FPP02 - On-Farm Pilot Project

Enhancement Description
On-Farm Pilots showcase conservation activities that have proven environmental benefits, but have not been widely adopted in the local farm community. Participants select and agree to install, monitor and promote conservation activities (practices, components or management techniques) that have been identified by the NRCS State Conservationist as addressing specific resource needs.

Land Use Applicability
Each approved pilot project will have a land use designated, e.g. Cropland, Pastureland, Rangeland and/or Forest land.

Benefits
Conservation activities can show promise in research but until they are proven in actual field use farmers may be reluctant to adopt them. Pilot projects will provide a mechanism to prove that a new conservation activity is viable in the project area. Publicizing the implementation of the conservation activity can help other farmers learn about new conservation techniques by observing their peers.

Conditions Where Enhancement Applies
This enhancement applies to all crop, pasture, range or forest land use acres.

Criteria
- Producers will select from a pre-approved list of pilot projects (if available).
- Pilots include practices, components, or management techniques that have shown environmental benefits but have not been adopted by farmers in the project area.
- The pilots must be implemented and monitored according protocols developed specifically for the project.
- Protocols include:
  - Specifics of the practice, component or management technique being piloted
  - Acreage required to adequately conduct the pilot
  - How many years the pilot is to be conducted
  - What the participant is required to provide (materials, labor, maintenance etc.)
  - Type(s) of publicized events that will be used (field days, signage, winter meetings, etc.) to meet the minimum number of three (3) events. This activity will be schedule once per year that an educational event takes place.

- Data on the costs and performance must be collected for the demonstration project as specified for each individual pilot project. The data collection needs are available in a separate document.

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

Documentation Requirements
- Documentation of the events held to publicize the project.
- Data collected for the project will include as directed by the individual states:
    - Practice cost, field operations conducted, etc.
    - Frequency of collection
    - Data collection forms

Conservation Stewardship Program
On-Farm Pilot Project
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 Pilots showcase conservation activities that have proven environmental benefits, but have not been widely adopted in the local farm community. Participants select and agree to install, monitor and promote conservation activities (practices, components or management techniques) that have been identified by the NRCS State Conservationist as addressing specific resource needs. Using field days, signage and/or other innovative publicity methods, conservation activities that have shown promise in research plots can be promoted on a larger scale, thus removing farmers' reluctance to adopt them. Participants in On-Farm Pilots learn about new conservation activities first hand, becoming advocates for how these new conservation techniques can be applied. On-Farm Pilots are not intended to pay for the cost of setting up or administering a pilot. CSP applicants that choose this activity will be awarded conservation performance points that increase their ranking score and payment level for participation in the program.

Pilot Project Requirements

Each year NRCS will identify broad national technology focus areas for which new and innovative conservation activities are needed. States will select specific pilot projects to emphasize and will develop a list of acceptable projects, guidelines for implementation and publicity requirements. This should be done in consultation with the State Technical Committee. Conservation partners are encouraged to help promote and organize On-Farm Pilots, but the activity is not intended to provide any financial assistance for doing so. Individual or groups of farmers are also encouraged to submit project proposal following the criteria listed below. Ideas for On-Farm Pilots should be submitted to the State Conservationist along with supporting documentation as to how the idea relates to a focus area and selected conservation activities (practices, components and/or management techniques).

Criteria for On-Farm Pilot Conservation Activities (Practices, Components and/or Management Techniques)

- Practices, components or management techniques:
  - Should have been demonstrated to provide environmental benefits either through research or practical field experience
  - Should not have been widely adopted in a given geographic area
  - Could be an activity that has been proven in another state or geographic area within the state and shows promise in addressing the resource needs in the targeted area
  - Address one of the State identified focus areas:
    - Air
    - Animal
    - Energy
    - Plant
    - Soil Erosion
    - Soil Quality
    - Water Quality
    - Water Quantity
- States will develop a pilot project protocol that includes:
  - Specifics of the practice, component or management technique being piloted
  - Acreage required to adequately conduct the pilot
  - How many years the pilot is to be conducted
  - What the participant is required to provide (materials, labor, maintenance etc.)
  - Type(s) of publicized events that will be used (field days, signage, winter meetings, etc.) to meet the minimum number of three (3) events. This activity will be schedule once per year that an educational event takes place.
  - This information can be presented to interested participants as a fact sheet that outlines their involvement.
- States will develop data collection criteria that includes:
  - Type of data collected (practice cost, field operations, etc.)
  - Frequency of collection
  - Data collection forms

