PEST MANAGEMENT PLAN

NC NRCS Practice Code 595 Job Sheet

Prepared for: _____

Prepared by: _____

Farm: _____ Tract: _____ Date: _____

WHAT IS PEST MANAGEMENT?

The conservation practice, Pest Management, is the use of environmentally sensitive prevention, avoidance, monitoring and suppression strategies, to manage weeds, insects, diseases, animals and other organisms that directly or indirectly cause damage or annoyance. This practice is accomplished through the development of a Pest Management Plan, which is normally part of a broader Conservation Plan that addresses multiple natural resource concerns on the land.

PURPOSE OF PEST MANAGEMENT

Your Pest Management Plan is intended to enhance the quantity and quality of the crops being grown, while minimizing the negative impacts of the pest control on humans and soil, water, air, plant, and animal resources.

CONTENTS OF THE PEST MANAGEMENT PLAN

The information provided in this Job Sheet and the attachments meets the minimum requirements for a Pest Management Plan for USDA-NRCS purposes. This Pest Management Plan includes:

1. This Job Sheet (or comparable information), that provides the following:
   - General requirements of this practice, as well as additional requirements to meet the natural resource protection purposes listed above.
   - Additional considerations specific to this plan.
   - A list of mitigating practices that are either required or recommended in order to minimize the environmental risks associated with the use of specific pesticides. Mitigating practices and management alternatives can be listed on page 5 of this Job Sheet.
   - Operation and maintenance information associated with this practice.
2. A plan map and soils map for the area planned (these may be part of the overall Conservation Plan).
3. Location of sensitive resources and setbacks, if applicable. These may be shown on the Plan Map or other map.
4. An overall Integrated Pest Management (IPM) strategy checklist for the major crop types planned.

   ☐ Row Crops (General)

   ☐ Forages (General)

   ☐ Other: _____

   _____

   _____
5. An assessment of the environmental risks from potential pesticide losses to surface and ground water. This assessment is done through the Windows Pesticide Screening Tool (WIN-PST). The *Soil/Pesticide Interaction* report or an interpretation/summary of that report is attached. *In situations where fumigants are utilized in vegetable production*

operations, then alternatives plus mitigation practices should be implemented to minimize impacts. Fumigants can also have significant negative effects on beneficial soil organisms. The WIN-PST database may not include fumigants and only evaluates potential hazards to surface and ground water.

Also, in forestland or wildlife habitat management situations where chemical use is generally limited to single applications, specifications prepared by a qualified forest or wildlife professional may be provided as part of the forest or wildlife management plan. These specifications are sufficient in lieu of WIN-PST assessments as long as guidance provided adheres to Forest Practice Guidelines (FPGs) and is implemented as such.

BASIC REQUIREMENTS

General

All methods of pest management must comply with Federal, State, and local regulations, including management plans for invasive pest species, noxious weeds and diseases. 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 pest control.

Pay special attention to all environmental hazards and site-specific application criteria listed on pesticide labels and contained in Extension and Crop Consultant recommendations.

Please note the location of any sensitive resources for exclusion of pest management activities when resource degradation is likely.

Integrated Pest Management

Your goal should always be to use the minimum level of pesticides needed to meet your quantity and quality objectives for your crops. Consideration of Integrated Pest Management (IPM) strategies is required for NRCS Pest Management Plans. IPM strives to balance economics, efficacy and environmental risk. Attempts to control one pest species without regard for the entire ecosystem can disrupt checks and balances between crops, other plants, pests, beneficial organisms and the physical environment. See the attached IPM Strategy Checklist(s) for specific actions to implement IPM. You may find some excellent resources with additional information on IPM at: ipm.ncsu.edu.

If no IPM Checklists are attached to this Plan, the following IPM strategies should be considered at a minimum:

1. Pest control actions must consider the entire ecosystem to ensure the checks and balances between crops, pests, beneficial organisms, and the physical environment are not disrupted.

Consider that:

- ✓ Over reliance on one pest control method can lead to pest resistance, resurgence, and replacement.
- ✓ Overzealous pest management can severely reduce the effectiveness of natural controls whereby you inherit their role.
- ✓ A vigorously growing plant can better defend itself against pests than a weak, stressed plant.

2. Tolerate a pest until its economic threshold has been reached.
3. Understand the pest's biology and ecology so that causes of the outbreak, not the symptoms can be addressed.
4. Prevention, such as using pest-free seeds and transplants, cleaning tillage and harvesting equipment between fields, irrigation scheduling to avoid situations conducive to disease development, etc.
5. Avoidance, such as using pest resistant varieties, crop rotation, trap crops, etc.
6. Monitoring, such as pest scouting, soil testing, weather forecasting, etc. to help target suppression strategies and avoid routine preventative pest control.
7. Suppression, such as cultural, biological and chemical controls, that can reduce a pest population or its impacts. Chemical controls should be used judiciously in

order to minimize environmental risk and pest resistance.

Protecting Your Soil Resources

Along with other conservation practices, the type, 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 other planned soil loss objective.

Pay special attention to pesticide label instructions for limiting pesticide residues in the soil that may harm non-target plants, animals, or humans.

