

Iowa State University Animal Industry Report 2016
Table of Contents

Animal Products

Antioxidant Peptides in Commercial Dry-Cured Hams (Authors: Chao-Zhi Zhu, Joseph G. Sebranek, Dong U. Ahn)..... ASL R3041
Characterization of Phosvitin Phosphopeptides using MALDI-TOF Mass Spectrometry (Authors: Himali Samaraweera, Sun Hee Moon, Dong U. Ahn)..... ASL R3042

Beef

Volatile Components of Wet and Modified Corn Distillers Grains – A Survey (Authors: Garland Dahlke, Beth Doran) ASL R3043
Effect of Excess Metabolizable Protein Supplementation from Corn Gluten Meal or Soybean Meal on Plasma Amino Acid Concentrations of Beef Cows Consuming Low Quality Forage (Authors: Taylor Grussing, Allison Meyer, Patrick Gunn) ASL R3044
Effects of Supplementing Excess Amounts of Metabolizable Protein from a Moderately Abundant Rumen Undegradable Source on Ovarian Function of Beef Cows Consuming Low Quality Forage (Authors: Taylor Grussing, George Perry, Patrick Gunn) ASL R3045
Relationship between Plasma Amino Acid Profile and Ovarian Function around the Time of Ovulation in Beef Cows (Authors: Taylor Grussing, Allison Meyer, George Perry, Patrick Gunn) ASL R3046
Cattle Feeding Benchmark Data: Fall & Winter 2014 Spring & Summer 2015 (Author: Garland Dahlke) ASL R3047
Viability of *Tritrichomonas foetus* Following the Freeze-Thaw Cycle Used for Freezing Bovine Semen (Authors: Patrick Phillips, Jacqueline Myers, Grant Dewell)..... ASL R3048
Effect of Shelter on Heat and Cold Stress on Feedlot Cattle in Iowa (Author: Russ Euken) ASL R3049
Effects of Label-Dose Permethrin Administration on Reproductive Function and Embryo Quality on Superovulated Beef Heifers (Authors: Tyler Dohman, Marianna Jahnke, James West, Patrick Phillips, Patrick Gunn) ASL R3050
Management Minder – A web based Data Management Application (Technical Details) (Authors: Dinesh Reddy Poddaturi, Garland Dahlke, Sandy Johnson) ASL R3051
Management Minder – A Web Based Data Management Application (Concept) (Authors: Dinesh Reddy Poddaturi, Garland Dahlke, Sandy Johnson) ASL R3052
Factors Affecting Timing and Intensity of Calving Season of Beef Cow-Calf Producers in the Midwest (Authors: Lee Schulz, Claire Andresen, Patrick Gunn)..... ASL R3053
Iowa Beef Center (Authors: Dan Loy, Patrick Gunn, Beth Doran, Russ Euken, Denise Schwab, Chris Clark, Joe Sellers, Patrick Wall, Garland Dahlke, Sherry Hoyer, Erika Lundy, Lee Schulz, Grant Dewell)..... ASL R3054
Effect of Zinc Amino-Acid Complex and Optaflexx Feeding Duration on Growth Performance and Carcass Characteristics of Finishing Cattle (Authors: Olivia Genter-Schroeder, Stephanie Hansen) ASL R3055
Incidence of Ovulation to GnRH at Onset of 5-d CO-Synch + CIDR Protocol and Impact on Reproductive Responses (Authors: Patrick Gunn, Allen Bridges) ASL R3056
Estimation of Genetic Parameters for Carcass Traits and Their Corresponding Ultrasound Measurements in Crossbred Beef Cattle (Authors: Hailin Su, Dorian Garrick, Bruce Golden, Wade Shafer, Lauren Hyde)..... ASL R3057
Effect of a Trace Mineral Injection on Growth Performance of Natural Beef Feedlot Steers (Authors: Emma Niedermayer, Olivia Genter-Schroeder, Stephanie Hansen) ASL R3058
Effects of Increased Inclusion of Algae Meal on Finishing Steer Performance and Carcass Characteristics (Authors: Rebecca S. Stokes, Daniel D. Loy, Stephanie L. Hansen)..... ASL R3059
A Nested Mixture Model for Genomic Prediction Using Whole-Genome SNP Genotypes (Authors: Jian Zeng, Dorian Garrick, Jack Dekkers, Rohan Fernando)..... ASL R3060
Near Infrared Spectroscopy (NIRS) Calibrations for Moisture in High Moisture Corn Co-Products (Authors: Camille Vernieres, Charles Hurburgh, Glen Rippke, Connie Hardy) ASL R3061
Growth and Carcass Characteristics of Feed Efficiency Classified Cattle Fed Corn or Roughage-Based Diets and Finished with Corn or Byproduct-Based Diets (Authors: Jason Russell, Erika Lundy, Stephanie Hansen) ASL R3062
Genome Wide Association Study for Heifer Pregnancy in Nellore Cattle (Authors: Gerson A de Oliveira Junior, José Bento Sterman Ferraz, Dorian Garrick)..... ASL R3063

