**Previous SARE Farmer/ Rancher Grants:**

***FNC06-626: Evaluation of annual legumes as alternatives to red clover for use as cover crops.*** This project evaluated three annuals ("Hubam" sweetclover, berseem clover and chickling vetch) planted after wheat compared to red clover interseeded in wheat for impact on corn yield as well as suitability for harvest as forage. Rational: although red clover is well adapted to this system on our soil type, it is difficult to harvest as dry hay if supplemental forage is needed. Alternative legumes were productive when August precipitation was adequate for establishment but produced poorly when establishment conditions were dry, resulting in unacceptable risk compared to red clover. Corn yield was also consistently greater following red clover.

***FNC08-706: Optimization of corn production following legume green manures.*** This project built on FNC06-626, evaluating corn yield response to supplemental fertilizer nitrogen after all legumes and in the case of red clover, a calibration trial to determine the optimum N rate. Rational: corn yield was enhanced by biomass removal creating uncertainty about nitrogen effects and the need for a better estimate of the appropriate rate of applied N. Corn following annual legumes was responsive to added N, increasing 47%. The economically optimum N rate following red clover was 101 lb./ acre, an apparent 40 pound "credit" to Extension recommendations. This work continues annually for further N rate refinement.

***FNC14-979: Evaluation of oilseed radish biomass management as a control strategy for pests in no-till corn.*** This project evaluated the impact of radish herbage management (chopped vs. unmanaged) as well as cover crop vs. a no cover control on slug and plant parasitic nematode populations, soil protection and corn yield. The hypothesis was that chopping the biomass in late fall would destroy slug habitat diminishing populations and the macerated tissue would release greater concentrations of biocides and trap them at the soil surface, increasing pest mortality. Results were inconclusive, partially attributed to conditions which did not favor pest development. Biomass management had no impact on surface residue measured after planting.

**Overall Outreach**

In addition to unique project outreach activities, data and recommendations have been built into University of Wisconsin-Extension recommendations and submitted to the Wisconsin Cover Crop Research and Outreach Project (CCrop), a USDA ARS funded consortium of Wisconsin partners working on cover crop adoption for inclusion in its master cover crop productivity dataset.

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