Soil fumigants often act as biocides and are harmful to beneficial soil organisms that promote soil quality. Alternative fumigants to methyl bromide should be considered and utilized when possible.

Protecting Your Surface and Ground Water Resources

If pesticides are a part of your pest management strategy, an assessment of the environmental risks to surface and ground water associated with the potential runoff or leaching of specific pesticides has been conducted using the Natural Resources Conservation Service's Windows Pesticide Screening Tool (WIN-PST). Using WIN-PST, the pesticides you plan to use are analyzed with the specific soil types on your land. The attached WIN-PST analysis identifies Hazard Ratings for your selected soil/pesticide alternatives.

When a chosen alternative has significant potential to negatively impact water resources of concern, an appropriate set of mitigation techniques are planned to address these risks to humans and non-target plants and animals. Planned mitigating practices are shown below.

Protect Your Air Resources

Pay special attention to pesticide label instructions for minimizing volatilization and drift that may harm non-target plants, animals and humans.

If soil fumigants are needed to control damage from insects, nematodes, diseases, and weeds, then the air quality effects of the selected fumigant must be considered and an alternative to methyl bromide selected if practical. With any fumigant use, mitigation practices must be considered to minimize air quality impacts. Alternative fumigants and Impermeable-type tarping that increases fumigant retention and efficiency, while decreasing gas flow from the soil to the atmosphere should also be considered as fumigant management alternatives.

Protecting Your Plant Resources

To benefit insect food sources for grassland nesting birds, spraying for control of noxious weeds or unwanted woody vegetation in early successional wildlife habitat areas will be done on a "spot" basis to protect forbs and legumes that benefit native pollinators and other wildlife. Negative impacts to native plant communities should be avoided when possible.

Pay special attention to weed control and pesticide label instructions directed at:

- Preventing misdirected pest management control measures that negatively impact non target plants (e.g., removing pesticide residues from sprayers before moving to the next crop, avoiding drift or volatilization 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 and improve efficacy.
- Restrictions regarding pesticide ingredients that can persist (carry over) and remain active in the soil and harm subsequent crops.

Protecting Your Animal Resources

Pay special attention to pesticide label instructions that minimize harm to wildlife, pets, and grazing animals.

Protecting Humans

Pay special attention to pesticide label instructions that minimize negative impacts to humans, such as minimum waiting periods before reentry into pesticide treated areas or

minimum clothing required by workers applying a pesticide.

ADDITIONAL CONSIDERATIONS

Consider that 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. Also consider that herbicides are most effective when applied to weeds that are not stressed by drought.

Consider that there may be areas not suitable for cultivation of weeds because of erosion hazard, or not suitable for pesticide application because of drift, run off or leaching, or not suitable for burning because of wildfire hazard, or not suitable for biological control because of the presence of non-target vulnerable species.

Consider that on irrigated land, irrigation water management should be designed to minimize pest management environmental risk.

Consider utilizing the NCSU WebHADSS (Herbicide Application Decision Support System) website (http://www.webhadss.ncsu.edu/) to make decisions on the effectiveness and economic impact of pest management/chemical alternatives.

OPERATION & MAINTENANCE

Proper operation and maintenance (O&M) is critical to safe and effective pest management. The following O&M plan should be followed:

1. Review and update your pest management plan periodically to incorporate new IPM technology, adjust to changes in the cropping system, and targeted pests, and avoid the development of pest resistance.
2. Inspect and maintain mitigation techniques identified in the plan in order to ensure continued effectiveness.
3. Follow label requirements for mixing/loading setbacks from wells, intermittent streams and rivers, natural or impounded ponds and lakes, or reservoirs.
4. Follow all requirements in rules and regulations and pesticide labels.
5. Inspect and replace worn nozzle tips, cracked hoses, and faulty gauges.
6. Inspect and calibrate application equipment according to Extension and/or manufacturer recommendations before each seasonal use and with each major chemical change.
7. Maintain records of pest management for at least two years. IMPORTANT: N.C. has additional record-keeping requirements for restricted use pesticides and aerial applicators that may be found at: www.ncagr.com/fooddrug/pesticid/cmfo.htm
8. Develop and review a Safety Plan including telephone numbers and addresses of emergency treatment centers and the telephone number for the nearest poison control center. (The most recent emergency contact information is available on the inside cover of the North Carolina Agricultural Chemicals Manual.) The safety plan should include:
   - A routine inspection and review of all safety equipment and procedures.
   - Posting signs according to label directions and Federal, State, and local laws around treated sites.
   - Following the worker safety requirements specified in labels, rules and regulations. Adhering to restricted entry intervals.
   - Disposing of pesticides and containers in accordance with label directions and Federal, State, and local regulations.
   - Reading and following label directions and maintain appropriate Material Safety Data Sheets (MSDS). Current labels and Material safety Data Sheets can be found on the internet at www.msdssearch.com or www.msdsonline.com .

MITIGATION TECHNIQUES AND MANAGEMENT ALTERNATIVES TO PROTECT WATER (if required by WIN-PST hazard ratings), AIR, AND SOIL QUALITY	
Conservation Management Unit (Tract/field)	*Mitigation Techniques (Conservation Practices or Management Techniques)*