



NEBRASKA SWINE REPORT

University of Nebraska–Lincoln Annual Swine Reports

● Nutrition ● Genetics ● Management ● Reproduction ● Odor

2009 Nebraska Swine Report
2008 Nebraska Swine Report
2007 Nebraska Swine Report
2006 Nebraska Swine Report
2005 Nebraska Swine Report
2004 Nebraska Swine Report
2003 Nebraska Swine Report
2002 Nebraska Swine Report
2001 Nebraska Swine Report
2000 Nebraska Swine Report
1999 Nebraska Swine Report
1998 Nebraska Swine Report
1997 Nebraska Swine Report
1996 Nebraska Swine Report
1995 Nebraska Swine Report

Prepared by the staff in Animal Science and cooperating Departments for use in Extension, Teaching and Research programs.

Extension Division
Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln



Extension is a Division of the Institute of Agriculture and Natural Resources at the University of Nebraska–Lincoln cooperating with the Counties and the United States Department of Agriculture.

University of Nebraska–Lincoln Extension educational programs abide with the nondiscrimination policies of the University of Nebraska–Lincoln and the United States Department of Agriculture.

© 2007, The Board of Regents of the University of Nebraska on behalf of the University of Nebraska–Lincoln Extension. All rights reserved.

Nebraska Swine Report Table of Contents page linking to annual reports of swine research and topics related to swine production from 1995 to 2008. Following are the searchable Tables of Content for the respective years:

2009 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec09219.pdf>

Nutrition

Effect of Corn Dried Distillers Grains with Solubles (DDGS) on Growth Performance and Carcass Characteristics of Growing-Finishing Gilts with Previous Exposure to DDGS in the Nursery
Feeding Value of Diets for Growing-Finishing Pigs with Varying Concentrations of Corn Distillers Dried Grain with Solubles (DDGS)
Effects of Distillers Dried Grains with Solubles (DDGS) and Paylean® Supplementation on Growth Performance of Growing-Finishing Pigs
Economy of Adding Fibrous Feedstuffs to Sow Gestation Diets
Nutrition During Gilt Development and Genetic Line Affect Reproductive Rate Through Parity 1
In Vivo and *In Vitro* Expression of Porcine Zinc Transporter (ZnT) 1 mRNA

Health

Effect Of Dam Parity On Litter Performance And Passive Immunity
Effect Of Dam Parity On Growth Performance And Immunity Of Weaned Pigs

Genetics

Selection for Immune Responses to Porcine Circovirus (PCV2) to Decrease Incidence of Porcine Circovirus Associated Disease (PCVAD)

Appendix

Explanation of Statistics Used in this Report

2008 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec08219.pdf>

Pork Central's Al Prosch Retires

Nutrition

The Effect of Corn Distillers Dried Grain with Solubles (DDGS) on Growth Performance of Growing-Finishing Pigs
The Effect of Corn Distillers Dried Grain with Solubles (DDGS) on Carcass Characteristics and Pork Quality
Effects of Increasing Concentrations of Distillers Dried Grains with Solubles (DDGS) on Growth Performance of Weanling Pigs
Dietary Fiber in Sow Gestation Diets — An Updated Review
Effects of Nutrition During Gilt Development on Lifetime Productivity of Sows of Two Profile Maternal Lines: Summary Growth Characteristics and Sow Productivity — 2008
Effects of Nutrition During Gilt Development and Genetic Line on Farrowing Rates through Parity 3, Causes of Culling, Sow Weights and Backfats through Parity 4, and Factors Affecting Farrowing Rates
Estimation of the Lysine Requirements for High-Lean Growth Pigs
Effect of Increasing Lysine:net Energy Ratio on Growth Performance and Plasma Urea Nitrogen Concentration of Late-finishing Barrows Fed Low-protein Amino Acid-supplemented Diets and Ractopamine

Health

Does Dam Parity Affect Progeny Health Status?
Key Points from the 48th Annual George A. Young Swine Health and Management Conference

Odor Management

Validating the Odor Footprint Tool Using Field Data
Association of Odor Measures with Annoyance: Results of an Odor-Monitoring Field Study

Meats

Effects of Organic Acid Salts on the Quality Characteristics of Whole Muscle Hams

