

University of Wisconsin - Madison
College of Agricultural & Life Sciences
CALS Conference Services/Short Courses
620 Babcock Drive
Madison, WI 53706

Nonprofit Organization
U.S. POSTAGE
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Madison, Wisconsin
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**IMPORTANT REGISTRATION
MATERIALS ENCLOSED!**

University of Wisconsin-Madison provides equal opportunities for admission and employment.

2006 Professional Development Series

University of Wisconsin-Madison Milking Research and Instruction Lab Team Quality Milk

Professional Development Courses For:

- Veterinarians
- Milking Equipment Installers
- Milk Quality Advisors
- Progressive Dairy Producers
- Farm Advisors

Beginning Courses

April 18, 2006

Introduction to Milking Machines

April 19, 2006

Introduction to Milking Parlor Design

April 20, 2006

Introduction to Milking Parlor Management

Intermediate Courses

May 8-9, 2006

Testing Milking Machine Vacuum Production and Control

May 10, 2006

Milking Machine Cleaning and Sanitation

Advanced Course

May 11-12, 2006

Advanced Milking Unit Evaluation

Sponsored by

University of Wisconsin-Madison
College of Agricultural & Life Sciences
Milking Research and Instructional Lab
Department of Biosystems Engineering
Department of Dairy Science

About the Courses

These courses are designed for professionals advising dairy producers on milking machines, milking management and milk quality. Some of the courses would also be of value to managers of the milking operations on progressive dairy farms.

- ❖ The introductory courses require no prior experience and no special test methods or equipment not commonly available on a dairy farm.
- ❖ The intermediate level courses assume a basic level of knowledge and some field experience and emphasize test methods and data collection using vacuum recorders and other specialized test equipment.
- ❖ The advanced level course builds on the knowledge base acquired in the introductory and intermediate level courses and emphasize interpretation of data and creative problem solving and will include a review of current topics and recent research.

The courses are designed so that you can come for 1 or 2 days, or attend the entire series. Please read the course descriptions carefully to determine your level of experience and to which courses meet your needs.

Students will receive materials prior to the course via the internet so that they can come to the courses with basic knowledge of the subject matter.

Introductory Courses

Introduction to Milking Machines

April 18, 2006 \$150

In this course you will learn about the basics of milking physiology and get an overview of the components of a modern milking machine and how all these components function together to get the cows milked. This introductory course does not require any previous experience with milking machines.

Course Topics:

- ◆ Introduction to milking
 - ◆ Basic lactation anatomy and physiology, letdown response and person-machine-cow interactions
- ◆ Introduction to milking machine components and function
 - ◆ Vacuum production and control
 - ◆ The milking unit and milk withdrawal
 - ◆ Air lines
 - ◆ Milk transport and storage
 - ◆ Cleaning and sanitation
 - ◆ Ancillary systems
- ◆ Integration and interaction between components in a complete milking system

Registration Form

Name _____

Company _____

Address _____ Circle: Home Business

City _____ State _____ Zip _____

Telephone _____ E-mail _____

Introductory Courses:

- \$150 - Introduction to Milking Machines (**April 18, 2006**)
- \$150 - Introduction to Milking Parlor Design (**April 19, 2006**)
- \$150 - Introduction to Milking Parlor Management (**April 20, 2006**)

Intermediate Courses:

- \$300 - Testing Milking Machine Vacuum Production and Control (**May 8-9, 2006**)
- \$150 - Miling Machine Cleaning and Sanitation (**May 10, 2006**)

Advanced Course:

- \$400 - Advanced Milking Unit Evaluation (**May 11-12, 2006**)

_____ Subtotal

_____ 15% discount for two or more courses

_____ Total Due

Make checks payable to UW-Madison.

Please charge to the following account:

Visa Mastercard Exp. date _____

Credit Card Number _____

Name on Credit Card _____

Send Registration Form and Payment to: **CALS Conference Services**
620 Babcock Drive
Madison, WI 53706
FAX: (608) 262-5088

General Information

Course Fees: Please refer to the registration panel for course fees. The fees include materials, lunch and breaks. Two-day courses include a dinner and evening discussion session at the end of the first day. Two or more courses taken by the same person include a 15% discount. Hotel accommodations are not included in the course fees.