Iowa State University Animal Industry Report 2016

Genetic Difference of Five Beef Cattle Breeds Characterized by Genome-wide SNPs and Haplotypes (Authors: Xiaochen Sun, Hailin Su, Dorian Garrick)	ASL R3064
Improved Accuracy of Across-breed Genomic Prediction Using Haplotypes in Beef Cattle Populations (Authors: Xiaochen Sun, Hailin Su, Dorian Garrick)	ASL R3065
Effect of Circulating Blood or Plasma Urea	
Nitrogen Concentrations on Reproductive Efficiency in Beef Heifers and Cows (Authors: Patrick J. Gunn and Allie. L. Lundberg, Robert A. Cushman and Harvey. C. Freetly, Olivia. L. Amundson, Julie A. Walker, and George. A. Perry)	ASL R3066
Superovulation of Boran Cattle in Ethiopia: A Preliminary Report (Authors: Tamrat Degefa, Alemayehu Lemma, Azage Tegegne, Curtis R. Youngs)	ASL R3067

Dairy

Best Management Production Input Approach to High Yielding Alfalfa (Authors: Brian Lang, Ken Pecinovsky)	ASL R3068
Lactational Performance of Holstein Dairy Cows Fed Two Levels of Full-fat Corn Dried Distillers Grains with Solubles (Authors: Eric D. Testroet, Vaishnavi Manimanna Sankarlal, Stephanie Clark, Donald C. Beitz)	ASL R3069
Regions of the Genome Associated with Mid-Lactation Feed Efficiency in Dairy Cattle (Authors: Lydia Hardie, Diane Spurlock)	ASL R3070
Genomic Prediction of Milk Fat using Fixed Length Haplotypes (Authors: Melanie Hayr, Xiaochen Sun, Tom Druet, Dorian Garrick)	ASL R3071
Impact of Embryo Transfer Technology on the Production of Artificial Insemination Sires for the U.S. Dairy Cattle Industry (Authors: Morgan M. Sommer, Curtis R. Youngs)	ASL R3072
Implementing Risk Management Decisions that Optimize Nutrient Value of Dairy Manure while Minimizing Related Risk (Authors: Jenn Bentley, Ryan Breuer, Leo Timms, Larry Tranel, Ron Lenth, Brian Lang, Angie Rieck-Hinz, Greg Brenneman, Kris Kohl, Beth Doran)	ASL R3073
Manure Management Systems-Iowa Dairy Producer Surveys (Authors: Jenn Bentley, Leo Timms, Larry Tranel, Ron Lenth)	ASL R3074
Economics of Dairy Manure Management in Iowa (Authors: Jenn Bentley, Leo Timms, Larry Tranel, Greg Brenneman, Kris Kohl, Ron Lenth)	ASL R3075
Organic Dairy Profits in Iowa – 2014 (Author: Larry Tranel)	ASL R3076
Organic Dairy Performance and Profitability in 2014 (Author: Larry Tranel)	ASL R3077
Gendered Intra-household Contributions to Low-input Dairy in Senegal (Authors: Muhammed Walugembe, Stanly Tebug, Miika Tapio, Ayao Missohou, Jarmo Juga, Karen Marshall, Max Rothschild)	ASL R3078
