
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
Improved Semen Characteristics in Boars Selected for Testis Size
Index Selection for Components of Litter Size
Legal Aspects of Swine Production Networking
Feedlot Nuisance and the Nebraska Right to Farm Act
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
Pharmacological Levels of Zinc in Nursery Diets - A Review
Environmental Contamination is a Major Contributor to Prevalence of Serpulina Hyodysenteriae 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
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
Nursery and Growing-Finishing Space Interactions


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

**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


**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

(Continued on next page)
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


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
Develeopment and Use of Pork Skin Fat Emulsion Gels in Low-Fat High-Added-Water Belogna

Housing and Equipment
Impact of Drinker Type on Pig Performance, Water Use and

Manure Production
Appendix
Explanation of the Statistics Used in This Report


Pubertal Response in Gilts to Type and Frequency of Boar Exposure and as Influenced by Genetic Line and Age at Initiation of Boar Contact
Candidate Reproductive Genes Do Not Explain Responses in Lines Selected for Ovulation Rate and Litter Size
The Effect of Oxytocin at the Time of Insemination on Reproductive Performance? A Review
Extruded-Expelled Soybean Meal for Pigs
The Effects of Dietary Feather Meal Concentration and Space Allocation on Performance and Carcass Characteristics of Barrows
A Review of the Ammonia Issue and Pork Production
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 Promotor and/or Carcass Modifier and the Efficacy of Betaine to Replace Methionine in Finishing Diets
Effect of Wean-to-Finish Management on Pig Performance
Acylation Stimulating Protein: A Potential Regulator of Fat Synthesis
Duration of PRRS Virus Infections and Proportion of Persistently Infected Pigs
Nebraska Competitive Livestock Marketing Act
District Court Rules in Progress Pig Case
Explanation of Statistics Used in This Report

**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 (Paylean) 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


**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
- Phytase 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
- 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

(Continued on next page)

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


- 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-1 Concentration
- 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
- 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
- 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
- Team Approach to Management
- Crop Residue Cover and Manure Incorporation - Part I: Reduction of Cover
- Crop Residue Cover and Manure Incorporation - Part II: “Fine-Tuning” the System

PRRSV Negative Herds: A Survival Analysis
Shoulder Ulcers in Sows
Out-of-Feed Events in Grow-Finish Pigs: Causes and Consequences
Teeth Clipping — Have You Tried to Quit?
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
Incidence and Inheritance of Splayleg in Nebraska Litter Size Selection Lines
How Big is “Big Enough” to Make a Living in Pork Production?
Heating Systems for Wean-to-Finish Facilities
Rapid Methods to Predict Lean Quality Attributes in Pork
Does Insulin and Leucine Stimulate Muscle Protein Synthesis?


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

(Continued on next page)

**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: 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


**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 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

**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

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


Nutrition
- Production Through Four Parities of Prolific Females Developed With and Without Energy Restriction
- An Economic Analysis of Energy Restriction during Pre-Pubescence in Gilts
- Effects of Distillers Grain with Solubles (DDGS) and Paylean® Supplementation on Carcass Quality, Color Stability, and Sensory Characteristics of Pork
- The Effect of Corn Distillers Dried Grains With Solubles (DDGS) on Carcass Quality, Color Stability, and Sensory Characteristics of Pork
- Utilizing Dried Distillers Grains With Solubles and Phytase to Alleviate Phosphorus Costs in Finishing Swine
- Effects of Distillers Dried Grains With Solubles and Lactose on Growth Performance of Nursery Pigs
- Lysine Requirement for Barrows Fed Ractopamine
- Effects of Lactose and Co-dried Milk-yeast on Growth Performance and Gastrointestinal Health of Nursery Pigs
- Effects of Crystalline Lactose on Expression of Sodium-dependent Glucose Transporter (SGLT)-1 mRNA

Health
- Effect of Dam Parity on Progeny Gastrointestinal Microbiota

Genetics
- Effect of DNA Markers in Nebraska Selection Lines

Appendix
- Explanation of Statistics Used in this Report

(Continued on next page)
Rodger Johnson: Patience and Perseverance Guided a Career in Swine Genetics Nutrition

Nutrition
- Effects of Distillers Dried Grains With Solubles (DDGS) and Energy Restriction During Development on Growth and Puberty of Gilts
- Effects of Distillers Dried Grains With Solubles (DDGS) and Ractopamine on Swine Growth and Carcass Value
- Effects of Incorporation of a Yeast-Dried Milk Product in Creep Feeding and Phase-1 Nursery Diets on Growth Performance and Circulating Immunoglobulin A of Pigs
- Evaluation of Soybean Meal With Genetically Modified Input Traits DP-356Ø43-5 Fed to Growing Pigs
- Evaluation of Soybean Meal With the Genetically Modified Trait DP-356Ø43-1 Fed to Growing Pigs

Genetics
- Genome-Wide Association Studies of Sow Lifetime Productivity

Health
- Variation in Response to Infection in Experimental Challenges with Porcine Circovirus 2b

Parity
- The Effect of Dam Parity on Milk Yield
- Effect of Dam Parity on Litter Performance, Passive Immunity, and Fecal Microbial Populations (Parity 1 vs. 3)

Appendix
- Explanation of Statistics Used in This Report