USDA United States Department of Agriculture

CONSERVATION ENHANCEMENT ACTIVITY

E595G

CONSERVATION STEWARDSHIP PROGRAM

Reduce resistance risk by utilizing PAMS techniques

CONSERVATION PRACTICE: 595 - Integrated Pest Management

APPLICABLE LAND USE: Crop (Annual & Mixed); Crop (Perennial); Pasture

RESOURCE CONCERN: Plants – Pest Pressure

ENHANCEMENT LIFE SPAN: 1 year

Enhancement Description

Utilize integrated pest management (IPM) prevention, avoidance, monitoring, and suppression (PAMS) techniques to reduce pesticide resistance and address plant pest pressure.

Criteria

1) As a baseline, document the producer's record of Integrated Pest Management (IPM) activities currently used that meet the Conservation Practice Standard Pest Management Conservation System (CPS 595) general criteria, including but not limited to:
    - Current IPM- fields, tracts, or PLUs and acres under current management.
    - Planned IPM - fields, tracts or PLUs and acres affected.
    - Prevention activities: cleaning equipment and gear when leaving an infested area, using pest-free seeds and transplants, and irrigation scheduling to limit situations that are conducive to disease development.
    - Avoidance activities: maintaining healthy and diverse plant communities, using pest resistant varieties, crop rotation, and refuge management.
    - Monitoring activities: pest scouting, degree-day modeling, and weather forecasting to help target suppression strategies and avoid routine preventative treatments.
    - Suppression activities: judicious use of cultural, mechanical, biological, and chemical control methods that reduce or eliminate a pest population or its impacts while minimizing risks to non-target organisms. Optimizing application timing, using precision application equipment, or substituting lower risk pesticides.

CONSERVATION STEWARDSHIP PROGRAM

2) Utilize rotation of pesticide modes of action (MOA) and ***at least three new or additional activities*** from the techniques below that fit within the general PAMS strategies above:

Pre-season strategies:

- Acquisition of knowledge and skills to manage pesticide resistance by:
  - Attending educational meetings to obtain the latest information in development of sound pest management programs.
    OR
  - Promote communication regarding pesticide resistance, by hosting a field day or community meeting to discuss pesticide resistance issues in their community.
- Diversify the current crop rotation to add different crop types to disrupt the host plant/pest cycle and reduce use of the same pesticide MOA season after season.
- Add cover crops to the crop rotation or consider use of nurse crops and intercropping of crops to be competitive with weeds thereby reducing weed pressure in the cash cropland weed seed development or as host crops for beneficial insects
- Use grazing and/or browsing animals when applicable, to reduce weed populations.

Planting strategies:

- Plant certified (or tested by a certified lab) weed-free crop, cover crop, or pollinator habitat seed to reduce introduction of new weed pests.
- Use pre-emergence herbicides with soil residual activity, with different mechanisms of activity MOA on target weed species.
- Plant crops with stacked traits to maximize the diversity of available pest management tools a crop with Bt (bacillus thuringiensis) and herbicide resistance traits.

Growing season strategies:

- Managing the crop according to recommendations from local extension experts or crop consultants (i.e., Certified Crop Advisors) to promote overall crop vigor, resilience, and competitiveness.
- Scouting prior to pesticide application to correctly identify the target pest and to determine if economic thresholds or estimates of crop damage are met before applying pesticides.
- Time pesticide applications treatment or other PAMS activity when the most susceptible life cycle stage of the target pest(s) is present to maximize the efficacy for the treatment selected.
- Methods of monitoring include use of monitoring traps to indicate adult emergence, real time data feeds from monitoring systems, or using weather or vegetation growth models that predict conditions conducive to pest development.

- Perform in-field follow-up after pesticide application determine and document whether the applied pesticide provided effective control of the target pests.
- Use of cultural, mechanical, or biological pest management strategies such as, tillage, mowing, flaming, roller crimping etc.

Harvesting strategies:

- Manage the soil seedbank by reducing weed seed inputs through use of harvest weed seed destruction equipment i.e., combine weed seed grinding.
- Manage the field environment (including soils) to lessen the probability of weed establishment, enhance weed seed decay, and promote weed seed predation (e.g., maintaining habitat refuges, delaying postharvest tillage etc.).

Documentation and Implementation Requirements

Participant will:

☐ Prior to implementation, provide documentation for review showing producer's record of integrated pest management meeting all Conservation Practice Standard Integrated Pest Management (CPS 595) general criteria.

☐ During implementation, keep documentation, such as records, plans, receipts, showing the implementation of the activities selected.

☐ After implementation, make documentation available for review by NRCS to verify implementation of the enhancement.

NRCS will:

☐ Prior to implementation, provide and explain NRCS Conservation Practice Standard Pest Management Conservation System (CPS 595) as it relates to implementing this enhancement.

☐ Evaluate any new pesticides used with this enhancement with WIN-PST and will plan appropriate mitigation if needed to protect water quality and/or beneficial organism protection.

☐ As needed, provide technical assistance to the participant as requested.

