

# **Marcia I. Endres**

## **Assistant Professor**

**Appointment** 25% Research, 75% Extension

**Research Area** Applied Dairy Nutrition and Management, Animal Welfare

**Appointment History** 2001-present Assistant Professor

### **Graduate Program Affiliations**

Animal Sciences – Member/Advising

### **Professional and Honorary Societies**

Member, American Dairy Science Association

Member, American Society of Animal Science

Member, Society for Engineering for Agricultural, Food and Biological Systems

Member, American Forage and Grassland Council

Member, Midwest Forage Council

Member, American Registry of Professional Animal Scientists

Honor Society of Phi Kappa Phi

Honor Society of Agriculture Gamma Sigma Delta

### **Most Significant Publications**

**Clanton, C.J., M.I. Endres, R.F. Bey, R.J. Farnsworth, K.A. Janni, and D.R. Schmidt. 2004. Dolomitic limestone bedding effects on microbial counts and cow comfort. *Journal of Applied Engineering in Agriculture* (accepted, pending final revision).**

Cow welfare is becoming a topic of great interest. This research helped determine what type of bedding was most comfortable for dairy cows.

**Endres, M.I. 2003. Dairy cow handling... does it affect the bottom line? *In Proc. 64<sup>th</sup> Minnesota Nutrition Conference. September 16-17, 2003. pp. 162-171***

A recent review on this topic was not available in the literature. It has been shown that cow handling can affect not only cow welfare but also cow productivity.

**Endres, M.I. 2003. Cow behavior/cow comfort update. *In Proc. Four-State Professional Dairy Management Seminar. February 17-20, 2003. pp. 39-42.***

Current topic of interest for dairy producers.

### **Refereed Journal Publications and Book Chapters (Last Five Years)**

Authored or co-authored the following 7 papers in peer-reviewed journals and 2 book chapters.

**Endres, M.I., M.A.G. von Keyserlingk, T.J. DeVries, and D.M. Weary. 2004. Effect of feed barrier design on feeding and social behavior of loose housed lactating dairy cows. *J. Dairy Sci.* (in preparation).**

Reneau, J.K., A.J. Seykora, B.J. Heins, **M.I. Endres**, R.F. Bey, and R.J. Farnsworth. 2004. Relationship between cow hygiene scores and somatic cell scores. *J. Dairy Sci.* (submitted).

Nennich, T.D., J.G. Linn, D.G. Johnson, **M.I. Endres**, and H.G. Jung. 2003. Comparison of feeding corn silages from leafy or conventional corn hybrids to lactating dairy cows. *J. Dairy Sci.* 86:2932-2939.

- Clark, P.W., S. Kelm, and **M.I. Endres**. 2002. Effect of feeding a corn hybrid selected for leafiness as silage or grain for lactating cattle. *J. Dairy Sci.* 85:607-612.
- Ballard, C.S., E.D. Thomas, D.S. Tsang, P. Mandebvu, C.J. Sniffen, **M.I. Endres**, and M.P. Carter. 2001. Effect of corn hybrid on dry matter yield, nutrient composition, in vitro digestion, intake by dairy heifers, and milk production by dairy cows. *J. Dairy Sci.* 84:442-452.
- Kuehn, C.S., J.G. Linn, D.G. Johnson, H.G. Jung, and **M.I. Endres**. 1999. Effect of feeding silages from corn hybrids selected for leafiness or grain to lactating dairy cattle. *J. Dairy Sci.* 82:2746-2755.
- Mansfield, H.R., **M.I. Endres**, and M.D. Stern. 1994. Influence of non-fibrous carbohydrate and degradable intake protein on fermentation by ruminal microorganisms in continuous culture. *J. Dairy Sci.* 72:2464-2474.

### **Book Chapters and Guides:**

- Endres, M.I.** 2004. Dairy Cattle Behavior. *In: Five-Minute Veterinary Consult: Ruminant*. Lipincott Williams and Wilkins Publisher (submitted).
- Endres, M.I.** (contributor). 2003. Best practices for the conduct of animal studies to evaluate crops genetically modified for input traits. International Life Sciences Institute. Washington, DC. (<http://www.ilsa.org/file/bestpractices.pdf>).

### **Proceedings and Invited lectures**

- Peterson, P., **M.I. Endres**, D. Holen, C. Sheaffer, V. Cray, D. Swanson, J. Larson, and J. Halgerson. 2003. Emergency forage plantings. *In: Proceedings of the Joint Meeting of Professional Nutrient Applicators of WI, Wisconsin Custom Operators and Wisconsin Forage Council, January 30 and 31, 2003, Wisconsin Dells, WI.* pp. 37.
- Endres, M.I.** 2002. Calcium metabolism, pathology, treatment - review and update. *In: Proc. Minnesota Dairy Health Conference, May 21-23, 2002.* pp. 114-122.
- Endres, M.I.** 2002. Transition cow nutrition update. *In: Proc. Minnesota Dairy Health Conference, May 21-23, 2002.* pp. 123-130.