Make checks payable to: UW-Madison

Mail or fax to: CALS Conference Services, 620 Babcock Drive, Madison, WI 53706;

FAX: (608) 262-5088

Location of Courses: J. F. Fredrick Center, UW-Madison, 1950 Willow Drive, Madison, WI 53706 and the UW milking lab (afternoon lab sessions).

Lodging: Lodging is available at the J. F. Fredrick Center, UW-Madison, 1950 Willow Drive, Madison, WI 53706. Room rates are \$77/single or \$87/double. Call to make your own room reservations at (608) 231-1341. Parking can be purchased at the front desk at the Friedrich Center.

Schedule: All courses run from 8 AM to 5 PM.

Confirmation will be mailed and will include course schedule, receipt, and map. Students will receive materials prior to the course via email so that they can come to the courses with basic knowledge of the subject matter.

Cancellation Policy: If you are unable to attend, please notify CALS Conference Services immediately at (608) 263-1672. To receive a full refund, you must cancel two weeks before the first day of the course. After that date, a cancellation fee will be charged. If you fail to cancel, no refund will be granted. Substitutions may be made at any time and at no charge.

For additional registration information: contact CALS Conference Services at (608) 263-1672 or FAX to (608) 262-5088.

For additional program information: contact Doug Reinemann at (608) 262-0223 or email Doug at djreinem@wisc.edu.

Please advise us at time of registration of any disabilities that require special accommodations. Requests will be kept confidential.

Instructors

These courses are organized by Dr. Doug Reinemann, Director of the University of Wisconsin's Milking Research and Instruction lab. Doug has been doing research and extension work on machine milking at the UW since 1990. These courses have been developed over that period to meet the needs of professional milking machine advisors. Guest instructors will include other members of the UW faculty and other leading milk industry professionals.

Introductory Courses Continued ...

Introduction to Milking Parlor Design

April 19, 2006 **\$150**

In this course we will review the components and function of a modern milking parlor and general aspects of milking parlor design. This course will be useful to dairy operators planning a new parlor as well as dairy service professionals and regulators working with farms planning new facilities. No prior knowledge of milking parlor design is required for this introductory course.

Course Topics:

- ◆ Parlor types
- ◆ Local and national regulatory requirements
- ◆ Building materials and surface finish
- ◆ Water supply and plumbing
- ◆ Floor drainage and drains
- ◆ Ergonomics and safety
- ◆ Noise levels
- ◆ Lighting
- ◆ Ventilation
 - ◆ Warm weather
 - ◆ Cold weather
- ◆ Animal handling facilities
 - ◆ Lanes and alleys
 - ◆ Sort gates and catch pens
 - ◆ In-parlor feeding
 - ◆ Cow ID and automation

Introduction to Milking Parlor Management

April 20, 2006 **\$150**

This course will teach you how to 'drive' your new milking parlor. Basic tools for developing milking routines and assessing the implementation of these routines will be covered. You will be provided with tools that you can take back to the farm to quantify various aspects of milking performance. These tools can be used to provide feedback to the operators as part of a process improvement program. This course will be most useful for milking parlor managers and dairy professionals advising farms on milking management. Some prior milking experience is beneficial for students in this course.

Course Topics:

- ◆ Goals of a milking routine
 - ◆ Sanitation, stimulation, prep-lag
 - ◆ Constructing a milking routine
- ◆ Assessing the people
 - ◆ Task timing and parlor throughput
 - ◆ People/cow interactions
 - ◆ Mastitis (and heat) detection
 - ◆ Treating clinical cows
 - ◆ Identify treated cows
- ◆ Assessing milking performance
 - ◆ Key performance indicators or milking
 - ◆ Evaluating teat condition and strip yield
- ◆ Assessing cows
 - ◆ Udder hygiene scoring
 - ◆ Cow behavior
- ◆ Milk quality management (see milk quality-section)
 - ◆ Crowd gate management
 - ◆ Getting information from parlor software
 - ◆ Assessing milk quality
 - ◆ Key performance indicators of cleaning

Intermediate Courses

Testing Milking Machine Vacuum Production and Control

May 8-9, 2006 \$300

In this course participants will learn how to test vacuum level and airflows in milking machines and interpret these test results. Participants will also gain knowledge of the latest installation, performance, and testing standards and design guidelines for milking systems. The course will cover the basic concepts in the classroom and then apply these test methods in the UW milking lab during hands-on lab sessions. This course is designed for participants who have a general knowledge of milking machine function.