Evaluation of Two Organic Acid Pre-Post Milking Teat Dips on Teat Health and Condition in a Commercial Herd (Authors: Whitney Shonka, Leo Timms)	ASL R3079
Evaluation of Two Experimental Organic Acid Post Milking Teat Dips on Teat Health and Condition (Authors: Heather Tauke, Leo Timms)	ASL R3080
Comparison of an Experimental vs. Commercial Dry Period Barrier Teat Sealant Dip on Teat Coverage Persistency and Teat Health (Trial 1) (Authors: Aislinn Pomfret, Leo Timms)	ASL R3081
Comparison of an Experimental vs. Commercial Dry Period Barrier Teat Sealant Dip on Teat Coverage Persistency and Teat Health (Trial 4) (Authors: Heather Tauke, Leo Timms)	ASL R3082
Comparison of an Experimental vs. Commercial Dry Period Barrier Teat Sealant Dip on Teat Coverage Persistency and Teat Health (Trial 5) (Authors: Heather Tauke, Leo Timms)	ASL R3083
Evaluation of Teat Coverage Persistency and Teat Health for 4 Dry Period Persistent Barrier Teat Sealant Dips (Hydromer) (Authors: Heather Tauke, Leo Timms)	ASL R3084
A Survey of Dairy Farm Treatment Practices on Midwest Dairy Farms (Authors: Patrick J. Gorden, Cassandra Rice, Adlai Schuler)	ASL R3085
Altered Plasma Pharmacokinetics of Ceftiofur Hydrochloride in Cows Affected with Severe Clinical Mastitis (Authors: Patrick J. Gorden, Michael D. Kleinhenz, Larry W. Wulf, Butch KuKanich, Chang J. Lee, Chong Wang, Johann F. Coetzee)	ASL R3086
Topical Flunixin Meglumine Effects on Pain Associated Biomarkers after Dehorning (Authors: Michael D. Kleinhenz, Nicholas Van Engen, Patrick Gorden, Johann Coetzee)	ASL R3087
June Dairy Month Open Houses: Improving Consumer Understanding of Modern Animal Agriculture (Authors: Leo Timms, Ryan Breuer, Jenn Bentley, Megan Kregel)	ASL R3088
Tri-State Dairy Youth Expo Hones in on Dairy Judging Skills (Authors: Jennifer Bentley, Ron Lenth)	ASL R3089

Iowa State University Animal Industry Report 2016

- Midwest Dairy Day Focuses on Genomics 101: Putting Genomics to Work (Authors: Jennifer Bentley, Megan Kregel, Kyra Bellrichard).....ASL R3090
Social Media: A Means of Educating and Advocating for the Dairy Industry (Author: Ryan Breuer).....ASL R3091

Environment

- Grazing System Effects on Enteric Methane Emissions from Cows in Southern Iowa Pastures (Authors: James R. Russell, Justin Bisinger, Wendy J. Powers)ASL R3092

Equine

- 2015 Equine Program Review (Authors: Peggy M. Auwerda, Nikki Ferwerda)ASL R3093