Appendix

Explanation of Statistics Used in this Report

2007 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec07219.pdf>

Practical Pig Research is His Niche

History of the Nebraska Feeder Pig Expo

Nutrition

- Impact of a Variable Number of Out-of-Feed Events on Grow-Finish Performance
- Effects of Nutrition During Gilt Development on Lifetime Productivity of Sows of Two Prolific Maternal Lines:
Preliminary Report of Reproductive Characteristics
- Effects of Nutrition During Gilt Development on Lifetime Productivity of Sows of Two Prolific Maternal Lines:
Growth Characteristics of Replicate 1, 2, and 3 Gilts
- Effect of a Commercial Feed Additive on Sow Feed Disappearance and Litter Performance in Two Maternal Lines
- Serum Vitamin B₁₂ and Homocysteine Concentrations of Weanling Pigs Fed Increased Levels of Dietary Vitamin B₁₂
- Effects of Repaxol® and Aciprol on Growth Performance of Weaned Pigs Challenged with *Escherichia Coli* K88
- Effect of Ractopamine (Paylean®) and Lysine: Net Energy Ratio on Growth Performance and Plasma Urea Nitrogen Concentration of Late-Finishing Barrows Fed Low-Protein Amino Acid-Supplemented Diets
- The Effect of Dietary Selenium on Pork Carcass Quality and Longissimus Color Stability
- The Effect of Organic and Inorganic Selenium on Smoked Pork Chop Color

Genetics

- Genetics Affect Incidence of Porcine Circovirus Associated Disease

Meats

- The Effect of Sodium Lactate and Sodium Citrate Solutions on the Quality Characteristics of Restructured Hams

Business Management

- Corn Prices, Ethanol and Feed Price Outlook

Appendix

- Explanation of Statistics Used In This Report

2006 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec06219.pdf>

Production Management

- Impact of Repeated Out-of-Feed Events and Fineness of Grind on Grow-Finish Performance
- The Case Against Evening-Up Litters Until Weaning
- Patterns of Drinking Water Use in Pork Production Facilities

Business Management

- Producers' Decisions

Reproduction

- Freezing Swine Embryos: Do Success Rates Differ Between Breeds?
- Regulation of Pituitary Gene Expression in Lines of Swine with Different Ovulation Rates

Nutrition

- Effect of Diet and Sire Line on Grow-Finish Performance
- Effects of Feeding Increased Levels of Vitamin B12 to Weaning Pigs
- Effects of Nutrition During Gilt Development on Lifetime Productivity of Sows of Two Prolific Maternal Lines:
Growth and Puberty Characteristics of Rep 1 Gilts
- Effect of Low-Protein Non-Amino Acid Supplemented Diet and Ractopamine on Growth Performance and Serum Urea Concentration of Late-Finishing Pigs
- Effect of Dietary Crude Protein Versus Crystalline Amino Acids on Growth Performance, Serum Insulin-Like Growth Factor-I Concentration, and IGF-I mRNA Expression in Growing-Finishing Gilts.

Genetics

- Genes Expressed in Response to PRRSV

2005 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec05219.pdf>

Health

PRRSV Negative Herds: A Survival Analysis

Production Management

Shoulder Ulcers in Sows

Out-of-Feed Events in Grow-Finish Pigs: Causes and Consequences

Teeth Clipping -- Have You Tried to Quit?

Nutrition

Research Proposal Summary: Effects of Nutrition During Gilt Development on Sow Lifetime Productivity of Two Prolific Maternal Lines

Effect of Increasing Dietary Crude Protein Concentration on Growth Performance and Serum Insulin-Like Growth Factor-I Concentration in Barrows and Gilts

Development of a NCR-42 Vitamin-Trace Mineral Mix

Genetics

Incidence and Inheritance of Splayleg in Nebraska Litter Size Selection Lines

Business Management

How Big is "Big Enough" to Make a Living in Pork Production?

Housing

Heating Systems for Wean-to-Finish Facilities

Meats

Rapid Methods to Predict Lean Quality Attributes in Pork

Does Insulin and Leucine Stimulate Muscle Protein Synthesis?

