IPM Herbicide Resistance Weed Conservation Plan

Criteria - Practice/Activity Code (154) (No.)

1. Definition and Overview:

A Integrated Pest Management (IPM) Herbicide Resistance Weed Conservation Plan is a conservation activity plan that documents decisions by producers who agree to implement a system of conservation practices and IPM techniques with an emphasis on herbicide use orientation to suppress herbicide resistant weeds at same time reduce the potential of herbicide resistant weeds establishing again in the treated area of cropland by utilizing the four IPM strategies: Prevention, Avoidance, Monitoring and Suppression. This approach will be implemented with the augmentation of one or more of the following key essential conservation practices: Crop Rotations, Cover Crops, and Residue Tillage Management practices. The IPM Herbicide Resistance Weed Conservation Plan will:

- Meet NRCS quality criteria for soil erosion, water quality, and air quality;
- Comply with federal, state, tribal, and local laws, regulations and permit requirements;
- Address the operator's objectives.

Producers choose to implement an IPM Herbicide Resistance Weed Conservation Plan for reasons that include, but are not limited to:

- To change herbicide rotation (modes of action and herbicide) and intensify mechanical practices. Initially some manual labor may be needed where farms are presently populated with herbicide resistance weeds;
- To change herbicide rotation (modes of action and herbicide) and increase the use of conservation practices, along with IPM techniques, that prevent early term resistance weeds on farms;
- Minimize resistance weeds seed production by reducing the weed populations before the flowering stage or before maturity;
- To manage the weeds seed bank with a healthy soil (cover crops) to improve soil biological activity and shorten the half-life of the weed seed bank and establishing a desirable habitat for seed predators (invertebrates, small rodents, birds) that consume weed seed.
- To manage resistance weeds effectively and economically;
- Cover Crops – consider using cover crops (1) to aid in controlling herbicide resistance weeds by shading and out competing weeds for nutrients, (2) for reducing water erosion to prevent herbicide contamination of water bodies and streams adjacent to treated site or field, and (3) managing cover crop residues left on soil surface can maximize the allelopathic (chemical) and mulching (physical) effects in suppressing herbicide resistance weed.

2. IPM Herbicide Resistance Weed Conservation Plan Criteria

This section establishes the minimum criteria to be addressed in the development and implementation of IPM Herbicide Resistance Weed Conservation Plan on cropland developed by a certified Technical Service Provider (TSP). Complete the IPM Herbicide Resistance Weed Plan (154) template provided that includes the following items:

- Background and site information - list and document information on the about the site condition, herbicide resistance weeds, and tools needed;
- Name of owner/operator;
- Farm location and mailing address;
- Soils Map and soil map units description using the Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm for the planned fields as a minimum printout the Soil Report > AOI Inventory > Map Unit Descriptions
- Site specific assessment of environmental risk associated with existing and alternative pest suppression system. To assist with the implementation of the practice standard (595) utilized the Agronomy See Technical Note No. 5 – Title: Pest Management in the Conservation Planning Process which is located in the eDirectives http://directives.sc.egov.usda.gov/ under Technical notes, title 190-Ecological Sciences, Agronomy Technical Note 5; then click the attachment;
- Digital Conservation plan map with;
  1. Location of sensitive areas such as: streams, surface waters, surface drainage, and wetlands on or adjacent to site
  2. Property lines, field boundaries, field name/number, field acres, and land use
  3. Map scale
  4. Structural practices located on the map
  5. Legend
  6. Grower Name, County, State
- Monitoring guidelines (see #3 below)
- State University's IPM guidelines for specific crops (optional)
- WIN-PST Report (NRCS Copy) – (see item #4 below).
- Record Keeping (see item #5 below)
- IPM guidelines for specific crops (optional) - Consult with Weed Society of America; http://www.hracglobal.com and State University's IPM guidelines for specific crops (optional)
- Total acres of the plan;
- Planned conservation practices, with amount, schedule for implementation, location (field). (Item 6 below).
- IPM techniques to mitigate the potential environmental risk (soil, water, air, and plant quality) associated with the selected control tactics for herbicide resistance weed. (see item #4 below) If, IPM 595 is planned to mitigate risks associated with pesticides

prepare Implementation Requirements using **Pest Management and the 595 Jobsheet 2.1.xlsm** or other state NRCS accepted document.

- Other practices to address soil, water, air, plant quality and other resources concerns.

3. **IPM key essential technique of an IPM Herbicide Resistance Weed Conservation Plan Monitoring/Scouting.** This element addresses scouting strategies that addresses weeds population levels, minimizing weeds maturity, and the reduction of seed production. The scouting report should include:
   a. List of crops to be grown/managed;
   b. Weed thresholds, which may be a goal of zero, based on the tolerant level for the specific weed and monitoring frequency;
   c. Scouting plan for weeds; specifying scouting frequencies based on time of season and weed species. Where needed include post harvest scouting plans.

