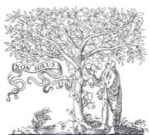
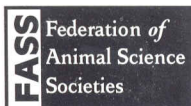


Journal of Dairy Science®

Official Publication of the American Dairy Science Association®



ELSEVIER



Volume 95, Number 5

May 2012

ISSN: 0022-0302

Journal of Dairy Science

May 2012

Volume 95, Number 5

CONTENTS

INTERPRETIVE SUMMARIES	viii
NEWS AND ANNOUNCEMENTS	xv
INVITED REVIEW:	
<i>Invited review:</i> The impact of automatic milking systems on dairy cow management, behavior, health, and welfare J. A. Jacobs and J. M. Siegford	2227
DAIRY FOODS:	
Effect of highly lipolyzed goat cheese on HL-60 human leukemia cells: Antiproliferative activity and induction of apoptotic DNA damage S. Yasuda, H. Kuwata, K. Kawamoto, J. Shirakawa, S. Atobe, Y. Hoshi, M. Yamasaki, K. Nishiyama, H. Tachibana, K. Yamada, H. Kobayashi, and K. Igoshi	2248
Probiotic yogurts manufactured with increased glucose oxidase levels: Postacidification, proteolytic patterns, survival of probiotic microorganisms, production of organic acid and aroma compounds A. G. Cruz, W. F. Castro, J. A. F. Faria, P. C. B. Lollo, J. Amaya-Farfán, M. Q. Freitas, D. Rodrigues, C. A. F. Oliveira, and H. T. Godoy	2261
Effects of hydrolysis on solid-state relaxation and stickiness behavior of sodium caseinate-lactose powders J. S. Mounsey, S. A. Hogan, B. A. Murray, and D. J. O'Callaghan	2270
Checking into China's cow hotels: Have policies following the milk scandal changed the structure of the dairy sector? D. Mo, J. Huang, X. Jia, H. Luan, S. Rozelle, and J. Swinnen	2282
No seasonal effect on culturable pseudomonads in fresh milks from cattle herds F. Leriche and K. Fayolle	2299
Stability of milk fat globule membrane proteins toward human enzymatic gastrointestinal digestion T. T. Le, T. Van de Wiele, T. N. H. Do, G. Debyser, K. Struijs, B. Devreese, K. Dewettinck, and J. Van Camp	2307
Effects of cooling and freezing storage on the stability of bioactive factors in human colostrum C. Ramírez-Santana, F. J. Pérez-Cano, C. Audí, M. Castell, M. G. Moretones, M. C. López-Sabater, C. Castellote, and A. Franch	2319
Sampling strategies for total bacterial count of unpasteurized bulk milk J. C. F. Pantoja, G. J. M. Rosa, D. J. Reinemann, and P. L. Ruegg	2326
Color of low-fat cheese influences flavor perception and consumer liking R. Wadhvani and D. J. McMahon	2336
<i>Short communication:</i> Evidence for methylglyoxal-mediated browning of Parmesan cheese during low temperature storage R. D. Divine, D. Sommer, A. Lopez-Hernandez, and S. A. Rankin	2347
PHYSIOLOGY AND MANAGEMENT:	
Low numbers of ovarian follicles ≥ 3 mm in diameter are associated with low fertility in dairy cows F. Mossa, S. W. Walsh, S. T. Butler, D. P. Berry, F. Carter, P. Lonergan, G. W. Smith, J. J. Ireland, and A. C. O. Evans	2355

