

Gerald C. Shurson

Professor

Appointment 25% Research, 15% Teaching, 50% Extension, 10% Service

Research Area Swine Nutrition and Management

Appointment History

1998-present	Professor
1992-1998	Associate Professor
1990-1992	Assistant Professor

Graduate Program Affiliations

Animal Sciences – Senior Member

Professional and Honorary Societies

Member, American Society of Animal Science

Five Most Significant Publications

Shurson, G. 2004. Swine nutrition and feeding – Past, present, and future. Proc. 18th Congress International Pig Veterinary Society, Hamburg, Germany, Vol. 2. pp. 718-720.

I was invited by the IPVS organizing committee to write and present this paper as a keynote to lead the papers presented in the nutrition section. I believe that this opportunity is a result of the highly visible and good international reputation I have developed over my career.

Shurson, G., M. Spiels, and M. Whitney. 2004. The use of maize distiller's dried grains with solubles in pig diets. *Pig News and Information* 25 (2): 75-83.

In recognition of our research on evaluating distiller's dried grains with solubles in swine feeding programs, CAB International invited me to write this review article.

Whitney, M.H., G.C. Shurson, R.M. Guedes, C.J. Gebhart, and N.L. Winkleman. 2003. Effect of corn distiller's dried grains with solubles (DDGS) and/or antimicrobial regimen on the ability of growing pigs to resist a *Lawsonia intracellularis* challenge. Presented at the 2003 Midwest ASAS/ADSA Meeting, Des Moines, IA. March 18, 2003.

This abstract represents two studies that we conducted to demonstrate that adding distiller's dried grains with solubles to pig diets is effective in reducing the length, severity, and prevalence of lesions in pigs infected with the enteric disease (ileitis). Our group was the first research group to do this. This work was part of my advisee's (Mark Whitney) Ph.D. thesis and will ultimately be published in a refereed journal.

Spiels, M.J., M.H. Whitney, and G.C. Shurson. 2002. Nutrient database for distiller's dried grains with solubles produced from new ethanol plants in Minnesota and South Dakota. *J. Anim. Sci.* 80:2639.

This was the first study conducted and published from our internationally recognized research program involving the evaluation of the feeding value of corn distiller's dried grains with solubles to swine. Prior to this study, and several subsequent studies, very little distiller's dried grains were used in swine diets.

www.ddgs.umn.edu

I created this University of Minnesota distiller's dried grains with solubles web site to share all of our research results along with those of other prominent distiller's research programs in the U.S. This web site has had over 16,000 visitors over the past 3 years.

Refereed Journal Publications and Book Chapters (Last Five Years)

Authored or co-authored the following 12 papers in peer-reviewed journals.

- Johnston, L.J., J.E. Pettigrew, S.K. Baidoo, **G.C. Shurson**, and R.D. Walker. 2003. Efficacy of sucrose and milk chocolate product or dried porcine solubles to increase feed intake and improve performance of lactating sows. *J. Anim. Sci.* 81: 2475-2481.
- Shurson, G.C.**, G.W. Libal, J. Crenshaw, C.R. Hamilton, R.L. Fisher, D.D. Koehler, and M.H. Whitney. 2003. Impact of energy intake and pregnancy status on rate and efficiency of gain and backfat changes of sows postweaning. *J. Anim. Sci.* 81: 209-216.
- Spiehs, M.J., M.H. Whitney, and **G.C. Shurson**. 2002. Nutrient database for distiller's dried grains with solubles produced from new ethanol plants in Minnesota and South Dakota. *J. Anim. Sci.* 80:2639
- Hill, G.M., D.C. Mahan, S.D. Carter, G.L. Cromwell, R.C. Ewan, R.L. Harrold, A.J. Lewis, P.S. Miller, **G.C. Shurson**, and T.L. Veum. 2001. Effect of pharmacological concentrations of zinc oxide with or without the inclusion of an antibacterial agent on nursery pig performance. *J. Anim. Sci.* 79:934.
- Leibbrandt, V.D., L.J. Johnston, **G.C. Shurson**, J.D. Crenshaw, G.W. Libal, and R.D. Arthur. 2001. Effect of nipple drinker water flow rate and season on performance of lactating swine. *J. Anim. Sci.* 79:2770-2775.
- Yang, H., G.R. Foxcroft, J.E. Pettigrew, L.J. Johnston, **G.C. Shurson**, A.N. Costa, and L.J. Zak. 2000. Impact of dietary lysine intake during lactation on follicular development and oocyte maturation after weaning in primiparous sows. *J. Anim. Sci.* 78:993-1000.
- Yang, H., J.E. Pettigrew, L.J. Johnston, **G.C. Shurson**, and R.D. Walker. 2000. Lactational and subsequent reproductive responses of lactating sows to dietary lysine (protein) concentration. *J. Anim. Sci.* 78:348-357.
- Yang, H., J.E. Pettigrew, L.J. Johnston, **G.C. Shurson**, J.E. Wheaton, M.E. White, Y. Koketsu, A.F. Sower, and J.A. Rathmacher. 2000. Effects of dietary lysine intake during lactation on blood metabolites, hormones, and reproductive performance in primiparous sows. *J. Anim. Sci.* 78:1001-1009.

