New Teachings and Research in Cover Crops  
(2013 Success Story)  
Nick Schneider, Winnebago County

**Situation:**
Cover crops have slowly been gaining popularity in Wisconsin and across the Midwest. Numerous reasons are cited for growing cover crops. These reasons include: scavenging nutrients, fixing nitrogen, fighting erosion, suppressing weeds, providing forage, breaking compaction, attracting beneficial insects, and quick growth. The time is right for expansion of cover crops because forage inventories are low, crop prices are high, heavy rainfall events are revealing conservation shortcomings in Wisconsin corn-soybean rotations, and sales agronomist see cover crop seed as a new revenue stream. The Midwest Cover Crops Council has created an excellent webpage and online cover crop selector tool. This resource has become a clearinghouse of data about cover crops across the Midwest.

**Response:**
Four years ago the UWEX Soil Quality Workgroup decided to transition to emphasizing research, teaching, and demonstrations in cover crops. Nick Schneider has performed local research, wrote articles, and taught about cover crop placement in Wisconsin throughout that time. The success of a cover crop demonstration garden at the 2012 Wisconsin Farm Technology Days served as a springboard for cover crop teaching. Extension colleagues that organized the educational displays at the 2013 FTD had continued success in the cover crop demonstration. Schneider received numerous requests from sources around the state to share his knowledge about cover crops.

**Results:**
Schneider has prepared numerous versions of cover crop presentations, which he has presented throughout Wisconsin and shared with Extension colleagues for them to teach at local events. Examples of teachings in 2013 included: “Double Crop Forages” presented at the Wisconsin Crop Management Conference in Madison to an audience of 125 people. “Cover Crops in Grain Systems” presented at Green Bay and Brillion to a total audience of 60 people.” “Cover Crops to Improve Soil Health” presented to 36 people in Green Bay. Co-taught with Ken Schroeder at the Organic Conference in La Crosse about cover crop options to an audience of 125 people. Teaching 48 vegetable growers about cover crops in Lomira. Created a webinar presentation titled “Cover Crops Gone Bad” for broadcast to locations around the state during the Wisconsin Soil Health Initiative classes to total audiences of 40 people. All total, more than 425 people learned about cover crops from teaching performed by Nick Schneider.

Schneider initiated research about a potential new cover crop in Wisconsin called Sunn Hemp. He first learned about this cover crop from conversation with a seed industry representative. Over the winter of 2012-2013, he performed an extensive literature review about Sunn Hemp. This plant has been researched in tropical parts of the world and the southern US. There was no documentation of research about this plant in northern climates but there was indication within the literature review that the plant could be promising in specific situations in Wisconsin. Sunn Hemp is a warm season annual legume with the capacity for tall growth and large nitrogen
fixation. Through collaboration with UW Extension Soil Scientist Francisco Arriaga, a replicated Sunn Hemp cover crop study was established.

**Evidence:**
Measuring acreage and acceptance of cover crops specifically creditable to UW-Extension research and teaching is nebulous. Clearly more cover crop planting is visible in rural Wisconsin over the past four years. Cover crops are changing the agronomic landscape in Wisconsin. In particular, the cover crops that are being planted most frequently are radish, winter rye, and oats; or mixtures with one of more of these plant species. Aerial planting technology also is helping improve cover crop acceptance. Statewide, NCRS sign up for cover crop planting has been a popular EQIP program.

The Sunn Hemp study in Oshkosh, with three replications, two varieties, and six planting dates has revealed there is a glimmer of potential of this warm season legume. Research will be replicated in 2014 in order to create a multi-year dataset for statistical analysis. If Sunn Hemp shows promise, Wisconsin researchers should consider expanding research to more warm season plants in response to climate change resulting in average higher temperatures and a longer growing season.