2012 Annual Report
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Region: North Central
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Summary
The cover crop demonstration site was located directly adjacent to Jackson County Judicial Ditch 3 in Section 33 of West Heron Lake Township in Jackson County. The cover crop project was implemented to address water quality problems in an effort to increase nutrient uptake, reduce erosion, and minimize nutrient leaching. Cover crops have the potential to directly benefit the community and watershed by slowing water and reducing sediment and nutrient runoff.

Objectives/Performance Targets
Goal 1: To establish 37 acres of cereal rye, purple top turnip, and tillage radish cover crop to reduce erosion, increase water infiltration to prevent runoff, bring leached nitrogen back to the root zone for the next year's crop, increase organic matter, and provide wildlife habitat cover.

Objective 1a: Within the grant period, a cover crop will be incorporated into the crop rotation, seeded in the fall of 2012, and destroyed in the spring of 2013 before the 2013 crop is planted.
Goal 2: To provide farmers and service providers with information about innovative cover crop practices to benefit water quality and nutrient management

Objective 2a: A field day would be hosted in the fall of 2012, following harvest, and would be open to the public.

Objective 2b: The Cover Crop Demonstration Project will be featured in one HLWD newsletter that will be distributed to 3,400 residents, conservationists, and legislators.

Objective 2c: A press release will be distributed to local media outlets highlighting project progress and the
upcoming field day before the Cover Crop Demonstration Field Day.

Accomplishments/Milestones
Tillage transects, infiltration measurements, plant tissue tests, and soil samples were taken at the cover crop field in the spring of 2012 and the same measurements will be taken in the spring of 2013 to gauge cover crop success.

Tillage transects were completed by Andy Nesseth on May 23, 2012. Residue levels were 64 percent. To measure the percent residue a fifty-foot transect line with markers every six inches was placed at a forty-five degree angle across the field following planting. Each marker that fell on top of the previous year’s crop was counted. This was performed at six random locations averaged to get the percent residue cover.

A 4.4 acre geo-referenced grid sampling was conducted on May 23, 2012. All cores were taken at a depth of 0-6” and 6-24”. The core samples were analyzed for organic matter, phosphorus, potassium, zinc, pH, buffer index, and nitrate. Cores taken at 6-24” were only analyzed for nitrate. All soil tests were mapped and surfaced using inverse distance weighting algorithm.

Infiltration measurements were taken on May 23, 2012. This was done to establish water absorption rates before and after the cover crop was seeded. Infiltration rates were not significantly different. To conduct infiltration measurements, a tube was driven halfway into the ground. The other half was filled with water. The amount of water that disappeared over a set period of time was measured and recorded by Extended Ag Services, Inc. This was repeated several times in the cover crop and control field to analyze each soil type before and after the cover crop was seeded.

Plant tissue samples were taken by Extended Ag Services, Inc. on June 6, 2012 and sent to Minnesota Valley Testing Laboratories for analysis. Results indicated that the nutrients for Nitrogen and Phosphorus were in the sufficiency range. Potassium was slightly below the sufficiency range according to UMN standards.

Bids for the aerial seeding were obtained. Teryjon Aviation, Inc. of St. Peter, Minnesota was contracted to seed the cover crops. Total cost for aerial seeding was $1,008.00. Seed was purchased from LaCrosse Forage & Turf Seed, LLC in Sioux Falls, South Dakota for $1,411.92. The cover crop was seeded on August 26, 2012. Cereal rye was seeded at 76 pounds per acre. Purple top turnip and tillage radish were each seeded at two pounds per acre.

A field day was planned for November 7, 2012, following harvest. Advertising was done through the HLWD newsletter, press releases to local media, and the HLWD website. The HLWD distributed the attached newsletter about the project and field day.

At the field day, Jill Sackett, UMN Extension Rural Advantage, spoke about the importance of cover crops. Jerry Ackermann and Andy Nesseth, Extended Ag Services, Inc. provided a project overview. Attendees had the opportunity to walk through the fields and see the vegetation that grew. Refreshments were provided. There were 37 people in attendance.

Following the field day, the speakers’ handouts and photos from the event were uploaded to the HLWD website. The web address is www.hlwdonline.org. Mike Jordan, Lakefield Standard, was present at the field day. He took photos and wrote the attached article that was published on November 14, 2012.
Impacts and Contributions/Outcomes
Despite the drought conditions, there was some plant emergence. The vegetation was still growing in mid-November. Although cover crop establishment was not as good as hoped, there was success in the education, outreach, and overall interest in cover crops. Having 37 participants at the field day was deemed successful. Following the field day, there has been a considerable interest in cover crops from other residents in and around the HLWD. Four watershed residents requested assistance in developing a cover crop project in 2013. The HLWD drafted and submitted two applications to the NCR-SARE Farmer Rancher program on November 5, 2012.

The Ackermans and the HLWD are pleased with the overall awareness generated by the cover crop project. An application for additional grant dollars was submitted for the establishment of a future cover crop project on the Ackermann’s farm. We know that there can be a yield and water quality advantage from establishing cover crops in southwest Minnesota. Research projects like the cover crop grant are essential to developing a positive relationship between productive agriculture and water quality.

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Cover Crop Field Day Article from Lakefield Standard:

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