Awards

Outstanding Teacher Award, COAFES Student Board

Funding (Last Five Years) – \$617,476

- National Pork Board.** Evaluation of the effects of diet formulation methods and inclusion of DDGS and phytase on manure phosphorus excretion of grow-finish pigs and on the concentration and forms of P in manure amended soil. 2004-05. \$46,539.
- Minnesota Soybean Research and Promotion Council.** Nutritional aspects of marketing Norsoy soybean meal. 2003-05. \$22,356.
- Minnesota Corn Research and Promotion Council.** Evaluation of health benefits from feeding new corn distiller's co-products in diets for baby pigs. 2004. \$17,300.
- U.S. Grains Council.** Gift. 2004. \$512.
- USDA ARS.** Analysis of feed ingredients for micro mineral content. 2003-04. \$10,659.
- Iowa Corn Promotion Board.** The benefits of using DDGS with and without phytase, in swine diets on phosphorus balance, and phosphorus levels and chemical form of P in swine manure. 2003-04. \$51,333.

- MPPA.** Assessment of the nutritional and immunological properties of yeast cells derived from fuel ethanol production in diets for baby pigs. 2003-04. \$25,000.
- Chr. Hansen, Inc.** Gift. 2003-04. \$26,889.
- Minnesota Corn Research and Promotion Council.** Evaluation of potential health benefits of corn DDGS produced from MN ethanol plants and a polyclonal antibody on the ability of pigs to resist and infection from salmonella. 2002-04. \$15,540.
- Commodity Specialists.** Gift. 1999-04. \$120,088.
- Pork Producer's Council.** Gift. 2003. \$400.
- Agri-Nutrition Services, Inc.** Gift. 2003. \$593.
- Ralco-Mix Products.** Gift. 2003. \$517.
- Camas Incorporated.** Gift. 2003. \$17,795.
- Alpharma.** Gift. 2002-03. \$440,300.
- Illinois Corn Marketing Board.** Effect of dietary inclusion of distiller's dried grains with solubles on gastrointestinal health and ability to resist ileitis challenge in growing pigs. 2002-03. \$20,000.
- Minnesota Corn Research and Promotion Council.** Effect of dietary fiber level and composition on gastrointestinal health and ability to resist ileitis challenge in growing pigs. 2002-03. \$10,000.
- Zinpro.** Gift. 1999-03. \$10,356.
- MPPA.** Biological and economic performance of pigs housed in hoop barns. L. Johnston (PI). 2001-03. \$11,250.
- MPPA.** Effect of dietary inclusion of distiller's dried grains with solubles on gastrointestinal health and ability to resist ileitis challenge in growing pigs. 2001-02. \$20,980.
- North Dakota Soybean Council.** Effect of barrier addition in a deep pit swine confinement system on growth performance of grow-finish pigs and emission of volatile organic compounds, ammonia, hydrogen sulfide, and odor. 2001-02. \$5,000.
- Minnesota Corn Research and Promotion Council.** Effect of adding increasing levels of DDGS to gestation and lactation diets on sow and litter performance. 2001-02. \$5,000.
- Agrilliance.** Gift. 2000-02. \$88,018.
- MPPA.** Economic evaluation of nutritional strategies to reduce odor. 1999-01. \$15,000.
- MPPA.** Pilot project to improve the transfer of useful information. 1999-01. \$15,000.
- MDA.** Effect of *Bacillus Subtilis* Ferm BP-3418. 1999-00. \$15,000.
- MPPA.** Diet formulation and ingredient selection to reduce odor. 1999-00. \$15,000.
- International Proteins.** Gift. 1999. \$2,300.