### **Funding (Last Five Years) – \$19,000**

- MDA.** Yield and feeding value of annual crops planted for emergency forage. 2002-04. \$19,000.

### **Research Publications in Progress**

- Endres, M.I.**, M.A.G. von Keyserlingk, T.J. DeVries, and D.M. Weary. 2004. Effect of feed barrier design on feeding and social behavior of loose housed lactating dairy cows. *J. Dairy Sci.* (in preparation).
- Reneau, J.K., A.J. Seykora, B.J. Heins, **M.I. Endres**, R.F. Bey, and R.J. Farnsworth. 2004. Relationship between cow hygiene scores and somatic cell scores. *J. Dairy Sci.* (submitted).

### **Graduate Student and Post-doctoral Supervision - Current Advisees**

Luis A. Espejo	M.S.	Animal Sciences
JoAnna M. Lukas (co-advise)	M.S.	Animal Sciences

### **Courses Taught (Last Five Years)**

<u>Designator</u>	<u>Name</u>	<u>Cr</u>	<u>% Effort</u>	<u>Term</u>	<u>Year</u>
AnSc 4403	Ruminant Nutrition	4	5	Spring	2002

**Service**

Director, Professional Animal Auditor Certification Organization  
Member, Animal Behavior and Well Being Planning Committee, ADSA/ASAS  
Program Chair, Four State Forage Conference  
Chair, Forages and Pastures Planning Committee, ADSA/ASAS  
Chair, Forages and Pastures Session at ADSA/ASAS  
Chair, Biosecurity Session, Combined Extension Workshop, ADSA/ASAS/PSA  
Member, ADSA/ASAS/PSA Combined Extension Workshop Planning Committee  
Coordinator, Minnesota Dairy Days  
Chair, Publicity Committee, Annual American Forage and Grassland Council Conference  
Co-chair & co-moderator, Symp. on Nutrient Management in Forage-Ruminant Systems  
Past President & Member, Executive Committee, Minnesota Forage and Grassland Council  
Chair, 2001 Minnesota Alfalfa and Forage Expo  
Vice Chair, Forages and Pastures Planning Committee, ADSA/ASAS  
President, Minnesota Forage and Grassland Council

**Extension Activities (Last Five Years)****Program Team Involvement and Goals****The major programs include:****Dairy Modernization Program, Team Director**

Audience: Minnesota dairy stakeholders, producers and consumers

Goal: Plan and implement educational curriculum for improved (modernized) dairy management techniques and operations.

**Dairy Advisory Group, Coordinator**

Audience: Minnesota dairy stakeholders, producers and consumers

Goal: Provide input on the development of educational activities relevant to dairy producers and the dairy industry.

**Minnesota Dairy Days, Program Planning Group Coordinator**

Audience: Producers, dairy farm advisors, industry professionals, students

Goal: Provide current information on important topics, present practical ideas on how producers can make stepwise changes in their operations to achieve success.

**Milker Training Workshop for Hispanic Milkers, Contributor**

Audience: Hispanic milkers, dairy herd managers

Goal: Develop a training workshop in Spanish for Hispanic milkers and teach the basics of milking dairy cows to improve milk quality.

**Dairy Cow Comfort and Behavior Program**

Audience: Herd owners, industry professionals and researchers

Goal: Develop teaching material for a workshop that summarizes research and producer experiences related to cow comfort.

**Four-State (MN, IA, IL, WI) Extension Planning Committee, Member**

Audience: Dairy industry personnel and dairy farmers

Goal: Plan four-state Extension events and interact with colleagues about topics of interest to the dairy industry.

### **Dairy Profitability Enhancement Program (DPEP), Contributor**

Audience: Dairy herd managers, herd personnel and milking technicians

Goals:

- increase the number of MN dairy herds receiving one-on-one advice from local diagnostic teams in an effort to improve farm profitability and quality of life for the dairy farm family
- develop standardized dairy diagnostic and data collection tools
- maintain quality problem solving and reporting effort within the DPEP teams
- provide “train the trainer” opportunities for dairy extension educators

### **Youth Activities**

- **4-H Workshops, Contributor**

Audience: 4-H youth

Goal: Coordinate workshops for 4-H youth that provides them with the basics of Animal Science using fun and interesting topics.