2004 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec04219.pdf>

Nutrition

Body Composition, Protein Deposition, and Efficiency of Lysine Utilization of Growing Pigs Fed Crystalline or Protein-Bound Lysine

Dietary Antimicrobials in a Wean-to-Finish Facility

Update on Omega-3 Fatty Acids and Litter Size in Swine

Effects of Sow Dietary Glutamine Supplementation on Sow and Litter Performance, Subsequent Weanling Pig Performance, and Intestinal Development after an Immune Challenge

Energy and Nitrogen Utilization of Corn Rootworm Protected Corn (Event MON 863) and Similar Non-Transgenic Corn in Young Pigs

Effect of Increasing Dietary Crude Protein Concentration on Growth Performance and Serum Insulin-Like Growth Factor-I Concentration

Genetics

Different Biological Responses of Pigs of Two Genetic Populations to PRRSV Challenge Suggests Underlying Genetic Variation in Susceptibility/Resistance to PRRSV

Major Genes Affect Reproduction and Early Growth

Reproduction

Role of the Gonadotropin-Releasing Hormone (GnRH) Receptor in Determination of Ovulation Rate Between Lines of Swine

Housing

Thermal Conditions Within Pens Fitted with Differing Zone-Heating Options and Resulting Performance of Newly Weaned Pigs in a Wean-to-Finish Facility

Public Policy

Where Can I Build or Expand a Livestock Operation? A Case Study of Cuming County, Nebraska

Nebraska Supreme Court Rules City can Regulate Animal Feeding Operation

Livestock Friendly Counties Statute Enacted

Property Valuation May be Reduced by Proximity to Livestock Operation

Business Management

Team Approach to Management

Manure Management

Crop Residue Cover and Manure Incorporation - Part I: Reduction of Cover

Crop Residue Cover and Manure Incorporation - Part II: "Fine-Tuning" the System

2003 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec03219.pdf>

Nutrition

- Growth Performance, Carcass Characteristics, and Economics of Pigs Fed Diets Containing a Corn Germ-Corn Bran Product
- Vitamin B12 Requirement for Weanling Pigs
- Vitamin B12 and Mecadox? Supplementation in Weanling Pig Diets
- Do Crowded Pigs Respond to Paylean??
- Comparison of Swine Performance When Fed Diets Containing Corn Root Worm Protected Corn, Parental Line Corn, or Conventional Corn Grown during 2000 in Nebraska
- Energy and Nitrogen Utilization of Roundup Ready? Corn (Event nk603) and Non-Transgenic Corn in Young Pigs
- Effect of a Low Phytate, Nutrient Dense Corn on Pig Performance
- Omega-3 Fatty Acids and Swine Reproduction - A Review
- Effects of Glutamine on Growth Performance and Intestinal Development of Immune Challenged Weanling Pigs Fed Chemically Defined Diets
- Influence of Crystalline or Protein-Bound Lysine on Growth Performance, Body Protein Deposition and Lysine Utilization in Nursery Pigs
- Influence of Crystalline or Protein-Bound Lysine on Lysine Utilization for Growth in Pigs

Housing

- Progress in Estimating Setback Distances for Livestock Facilities
- The Economic Potential of Methane Recovery: Projected Impacts of Various Public Policy Scenarios

Industry Issues

- Agricultural Management Advisory Groups for Pork Producers

Meats

- Case Ready and Enhanced Pork - How do Ingredients Make them Work?
- Fresh vs. Frozen Bellies for Bacon
- Fatty Acid Composition of Fresh Pork Bellies - Implications to Bacon Production?
- Effect of Post-Cooking Holding Time on Consumer Taste Panel Ratings of Enhanced Pork Loins

Appendix

- Explanation of the Statistics Used in this Report

2002 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec02219.pdf>

Nutrition

- Comparison of Swine Performance When Fed Diets Containing Roundup Ready? Corn, Parental Line Corn, or Two Commercial Corns
- Niacin and Vitamin B12 Requirements of Weanling Pigs
- Fades Sources in Pelleted Diets
- Managing Swine Dietary Phosphorus to Meet Manure Management Goals
- Update on the Economics of Feeding Ractopamine (PayleanTM) to Finishing
- Defining the Optimal Feed Budget System for Terminal-Crossed, Growing-Finishing Barrows
- Effects of Glutamine on Growth Performance and Small Intestine Villus Height in Weanling Pigs
- Influence of Linoleic Acid Isomers on Body Fat
- Dietary Amino Acid Utilization for Body Protein Deposition-Current and Future Research

