

FPP02 - On-Farm Pilot Project



On-Farm Pilot Projects

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.

Criteria for Demonstrations

- Producers will select from a pre-approved list of pilot project.
- 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.



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2011 Ranking Period 1

- 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.

Documentation Requirements

- Documentation of the events held to publicize the demonstration.
- Data collected for the demonstration will include as directed by the individual states:
 - Practice cost, field operations conducted, 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.

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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

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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

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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 AerWay 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.”

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On-Farm Pilot Project – FPP02 – *Targeted Grazing*

Reference:

- ***Conservation Practice Standard 528 – Prescribed Grazing***

General Description

Targeted grazing is the application of a specific kind of livestock at a determined season, duration, and intensity to accomplish defined vegetation or landscape goals. Typically the focus of targeted grazing is to control invasive species or reduce their numbers on a site to acceptable levels. Research and on-the-ground experiences have clearly demonstrated that sheep and goats are a promising tool in the battle against many broadleaf invasive species. In warm season native grass and forb stands, cattle may be used to control the spread of invasive introduced cool season grasses and legumes.

The producer is responsible for identifying the target species, developing before and after plant surveys, developing a grazing plan, filing a yearend report, and holding annual field days to publicize the findings.

Field Size

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

Target Species

The producer will identify the invasive species to be controlled. This can be one or many species depending on the site(s). A plant survey that characterizes the concentration of the target species expressed in plants per unit of area before grazing will be conducted. The plant survey methodology will be explained in detail and the concentration of these species and their location will be mapped on aerial photos.

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Grazing Plan

A grazing plan for managing the target species will be developed. The grazing plan will include the number, kind, class and weight of the livestock. An aerial photo showing the location of fences, water, environmentally sensitive features (wetlands, hydric soils, springs, seeps riparian areas, prairie remnants, sinkholes, steep slopes, woodlands, and droughty soils), concentrations of invasives and pasture subdivisions (paddocks) will be identified. If applicable the plan will address management of environmentally sensitive features. The plan will outline a schedule of operations detailing the proposed number of days of grazing in each paddock and the number and weight of animals grazing. A photo point will be established within each paddock and photos will be taken before and after grazing.

Reporting and Documentation

An annual report will be filed with the local NRCS office following this format:

Paddock ID	Date In	Date Out	Kind/Class Livestock	Weight	Number	Comments

The percent of the targeted invasive species removed by livestock should be noted upon moving to another paddock. Photo points will be taken and identified by paddock and submitted with the report. Photo points consist of before and after photos of the target species. Condition of the environmentally sensitive features will be recorded and submitted.

Final Report

Upon completion of the project a final report will be submitted comparing the initial concentration of the target invasive species with the final concentration. The final report will contain before and after photographs of the photo points taken during the same time of the year. The final report will contain recommendations for controlling the target invasive species.

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Publicity

A field day will be held for the general public each year during the Pilot Project. Publicity for the meetings will consist of mailings, news media outlets, and it is suggested that the producer contact the Minnesota Resource Conservation and Development Council and/or the Minnesota Grazing Lands Conservation Association for assistance. The field days will discuss in detail the movement of the livestock throughout the grazing system, the kind, class, weight and number of animals involved and the effect the animals are having on the target species. Optionally the producer may discuss the economic affect to their operation of targeted grazing.

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