Poultry

- Host-Pathogen Protein-Protein Interaction Prediction Using an in silico Model (Authors: John C.F. Hsieh, Robert L. Jernigan, Susan J. Lamont).....ASL R3094
Heat-Susceptible and Heat-Resistant Chicken Lines Reveal Differentially Expressed Genes in Liver in Response to Heat Stress (Authors: Xi Lan, Carl J Schmidt, Susan J. Lamont).....ASL R3095
Infection of Commercial Laying Hens with Newcastle Disease Virus: Differing Responses between Birds Provide Potential for Genetic Improvement through Selection (Authors: Kaylee Rowland, Huaijun Zhou, Rodrigo Gallardo, David Bunn, Susan J. Lamont).....ASL R3096
Host Cellular Response to Multiple Stressors Using a Chicken in vitro Model (Authors: Anna Slawinska, John C.F. Hsieh, Carl J. Schmidt, Susan J. Lamont)ASL R3097
Do Two Distinct Chicken Lines Differ in Their Response to Newcastle Disease Virus? (Authors: Melissa S. Herrmann, Rodrigo Gallardo, David A. Bunn, Huaijun Zhou, Susan J. Lamont)ASL R3098
Unique Genetic Differences in Responses of Chicken Immune Cells to an Inflammatory Stimulus and Heat Stress (Authors: Angelica Van Goor, Anna Slawinska, Carl Schmidt, Susan J Lamont).....ASL R3099
Gene Expression Response to Heat Stress in Two Broiler Lines (Authors: Jibin Zhang, Carl J. Schmidt, Susan J. Lamont)ASL R3100
Genomes of African Chickens Show Evolutionary Response to Environmental Stress (Authors: Damarius S. Fleming, James E. Koltes, Alyssa D. Markey, Carl J. Schmidt, Chris M. Ashwell, Max F. Rothschild, Michael E. Persia, James M. Reecy, Susan J. Lamont)ASL R3101
Variation in Avian Pathogenic Escherichia coli Colonization Levels in Chickens (Authors: Melissa S. Monson, Michael G. Kaiser, Susan J. Lamont).....ASL R3102
Cytotoxic and Antigenotoxic Activities of Phosvitin From Egg Yolk (Authors: Sunhee Hoon, Dong U. Ahn).ASL R3103
Sequential Separation of Lysozyme, Ovomucin, Ovotransferrin and Ovalbumin from Egg White (Authors: Sandun Abeyrathne, Hyunyoung Lee, Dong U. Ahn).....ASL R3104
Separation of Ovotransferrin and Ovomuroid from Chicken Egg White (Authors: Sandun Abeyrathne, Hyunyoung Lee, Dong U. Ahn).....ASL R3105

Small Ruminants

- Genome-wide Analysis of Small Ruminant Tolerance to Grazing Stress Under Arid Desert (Authors: Ahmed R. Elbeltagy, Eui-Soo Kim, Barbara Rischkowsky, Adel M. Aboul-naga, Joram M. Mwacharo, Max F. Rothschild).....ASL R3106
Meningeal Worm in Central Iowa Goat Herds (Author: Kelly Still Brooks)ASL R3107

Swine

- Oat Screenings: A Novel Swine Feedstuff (Authors: Mark S. Honeyman, Peter J. Lammers).....ASL R3108
Genomic Differences between Prewaning Survival and Mortality of Piglets Following PEDV Outbreaks (Authors: Francesca Bertolini, John C. S. Harding, Benny Mote, Graham S. Plastow, Max Rothschild).....ASL R3109
Effect on Gilt Behavior and Postures when Selected for Residual Feed Intake Selection in Response to a Lipopolysaccharide Challenge (Authors: Samaneh Azarpajouh, Jessica Colpoys, Nicholas Gabler, Anna Johnson, Jack Dekkers, Anoosh Rakhshandeh, Caitlyn Abell)ASL R3110
Comparison of Gilt Behavior when Fed Ad Libitum or Twice Daily (Authors: Jessica Colpoys, Amber Haritos, Paige Mercer, Kirsten Springman, Nicholas Gabler, Anna Johnson)ASL R3111
Stalled Gilt Behavior when Provided with Novel Flavors on Rope Environmental Enrichment (Authors: Jessica Colpoys, Jennifer Annen, Kimberly Martens, Nicholas Gabler, Anna Johnson)ASL R3112

