

Journal of Dairy Science®

Official Publication of the American Dairy Science Association®



ELSEVIER

FASS Federation of
Animal Science
Societies

Volume 95, Number 4

April 2012

ISSN: 0022

Journal of Dairy Science

April 2012

Volume 95, Number 4

CONTENTS

INTERPRETIVE SUMMARIES	vi
NEWS AND ANNOUNCEMENTS	xiv
EDITORIAL	
<i>Journal of Dairy Science</i> ® 2011 Editorial Report Roger D. Shanks, Editor-in-Chief	1587
DAIRY FOODS:	
Effect of membrane length, membrane resistance, and filtration conditions on the fractionation of milk proteins by microfiltration A. Piry, A. Heino, W. Kühnl, T. Grein, S. Ripperger, and U. Kulozik	1590
Effect of temperature and pH on the solubility of caseins: Environmental influences on the dissociation of α_s - and β -casein A. E. Post, B. Arnold, J. Weiss, and J. Hinrichs	1603
Twelve-year cohort study on the influence of caprine arthritis-encephalitis virus infection on milk yield and composition J. Kaba, N. Strzałkowska, A. Jóźwik, J. Krzyżewski, and E. Bagnicka	1617
Heat stability of milk supplemented with calcium chloride N. On-Nom, A. S. Grandison, and M. J. Lewis	1623
Estimation of <i>Coxiella burnetii</i> prevalence in dairy cattle in intensive systems by serological and molecular analyses of bulk-tank milk samples I. Astobiza, F. Ruiz-Fons, A. Piñero, J. F. Barandika, A. Hurtado, and A. L. García-Pérez	1632
Characterization of coagulase-positive staphylococci isolated from tank and silo ewe milk B. Linage, J. M. Rodríguez-Calleja, A. Otero, M. L. García-López, and J. A. Santos	1639
Selection of potential probiotic lactobacilli for cholesterol-lowering properties and their effect on cholesterol metabolism in rats fed a high-lipid diet J. Wang, H. Zhang, X. Chen, Y. Chen, Menghebilige, and Q. Bao	1645
Proteolytic and proteomic changes in milk at quarter level following infusion with <i>Escherichia coli</i> lipopolysaccharide K. Hinz, L. B. Larsen, O. Wellnitz, R. M. Bruckmaier, and A. L. Kelly	1655
Functional properties of whey proteins microparticulated at low pH M. Dissanayake, S. Liyanaarachchi, and T. Vasiljevic	1667
Optimal growth of <i>Lactobacillus casei</i> in a Cheddar cheese ripening model system requires exogenous fatty acids W. S. Tan, M. F. Budinich, R. Ward, J. R. Broadbent, and J. L. Steele	1680
Consumer perception and sensory effect of oxidation in savory-flavored yogurt enriched with n-3 lipids M. Rognlien, S. E. Duncan, S. F. O'Keefe, and W. N. Eigel	1690
Comparison of estrone and 17 β -estradiol levels in commercial goat and cow milk D. W. Farlow, X. Xu, and T. D. Veenstra	1699
Short communication: Factors affecting coagulation properties of Mediterranean buffalo milk A. Cecchinato, M. Penasa, C. Cipolat Gotet, M. De Marchi, and G. Bittante	1709

PHYSIOLOGY AND MANAGEMENT:

- Mechanical properties of the bovine claw horn during lactation
B. Winkler and J. K. Margerison 1714
- Endocrine milieu and developmental dynamics of ovarian cysts and persistent follicles in postpartum dairy cows
Z. Roth, D. Biran, Y. Lavon, I. Dafni, S. Yakobi, and R. Braw-Tal..... 1729
- Automatic measurement of touch and release angles of the fetlock joint for lameness detection in dairy cattle using vision techniques
A. Pluk, C. Bahr, A. Poursaberi, W. Maertens, A. van Nuffel, and D. Berckmans..... 1738
- Blood immunometabolic indices and polymorphonuclear neutrophil function in peripartum dairy cows are altered by level of dietary energy prepartum
D. E. Graugnard, M. Bionaz, E. Trevisi, K. M. Moyes, J. L. Salak-Johnson, R. L. Wallace, J. K. Drackley, G. Bertoni, and J. J. Loor..... 1749
- Alterations of fatty acid β -oxidation capability in the liver of ketotic cows
P. Li, X. B. Li, S. X. Fu, C. C. Wu, X. X. Wang, G. J. Yu, M. Long, Z. Wang, and G. W. Liu 1759
- Association of plasma insulin concentration to fatty acid distribution between milk fat and membrane synthesis
R. Mesilati-Stahy, H. Malka, and N. Argov-Argaman 1767
- Effect of endocervical inflammation on days to conception in dairy cows
L. Deguillaume, A. Geffré, L. Desquilbet, A. Dizien, S. Thoumire, C. Vornière, F. Constant, R. Fournier, and S. Chastant-Maillard 1776
- On-farm estimation of energy balance in dairy cows using only frequent body weight measurements and body condition score
V. M. Thorup, D. Edwards, and N. C. Friggens 1784
- Low progesterone concentration during the development of the first follicular wave reduces pregnancy per insemination of lactating dairy cows
A. C. Denicol, G. Lopes Jr., L. G. D. Mendonça, F. A. Rivera, F. Guagnini, R. V. Perez, J. R. Lima, R. G. S. Bruno, J. E. P. Santos, and R. C. Chebel 1794
- Role of metabolic and cellular proliferation genes in ruminal development in response to enhanced plane of nutrition in neonatal Holstein calves
A. Naeem, J. K. Drackley, J. Stamey, and J. J. Loor..... 1807
- An experimental infection model to induce digital dermatitis infection in cattle
A. Gomez, N. B. Cook, N. D. Bernardoni, J. Rieman, A. F. Dusick, R. Hartshorn, M. T. Socha, D. H. Read, and D. Döpfer 1821
- Prostaglandin $F_{2\alpha}$ and gonadotropin-releasing hormone administration improve progesterone status, luteal number, and proportion of ovular and anovular dairy cows with corpora lutea before a timed artificial insemination program
J. S. Stevenson, S. L. Pulley, and H. I. Mellieon Jr. 1831
- Risk factors and effects of postpartum anovulation in dairy cows
J. Dubuc, T. F. Duffield, K. E. Leslie, J. S. Walton, and S. J. LeBlanc..... 1845
- Economic analysis of *Mycobacterium avium* subspecies *paratuberculosis* vaccines in dairy herds
J. Cho, L. W. Tauer, Y. H. Schukken, M. I. Gómez, R. L. Smith, Z. Lu, and Y. T. Grohn 1855
- Risk factors for a high somatic cell count at the first milk recording in a large sample of UK dairy herds
A. Madouasse, W. J. Browne, J. N. Huxley, F. Toni, A. J. Bradley, and M. J. Green.... 1873
- Chronic mastitis is associated with altered ovarian follicle development in dairy cattle
M. M. Rahman, M. Mazzilli, G. Pennarossa, T. A. L. Brevini, A. Zecconi, and F. Gandolfi..... 1885

Effect of intrauterine dextrose or antibiotic therapy on reproductive performance of lactating dairy cows diagnosed with clinical endometritis T. A. Brick, G. M. Schuenemann, S. Bas, J. B. Daniels, C. R. Pinto, D. M. Rings, and P. J. Rajala-Schultz	1894
Intramammary infections and teat canal colonization with coagulase-negative staphylococci after postmilking teat disinfection: Species-specific responses T. Quirk, L. K. Fox, D. D. Hancock, J. Capper, J. Wenz, and J. Park	1906
Minimum inhibitory concentrations of <i>Staphylococcus aureus</i> recovered from clinical and subclinical cases of bovine mastitis L. Oliveira, H. Langoni, C. Hulland, and P. L. Ruegg	1913
Herd-level association between antimicrobial use and antimicrobial resistance in bovine mastitis <i>Staphylococcus aureus</i> isolates on Canadian dairy farms V. Saini, J T. McClure, D. T. Scholl, T. J. DeVries, and H. W. Barkema	1921
NUTRITION, FEEDING, AND CALVES:	
Effect of dietary protein concentration on ammonia and greenhouse gas emitting potential of dairy manure C. Lee, A. N. Hristov, C. J. Dell, G. W. Feyereisen, J. Kaye, and D. Beegle	1930
Effects of feeding increasing dietary levels of high oleic or regular sunflower or linseed oil on fatty acid profile of goat milk A. L. Martínez Marín, P. Gómez-Cortés, G. Gómez Castro, M. Juárez, L. Pérez Alba, M. Pérez Hernández, and M. A. de la Fuente	1942
Rapeseed or linseed supplements in grass-based diets: Effects on dairy performance of Holstein cows over 2 consecutive lactations S. Lerch, A. Ferlay, D. Pomiès, B. Martin, J. A. A. Pires, and Y. Chilliard	1956
Effects of grain, fructose, and histidine on ruminal pH and fermentation products during an induced subacute acidosis protocol H. M. Golder, P. Celi, A. R. Rabiee, C. Heuer, E. Bramley, D. W. Miller, R. King, and I. J. Lean	1971
Protein and energy intakes affected amino acid concentrations in plasma, muscle, and liver, and cell signaling in the liver of growing dairy calves A. G. Rius, H. A. Weeks, J. Cyriac, R. M. Akers, B. J. Bequette, and M. D. Hanigan	1983
A ring test of in vitro neutral detergent fiber digestibility: Analytical variability and sample ranking M. B. Hall and D. R. Mertens	1992
Development and evaluation of equations in the Cornell Net Carbohydrate and Protein System to predict nitrogen excretion in lactating dairy cows R. J. Higgs, L. E. Chase, and M. E. Van Amburgh	2004
Rumen and milk odd- and branched-chain fatty acid proportions are minimally influenced by ruminal volatile fatty acid infusions E. A. French, S. J. Bertics, and L. E. Armentano	2015
Effect of bromochloromethane on methane emission, rumen fermentation pattern, milk yield, and fatty acid profile in lactating dairy goats L. Abecia, P. G. Toral, A. I. Martín-García, G. Martínez, N. W. Tomkins, E. Molina-Alcaide, C. J. Newbold, and D. R. Yáñez-Ruiz	2027
Chromium propionate enhances insulin sensitivity in growing cattle J. W. Spears, C. S. Whisnant, G. B. Huntington, K. E. Lloyd, R. S. Fry, K. Krafka, A. Lamptey, and J. Hyda	2037
Interaction of unsaturated fat or coconut oil with monensin in lactating dairy cows fed 12 times daily. I. Protozoal abundance, nutrient digestibility, and microbial protein flow to the omasum C. Reveneau, S. K. R. Karnati, E. R. Oelker, and J. L. Firkins	2046

