

# Jeffrey K. Reneau

## Professor

**Appointment** 25% Teaching, 75% Extension

**Research Area** Dairy Cattle Management

**Appointment History**

1989-present	Professor
1983-1989	Associate Professor
1979-1983	Assistant Professor

### Graduate Program Affiliations

Animal Sciences – Member/Advising

### Professional and Honorary Societies

Member, American Association of Bovine Practitioners

Member, American Dairy Science Association

Member, National Mastitis Council

Member, Russian Dairy Farms Inc. Board

### Five Most Significant Publications

**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 counts (SCC). *Journal of Dairy Science* (Submitted), June 2004.**

Although the connection between low somatic cell counts and cow hygiene is intuitive no one had ever verified the correlation. This study in 1096 cows shows the highly correlated connection between udder and lower rear leg hygiene and somatic cell count scores. It provides a much-needed method to objectively measure cow hygiene and relate results to herd somatic cell count. This scoring system provides herd consultants an effective tool in motivating dairy producers to improve milk quality.

**Reneau, J.K., and M.L. Kinsel. 2001. Record systems and herd monitoring in production-oriented health management programs in food producing animals. Chapter 3 *In: Herd Health, 4<sup>th</sup> Ed.*, W.D. Sanders.**

Tradition herd record keeping systems have focused attention on cow performance. While cow performance is helpful in identifying superior genetics it does not always accurately reflect the quality of herd management. This book chapter discusses the strengths and weaknesses of recording systems and traditional cow and herd performance measures. It's most important contribution is the introduction of herd monitoring techniques that use cow performance metrics to effectively measure people and process performance so that more timely interventions to improve herd management can be made. The uses of statistical process control and cohort performance analysis are good examples of techniques to enhance management use of herd records.

**Reneau, J.K. 2000. Process control: Timely feedback for quality milk production at the farm. National Mastitis Council Annual Meeting, Atlanta, GA, February 11, 2000.**

Statistical process control has been successfully used to improve and maintain product quality in manufacturing industries for many years. The paper introduced and demonstrated the effective use of statistical process control techniques to monitor daily BTSCC and improve milk quality.

**Reneau, J.K. 1993. Clinical mastitis records in production medicine programs. *Compend. of Cont. Educ. Pract. Vet.* Vol. 15, No. 3.**

Poorly kept clinical mastitis records are notoriously common in dairy herds across the county. There is much need for improvement in the recording and analysis of clinical mastitis records. This publication established a standardized record system for classifying, recording and analyzing clinical mastitis. In addition criteria are given for the development of prudent use of anti-microbials when treatment is necessary.

**Reneau, J.K. 1986. Symposium: Effective use of DHI somatic cell counts in mastitis control. *J. Dairy Sci.* 69:1708-1720.**

This was an invited paper at the American Dairy Science Association Meetings for the purpose of furthering the understanding and use of somatic cell counting for dairy herd management. The paper was the first to recommend and demonstrate the epidemiological use of somatic cell count records to characterize herd mastitis problems at the farm. Since the introduction of this idea all DHI organizations in the U.S. now utilize epidemiological principals in reporting somatic cell data.

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

Authored or co-authored the following 4 papers in peer-reviewed journals and 1 book chapter.

- Godden, S., L. Wilson, R. Bey, M. Lavalley, P. Weinand, R. Farnsworth, and **J. Reneau**. 2003. Evaluation of the Azotest® Strip as recommended for estimation of milk urea nitrogen concentrations in individual cow, milk line and bulk tank samples. *The Bovine Practitioner* Vol. 37, No. 1. pp. 36-42.
- Godden, S., R. Bey, J. Farnsworth, **J. Reneau**, and M. LaValle. 2002. Field validation of a milk line sampling device for monitoring milk quality and udder health. *J. Dairy Sci.* 85:1468-1475.
- Godden, S., R. Bey, **J. Reneau**, R. Farnsworth, and M. LaValle. 2002. Field validation of a milk line sampling device for monitoring milk component data. *J. Dairy Sci.* 85:2192-2196.
- Gabler, M.T., **J.K. Reneau**, and R.J. Farnsworth. 2000. Comparison of *Streptococcus uberis* counts calculated on a volume and weight basis from sand and sawdust bedding. *Am. J. Vet. Res.* December Issue.