Genetics

- Reproductive Responses in the NE Index Line Estimated in Pure-line and Crossbred Litters
- Growth and Carcass Responses in the NE Index Line Estimated in Pure-line and Crossbred Litters
- Economic Analysis of the Selection Response to the NE Index Line
- PAYLEAN? Improves Growth and Carcass Merit of Pigs with 25% and 50% Nebraska Index Line Genes
- Economic Analyses of Feeding 18g per ton PAYLEAN? to Crosses of the NE Index Line

Housing

- Applicability of High-RiseTM Hog Housing For Finishing Operations
- Sorting and Mixing Effects in a Wean-to-Finish Facility

Industry Issues

- Competition - It's Not Just "Cost" of Production

Meats

- Factors Affecting Bacon Color and Composition

Youth Education

- Effectiveness of Pork Quality Assurance Training for Youth

2001 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec01219.pdf>

Nutrition

- Phytase in Swine Diets
- Dietary Manipulation to Reduce Ammonia Concentration in Nursery Pig Facilities
- Plasma Urea Concentration of Pigs on Commercial Operations
- Replacing Conventionally Processed Soybean Meal With Extruded/Expelled Soybean Meal in Swine Diets
- Economic Value of Ractopamine (Paylene) for Finishing Pigs
- Valine, Isoleucine and Histidine Supplementation of Low-Protein, Amino Acid-Supplemented Diets for Growing Pigs
- Dietary Conjugated Linoleic Acid (CLA) and Body Fat Changes
- The Effect of Compensatory Growth on Organ Weights and Carcass Composition in Growing Gilts
- Factors Affecting Small Intestine Development in Weanling Pigs

Genetics

- Two-stage Selection for Ovulation Rate and Litter Size in Swine - an Effective Procedure to Increase Reproductive Rate

Legal Issues

- Supreme Court Rules in Progress Pig Case

2000 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec00219.pdf>

Reproduction

- Pubertal Response in Gilts to Type and Frequency of Boar Exposure and as Influenced by Genetic Line and Age at Initiation of Boar Contact
- The Effect of Oxytocin at the Time of Insemination on Reproductive Performance ? A Review

Genetics

- Candidate Reproductive Genes Do Not Explain Responses in Lines Selected for Ovulation Rate and Litter Size

Nutrition

- Extruded-Expelled Soybean Meal for Pigs
- The Effects of Dietary Feather Meal Concentration and Space Allocation on Performance and Carcass Characteristics of Barrows
- Nitrogen Balance and Growth Trials With Pigs Fed Low-Crude Protein, Amino Acid-Supplemented Diets
- The Use of Plasma Urea as an Indicator of Protein Status in Growing-Finishing Pigs
- The Effects of Compensatory Growth and Form of Amino Acid Supply on Plasma Urea Concentration, Organ Weights, and Carcass Characteristics in Gilts
- The Investigation of Betaine as a Growth Promoter and/or Carcass Modifier and the Efficacy of Baden to Replace Methionine in Finishing Diets
- Acylation Stimulating Protein: A Potential Regulator of Fat Synthesis

Air Quality

- A Review of the Ammonia Issue and Pork Production

Production Management

- Effect of Wean-to-Finish Management on Pig Performance

Health

- Duration of PRRS Virus Infections and Proportion of Persistently Infected Pigs

Legal Issues

- Nebraska Competitive Livestock Marketing Act
- District Court Rules in Progress Pig Case

Appendix

- Explanation of Statistics Used in This Report

1999 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec99219.pdf>

Reproduction

- Changes in pH of Boar Semen Extenders
- Follicular Selection and Atresia in Gilts for an Index of High Ovulation Rate and High Prenatal Survival

Health

- A Population Approach to Diagnosis of Grow-Finish Diarrhea Complex
- Survival of Pathogenic Intestinal Spirochetes Kept in Pure Cultures and in Pig Feces Held at Four Different Temperatures