Dissertations and Theses (Last Five Years)

Name	Program	Degree	Thesis Title
Albert DeVries (co-advise)	Animal Sciences	Ph.D.	tatistical process control charts applied to dairy herd reproduction.
Jeffrey S. Knott	Animal Sciences	M.S.	Effects of dietary manipulation on nutrient excretion and gas and odor emissions in growing and finishing swine.
	Animal Sciences	Ph.D.	Evaluation of potential value-added properties of feeding diets containing dried corn distiller's solubles fractions to young pigs.
J. Antonio Renteria Flores	Animal Sciences (co-advise)	Ph.D.	Effects of soluble and insoluble dietary fiber on diet digestibility and sow performance.

Name	Program	Degree	Thesis Title
Mindy J. Spiehs	Animal Sciences	M.S.	Evaluation of the feeding value of distiller's dried grains with solubles for swine.
	Animal Sciences	Ph.D.	Evaluation of dietary manipulations to improve growth performance and reduce Salmonella Typhimurium prevalence and shedding in finishing swine.
Mark H. Whitney	Animal Sciences	Ph.D.	Nutritional strategies to improve gastro-intestinal health in swine.

Graduate Student and Post-doctoral Supervision - Current Advisees

Guowu Xu	Ph.D.	Animal Sciences
Pedro Urriloa	Ph.D.	Animal Sciences

Courses Taught (Last Five Years)

Designator	Name	Credits	% Effort	Term	Years
AnSc 8340	Concepts & Dev in Swine Nutr.	2	40%	Fall	1999, '01, '02
AnSc 4609	Analysis of Livestock Production	2	50%	Spr & Fall	2000
AnSc 4611	Adv Pork Prod Systems Mgmt	2	100%	Spring	2000-2004
AnSc 4601	Pork Production Systems Management	4	100%	Spring	2001-2004
AnSc 4401	Swine Nutrition	3	100%	Fall	1999-2003
AnSc 4401	Swine Nutrition	3	100%	Spring	2002

Service

President, Director, Midwest Section ASAS/ADSA
 Reviewer: *Journal of Animal Science*, *Acta Agriculturae Scandinavica*
 Reviewer, CFAR Research Grant Proposals
 Coordinator, Swine Extension Educators Conference, Des Moines
 Member, NPPC Swine Educators Committee
 Member, NPPC Production & Financial Standards Committee
 Member, NPPC Curriculum Development Committee
 Chair, ASAS Non-Ruminant Nutrition Program

Service to National and Regional Research Committees

Member, NCR-42 Swine Nutrition Committee

Extension Activities (Last Five Years)

Program Team Involvement and Goals

The major programs include:

Feeding Value of Distiller's Dried Grains with Solubles (DDGS) for Swine and Poultry, Developer

Audience: Ethanol plant personnel, feed industry nutritionists, pork producers

Goals:

- Present research results on the nutritional evaluation and value-added properties of DDGS
- Provide feeding recommendations for DDGS.
- Work with Minnesota ethanol plants to implement the MN Certified DDGS program.
- Increase awareness among feed industry nutritionists and pork producers of the value of DDGS in swine diets.
- Provide on-line DDGS information via our DDGS web site <http://www.ddgs.umn.edu>.

