



Cornell University

Department of Crop & Soil Sciences

## Waste Management Institute

Rice Hall  
Cornell University  
Ithaca, NY 14853

Telephone: 607-255-1187  
Facsimile: 607-255-0238  
E-mail: [cwmi@cornell.edu](mailto:cwmi@cornell.edu)  
<http://cwmi.css.cornell.edu>

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### Project Summary- Phase 2

### Use Of Dried Manure Solids as Dairy Bedding: Frequency of Bedding Changes

#### *Cornell faculty:*

Dr Frank Welcome: Quality Milk Production Services, Cornell College of Veterinary Medicine

Dr. Ruth Zadoks: Quality Milk Production Services, Cornell College of Veterinary Medicine

Ed Staehr: NY FarmNet and NY FarmLink Programs, Department of Applied Resource  
Economics and Management

Caroline Rasmussen: Department of Crop & Soil Sciences

#### *Others:*

Dr. John Ferry, DVM, Adams, NY

Six Participating Farms

*Funding:* NY Farm Viability Institute (NYFVI); NYS Energy Research and Development  
Authority (NYSERDA); Cornell University College of Agriculture and Life Sciences

*Timing:* This project will run from June 2007-February 2009

NYS dairy farms are under increasing pressure to improve their manure management while increasing their efficiency. Livestock bedding is a costly component of dairy farming with significant production, environmental and economic implications. NYS dairy producers spend \$65-100/cow/year purchasing bedding material. Farmers bedding with dried manure solids (DMS) realize substantial financial savings through avoiding the purchase and transportation of bedding materials. They also report enhanced cow comfort. Documentation of practices on the various farms will help identify practices that are cost-effective. Although there is some resistance from farm advisors and veterinarians, a number of successful dairy farmers in NYS are using this practice.

Some farms are using manure solids directly from a separator, others are drying them or using partially composted manure in the barns. Minimizing handling saves time and money but questions remain as to effectiveness in the Northeast climate. In a recent CWMI project funded partly through NYFVI and partly through NYSERDA, CWMI is working with six farms that are using DMS as bedding. Bedding samples are being collected and analyzed seasonally through the project period for verification of pathogen levels and documentation of bedding quality. Other data including economic, herd health and nutrient balances are being collected and analyzed. The goal is to evaluate the impact of DMS bedding on those factors.



A question that farms bedding with DMS have is how frequently to rebed. "Common wisdom" suggests frequent spreading of new DMS, while the literature indicates that bacterial growth in the bedding peaks quickly and that rebedding frequently may actually increase bacterial numbers by providing a constant source of new nutrients for the bacteria. There are also labor and energy costs related to the frequency of spreading DMS bedding.

By working intensively with two of the six farms, in Phase 2 CWMI will evaluate two different frequencies of rebedding. In summer and winter for two weeks at a time, one pen on each farm will be rebedded daily and an adjacent pen will be rebedded every seven days. Samples collected daily of unused bedding and of the bedding in these pens will be analyzed for bacterial concentrations, enabling us to assess how quickly bacteria re-colonize the bedding.

Project results will be shared through outreach to farmers, veterinarians and farm advisors to provide information that can help dairy farms make decisions. Information gathered will be shared through discussions with interested farmers and will be compiled into a fact sheet and articles and posted on the WWW.