Iowa State University Animal Industry Report 2016

Genetic Parameters and Effect of WUR Genotype on Piglet Response to Co-Infection with PRRS and PCV2b, with or without Vaccination for PRRS (Authors: Jenelle Dunkelberger, Nick V. L. Serão, Assistant Professor, Maureen Kerrigan, Joan Lunney, Bob Rowland, Jack Dekkers).....	ASL R3113
Number Born Alive Accuracy Changes Based on the Number of Crossbred Records Included for Large White and Landrace Breeding Value Estimation from a Large Seedstock Supplier (Authors: Denise L. Beam, John W. Mabry, Kenneth J. Stalder)	ASL R3114
Identification of the Range of Hock Angles in Lame and Non-lame Replacement Gilt (Authors: Jared Mumm, Kenneth J. Stalder, Joe Stock, Julia Calderon Diaz)	ASL R3115
Ad libitum Feeding of Gilt Developer Diets Differing in Standard Ileal Digestive Lysine Concentrations Affected Growth and Feed Efficiency but did not Affect Age at Puberty in Replacement Gilts (Authors: Julia A. Calderón Díaz, Jeffrey L. Vallet, Terry Prince, Ashley DeDecker, Christina Phillips, George Foxcroft, Kenneth J. Stalder)	ASL R3116
Juvenile IGF-I: An Early Bio-marker for Feed Efficiency in Pigs (Authors: Emily Mauch, Nick Serão, Anna Wolc, Kim Bunter, Jack Dekkers)	ASL R3117
Comparison of Joint Angles for Feet and Leg Conformation Traits between Gilts at Selection and at their Second Gestation and Sows Parity 5 and Above (Authors: Joseph D. Stock, Julia A. Calderón Díaz, Benny E. Mote, Kenneth J. Stalder)	ASL R3118
Joint Angles for Feet and Leg Conformation Traits in Second Gestation Sows (Authors: Joseph D. Stock, Julia A. Calderón Díaz, Benny E. Mote, Kenneth J. Stalder)	ASL R3119
Does Heat Stress Alter the Pig’s Response to Dietary Fat Source, as it Relates to Apparent or True Total Tract Digestibility? (Authors: Trey A. Kellner, Lance H. Baumgard, Ken J. Prusa, John F. Patience)	ASL R3120
Effect of Reducing Mean Particle Size of Corn DDGS Using a Roller Mill or a Hammermill on Apparent Total Tract Digestibility of DM, GE, Nitrogen and NDF in Growing and Finishing Pigs (Authors: Jesus Acosta, John Patience).....	ASL R3121
Xylanase Effects on Apparent Total Tract Digestibility of Energy and Dry Matter with or without DDGS at Three Time Points Over Six Weeks in Growing Pigs (Authors: Sarah Weiland, John Patience).....	ASL R3122
Association of Different Iowa Livestock Truck Wash Stations Service Levels with Enterobacteriaceae Counts (Authors: Amber Danielson, Samaneh Azarpajouh, Anna Johnson, James Dickson, Locke Karriker, Rodney Baker, Christopher Rademacher, Troy Bigelow, Kenneth Stalder)	ASL R3123

Teaching

AnS 490-A: The Use of Positive Reinforcement Training for a Filly to Accept Husbandry Practices (Authors: McKenzie Shaffer, Meredith Puls, Nikki Ferwerda, Anna Johnson)	ASL R3124
Update from the Animal Science Undergraduate Teaching Section – 2015 (Author: Jodi Sterle).....	ASL R3125

Zoo/Non Traditional Livestock

Inter-Observer Reliability for Large Exotic Felids (Authors: Cayla Iske, Cheryl Morris, Anna Johnson)	ASL R3126
Evaluation of Microbial Populations in Raw Meat Diets Fed to Captive Exotic Animals in Zoological Institutions (Authors: Cayla Iske, Cheryl Morris, Kelly Kappen).....	ASL R3127