



# Marshfield EIDMRU



Main laboratory building in Marshfield.



Research farm is located north of laboratory near Stratford.

The Environmentally Integrated Dairy Management Research Unit is charged with developing the science to support economically and ecologically sound nutrient management decisions.

Dairy cows produce nearly equal amounts of milk and manure. While much of the research at the Madison location is geared toward finding ways to improve nutrient use efficiency (so cows use more nutrients to make milk, not manure), research at the EIDMRU is finding ways to make more efficient use of the nutrients in manure – to reduce fertilizer costs for the farmer and to reduce the amount of nutrients, like nitrogen and phosphorus, that escape to the environment where they may have a negative impact.

## UW Connection

The EIDMRU operates jointly with the Marshfield Agricultural Research Station of the University of Wisconsin College of Agricultural and Life Sciences. The UW-CALS Agricultural Research Station has been at Marshfield (south site) since 1912. In the late 1990s, with the City of Marshfield encroaching upon the research station, a land swap enabled the UW to acquire new land for its dairy facilities about 10 miles north of Marshfield near Stratford. New heifer facilities were completed at this site in 2003.

The USDA Agricultural Research Service presence at Marshfield began in 2006. Because of the need to develop scientific research that can find environmentally sound answers to nutrient management questions on livestock operations, Congress appropriated funds in 2003 through 2006 to build research laboratories and offices at the south location (completed in 2008) and dairy and field research facilities for lactating cows at the north location (completed in 2011). The U.S. Dairy Forage Research Center manages the USDA research at these two locations.



Rain simulator for runoff research.



Paired 'watersheds' that compare field runoff losses with different cropping and manure management systems.



Unique heifer facility allows for splitting up to 120 heifers in groups of 8 for research trials.

## Research Objectives

Researchers from USDA and UW-CALS work collaboratively on many research projects. The Wisconsin Water Science Center of the U.S. Geological Survey also collaborates on water quality issues. Current research objectives at the EIDMRU include:

- New methods/strategies for applying manure that minimize environmental risk (nutrients or pathogens in runoff, gaseous emissions) and improve the utilization of nutrients for crop growth.
- Soil and crop management systems to maintain/improve soil quality for long-term productivity and environmental benefit.
- Evaluation of the potential for pathogen movement from dairy production systems to the environment, and methods to mitigate this potential problem.
- Alternative forage crops or cropping strategies that give farmers more options for applying manure, managing their operations during drought, and for meeting the specific nutrient requirements of dairy heifers or cows.
- Improved preservation and utilization of nutrients from harvested or grazed forages.
- Manipulation of cattle diets to reduce input costs and environmental burdens (especially phosphorus).
- Improved management strategies for rearing replacement dairy heifers.
- Assessing how bedding affects manure management and cow comfort.



Evaluating the method and timing of liquid dairy manure on nitrogen availability to the crop and emission of gases.



Research to assess the impacts of dairy slurry application onto growing alfalfa on subsequent silage fermentation and quality.



Surface band application of liquid manure on alfalfa to minimize contact with plants and volatilization of ammonia.

## Contact Information

Address and Phone:

2615 Yellowstone Dr.  
Marshfield, WI 54449  
Phone: (715) 387-4609

Research Leader:

Wayne Coblenz  
Phone: (715) 384-5784  
wayne.coblenz@ars.usda.gov

Map to the Marshfield and Stratford locations of the USDFRC

*(GPS and internet-based maps are often inaccurate.)*