4. **Window Pesticide Screening Tool (WIN-PST)** is a NRCS supported tool that is used to assess relative pesticide leaching, solution runoff, and adsorbed runoff risks to water quality. If, IPM 595 is planned to mitigate risks associated with pesticides prepare Implementation Requirements using **Pest Management and the 595 Jobsheet 2.1.xlsm** or other state NRCS accepted document.

5. **Recordkeeping.** This element addresses list of records that shall be maintained, detailing:
   a. Date of monitoring;
   b. Results of monitoring;
   c. Identification of crop and/or plant community condition;
   d. Threshold of infestation or tolerant level for each specific weed
   e. Tactics implemented with dates
   f. All required pesticide application records required by state and federal requirements;
   g. Records required or needed as part of the State University IPM guidelines being used

6. **Typical conservation practices** that support an IPM Herbicide Resistance Weed Conservation Plan.

   a. Document the planned conservation practices to address the identified resource concerns. For each planned practice, identify the field(s) or location within a field a practice is to be applied, the amount of the practice to be applied, and the scheduled year to apply the practice. For the following planned conservation practices develop the appropriate specification to implement the conservation practices in the appropriate **Implementation Requirements documents (formerly Jobsheet).** The documents are located in **Section IV of the Electronic Field office Technical Guide for the respective state.**

Code	Practice Name
314	Brush Management
327	Conservation Cover
328	Conservation Crop Rotation
329	Residue and Tillage Management, No- Till/Strip Till/Direct Seed
340	Cover Crop
344	Residue Management, Seasonal
345	Residue and Tillage Management, Mulch Till
346	Residue and Tillage Management, Ridge Till
484	Mulching
585	Stripcropping

b. For all other practices, the practice shall be documented for the planned amount, the fields where the practice is to be applied, and the planned year of application.

c. Herbicide use is last building box of planning tactical sequence for an IPM Herbicide Resistance weed plan. It should be noted that herbicides are not the do all for weed suppression. The use of herbicides need to be judicious; proper application rate, proper timing, proper weather conditions, rotate different herbicides annually, and change mode of action regularly. Make use of extension recommendations and followed label warnings and instructions.

7. References

- USDA Natural Resources Conservation Service National Agronomy Manual, Parts 501, 502, 503, 504, 507, and 508.

8. Deliverables for the Client – hardcopy of the plan that includes:

- Cover page – name, address, and phone number of client and TSP, total acres of the plan, signature blocks for the TSP and producer, and a signature block for the NRCS acceptance.
- Complete Hardcopy of the client's plan (MsWord copy of the "Plan Template" 154) and all the appropriate Jobsheets and/or Implementation Requirements for the practices listed above.
- Soils Map and soil map units descriptions using the Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm as a minimum printout the Soil Report > AOI Inventory > Map Unit Descriptions
- Resource assessment results soil, water, air, plant quality, and others identified resource concerns that may be needed documented in the template or add printouts from assessment

tool (RUSLE2, and WEPS).

- Provide the Window Pesticide Screening Tool (WIN-PST) Soil/Pesticide Interaction Hazard Ratings report **(Only if the WIN-PST Identified Hazard Rating is intermediate or higher)** and IPM Implementation Requirements using **Pest Management and the 595 Jobsheet 2.1.xlsm** or other state NRCS accepted document **(Only if the WIN-PST Identified Hazard Rating is intermediate or higher)**.
- For engineering/structural practices. Document in the 154 Plan Template the planned practice, when it will be applied and extent, and location on the conservation plan map.
- Digital Conservation plan map with;

  a. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
  b. Required setbacks
  c. Property lines, field boundaries, field name/number/acres, and land use
  d. Map scale
  e. Structural practices located on map
  f. Legend
  g. Grower Name, County, State

9. Deliverables for NRCS Field Office (same as client except add an electronic copy of documents):

- Complete Hardcopy of the client's plan (MsWord copy of the "Plan Template" 154) and other appropriate digital copies of the plan and supporting documents..
- Soils Map and soil map units descriptions using the Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm as a minimum printout the Soil Report > AOI Inventory > Map Unit Descriptions
- Resource assessment results soil, water, air, plant quality, and others identified resource concerns that may be needed documented in the template or add printouts from assessment tool (RUSLE2, and WEPS).
- Provide the Window Pesticide Screening Tool (WIN-PST) Soil/Pesticide Interaction Hazard Ratings report **(Only if the WIN-PST Identified Hazard Rating is intermediate or higher)** and IPM Implementation Requirements using **Pest Management and the 595 Jobsheet 2.1.xlsm** or other state NRCS accepted document **(Only if the WIN-PST Identified Hazard Rating is intermediate or higher)**.
- For engineering/structural practices. The planned practice, when it will be applied and extent, and location on the conservation plan map.
- Digital Conservation plan map with;

a. Streams, surface waters, surface drainage, and wetlands on or adjacent to site
b. Required setbacks
c. Property lines, field boundaries, field name/number/acres, and land use
d. Map scale
e. Structural practices located on map
f. Legend
g. Grower Name, County, State