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**Project Summary**

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***Energy Intensity and Environmental Impact of  
integrated Dairy and Bio-Energy Systems in  
Wisconsin***

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## *Project Summary*

The environmental impact of production technologies and management decisions in food systems has become more important as the challenges of climate change increase and availability of natural resources decrease. Scientific studies have resulted in varying estimates of GHG emissions from milk production which are influenced by a number of factors including; milk yield per cow, differing dairy diets, and different manure management practices. Several studies have evaluated adjustments in dairy diet compositions to reduce enteric methane emissions from cows. Others have investigated reduction of methane emission from slurry manure through manure management practices.

From the dairy farm perspective, methods of reducing GHG emissions can be technically and economically challenging. There are a number of well known 'green' or 'environmentally friendly' management practices that can reduce the undesirable environmental consequences of milk production including: optimizing dairy diets, wisely managing waste, adopting optimal cropping patterns and conservative field operations, improving energy efficiency of food production and generating energy on farms.

The Green Cheese study is a group effort focused on identifying synergies that reduce Green-House Gas emissions, the use of fossil fuels, and other environmental impacts of integrated dairy and bio-fuels production systems in Wisconsin. The Green Cheese model is a partial life cycle assessment of integrated dairy and bio-fuels production systems based on two objectives: quantifying and evaluating the energy, GHG, land use, and nutrient balances of dairy systems combined with bio-fuel production, energy generation and conservation technologies; and

investigating synergies and opportunities to reduce net energy intensity and environmental impact of dairy and bio-fuel production in Wisconsin.