☐ After implementation, verify implementation by reviewing records kept during enhancement implementation.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and met all criteria and requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

_____ _____

NRCS Technical Adequacy Signature Date

2024 Alabama Supplemental Guidance for CSP Enhancement

ENHANCEMENT NUMBER AND TITLE: **E595G:** Reduce resistance risk by utilizing PAMS techniques

CONSERVATION PRACTICE: 595 – Pest Management Conservation System (PMCS)

BRIEF DESCRIPTION OF ENHANCEMENT: Reliance on a single pest management tactic increases the chance that a pest population will become resistant to it. This enhancement is to reduce resistance risk by utilizing Prevention, Avoidance, Monitoring and Suppression (PAMS) techniques.

IMPORTANT CONSIDERATIONS:

1. Document record of current and planned PAMS fields, tracts, or PLUs, and acres under current management, and affected acres.
2. Utilize pest management worksheet (Job Sheet No. AL595) as provided in Tables 1 and 2 below.
3. Document pest management producer's activities that meet CPS 395 general criteria including but not limited to:
   - **Prevention activities:** Keeping away potential pests from entering an area or inhibiting their spread to new areas by cleaning equipment, using pest-free certified seed and transplants, eliminating alternative hosts, proper water management, and placing or erecting barriers like fencing or netting.
   - **Avoidance activities**: Utilizing tactics that limit resources and create unfavorable conditions for the present or reoccurring pest organism by rotating crops, selecting pest-resistant varieties, altering planting and harvesting dates, and planting right plant in the right place.
   - **Monitoring activities.** Watching regularly for the appearance and reappearance of insects, weeds, diseases, and other pests. Identify pests and where potential pests are present, determine the severity of infestations, presence of pesticide resistance in the population, indications of activity or presence of natural enemies and damage to the asset being protected (crop/plants). **Assess** answers if the pest causing damage and current prevention or avoidance tactics working, and, if there is a need to act.
   - **Suppression activities**: Judicious use of cultural practices, physical barriers, biological controls, and pesticide applications.
     - *Cultural Controls*- activities that disrupt the environment of the pest, and/or prevent its movement. Plowing, crop rotation, removal of infected plant material, cleaning of greenhouse and tillage equipment, and effective manure management to deprive pests of a comfortable habitat or prevent their spread.
     - *Physical Barriers*- Mulch to inhibit weed germination beneath desirable plants.
     - *Biological Controls*- conserving or releasing of natural enemies (biological control agents) to prevent the rise of certain pests.
4. *Pesticides*- Use pesticides judiciously, with proper timing for the best targeted control. The pesticides must be labeled for use on intended crop or site. Combine tactics from each of the PAMS activities into a single strategy, utilize rotation of pesticide mode of action (MOA) with at least three new or additional activities from the techniques such as:

- Pre-season strategies,
- Planting strategies,
- Growing season strategies and
- Harvesting strategies.

5. Use Agronomy Technical Note 5, Pest Management in the Conservation Planning Process to apply appropriate PAMS techniques. When pesticides are part of a PMCS, use the current version of the pesticide risk assessment tool (Windows Pesticide Screening Tool (WIN-PST). Use IPM guidelines from the Alabama Cooperative Extension System as supplemental information on prevention, avoidance, monitoring, and suppression (PAMS) activities.

Table 1. Pest Management Worksheet

PEST MANAGEMENT WORKSHEET

Producer_____ Date _____ Time _____am/pm
Field ID _____ County _____ Scout _____

PLANT POPULATION Set Counts Total Plants Plants/Acre

Plants per 1/1000 of an acre* _____ _____

Total Plants ÷ # Set x 1,000 =

36" row width = 14' 6" length of row, 30" = 17' 5", 20" = 26' 2", 15" = 34' 10", 10" = 52' 3", 7" = 74' 8"

INSECTS	Plants/Set	Set Counts	Total	%	# per Plant
	/set				
	/set				
	/set				
	/set				
	/set				

WEEDS		SOIL CONDITIONS
Grasses (Scattered, Slight, Moderate, Severe)		Wet Moist Dry
_ SC SL MD SV	Avg. height _____	Loose Light Crust Hard Crust
_ SC SL MD SV	Avg. height _____	**WEATHER**
Broadleaves		Cool Warm Hot
_ SC SL MD SV	Avg. height _____	Partly Sunny Cloudy Rainy
_ SC SL MD SV	Avg. height _____	Calm Light Wind Strong Wind

DISEASES (Rating 1, 2, 3, 4 or 5) **Map** (or attach map)

_____ _____

_____ _____

CROP GROWTH STAGE _____

Comments:

MGT. DECISION BASED ON SCOUTING REPORT:

NOTE: COMPLETION OF SHADED AREAS IS OPTIONAL.

Table 2. Pesticide Data Collection Sheet

Crop	Target Pest	Product Name or Active Ingredient (AI)	% AI	Broadcast or Banded	Application: Surface, Foliar, or Soil Incorporated	Rate Used (Note if Reduced Spray Technology Used)

PROVIDE REQUIRED DOCUMENTS AND IMPLEMENTATION REQUIREMENTS

Provide documentation for review (prior to, during and after implementation) showing producer's record of pest management meeting all Conservation Practice Standard Pest Management Conservation System (CPS 595) general criteria.

THE ATTACHED DOCUMENTS SUPPORT THE FULL IMPLEMENTATION OF THIS CONSERVATION STEWARDSHIP ENHANCEMENT.

_____ _____

CSP Participant Name Date