**Book chapter:**

- Reneau, J.K.**, and M.L. Kinsel. 2001. Record systems and herd monitoring in production-oriented health management programs in food producing animals. Chapter 3 *In: Herd Health*, 4<sup>th</sup> Ed., W.D. Sanders. pp. 107-141.

**Awards**

Distinguished Service Award, Minnesota Dairy Herd Improvement Association, 2003.

**Funding (Last Five Years) – \$3,000**

**Pharmacia** Gift 2001-03 \$3,000

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

JoAnna (Asia) M. Lukas (co-advise) M.S. Animal Sciences

**Courses Taught (Last Five Years)**

Designator	Name	Cr	% Effort	Term	Years
AnSc 4604	Dairy Prod Syst Mgmt	4	100%	Spring	2000-2004
AnSc 4609	Analysis of Livestock Prod Systems	2	50%	Spring	2000
AnSc 4614	Adv Dairy Prod Systems Mgmt	2	100%	Spring	2000-2004

AnSc 4609	Analysis of Livestock Prod Systems	2	50%	Fall	2000
AnSc 4609	Analysis of Livestock Prod Systems	2	33%	Fall	2001, 2003

### **Service**

AFE Extension APL for livestock starting Nov. 1, 2003  
 Russian Dairy Farm Inc. Board  
 Member, Board of Directors, National Mastitis Council  
 Member, Research Committee, National Mastitis Council  
 Member ADSA West Agro Award Committee  
 Member, Board of Directors, Minnesota Dairy Advisors  
 Member, GEIS Animal and Human Health Committees  
 Member, South Africa Zulu Tribe Dairy Project  
 Judge, National Dairy Quality Award

### **Extension Activities (Last Five Years)**

#### **Program Team Involvement and Goals**

##### **The major programs include:**

##### **Dairy Modernization Program, Team Member**

Audience: Minnesota dairy stakeholders, producers and consumers

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

##### **Dairy Advisory Group, Member**

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 Member**

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.

#### **Quality Milk Production**

- **Quality Count\$, Contributor**

Audience: Milk plant field staff, state milk inspectors, veterinarians, dairy suppliers, dairy farmers

Goals:

- Improve milk quality and reduce SCC in Minnesota dairy herds.
- Provide milk quality resources and develop mastitis diagnostic tools for dairy farmers.
- Increase dairy farm profitability.
- Provide milker training.
- Provide “train the trainer” opportunities.

- **Minnesota Milker Training Workshop, Contributor**

Audience: Dairy herd owners, parlor managers, and milking technicians

Goals:

- Teach proper milking procedures and their relationship to quality milk and mastitis.
- Provide information to aid in the understanding of milking machine function.

- Teach mastitis control practices including pre- and post-teat dipping, bedding management, and general hygiene.
- Provide a working knowledge of problem-solving tools at the farm (bulk tank cultures, individual cow cultures, bedding cultures) including proper sample collection and data interpretation.
- Provide hands-on experience in evaluation of milking routines and in assessment of mastitis control practices at the farm via an on-farm visit.
- Provide an active learning experience through “decision case discussion”.
- Improve milk quality and herd profitability.

### **Dairy Diagnostics**

- **Statistical Process Control (SPC) Project: Development and Implementation of MilkLab, Contributor**

*Audience:* Dairy herd owners, dairy managers, dairy processors

*Goals:* Implement and provide training for MilkLab, a web-based daily monitoring system that allows dairies the capability of tracking the quality of their milk using advanced SPC and graphical visualization tools.

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

*Audience:* Dairy herd managers, herd personnel and milking technicians

*Goals:*

- Increase the number of Minnesota 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.

