

**NATURAL RESOURCES CONSERVATION SERVICE
MONTANA CONSERVATION PRACTICE SPECIFICATION**

PEST MANAGEMENT (ACRE)

ORGANIC PRODUCTION

CODE 595B

DEFINITION: Utilizing a system of agriculture that is ecologically and socially viable requiring actions to restore and enhance natural balances in a functional ecosystem including environmentally sensitive prevention, avoidance, monitoring and suppression strategies, management of weeds, insects, diseases, animals, and other organisms (including invasive and non-invasive species) that directly or indirectly cause economic damage.

PURPOSE: Pest management in organic production is the process where sustainable IPM methods are used to conserve and build a healthy agro-ecosystem while maintaining organic integrity to enhance the quality and quantity of crops and forages while minimizing negative impacts on soil, water, air, plant, animal and human resources.

CONSERVATION MANAGEMENT SYSTEMS. The pest management practice, in an organic production system, is used in conjunction with a diverse crop rotation, green-manuring, cover crops, livestock manure, residue management, nutrient management, and/or other practices needed on a site-specific basis to address resource concerns and producer objectives. The major role of organic pest management is to utilize an environmentally responsible approach to producing high-quality food and fiber that protects surface and ground water resources.

ORGANIC PEST MANAGEMENT PLANNING. A pest management plan in an organic production system is a dynamic tool that must be monitored and adjusted annually. An effective pest management program considers more than one control method including mechanical, biological, and cultural controls.

The pest management plan must include both proactive and reactive options:

Proactive

Crop rotations
Biologically active soils
Habitat creation for beneficial organisms
Appropriate plant cultivars
Cultural controls

Reactive

Release of biological controls
Mechanical controls
Physical controls

CULTURAL CONTROLS

Cultural controls are manipulations of the agro-ecosystem that make the cropping system less friendly to the establishment and proliferation of pest populations. Maintaining and increasing biological diversity of the farm system is a primary strategy of cultural control. Systems high in biodiversity provide more checks and balances preventing one species from overwhelming the system. Factors influencing biodiversity of soils include amount of soil organic matter; soil pH, nutrient balance, moisture, and parent material of the soil. Soil rich in organic matter tends to suppress plant pathogens. Overall, a healthy soil with a diversity of beneficial organisms and high organic matter content helps maintain pest populations below their economic thresholds. Other cultural controls include genetic diversity of a crop, interplanting, intercropping, strip cropping, using disease-free seed and plants, resistant varieties, sanitation, spacing of plants, altering plant dates, and using living or non-living mulches.

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BIOLOGICAL CONTROLS

Biological control is the use of living organisms'—parasites, predators, or pathogens—to maintain pest populations below economically damaging levels, and may be either natural or applied. Natural enemies can make significant contributions to pest management if provided with adequate habitat. Natural biological control results when naturally occurring enemies maintain pests at a lower level than would occur without them. Creation of habitat to enhance the chances for survival and reproduction of beneficial organisms (called farmscaping) is essential for biocontrol. Habitat enhancement for beneficial insects includes establishment of flowering annual or perennial plants, providing water, alternative prey, perching sites, overwintering sites, and wind protection. Periodic release of parasites, predators, and pathogens may be necessary for control of some pests if they are not thriving within a particular organic system.

MECHANICAL AND PHYSICAL CONTROLS

Methods included in this category utilize some physical component of the environment, such as temperature, humidity, or light, to the detriment of the pest. Common examples are tillage, flaming, flooding, soil solarization, and plastic mulches to kill weeds or to prevent weed-seed germination.

Pest Identification

A crucial step in any IPM program is to identify the pest. The effectiveness of both proactive and reactive pest management measures depend on correct identification and knowledge of pest-life cycles.

Monitoring

Monitoring (field scouting) involves systematically checking crop fields for pests and beneficial organisms at regular intervals and at critical times to gather information about the crop, pests, and natural enemies. Sweep nets, sticky traps, and pheromone traps can be used to collect insects for both identification and population density. Records of rainfall and temperature are also helpful to predict likelihood of disease infections.

ALTERNATIVE'S NARRATIVE. An alternative's narrative is required in all organic system pest management plans. The alternative's narrative identifies resource concerns and provides an explanation of potential hazards and concerns. The alternative's narrative also provides alternatives to treating pest problems. The producer-selected alternatives or mitigation practices are then documented on the organic pest management job sheet.

MITIGATION PRACTICES. Mitigation practices are designed to minimize risks required to ensure the protection of water resources. Minimizing ground water contamination by leaching are those practices that reduce or eliminate exposure or infiltration. Mitigation practices for limiting surface water contamination by runoff are those practices that minimize water runoff and soil erosion.