Course Topics:

- ◆ Standards and guidelines for vacuum
 - ◆ Fundamentals of vacuum and airflow, vacuum drop in airlines and fittings
 - ◆ Levels of testing
 - ◆ Choosing and calibrating test equipment
 - ◆ Vacuum recorder response and pulsation testing
 - ◆ Making the measurements
 - ◆ Dry tests of airflow and vacuum levels in milking machines
 - ◆ Milking-time performance tests
 - ◆ Wet tests - using a flow simulator
 - ◆ Milking machine test routines and interpretation.
 - ◆ Milking time tests and interpretation
 - ◆ Dry tests of pulsators
 - ◆ Identifying pulsator faults
 - ◆ Diagnostic tests of vacuum and airflow
 - ◆ Prioritizing and making recommendations

Milking Machine Cleaning and Sanitation

May 10, 2006 \$150

In this course participants will learn how to assess the performance of milking machine cleaning and sanitation systems. The course will cover the basic concepts in the classroom and then apply these test methods in the UW milking lab during hands-on lab sessions. This course is designed for participants who have a general knowledge of milking machines.

Course Topics:

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| <ul style="list-style-type: none">◆ Sources of bacterial contamination in raw milk◆ Soiling types<ul style="list-style-type: none">◆ Identifying residues◆ Elements of cleaning<ul style="list-style-type: none">◆ Time, temperature, turbulence, chemical types, action and concentration◆ Taking the measurements | <ul style="list-style-type: none">◆ Routine bulk tank cultures<ul style="list-style-type: none">◆ Strategic milk sampling◆ Observation of CIP procedures<ul style="list-style-type: none">◆ Overall process description◆ Observe flow dynamics◆ Measure chemical concentrations◆ Estimate water volumes |
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topics continued on next page ...

Milking Machine Cleaning and Sanitation

Course Topics (continued)

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| <ul style="list-style-type: none">◆ Water available◆ Water used◆ Measure water temperature◆ Identify other procedures◆ Water quantity and quality◆ Unit flow in milking parlors◆ Milkline slug flow dynamics◆ Cleaning the bulk tank and heat exchangers<ul style="list-style-type: none">◆ Chemicals◆ Temperature◆ Cycle time◆ Flow rates and water volume | <ul style="list-style-type: none">◆ Interpreting the measurements<ul style="list-style-type: none">◆ System design guidelines for cleaning<ul style="list-style-type: none">◆ Vacuum pump capacity and control strategies◆ Air injected slug flow dynamics◆ Water requirements for cleaning◆ Chemical considerations |
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Advanced Course

Advanced Milking Machine Unit Evaluation

May 11-12, 2006 \$400

This advanced level course is focused on assessing the milking unit and the interaction between the cow and machine. You will learn about test methods that can be used to assess various aspects of the milking unit including the claw, long and short milk and sir lines, liners and shells. We will begin with a review of the research on the physiology of milking and the way that the milking machine influences teat skin and teat end condition as well as milk letdown. After a review of advanced test methods in the classroom we will try out our skills during hands-on sessions in the UW milking lab.

Course Topics:

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| <ul style="list-style-type: none">◆ Action of the milking unit◆ Making and recording measurements◆ Advanced test equipment◆ Measuring milking vacuum◆ The milking unit<ul style="list-style-type: none">◆ Shells◆ Claws◆ Air vents◆ Hose size, length and support◆ Weight and balance | <ul style="list-style-type: none">◆ Liner properties<ul style="list-style-type: none">◆ Liner dimensions◆ Physical characteristics◆ Compressive load◆ Interpretation of measurements◆ Assessing the milking unit◆ Average vacuum and vacuum stability◆ Effects of pulsation on milking performance◆ Assessing liners<ul style="list-style-type: none">◆ When should liners be changed? |
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