Metabolic and production profiles of dairy cows in response to decreased nutrient density to increase physiological imbalance at different stages of lactation V. Bjerre-Harpøth, N. C. Friggens, V. M. Thorup, T. Larsen, B. M. Damgaard, K. L. Ingvarsen, and K. M. Moyes	2362
Endogenous and exogenous progesterone influence body temperature in dairy cows V. S. Suthar, O. Burfeind, S. Bonk, A. J. Dhimi, and W. Heuwieser	2381
Relationship between pregnancy per artificial insemination and early luteal concentrations of progesterone and establishment of repeatability estimates for these traits in Holstein-Friesian heifers M. H. Parr, M. P. Mullen, M. A. Crowe, J. F. Roche, P. Lonergan, A. C. O. Evans, and M. G. Diskin	2390
Supplemental feeding with glycerol or propylene glycol of dairy cows in early lactation—Effects on metabolic status, body condition, and milk yield H. Lomander, J. Frössling, K. L. Ingvarsen, H. Gustafsson, and C. Svensson	2397
Liver protein expression in dairy cows with high liver triglycerides in early lactation H. Sejersen, M. T. Sørensen, T. Larsen, E. Bendixen, and K. L. Ingvarsen	2409
In vitro effects of <i>Escherichia coli</i> lipopolysaccharide on the function and gene expression of neutrophils isolated from the blood of dairy cows X. S. Revelo and M. R. Waldron	2422
The effect of strategic supplementation with <i>trans</i> -10, <i>cis</i> -12 conjugated linoleic acid on the milk production, estrous cycle characteristics, and reproductive performance of lactating dairy cattle I. A. Hutchinson, A. A. Hennessy, R. J. Dewhurst, A. C. O. Evans, P. Lonergan, and S. T. Butler	2442
Effects of management and health on the use of activity monitoring for estrus detection in dairy cows S. P. M. Aungier, J. F. Roche, M. Sheehy, and M. A. Crowe	2452
Effect of alternative models for increasing stocking density on the short-term behavior and hygiene of Holstein dairy cows P. D. Krawczel, C. S. Mooney, H. M. Dann, M. P. Carter, R. E. Butzler, C. S. Ballard, and R. J. Grant	2467
Incidence of subclinical mastitis in Dutch dairy heifers in the first 100 days in lactation and associated risk factors I. M. G. A. Santman-Berends, R. G. M. Olde Riekerink, O. C. Sampimon, G. van Schaik, and T. J. G. M. Lam	2476
Factors associated with cattle cleanliness on Norwegian dairy farms S. J. Hauge, C. Kielland, G. Ringdal, E. Skjerve, and O. Nafstad	2485
Lipolysis in early lactation is associated with an increase in phosphorylation of adenosine monophosphate-activated protein kinase (AMPK) α 1 in adipose tissue of dairy cows L. F. Locher, J. Rehage, N. Khraim, U. Meyer, S. Dänicke, K. Hansen, and K. Huber	2497
A field trial on the effect of propylene glycol on displaced abomasum, removal from herd, and reproduction in fresh cows diagnosed with subclinical ketosis J. A. A. McArt, D. V. Nydam, and G. R. Oetzel	2505
Effects of presynchronization and length of proestrus on fertility of grazing dairy cows subjected to a 5-day timed artificial insemination protocol E. S. Ribeiro, A. P. A. Monteiro, F. S. Lima, H. Ayres, R. S. Bisinotto, M. Favoreto, L. F. Greco, R. S. Marsola, W. W. Thatcher, and J. E. P. Santos	2513
Mastitis alert preferences of farmers milking with automatic milking systems H. Mollenhorst, L. J. Rijkaart, and H. Hogeveen	2523
Blocking opioid receptors alters short-term feed intake and oro-sensorial preferences in weaned calves C. Montoro, I. R. Ipharraguerre, and A. Bach	2531

Local and systemic response to intramammary lipopolysaccharide challenge during long-term manipulated plasma glucose and insulin concentrations in dairy cows M. C. M. B. Vernay, O. Wellnitz, L. Kreipe, H. A. van Dorland, and R. M. Bruckmaier	2540
Level of nutrient intake affects mammary gland gene expression profiles in preweaned Holstein heifers P. Piantoni, K. M. Daniels, R. E. Everts, S. L. Rodriguez-Zas, H. A. Lewin, W. L. Hurley, R. M. Akers, and J. J. Loor	2550
<i>Short communication:</i> Endoplasmic reticulum stress gene network expression in bovine mammary tissue during the lactation cycle G. Invernizzi, A. Naeem, and J. J. Loor	2562
<i>Short communication:</i> Effect of automatic postmilking teat disinfection and cluster flushing on the milking work routine I. Ohnstad, R. G. M. Olde Riekerink, P. Hogewerf, C. A. J. M. de Koning, and H. W. Barkema.....	2567
<i>Short communication:</i> The effects of experimentally induced <i>Escherichia coli</i> clinical mastitis on lying behavior of dairy cows J. A. Cyples, C. E. Fitzpatrick, K. E. Leslie, T. J. DeVries, D. B. Haley, and N. Chapinal	2571
<i>Technical note:</i> The risk ratio, an alternative to the odds ratio for estimating the association between multiple risk factors and a dichotomous outcome P. A. Ospina, D. V. Nydam, and T. J. DiCiccio	2576
NUTRITION, FEEDING, AND CALVES:	
Effects of feeding a calf starter on molecular adaptations in the ruminal epithelium and liver of Holstein dairy calves A. H. Laarman, A. L. Ruiz-Sanchez, T. Sugino, L. L. Guan, and M. Oba.....	2585
Associations among dairy cow body condition and welfare-associated behavioral traits L. R. Matthews, C. Cameron, A. J. Sheahan, E. S. Kolver, and J. R. Roche.....	2595
Enteric methane emissions and lactational performance of Holstein cows fed different concentrations of coconut oil M. Hollmann, W. J. Powers, A. C. Fogiel, J. S. Liesman, N. M. Bello, and D. K. Beede.....	2602
Nutrient demand interacts with legume particle length to affect digestion responses and rumen pool sizes in dairy cows K. L. Kammes, Y. Ying, and M. S. Allen.....	2616
Nutrient demand interacts with legume maturity to affect rumen pool sizes in dairy cows K. L. Kammes, Y. Ying, and M. S. Allen.....	2632
Adding liquid feed to a total mixed ration reduces feed sorting behavior and improves productivity of lactating dairy cows T. J. DeVries and R. M. Gill	2648
Excretion pattern of aflatoxin M ₁ in milk of goats fed a single dose of aflatoxin B ₁ G. Battacone, A. Nudda, S. P. G. Rassu, M. Decandia, and G. Pulina	2656
Meta-analysis reveals threshold level of rapidly fermentable dietary concentrate that triggers systemic inflammation in cattle Q. Zebeli, B. U. Metzler-Zebeli, and B. N. Ametaj.....	2662
Effect of rumen-protected niacin on lipid metabolism, oxidative stress, and performance of transition dairy cows K. Yuan, R. D. Shaver, S. J. Bertics, M. Espineira, and R. R. Grummer	2673
Ruminal escape and intestinal digestibility of ruminally protected lysine supplements differing in oleic acid and lysine concentrations Z. Wu, J. K. Bernard, R. B. Eggleston, and T. C. Jenkins	2680