### **Transition Cow Workshops, Contributor**

*Audience:* Dairy farm owners, managers and employees, and dairy professionals

*Goals:* Provide training opportunities to increase dairy skills in dry and fresh cow care, and to provide dairy professionals with a better understanding of metabolic problems and their prevention.

### **Dairy Initiatives Newsletter, Editor**

*Audience:* Dairy herd owners, industry personnel

*Goals:* Provide original informative material that both highlights the University and strategically plants ideas around which dairy extension programming may be built.

### **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.
- Quality Count\$ Seminar CD – a collection of factsheets, worksheets, spreadsheets, milk quality reference material and related links
- Quality Count\$ “Train the Trainer“ Workshop CD, which contains all of the information from the seminar CD plus milker training materials in English and Spanish, and PowerPoint presentations from the Quality Count\$ seminars
- Course materials for Milker Training Workshops
- Dairy Diagnostics Tool Box – a collection of resources available on-line and on CD to support dairy diagnostic team professionals in completing accurate and comprehensive analyses of dairy farm businesses
- Dairy Initiatives Newsletter

## Program Delivery Events

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

- Minnesota Dairy Days
- Quality Count\$ seminars and workshops
- SCC reduction educational program
- Milker training for Spanish speaking milkers
- Parlor Managers and Milking Technicians Schools
- MilkLab demonstrations and training of milk processor field staff

## Extension Scholarship

### Proceedings and Invited Lectures (36):

- Lukas, J. and **J.K. Reneau**. 2004. Consistency index as a dynamic field measure of BTSCC variation. Proc. 2004 Minnesota Dairy Days. pp. 24-25.
- Lukas, J. and **J.K. Reneau**. 2004. Control chart monitoring provides dynamic measure of herd mastitis prevalence. Proc. 2004 Minnesota Dairy Days. pp. 21-23.
- Clow, L., R. Bey, **J. Reneau**, and R. Farnsworth. 2003. Bacteria counts on the surface and subsurface of *Klebsiella pneumoniae* inoculated sand and wood shavings. *In*: Proc. National Mastitis Council Annual Meeting, Technology Transfer Session. February 2003. p. 290.
- Janni, K.A., W.F. Lazarus, and **J.K. Reneau**. 2003. Successful stall barn remodeling cases. Proc. 5th Internatl. Dairy Housing Conf. ASAE, St. Joseph, MO and Fort Worth, TX. January 29-31, 2003.
- Lazarus, W.F., K.A. Janni, and **J.K. Reneau**. 2003. Economics of successful stall barn modernization. Proc. 5th Internatl. Dairy Housing Conf. ASAE, St. Joseph, MO and Fort Worth, TX. January 29-31, 2003. pp. 117-124.
- Reneau, J.K.** 2003. Lowering SCC makes cents for you. Proc. 2003 Minnesota Dairy Days. pp. 11-24.
- Reneau, J.K.** 2003. Milk quality mind set in the Upper Midwest and new methods for monitoring milk quality programs. Pfizer Upper Midwest Veterinary Symp. LaCrosse, WI. August 20, 2003.
- Reneau, J.K.** 2003. Veterinarian's role in milk quality improvement on U.S. dairies. Pfizer Veterinary Conf., Pasadena, CA. November 15, 2003.
- Reneau, J.K.** 2003. What you can't see does hurt you. W.E. Peterson Symp., St. Paul, MN, April 8, 2003.
- Reneau, J.K.**, A.J. Seykora, B.H. Heins, R.F. Bey, and R.J. Farnsworth. 2003. Relationship of cow hygiene scores and SCC. *In*: Proc. National Mastitis Council Annual Meeting, Technology Transfer Session. February 2003. p. 362.
- Bey, R.F., **J.K. Reneau**, and R.J. Farnsworth. 2002. The role of bedding management and udder health. *In*: Proc. Natl. Mastitis Council Annual Meeting, February 3-6, 2002, Orlando, FL. pp. 45-55.
- Reneau, J.K.** 2002. Application of Statistical Process Control for improvement of milk quality in Chile. Seminar for Cooprinsem Staff, Osorno, Chile. August 8, 2002.
- Reneau, J.K.** 2002. Management and milk quality considerations for modernization of the milking facility. Proc. 2002 Minnesota Dairy Days. pp. 9-14.
- Reneau, J.K.** 2002. Managing the environment for low SCC. Ontario Veterinary Medical Assn. Annual Meeting, Toronto, Canada. January 25, 2002.
- Reneau, J.K.** 2002. Managing the environment for quality milk production. The Great Lakes Dairy Conf., Oregon, OH. April 30-May 2, 2002.
- Reneau, J.K.** 2002. Milk quality. Two 1-day Workshops for Dairy Farmers and Professionals in Puerta Varas and Orsono, Chile. September 10-11, 2002.