- **North American Intercollegiate Dairy Challenge, Coach**

Audience: Dairy program students (undergraduate seniors)

Goal: Coach the student team competing at this national event – a dairy management contest that incorporates all phases of a specific dairy business.

### **Product Development (selected materials developed)**

- Minnesota Dairy Days CD – proceedings articles, updates on U of MN dairy research, additional topic-related material, and links to dairy related sites.
- Course materials Milker Training Workshop for Hispanic Milkers
- Teaching materials for Dairy Cow Comfort and Behavior Workshop
- Proceedings: Four-State Dairy Management Seminar, Four-State Forage Conference, Four-State Professional Dairy Management Seminar, Four-State Applied Nutrition and Management Conference

### **Program Delivery Events**

Programs are delivered in a variety of formats including annual programs, workshops (classroom and on-farm), lectures, seminars, conferences, on-farm diagnostics, and county and regional meetings. Some examples include:

- Minnesota Dairy Days
- Milker Training Workshops for Hispanic milkers
- Minnesota Dairy Leaders Roundtable Meetings
- Parlor Managers and Milking Technicians Schools
- Four-State Extension programs
- Minnesota Nutrition Conference

### **Extension Scholarship**

Proceedings (9):

**Endres, M.I.** 2003. Cow behavior/cow comfort update. Proc. Four-State Professional Dairy Management Seminar. February 17-20, 2003. pp. 39-42.

**Endres, M.I.** 2003. Dairy cow handling affects the bottom line. Proc. Minnesota Dairy Conf., St. Cloud, MN. December 10-11, 2003. pp. 104-111.

**Endres, M.I.** 2003. Dairy cow handling... does it affect the bottom line? Proc. 64<sup>th</sup> Minnesota Nutrition Conference. September 16-17, 2003. pp. 62-71.

**Endres, M.I.** 2003. Yield and feeding value of annual crops planted for emergency forage. Page 53 in Minnesota Department of Agriculture Greenbook 2003.

- Endres, M.I.**, H. Chester-Jones, and J. Salfer. 2003. An overview of robotic milking. Proc. 2003 Minnesota Dairy Days. pp. 32-34.
- Endres, M.I.** and B. Visser. 2003. Drenching and diets for transition cows. Proc. Four-State Professional Dairy Management Seminar. February 17-20, 2003. pp. 13-17.
- Linn, J.G. and **M.I. Endres**. 2003. Dry matter intake of group fed lactating dairy cows. Proc. 4-State Applied Nutrition and Management Conf., La Crosse, WI. July 9-10. pp. 169-174.
- Salfer, J., V. Oraskovich, **M.I. Endres**, and J. Linn. 2003. Keys to success in your dairy business: Cow considerations. Proc. 2003 Minnesota Dairy Days. pp. 3-9.
- Endres, M.I.** 2002. Calcium metabolism, pathology, treatment - review and update. *In* Proc. Minnesota Dairy Health Conference, May 21-23, 2002. pp. 114-122.
- Endres, M.I.** 2002. Transition cow nutrition update. *In* Proc. Minnesota Dairy Health Conference, May 21-23, 2002. pp. 123-130.
- Endres, M.I.** 2002. Transition cows: What are some of the basics? Proc. 2002 Minnesota Dairy Days 2002. pp. 21-24.
- Endres, M.I.** 2002. Understanding corn silage hybrid differences and corn silage processing. Proc. Four-State Professional Dairy Management Seminar. pp. 25-29.
- Endres, M.I.** and J.G. Linn. 2001. Corn silage quality: Is there a way to evaluate it? *In* Proc. Minnesota Dairy Expo, December 6-7, St. Cloud, MN.

**Research reports published in Extension publications (3):**

- Allen, D.M., C.S. Kuehn, J.G. Linn, W.P. Hansen, H.G. Jung, **M.I. Endres**, and M.L. Raeth-Knight. 2003. Effect of feeding different levels of forage NDF from corn silage in diets of lactating dairy cows. *In*: Proc. 2003 Minnesota Dairy Days. pp. 43-45.
- Nennich, T.D., J.G. Linn, D.G. Johnson, **M.I. Endres**, H.G. Jung, and M.L. Raeth-Knight. 2003. Comparison of feeding corn silage from leafy or high grain corn hybrids to lactating dairy cows. *In*: Proc. 2003 Minnesota Dairy Days. pp. 40-42.
- Kuehn, C.S., J.G. Linn, D.G. Johnson, H.G. Jung, and **M.I. Endres**. 2002. Effect of feeding corn hybrids selected for leafiness or grain to lactating dairy cattle. *In*: Proc. 2002 Minnesota Dairy Days. pp. 63-66.