

**FRD01 – On Farm Research and Demonstration**



**Enhancement Description**

On farm research and demonstration consists of the implementation of applied research projects on working farms to gather information and demonstrate the efficacy of the activity. The projects must fit within identified state priority topic areas.

**Land Use Applicability**

Cropland, Pastureland, Rangeland and/or Forest land, each approved project will have a land use designated.

**Benefits**

Researchers often need willing farmers to help them carry out research projects on working farms. Participating in such projects can help farmers learn about new technologies while helping researchers determine the results of new technologies. The results of the research can help NRCS identify new and innovative techniques to address on farm conservation problems.

**Conditions Where Enhancement Applies**

This enhancement applies to all crop, pasture, range or forest land use acres.

**Criteria**

On-Farm Research and Demonstration projects consists of implementing applied research on working land to gather information and demonstrate the effectiveness of new and innovative conservation activities. The research projects must be conducted by an entity that seeks to determine the value of a conservation practice, component, treatment, or process. The entity must have the means and expertise to conduct the research, analyze the findings and develop conclusions from the findings that are relevant to NRCS. Projects are preapproved by the NRCS State Conservationist in each state.

This is not intended to require farmers to initiate on farm research and demonstrations but rather to encourage them to participate in new or ongoing research projects sponsored by other responsible parties such as universities or other research oriented entities. However, if farmers have the necessary capability to conduct scientific research, they can initiate their own projects within the topic areas identified by their state and the criteria of this activity.

Participants will need to follow criteria as outlined for each project that include:

- Goals of the research and demonstration
- A schedule showing completion of the project during the contract period
- A chronological list or plan of activities expected to take place during the project



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- Planned end products or outcomes from the project
- Acreage needed
- Years research is to be conducted
- Farm inputs, equipment needs, etc.
- Expected assistance with data collection

### **Adoption Requirements**

This enhancement is considered adopted when the pre-approved applied research project has been implemented and monitored according to protocols developed specifically for the project and events to publicize the project have been held.

### **Documentation Requirements**

- Results or conclusions from the research and demonstration
- Documentation of the CSP participant's participation in the research project including:
  - A schedule of activities undertaken by the participant
  - Fields or other areas of the farm involved in the research



## **Conservation Stewardship Program On-Farm Research and Demonstration Projects and Research Entity Requirements**

### **Overview**

The Conservation Stewardship Program (CSP) encourages participants to address resource concerns in a comprehensive manner by undertaking additional conservation activities, and improving, maintaining, and managing existing conservation activities. This enhancement is eligible for cropland, pastureland, rangeland, and non-industrial private forestland. CSP enhancements means a type of activity installed and adopted to treat natural resources and improve conservation performance. Many of the CSP enhancements are related to existing NRCS conservation practice standards, but at a management intensity level that exceeds minimum practice standards.

On-Farm Research and Demonstration projects consists of implementing applied research on working land to gather information and demonstrate the effectiveness of new and innovative conservation activities. The research projects must be conducted by an entity that seeks to determine the value of a conservation practice, component, treatment, or process. These projects are designed to encourage applicants to participate in new or ongoing research where participation is needed from working land. Interested researchers gain access to farmers that are willing to follow research protocols on their farm across a broad landscape. Farmers participating in such projects learn about new technology first hand, helping to determine how new technology will be applied.

NRCS invites interested researchers to submit their projects for inclusion as eligible On-Farm Research and Demonstrations. The purpose of this activity is not to provide primary funding for a research project, but to expand the area and acreage from which research data is collected. CSP applicants that choose to participate in On-Farm Research and Demonstrations are awarded conservation performance points that improve their CSP ranking and increase annual payment levels.

### **Project Criteria:**

#### **Eligible Entities**

#### **Research Entity Requirements**

Entities must be able to demonstrate their means and expertise to conduct on-farm research, analyze findings, and develop conclusions that are relevant to NRCS. Eligible research institutions include land grant universities and others, who have ongoing research or the potential for research in the focus areas. Individual farmers are encouraged to participate in identified on-farm projects. However, if they have the necessary capability to conduct scientific research they can initiate their own proposal for consideration.

#### **Research Project Requirements**

Projects must address one of the resource concerns identified by NRCS as a national technology focus area and be conducted by a creditable research entity. States will identify specific projects within the national focus areas that they want to offer to CSP applicants in their states. Research projects should follow scientific methods that include project goals, hypotheses, data collection methods, results, summary, etc.