Nutrition

- Feasibility of Growing and Feeding High-Oil Corn to Pigs
- Bioavailability of Iron in Iron Proteinates
- Zinc Oxide, With or Without Carbadox, Stimulates Performance in Nursery Pigs
- The Effects of Dietary Feather Meal Concentration on Performance and Carcass Characteristics of Barrows
- Defining Swine Nutrient Requirements and Allowances ? What do the Numbers Mean?
- Response to Increasing Levels of Nutrients Fed During Gestation and Lactation to Control and Prolific Gilts
- Are the Sows Fed Adequately?
- Growth and Carcass Responses of Barrows Fed a Corn-Soybean Meal Diet or Low-Protein Amino Acid-Supplemented Diets at Two Feeding Levels

Pork Quality and Meats

- Pork 101 - A Short Course Focusing on the Importance of Pork Quality and Consistency
- Development of Intervention Strategies to Extend the Shelf-life of Fresh Ground Pork
- Development and Use of Pork Skin Fat Emulsion Gels in Low-Fat High-Added-Water Bologna

Housing and Equipment

- Impact of Drinker Type on Pig Performance, Water Use and Manure Production

Appendix

- Explanation of the Statistics Used in This Report

1998 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec98219.pdf>

Reproduction

- Efficacy of Once (1x) Vs Twice (2x) Daily Physical or Fence-line Contact with Boars for Stimulating Earlier Puberty in Gilts
- Follicular Development in Gilts Selected for High Ovulation Rate and Embryo Survival Vs Randomly Selected Control Line Gilts

Genetics

- The Effects of Genetic Line and Diet Regimen on Attainment of Puberty in Gilts
- Effects of Gestation Housing System on Productivity of Three Genetic Lines of Sows
- Responses to 14 Generations of Selection for Components of Litter Size

Health

- Activity of Four Antimicrobial Agents Against Porcine *Serpulina* *Pilosicoli* Isolates From the Midwestern United States

Nutrition

- Protein Sources for Segregated Early Weaned (SEW) Pigs 20
- Dietary Fiber in Sow Gestation Diets - An Economic Analysis
- Plasma Urea Can Be Used to Identify the Protein Requirements of Group-penned Finishing (130 to 220 lb) Barrows and Gilts Fed Corn-soybean Diets
- Responses of Barrows Consuming a Diet Formulated on an Ideal Protein Basis at Different Feeding Levels
- The Effect of Protein Intake on Growth Performance, Plasma Urea Concentration, Liver Weight, and Arginase Activity of Finishing Barrows and Gilts

Pork Quality and Meats

- Improvement of Pork Loin Tenderness Using the Hydrodyne Process
- Properties and Applications of Pork Trim Obtained from an Advanced Meat Recovery System
- Utilization of Raw Pork Skins in Reduced Fat Fresh Pork Sausage

Housing

- Pen Space Allocations and Pelleting of Swine Diets
- Building Loads and Failures
- Ventilation Systems - Redundancy is Essential

Manure Management

Nutrient Balance in Nebraska Livestock Confinement Systems

Legal Aspects

The Pig Pro Decision, Networking, and Environmental Protection: The Public Policy Challenge

Appendix

Explanation of the Statistics Used in This Report

1997 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec97219.pdf>**Reproduction**

Method of Detection, but not Type of Housing, Affects Accuracy and Rapidity of Estrus Detection in Gilts

Boar Libido Affects Pubertal Development of Gilts

Effect of Early Weaning on Sow Reproductive Performance ? A Review

Health

Synergism between Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) and Salmonella choleraesuis

Nutrition

The Effects of Reducing Dietary Crude Protein Concentration on Odor in Swine Facilities

Segregated Early Weaning of Pigs: Dietary Challenges and Opportunities

The Effect of Infusion of Urea into the Jugular Vein on Feed Intake of Finishing Gilts

Growth Performance and Digestive and Metabolic Responses of Finishing Gilts Penned Individually or in Groups

Dietary Fiber in Sow Gestation Diets ? A Review

Addition of Fat to Diets of Lactating Sows: I. Effects on Lactation Performance and Pig Composition

Addition of Fat to Diets of Lactating Sows: II. Effects on Energy Mobilization and Hormone-Sensitive Lipase Activity