Forage proportion and particle length affects the supply of amino acids in lactating dairy cows
C. Li, J. Q. Li, K. A. Beauchemin, and W. Z. Yang..... 2685

Heat treatment of colostrum on commercial dairy farms decreases colostrum microbial counts while maintaining colostrum immunoglobulin G concentrations
M. Donahue, S. M. Godden, R. Bey, S. Wells, J. M. Oakes, S. Sreevatsan, J. Stabel, and J. Fetrow 2697

Short communication: Antioxidant activity of calf milk replacers
M. A. Soberon, R. H. Liu, and D. J. R. Cherney..... 2703

GENETICS AND BREEDING:

Breed differences over time and heritability estimates for production and reproduction traits of dairy goats in the United States
T. B. García-Peniche, H. H. Montaldo, M. Valencia-Posadas, G. R. Wiggans, S. M. Hubbard, J. A. Torres-Vázquez, and L. Shepard 2707

Using an incomplete gamma function to quantify the effect of dystocia on the lactation performance of Holstein dairy cows in Iran
H. Atashi, A. R. Abdolmohammadi, A. Asaadi, A. Akhlaghi, M. Dadpasand, and Y. Jafari Ahangari..... 2718

Genomic selection in the French Lacaune dairy sheep breed
S. I. Duchemin, C. Colombani, A. Legarra, G. Baloche, H. Larroque, J.-M. Astruc, F. Barillet, C. Robert-Granié, and E. Manfredi..... 2723

Heritability estimates for *Mycobacterium avium* subspecies *paratuberculosis* status of German Holstein cows tested by fecal culture
J. Küpper, H. Brandt, K. Donat, and G. Erhardt..... 2734

Genome-wide association study to identify chromosomal regions associated with antibody response to *Mycobacterium avium* subspecies *paratuberculosis* in milk of Dutch Holstein-Friesians
K. J. E. van Hulzen, G. C. B. Schopen, J. A. M. van Arendonk, M. Nielen, A. P. Koets, C. Schrooten, and H. C. M. Heuven 2740

OUR INDUSTRY TODAY:

Milk adulteration: Detection of bovine milk in bulk goat milk produced by smallholders in northeastern Brazil by a duplex PCR assay
N. P. A. Rodrigues, P. E. N. Givisiez, R. C. R. E. Queiroga, P. S. Azevedo, W. A. Gebreyes, and C. J. B. Oliveira..... 2749

Prevalence of respiratory disorders in veal calves and potential risk factors
M. Brscic, H. Leruste, L. F. M. Heutinck, E. A. M. Bokkers, M. Wolthuis-Fillerup, N. Stockhofe, F. Gottardo, B. J. Lensink, G. Cozzi, and C. G. Van Reenen 2753

Recording of direct health traits in Austria—Experience report with emphasis on aspects of availability for breeding purposes
C. Egger-Danner, B. Fuerst-Waltl, W. Obritzhauser, C. Fuerst, H. Schwarzenbacher, B. Grassauer, M. Mayerhofer, and A. Koeck..... 2765