On-Farm Pilot Project – FPP02 – *Manure Slurry Seeding of Cover Crops*

Reference:

- ***Conservation Practice Standard 340 – Cover Crop***

General Description

The development of cropping systems that reduce tillage intensity, increase the use of cover crops and make efficient use of manure can protect the environment and improve soil quality in many ways. Low disturbance tillage and soil conservation practices that stabilize soil will keep manure in place and protect water quality. Cover crops prevent erosion and filter contaminants in runoff, improve water-stable aggregation of soil, increase water infiltration, improve soil structure and improve soil tilth.

Manure slurry seeding combines low-disturbance aeration tillage, liquid manure application and the seeding of cover crops in one efficient operation. In one pass, cover crop seed that has been mixed with liquid manure in the spreader tank is delivered through drop-tubes to the fractured and loosened soil behind the aeration tines. A cover crop soon emerges, capturing nutrients and forming a vegetative barrier to overland flow.

The farmer is responsible for planning and completing this cover crop seeding and must conduct at least three events to publicize the technique to other farmers in the area. These events can be field days, signage, presentations at meetings or other similar events. This activity will be scheduled once per year in each year in which an educational event takes place.

Field Size

This project will be completed on a minimum of 20 acres and a maximum of 50 acres per contract.

Cover Crops to be planted

Crop	Seeding Rate
Cereal Rye	2 bu/acre
Winter wheat	2 bu/acre
Oil Seed Radish	15 lbs/acre
Oats and forage turnips	Oats – 2 bu/acre and Turnips – 2 lbs/acre
Oriental Mustard	10 lbs/acre

Seeding Method

Slurry seeding is done using a slurry tanker equipped with a rear-mounted rolling-tine aerator (AerWay or similar equipment) and a slurry distribution system. Place the cover crop seed in the spreader tank where bypass flow will provide tank agitation and seed mixing. Drop tubes place the seed-laden slurry in the fractured and loosened soil behind each set of rolling tines. No additional tillage or soil firming is needed. All seeding equipment will be provided by the participant.

Cover Crops are to be seeded in the fall after harvest of the primary crop according to the planting dates in the MN Cover Crop practice standard. The cover crop will be terminated by frost, chemicals, using a roller-crimper or by tillage the following spring before planting the subsequent crop.

Documentation

Use the following tables for documentation and attach a plan map showing the location of the field(s) where this demonstration is being implemented.

Field	Acres	Cover Crop seeded	Date

Publicized Events

Event	Year Planned

References

Midwest Cover Crops web site:
http://www.mccc.msu.edu/SlurrySeeding.html#Publications

Michigan State University:
http://www.animalagteam.msu.edu/LandApplication/SlurrySeeding/tabid/217/Default.aspx

Michigan State University Extension and Extension:
http://www.extension.org/pages/Manure_Nutrients,_Cover_Crops,_and_Slurry_Seeding#Manure_Slurry_Seeding_of_Forage_and_Cover_Crops

Appendix A – Equipment Set-up

All of the equipment needed for this is commercially available. There are no plans or drawings for attaching the AerWay to the slurry wagon, but the different videos show the arrangement pretty well. The following comments/suggestions are from Dr. Tim Harrigan, Michigan State University, who developed this process:

> "On my unit the tank is mounted on 3 pt hitch arms. However, the tank can be mounted on a cart and towed behind the tank. That requires only a drawbar to be mounted on the tank. That also makes the Aer Way a little more versatile in that it can be used without the tank and manure applicator.
>
> Either mounting/towing option can be handled by the tank manufacturer. I worked with Husky because they had a good working relationship with AerWay and I did not have to do much coordinating of activities.
>
> The distribution manifold also is standard equipment. The manifold is a Vogelsang chopper/distributor that is commercially available. The distribution unit is an AerWay SSD applicator. There are hose configurations that direct the slurry in front of the aeration tines, but I think it is important to direct the slurry behind the tines to concentrate the slurry and seed in the fractured soil. The drop nozzles are also standard equipment."