesticide applications according to label instructions including precautionary statements and CSU recommendations regarding plant resources to prevent misdirected pest management control measures and limit pesticide residues in soil that may carry over and negatively affect subsequent crops.

Animal

Make pesticide applications according to label instructions including precautionary statements and CSU recommendations to minimize negative impacts to animals.

Human

Apply pesticides according to label instructions, including precautionary statements and CSU recommendations to minimize negative impacts to humans.

CONSIDERATIONS

Maintain adequate nutrients and soil moisture, including favorable pH and soil condition to decrease plant stress and increase plant vigor and ability to tolerate pests.

Plan and apply the Colorado Irrigation Water Management, 449 Conservation Practice Standard to maximize the benefits of pest management and minimize potential environmental risk.

Hand weeding may be appropriate for small isolated areas or on larger areas where labor costs are not prohibitive. Spot spraying rather than full-coverage spraying may be another acceptable alternative.

Consider the use of banded pesticide applications where appropriate to decrease environmental risk and treatment costs.

Avoid repetitive use of the same pesticide or pesticides with similar chemistry to decrease potential development of pest resistance.

PLANS AND SPECIFICATIONS

Prepare plans and specifications for each field or treatment unit according to the Criteria, Considerations and Operation and Maintenance sections of this standard.

Specifications shall describe the requirements for applying this practice to meet the intended purpose.

Complete a Colorado Pest Management, 595 Job Sheet for each field or treatment unit.

OPERATION AND MAINTENANCE

The pest management component of a conservation plan shall include appropriate operation and maintenance items.

These may include but are not limited to the following.

- Review and update the plan periodically 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 to ensure continued effectiveness.
- Develop a safety plan for individuals who may be exposed to pesticides, including telephone numbers and addresses of local emergency treatment centers and the telephone number for the nearest poison control center.
Rocky Mountain Poison and Drug Center
1-800-222-1222

National Pesticide Information Center (NPIC) 1-800-858-7384) available for non-emergency information 6:30 a.m. to 4:30 p.m. PST, Monday – Friday
- For advice and assistance with pesticide spills, a local emergency telephone number should be provided. The national 24-hour CHEMTREC number is 1-800-424-9300.
- Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers and natural or impounded ponds, lakes or reservoirs.
- 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 Federal, State, and local regulations.
- Read and follow label directions and maintain appropriate Material Safety Data Sheets (MSDS).
- Calibrate application equipment according to CSU and/or manufacturer recommendations before each seasonal use and with each major chemical change.
- Maintain application equipment and 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.

REFERENCES

Colorado Environmental Pesticide Education Program. CSU. Ft. Collins, CO.
<http://www.colostate.edu/Depts/SoilCrop/extension/CEPEP/index.htm>

Colorado Field Office Technical Guide, Section IV. Pest Management 595 Conservation Practice Statement of Work. 2006. USDA, Natural Resources Conservation Service. Lakewood, CO.
http://efotg.nrcs.usda.gov/references/public/CO/CO595_SOW.pdf

Colorado Field Office Technical Guide, Section IV. Pest Management 595 Conservation Practice Job Sheet. 2008. USDA, Natural Resources Conservation Service. Lakewood, CO.
http://efotg.nrcs.usda.gov/references/public/CO/CO595_JS.pdf

Colorado Field Office Technical Guide, Section III. Resource management system quality criteria. 2005. USDA Natural Resources Conservation Service. Lakewood, CO.
http://efotg.nrcs.usda.gov/references/public/CO/CO_Resource_QC_Table1.pdf

Pesticide Registration Program. Plant Industry Division. CO Dept. of Ag. Lakewood, CO.
<http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1178305424099>

Agricultural Chemicals and Groundwater Protection Program. Conservation Services Division. CO Dept. of Ag, Lakewood, CO.
<http://www.colorado.gov/cs/Satellite/Agriculture-Main/CDAG/1167928159328>

Veg Net. Integrated Pest Management Information. CSU Coop. Ext. Fort Collins, CO.
<http://www.colostate.edu/Orgs/VegNet/>

Waskom, R.M. 1995. Best management practices for crop pests. Bulletin # XCM-176. CSU Coop. Ext. Fort Collins, CO.
<http://www.ext.colostate.edu/pubs/crops/xcm176.pdf>.

Waskom, R.M. 1995. Best management practices for agricultural pesticide use. Bulletin # XCM-177. CSU Coop. Ext. Fort Collins, CO.
<http://www.ext.colostate.edu/pubs/crops/xcm177.pdf>.

Waskom, R.W. and M.D. Yergert. 1994. Best management practices for pesticide and fertilizer storage and handling. Bulletin #XCM 178. CSU Coop. Ext. Fort Collins, CO.
<http://www.ext.colostate.edu/pubs/crops/xcm178.pdf>.