Interaction of unsaturated fat or coconut oil with monensin in lactating dairy cows fed 12 times daily. II. Fatty acid flow to the omasum and milk fatty acid profile C. Reveneau, C. V. D. M. Ribeiro, M. L. Eastridge, and J. L. Firkins.....	2061
Conservation characteristics of corn ears and stover ensiled with the addition of <i>Lactobacillus plantarum</i> MTD-1, <i>Lactobacillus plantarum</i> 30114, or <i>Lactobacillus buchneri</i> 11A44 J. P. Lynch, P. O'Kiely, S. M. Waters, and E. M. Doyle.....	2070
Use of a corn milling product in diets for dairy cows to alleviate milk fat depression W. P. Weiss	2081
Short communication: Relationship of carbohydrate molecular spectroscopic features to carbohydrate nutrient profiles in co-products from bioethanol production P. Yu.....	2091

GENETICS AND BREEDING:

Optimum multistage genomic selection in dairy cattle V. Börner, F. Teuscher, and N. Reinsch	2097
Accuracy of genomic predictions of residual feed intake and 250-day body weight in growing heifers using 625,000 single nucleotide polymorphism markers J. E. Pryce, J. Arias, P. J. Bowman, S. R. Davis, K. A. Macdonald, G. C. Waghorn, W. J. Wales, Y. J. Williams, R. J. Spelman, and B. J. Hayes.....	2108
A comparison of partial least squares (PLS) and sparse PLS regressions in genomic selection in French dairy cattle C. Colombani, P. Croiseau, S. Fritz, F. Guillaume, A. Legarra, V. Ducrocq, and C. Robert-Granié	2120
Makeup of the genetic correlation between milk production traits using genome-wide single nucleotide polymorphism information R. van Binsbergen, R. F. Veerkamp, and M. P. L. Calus	2132
Incidences of and genetic parameters for mastitis, claw disorders, and common health traits recorded in dairy cattle contract herds E. Gernand, P. Rehbein, U. U. von Borstel, and S. König.....	2144
Short communication: Principal components and factor analytic models for test-day milk yield in Brazilian Holstein cattle A. B. Bignardi, L. El Faro, G. J. M. Rosa, V. L. Cardoso, P. F. Machado, and L. G. Albuquerque.....	2157
Short communication: A new bovine milk-protein variant: α -Lactalbumin variant D M. H. P. W. Visker, J. M. L. Heck, H. J. F. van Valenberg, J. A. M. van Arendonk, and H. Bovenhuis	2165
Technical note: Prediction of liveweight from linear conformation traits in dairy cattle G. Banos and M. P. Coffey	2170

OUR INDUSTRY TODAY:

Interaction between <i>Lactococcus lactis</i> and <i>Lactococcus raffinolactis</i> during growth in milk: Development of a new starter culture H. Kimoto-Nira, R. Aoki, K. Mizumachi, K. Sasaki, H. Naito, T. Sawada, and C. Suzuki	2176
Dairy cow behavior affects the availability of an automatic milking system J. A. Jacobs, K. Ananyeva, and J. M. Siegford	2186
Management and characteristics of recycled manure solids used for bedding in Midwest freestall dairy herds A. W. Husfeldt, M. I. Endres, J. A. Salfer, and K. A. Janni	2195

Characteristics of dairy calf ranches: Morbidity, mortality, antibiotic use practices, and biosecurity and biocontainment practices	
W. L. Walker, W. B. Epperson, T. E. Wittum, L. K. Lord, P. J. Rajala-Schultz, and J. Lakritz.....	2204
Potential gains in lifetime net merit from genomic testing of cows, heifers, and calves on commercial dairy farms	
K. A. Weigel, P. C. Hoffman, W. Herring, and T. J. Lawlor Jr.....	2215

NOTICE: Page Charges for Publication

The page charge per printed page is \$85 for professional members and \$140 for nonmembers for papers published in *Journal of Dairy Science*. Open access (OA) publication is available upon payment of a \$1750 (ADSA member) or \$3500 (nonmember) OA fee in lieu of standard page charges.

Future Annual Meetings

2012–July 15–19, Phoenix, AZ

2013–July 8–12, Indianapolis, IN