- Reneau, J.K.** 2002. Milk quality as an attitude. Pennsylvania Assn. of Milk, Food, and Environmental Sanitarians Convention, University Park, PA. May 14-15, 2002.
- Reneau, J.K.** 2002. The milk quality mindset. Keynote: Pharmacia Qmax Conf., Rochester, MN. February 2002.
- Reneau, J.K.** 2002. The milk quality mindset. Keynote: The Great Lakes Dairy Conf., Oregon, OH. April 30-May 2, 2002.
- Reneau, J.K.** 2002. Practical monitoring methods for quality milk production. Ontario Veterinary Medical Assn. Annual Meeting, Toronto, Canada, January 25, 2002.
- Reneau, J.K.** 2002. Prepping cows – Who needs it? Ontario Veterinary Medical Assn. Annual Meeting, Toronto, Canada. January 25, 2002.
- Reneau, J.K.** 2002. Resources available to help producers reduce cull rates. Minnesota Milk Producers Annual Convention and Trade Show, St. Cloud, MN. March 21-22, 2002.
- Reneau, J.K., R.F. Bey, and R.J. Farnsworth.** 2002. Bedding management and udder health. *In: Proc. 35th Annual Conf. of the AABP, Madison, WI. September 26-28, 2002. pp. 83-90.*
- Reneau, J.K., Y.H. Schukken, D.J. Wilson, and H.W. Barkema.** 2002. Best management practices to lower herd SCC. *In: Proc. Natl. Mastitis Council Regional Meeting, Syracuse, NY. July 8-9, 2002.*
- Reneau, J.K.** 2001. Bedding management strategies in mastitis control. Buffalo Vet Clinic Spring Seminar, Buffalo, MN. April 5, 2001.
- Reneau, J.K.** 2001. Cow prep – Who needs it? Buffalo Vet Clinic Spring Seminar, Buffalo, MN. April 5, 2001.
- Reneau, J.K.** 2001. Importancia de la preparacion pre-ordena en la produccion de leche de calidad. III Jornada Internacio de Leche, Santiago, Chile, June 22-23, 2001 and Seminario Internacional Produccion de Leche, Los Angeles, Chile, June 27, 2001.
- Reneau, J.K.** 2001. Keynote: The milk quality mindset. U.S. Pharmacia Dairy Team Think Tank Meeting for development of the Q-Max milk quality educational program, Augusta, MI. May 30-June 1, 2001.
- Reneau, J.K.** 2001. Managing the environment for low SCC in first calf heifers. Four-State (MN, IA, IL, WI) Dairy Seminar. February 2001.
- Reneau, J.K.** 2001. Manejo del ambiente para la produccion de leche de alta calidad. III Jornada Internacio de Leche, Santiago, Chile, June 22-23, 2001 and Seminario Internacional Produccion de Leche, Los Angeles, Chile, June 27, 2001.
- Reneau, J.K.** 2001. Prepping cows: Who needs it? National Mastitis Council – Professional Dairy Producers of Wisconsin Annual Meeting. April 9-10, 2001.
- Reneau, J.K.** 2001. Somatic cell counts: Measures of farm management and milk quality. *In: Proc. National Mastitis Council Annual Meeting, Reno, NV.*
- Reneau, J.K.** 2001. Utilizacion de registros en la evaluacion y monitoreo de las mastitis clinica y subclinica. III Jornada Internacio de Leche, Santiago, Chile, June 22-23, 2001 and Seminario Internacional Produccion de Leche, Los Angeles, Chile, June 27, 2001.
- Reneau, J.K.** 2000. Process control: Timely feedback for quality milk production at the farm. *In: Proc. National Mastitis Council Annual Meeting, Atlanta, GA. February 11, 2000.*
- Reneau, J.K.** 1999. HACCP programs for dairy farms. North Central Cheese Industries Association Annual Meeting, Minneapolis, MN. October 12-13, 1999.
- Reneau, J.K.** 1999. Response to Cornell's recommendations to expand calving interval when using rBST. The Dairy Industry and the "U", Crookston, MN. January 9, 1999.