Nutritional Strategies to Reduce Gas and Odor Emissions and Nutrient Excretion, Contributor

Audience: Environmental consulting groups, swine producers, Environmental Protection Agency

Goal: Reduce gas and odor emissions and nutrient excretion on swine farms based on research data from our work related to sulfur mass balance and hydrogen sulfide emissions.

Minnesota Certified Pork/MinnCERT, Contributor

Audience: Minnesota pork producers

Goals:

- Minimize food safety risk and improve food quality for differentiated market segments.
- Work with pork producers to implement standard operating procedures to achieve compliance with the food safety and quality standards.
- Provide independent pork producers with the opportunity to access differentiated market segments and become partners in various pork chains.

Model Swine Ventilation Room Demonstration Project, Contributor

Audience: Minnesota pork producers and industry professionals

Goal: Give producers and their employees the opportunity to learn about ventilation and temperature systems, and to practice setting controls, inlets and fans using a model swine ventilation training room on wheels for hands-on demonstrations and practice.

NPPC Training Curriculum for Breeding/Gestation Barn Workers, Contributor

Audience: Extension educators, veterinarians, adult farm management instructors

Goal: Train pork producers on proper management techniques and skills for managing the breeding and gestation phases of pork production.

Swine Nutrition: A Web-Based Curriculum for Distance Education in the Pork Industry, Developer

Audience: Extension educators, feed industry professionals, veterinarians, owners, managers and employees of pork production operations, and traditional and non-traditional students

Goal: This web-based applied course teaches key swine nutrition and management concepts to those who want to improve their knowledge of swine nutrition and become capable of developing, managing and evaluating life cycle feeding programs for swine.

Product Development (selected materials developed)

- DDGS Web Site – a collection point for research results and educational materials related to feeding DDGS in livestock and poultry diets, with links to marketing groups and additional resources related to DDGS and the ethanol industry.
- Swine Nutrition Course Web Site for traditional and non-traditional students as well as those in the swine industry.
- Model Swine Ventilation Room – A portable training room on wheels designed for hands-on demonstration and practice of properly ventilating swine buildings. Developed in cooperation with faculty from Iowa, Minnesota, Nebraska and South Dakota.
- Instructors' Guide and slide presentations for NPPC Training Curriculum for Breeding/ Gestation Barn Workers.

Program Delivery Events

Programs are delivered in a variety of formats including, workshops (classroom and on-farm), lectures, seminars, conferences, interactive discussion groups, web sites, and county and regional meetings. On-going interactions with producers also occur by telephone and email. Some examples include:

- Model Swine Ventilation Workshops
- Seminars on the value of DDGS in swine diets
- MinnCERT Implementation Sessions

- NPPC Training Sessions
- Minnesota Nutrition Conference

Extension Scholarship

Proceedings and invited lectures:

- Shurson, G.C.** 2003. The feeding value of “new generation” DDGS for swine. Biofuels Conference. Winnipeg, MB, Canada. December, 2003.
- Shurson, G.C.** 2003. The value of “new generation” DDGS in swine and layer diets. Presented at the Annual Meeting of the Iowa Institute for Cooperatives, Iowa State Center, Ames, IA. November 25, 2003.
- Shurson, G.C.** 2003. “New generation” distiller’s dried grains with solubles in swine diets. Presented to U.S. Grains Council – Spanish DDGS Users on November 17 and 18, 2003.
- Shurson, G.C.** 2003. Overview of production, nutrient profile, physical characteristics, and quality assessment of “new generation” DDGS. Presented to U.S. Grains Council – Spanish DDGS Users on November 17 and 18, 2003.
- Shurson, G.C.** 2003. “New generation” corn DDGS. Presented to a group of Canadians during a tour organized by the Energy Development Initiative, Government of Manitoba, Canada. November 13, 2003.
- Shurson, G.C.** 2003. Feeding “new generation” distiller’s dried grains with solubles to nonruminants. AFIA Alternative Feed Ingredients Conference. Kansas City, MO, November, 2003.
- Shurson, G.C.** 2003. Research highlights on evaluating the feeding value of corn DDGS for swine. AFIA Swine Nutrition Committee Meeting, Kansas City, MO. November, 2003.
- Shurson, G.C.** 2003. University of Minnesota DDGS Research Update. Presented at the Land O’Lakes Fall Regional Swine Training Meeting, Albert Lea, MN. October 2, 2003.
- Shurson, G.C.** 2003. “New generation” distiller’s dried grains with solubles in swine and poultry diets. Presented at the Taiwan Feed Industry Short Course in Taiwan on September 17, 2003, and at the National Chia-yi University/U.S. Grains Council DDGS Conference (cosponsored by the U.S. Grains Council) in Seoul, Korea on September 22, 2003.
- Shurson, G.C.** 2003. The value of “new generation” corn distiller’s dried grains with solubles in swine feeding programs. Presented at the Western Nutrition Conference, Winnipeg, Manitoba, Canada. September 10, 2003.
- Shurson, G.C., M.J. Spiehs, and M.H. Whitney.** 2003. The value of “new generation” corn distiller’s dried grains with solubles in swine diets. Presented at the Western Nutrition Conference, Winnipeg, Manitoba, Canada. September 10, 2003.
- Shurson, G.C.** 2003. 新世代含可溶物乾燥酒粕在豬與家禽日糧的利用. Presented at the 2003 Feed Manufacturing Short Course, National Chiayi University, Chiayi, Taiwan, ROC. September, 2003.
- Shurson, G.C.** 2003. Distiller’s dried grains with solubles for swine and poultry. Presented at the U.S. Grains Council Meeting, Minneapolis, MN. July 21-25, 2003.
- Shurson, G.C.** 2003. Opportunities for using DDGS in livestock and poultry feeds in Canada. Presented at the U.S. Grains Council Meeting, Minneapolis, MN. July 21-25, 2003.
- Shurson, G.C.** 2003. Use of “new generation” distiller’s dried grains with solubles in livestock and poultry production systems. Presented at the U.S. Grains Council Meeting, Minneapolis, MN. July 21-25, 2003.
- Shurson, G.C.** 2003. Distiller’s dried grains with solubles in livestock and poultry production systems. Presented at the ADM Alliance Nutrition Sales Staff Training Meeting, Morton, MN. July 8, 2003.
- Shurson, G.C.** 2003. Distiller’s dried grains with solubles – Redefined for swine. Presented at the Standard Nutrition Sales Staff Training Meeting. June 25, 2003.