### **Project Documentation**

Creditable research entities must submit a copy of their research project documentation for a State to use in selecting those projects that will be offered to applicants. The document should include:

- a. Title of Research Project
- b. Research Director/Manager work affiliation and contact information (phone, email, etc.)
- c. Name and brief description of the research entity submitting the proposal, along with similar information for other collaborating researchers, if applicable
- d. General description and/or summary of research to be conducted, specifying the national focus that is being addressed:
  - Air
  - Animal
  - Energy
  - Plant
  - Soil Erosion
  - Soil Quality
  - Water Quality
  - Water Quantity
- e. The geographic location (e.g. state, county) or farm enterprise (peach growers, cattle producers) targeted by the research
- f. Researcher expectation of participants, explaining what the participants will need to provide as part of the project. This should include acreage, number of years research is to be conducted, farm inputs, equipment needs, and/or assistance with data collection.
- g. Total number of on-farm research sites needed
- h. Copy of research projects final report for NRCS use

### **Evaluation Criteria**

States should select research projects that will be offered to applicants based on the following or similar evaluation criteria:

- a. Research purpose and goals as related to the resource focus area
- b. Potential for success and adoption on a broad scale
- c. Number of participants the research can appropriately involve
- d. Demonstration of new and innovative approach to conservation
- e. Design and implementation of research based on sound methodology and/or demonstrated technology
- f. Capability of the entity to conduct scientific research
- g. Potential to transfer the approach or technology nationally or to other geographic or socio-economic areas
- h. Development or improvement of NRCS technical or related materials that will help foster expanded adoption of the innovative technology or approach

This information can be presented to interested participants as a fact sheet that outlines their involvement. Enhancement Job Sheet must be provided for additional information. States will notify the Field of the selected projects and associated entities that will be offered and available to applicants.



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**Additional guidance for on-farm research and demonstration:**

Pick **ONE** of the following on-farm research and demonstration projects for FY2012 in Idaho. Descriptions of each project are provided below.

- 1) **EVALUATION OF POLLINATOR SPECIES (This cannot be used with PLT15).**
- 2) **ONEPLAN IPM PLANNER AND PESTICIDE RECORDING-KEEPING DEMONSTRATION PROJECT**

**Potential Duplicate Practices:**

**327 – Conservation Cover, 386 – Field Border, 612 – Tree and Shrub Establishment, 512 – Forage and Biomass Planting, 550 – Range Planting, 380 – Windbreak and Shelterbelt Establishment**

**EVALUATION OF POLLINATOR SPECIES**

The following research scenarios (conventional or organic) can be used to evaluate pollinator species. The research must be conducted in cooperation with the NRCS Plant Materials Center.

**Research Scenario - 1**

	<b>Treatment 1</b>	<b>Treatment 2</b>	<b>Treatment 3</b>
<b>YEAR 1</b>			
<b>Spring</b>	Cultivate early to maximize germination of weed seed. After 2 <sup>nd</sup> cultivation, apply non-selective topical herbicide to chemical fallow after vegetation has grown 4 to 6 inches. Check with your state or plant materials contact for site preparation.	Cultivate early to maximize germination of weed seed. After 2 <sup>nd</sup> cultivation, apply non-selective topical herbicide to chemical fallow after vegetation has grown 4 to 6 inches. Check with your state or plant materials contact for site preparation.	Cultivate early to maximize germination of weed seed. After 2 <sup>nd</sup> cultivation, apply non-selective topical herbicide to chemical fallow after vegetation has grown 4 to 6 inches. Check with your state or plant materials contact for site preparation.
<b>Summer</b>	Spray with non-selective herbicide as needed to control weeds.	Spray with non-selective herbicide as needed to control weeds.	Spray with non-selective herbicide as needed to control weeds.
<b>Fall</b>	1. Plant mix of wildflowers and native grasses (grasses	Plant alternating strips of native bunch grasses and wildflowers	Plant native grasses (grasses <25% of total mix) and

	<25% of total mix). 2. Plant “islands” of selected pollinator plants (containerized plants not seed).	species strips(<3 species with matching flowering times)	wildflowers.
<b>YEAR 2</b>			
<b>Spring</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing, cultivating or using selective herbicides if necessary. Evaluate Planting.	Mow native grass planting and treat broadleaf weeds with selective herbicide if necessary. Treat wildflowers strips with mowing or selective herbicide if necessary. Evaluate Planting.	Evaluate and mow as needed. Apply appropriate herbicide if necessary and feasible.
<b>Summer</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing, cultivating or using selective herbicides. Evaluate Planting.	Mow native grass planting and treat broadleaf weeds with selective herbicide if necessary. Treat wildflowers strips with mowing or selective herbicide if necessary. Evaluate Planting.	Evaluate and mow as needed. Apply appropriate herbicide if necessary and feasible.
<b>Fall</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing, cultivating or using selective herbicides. Evaluate Planting.	Mow native grass planting and treat broadleaf weeds with selective herbicide if necessary. Treat wildflowers strips with mowing or selective herbicide if necessary. Evaluate Planting.	Evaluate and mow as needed. Apply appropriate herbicide if necessary and feasible.
<b>YEAR 3</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing, cultivating or using selective herbicides. Evaluate Planting.	Mow native grass planting and treat broadleaf weeds with selective herbicide if necessary. Treat wildflowers strips with mowing or selective herbicide if necessary. Evaluate Planting.	Evaluate and mow as needed. Apply appropriate herbicide if necessary and feasible.
<b>YEAR 4</b>	Evaluate. Mow and apply herbicide if necessary. Evaluate Planting	Mow native grass planting and treat broadleaf weeds with selective herbicide if necessary. Treat wildflowers strips with mowing or selective herbicide if necessary. Evaluate Planting.	Evaluate and mow as needed. Apply appropriate herbicide if necessary and feasible.