**Research reports published in Extension publications:**

- Clow, L., R. Bey, **J. Reneau**, and R. Farnsworth. 2003. Bacteria counts on the surface and subsurface of *Klebsiella pneumoniae* inoculated sand and wood shavings. *In: Proc. 2003 Minnesota Dairy Days. pp. 49-51.*

- Crooker, B.A., M. Chahine, W.J. Weber, **J.K. Reneau**, J.L. Vicini, M.F. McGrath, E.A. Reed, and T.H. Klusmeyer. 2003. Induction of lactation using steroid hormones and bST in nonpregnant, reproductive cull Holstein cows. *In: Proc. 2003 Minnesota Dairy Days.* pp. 54-55. Dept. Anim. Sci. Univ. of MN, St. Paul. January 2003.
- Reneau, J.**, A. Seykora, B. Heins, R. Bey, and R. Farnsworth. 2003. Relationship of cow hygiene scores and SCC. *In: Proc. 2003 Minnesota Dairy Days.* pp. 52-53.
- Bey, R.F., **J.K. Reneau**, and R.J. Farnsworth. 2002. Interpretation and use of laboratory culture results: A technical guide published for dairy producers and dairy professionals to aid in mastitis problem solving (while on sabbatical in Chile I also had this guide translated into Spanish for use in the seminars in which I participated).

**Popular press:**

- Linn, J, J. Salfer, and **J.K. Reneau**. 2000. Keep ahead of cow problems. *Hoards Dairyman.* January 10, 2000.

**Newsletters:**

- Reneau, J.** 2003. Clean up your act. *Dairy Initiatives Newsletter*, Vol. 12, Issue 1, Spring 2003. Department of Animal Science, University of Minnesota, St. Paul.
- Reneau, J.**, and R. Farnsworth. 2003. Can SCC be too low? *Dairy Initiatives Newsletter*, Vol. 12, Issue 1, Spring 2003. Department of Animal Science, University of Minnesota, St. Paul.
- Reneau, J.**, R. Bey, and R. Farnsworth. 2002. Minnesota DHI SCC is high and getting higher. *Dairy Initiatives Newsletter*, Vol. 11, Issue 2, Summer 2002. Department of Animal Science, University of Minnesota, St. Paul.
- Reneau, J.** 2001. Bedding and bacteria. *Dairy Initiatives Newsletter*, Vol. 10, Issue 1, Spring 2001. Department of Animal Science, University of Minnesota, St. Paul.
- Reneau, J.** 2000. Keep moving ahead. *Dairy Initiatives Newsletter*, Vol. 9, Issue 1, Winter 2000. Department of Animal Science, University of Minnesota, St. Paul.

**Miscellaneous Extension publications:**

- Reneau, J.K.** 1999. Cold weather teat dipping. *Dairy Update Issue 127*, November 1999. Department of Animal Science, University of Minnesota, St. Paul.