Pork Quality

Retention of Selected Nutrients in Grilled Boneless Pork Chops

Pork Quality Assurance Dollars and Sense

Facility and Equipment Management

Space Allocation Decisions for Barrows and Gilts

Impact of Feeder and Drinker Designs on Pig Performance, Water Use and Manure Production

Manure Management

Purple Sulfur Bacteria in Anaerobic Treatment Lagoons

Environmental Assurance Program

Appendix

Explanation of the Statistics Used in this Report

1996 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec96219.pdf>**Reproduction and Genetics**

Age at Synchrony of First Estrus in Gilts as Influenced by Type and Duration of Daily Boar Exposure

Is Physical Boar Exposure Required for Accurate Detection of Estrus in Gilts?

The Effect of Photoperiod on Sexual Development in Your Boars

Plasma FSH Concentration in Young Boars and Gilts from Lines That Differ in Ovulation Rate and Litter Size

National Swine Improvement Federation Ultrasound Certification Workshops

Records and Marketing

PigCHAMP Summary of 1994 Reproductive Herd Performance

1995 Nebraska Swine Enterprise Records Program Results

Slaughter Hog Price Patterns at Omaha

Health

Porcine Reproductive and Respiratory Syndrome (PRRS) 18

Pathogenicity of Intestinal Spirochetes Associated with Porcine Colonic Spirochetosis

Nutrition

- Bioavailability of Iron in Two Different Sources for Weanling Pigs
- New Swine Nutrition Guide Available
- The Effects of Dietary Protein Concentration on Performance and Visceral Organ Mass in Finishing Barrows and Gilts
- Performance of Growing-finishing Pigs Consuming Diets Formulated on an Ideal Protein (First Four Limiting Amino Acids) Basis
- Epinephrine and Energy Mobilization by Lactating Sows
- The Effects of Tallow Addition to the Diets of Lactating Sows on Hormone and Metabolite Concentrations

Meats

- Impact of Cooking Method on Quality of Boneless Pork Loin Roasts
- Gelatinized High-added Water Pork Skin Connective Tissue Protein Gels as Potential Water Binders

Facility Management

- House Mouse Damage to Insulation
- Effect of Floor Space Allocation on Barrow Performance to 300 Pounds

Appendix

- Explanation of the Statistics Used in this Report

1995 Nebraska Swine Report — <http://www.ianrpubs.unl.edu/epublic/live/ec219/build/ec95219.pdf>

Reproduction

- How Long Does Standing Estrus Last After Initial Boar Exposure When Heat Checking
- Elevation of Plasma FSH with a Low Level of FSH-P During the Early to Mid Follicular Phase Blocks the Loss of Greater Numbers of Medium Follicles in Control Line Gilts Compared to Gilts Selected for High Ovulation Rate

Genetics

- Improved Semen Characteristics in Boars Selected for Testis Size
- Index Selection for Components of Litter Size

Legal Issues

- Legal Aspects of Swine Production Networking
- Feedlot Nuisance and the Nebraska Right to Farm Act

Meats

- Estimation of Pork Trim Composition by Electromagnetic Scanning
- Effect of Cooking Method on Nutrient Content of Boneless Pork Loin Roasts
- Utilization of Twin Screw Cold Extrusion to Manufacture Restructured Chops from Lower Valued Pork

Nutrition

- Pharmacological Levels of Zinc in Nursery Diets - A Review
- Addition of Fat to Diets of Lactating Sows I. Effects on Sow and Pig Performance
- Addition of Fat to Diets of Lactating Sows II. Effects on Energy Intake, Meal Patterns and Blood Hormones and Metabolites
- Are There Benefits in Adding Fat to Sow Lactation Diets?
- Plasma Urea Concentration as an Index of the Protein Requirements of Growing-Finishing Pigs

Health

- Environmental Contamination is a Major Contributor to Prevalence of Serpulina Hydrosentariae Infection of Swine on Farms Medicating Against Swine Dysentery
- Reduced Severity of Disease Associated with Feeding a Pharmacologic Amount of Zinc in a Laboratory Mouse Model of Swine Dysentery

Production Management

- Nursery and Growing-Finishing Space Interactions