### Research Scenario - 2 (Organic Option)

	<b>Treatment 1</b>	<b>Treatment 2</b>	<b>Treatment 3</b>
<b>YEAR 1</b>			
<b>Spring</b>	Cultivate early with 1 <sup>st</sup> flush of vegetation. Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks). Check with your state or plant materials contact for recommendations on site	Cultivate early with 1 <sup>st</sup> flush of vegetation. Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks). Check with your state or plant materials contact for recommendations on site	Cultivate early with 1 <sup>st</sup> flush of vegetation. Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks). Check with your state or plant materials contact for recommendations on site preparation.

	preparation.	preparation.	
<b>Summer</b>	Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks).	Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks).	Cultivate regularly to prevent weeds from setting seed (every 1 to 2 weeks).
<b>Fall</b>	Plant mix of wildflowers and native grasses (<25% of total mix). 2. Plant “islands” of selected pollinator plants (containerized plants not seed).	Plant alternating strips of native bunch grasses and wildflowers species strips(≥3 species with matching flowering times)	Plant native grasses (<25% of total mix) and wildflowers.

<b>YEAR 2</b>			
<b>Spring</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing or cultivating. Evaluate Planting.	Mow native grass planting and mechanically remove broadleaf weeds in native grasses. Evaluate Planting.	Evaluate and mow as needed.
<b>Summer</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing or cultivating. Evaluate Planting.	Mow native grass planting and mechanically remove broadleaf weeds in native grasses. Evaluate Planting.	Evaluate and mow as needed.
<b>Fall</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing or cultivating. Evaluate Planting.	Mow native grass planting and mechanically remove broadleaf weeds in native grasses. Evaluate Planting.	Evaluate and mow as needed.
<b>YEAR 3</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing or cultivating. Evaluate Planting.	Mow native grass planting and mechanically remove broadleaf weeds in native grasses. Evaluate Planting..	Evaluate and mow as needed.
<b>YEAR 4</b>	Mow planting avoiding “islands”. Remove weeds from “islands” by hand hoeing or cultivating. Evaluate Planting.	Mow native grass planting and mechanically remove broadleaf weeds in native grasses. Evaluate Planting...	Evaluate and mow as needed..

For additional information and guidance on this demonstration, contact:

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## **ONEPLAN IPM PLANNER AND PESTICIDE RECORDING-KEEPING DEMONSTRATION PROJECT**

The goal of this project is to demonstrate the use of a valuable online tool for landowners to use for pesticide record keeping (PAR) and for Integrated Pest Management (IPM) planning. The project provides an opportunity for landowners to work with the University of Idaho to refine the tool and address any concerns. The PAR and the IPM planner can be utilized by producers to provide an overall pest management plan that will address producer needs as well as reducing the impact to water quality and other resources. The PAR allows producers to maintain critical and accurate site specific pesticide applications on their own computers. The PAR also provides pesticide safety and worker protection information, along with important field data that allows landowners to judiciously select proper pesticides, when needed. The PAR is a completed stand-alone program that is ready to be introduced to producers statewide.

The IPM planner is in development stage but will be sufficiently completed to demonstrate in Year 2 of FY2012 contracts. The IPM planner will provide an array of crop specific pest management options, by crop stage. The benefit of using the IPM planner is to provide the best combination of pest management options to the producer and explain how to accomplish the recommendations, in order to protect water quality and other natural resources.

In addition to presentations at winter grower meetings and commodity workshops, there may also be one-on-one producer and farm advisor meetings to help introduce the PAR and IPM Planner tools. These tools can be utilized by additional states, once the programming framework is in place.

### **Participant Expectations:**

The project is restricted to growers from the Treasure Valley, Magic Valley, and eastern Idaho. Landowners involved in this project will grow, or have knowledge of, at least one of the following crops: potato, onion, small grains, or sugarbeets. Participants are asked to keep pesticide application records on their own computers through the use of the online PAR tool. University of Idaho Extension will survey users to determine usage, acceptance, feasibility, etc. Each participant will be asked to complete some type of questionnaire. Additionally, each grower will need to supply the time and computer hardware to utilize the IPM planning tool for appropriate crops, and to meet one-on-one with Extension staff to discuss use of the planning tool. Each participant will be asked to complete a separate questionnaire for the IPM planner. Participants need to commit to a minimum of two years for data collection. The demonstration project should not be scheduled until YEAR 2 of FY2012 contracts.

The user data collected from the project will be evaluated in order to determine resource impacts from the use this innovative pest management delivery system. The user data will also be extremely helpful in fine-tuning and modifying aspects of the tool to provide the best possible product to maximize grower adoption.

For additional information on this project, contact

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