- Ing. Ramiro Martín Barba, M.V.Z. Jorge Pérez Casillas, and **G. Shurson**. 2003. Comportamiento productivo de cerdos en crecimiento-finalización alimentados con dietas convencionales utilizadas en Jalisco, México, comparadas con dietas que incluyeron 10% de Norgold DDGS. Norproducts Feed Conference, Guadalajara, Jalisco, Mexico. June 20, 2003.
- Shurson, G.**, C. Santos, J. Aguirre, and S. Hernández. 2003. Efecto de la alimentación de gallinas de postura Babcock B300 con una dieta convencional utilizada en Sanfandila vs. una dieta que incluyo un10% de Norgold DDGS en el comportamiento productivo y la calidad del huevo. Norproducts Feed Conference, Guadalajara, Jalisco, Mexico. June 20, 2003.
- Shurson, G.C.** 2003. Distiller's dried grains with solubles – Redefined for swine. Presented at the 19th International Alltech Conference, Lexington, KY. May 13, 2003.
- Shurson, G.C.**, M.J. Spiehs, J.A. Wilson, and M.H. Whitney. 2003. Value and use of “new generation” distiller's dried grains with solubles in swine diets. Presented at the 19th International Alltech Conference, Lexington, KY. May 13, 2003.
- Shurson, G.C.** 2003. Inclusion of DDGS in nursery pig diets and DDGS effects on ability of pigs to resist an ileitis challenge. Presented at DeKalb Feeds Meeting, Kalona, IA. April 24, 2003.
- Shurson, G.C.** 2003. The value of corn distiller's dried grains with solubles in swine feeding programs. Presented to DeKalb Feeds, Kalona, IA. April 24, 2003.
- Shurson, G.C.** 2003. The value of distiller's dried grains with solubles in swine feeding programs. Presented at Minnesota Pork Congress, January 30, 2003; Iowa State University Extension Meetings, Carrol, IA, April 4, 2003 and Bancroft, IA, April 24, 2003; Nebraska Pork Expo, Columbus, NE, April 6, 2003.
- Shurson, G.C.** 2003. The value of corn distiller's dried grains with solubles in swine feeding programs. Presented at the NCGA Regional Distillers Grains Workshop, Des Moines, IA. April 10, 2003.
- Shurson, G.C.** 2002. The value and use of distiller's dried grains with solubles (DDGS) in swine diets. DDGS workshop, Cherokee, IA. December 17, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. National Corn Growers Association DDGS Workshop, Amarillo, TX. October 31, 2002.
- Shurson, G.C.** 2002. The value and use of distiller's dried grains with solubles (DDGS) in swine diets. Carolina Swine Nutrition Conference, Raleigh, NC. October 30, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. ANAFACA Conference, Puerto Vallarta, Mexico. October 10, 2002.
- Shurson, G.C.** 2002. Nutrition and Health Connections. Ministry of Agriculture Feed Industry Center, Chinese Agricultural University seminar, Beijing, China. September 16, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. Ministry of Agriculture Feed Industry Center, Chinese Agricultural University seminar, Beijing, China. September 11, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. National Corn Growers Association DDGS Workshop, Prior Lake, MN. August 22-23, 2002.
- Shurson, G.C.** 2002. The Minnesota Certified DDGS Program. National Corn Growers Association DDGS Workshop, Prior Lake, MN. August 22-23, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to poultry. U.S. Grains Council Annual Nutrition Seminar Series, Taipei, Kaoshung, Tainen, Taiwan. June 24-28, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. U.S. Grains Council Annual Nutrition Seminar Series, Taipei, Kaoshung, Tainen, Taiwan. June 24-28, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to poultry. U.S. Grains Council/American Soybean Association Annual Nutrition Seminar Series, Tokyo, Osaka, and Kagoshima, Japan. June 17-21, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. U.S. Grains Council/American Soybean Association Annual Nutrition Seminar Series, Tokyo, Osaka, and Kagoshima, Japan. June 17-21, 2002.

- Shurson, G.C.** 2002. Trace minerals in swine nutrition: Research Update. U.S. Grains Council/American Soybean Association Annual Nutrition Seminar Series, Tokyo, Osaka, and Kagoshima, Japan. June 17-21, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. U.S. Grains Council Value Added Workshop, Panama City, Panama. January 9-11, 2002.
- Shurson, G.C.** 2002. The feeding value of “new generation” DDGS to swine. MN Ag Expo, Morton, MN. January 22, 2002.
- Shurson, G.C.** 2002. The value and use of distiller’s dried grains with solubles (DDGS) in swine diets. 18th Annual Carolina Swine Nutrition Conference, Carolina Feed Industry Association. pp. 8-26.
- Whitney, M.H., **G.C. Shurson**, R.M. Guedes, and C.J. Gebhart. 2002. The relationship between distiller’s dried grains with solubles (DDGS) and ileitis in swine. Proc. 63rd Minnesota Nutrition Conference and Pre-conference Symposium: Rendering: A Foundation for Food Security. Minnesota Extension Service. pp. 244-256.
- Shurson, G.C.**, M.J. Spiehs, M.H. Whitney, S.K. Baidoo, L.J. Johnston, B. Shanks, and D. Wulf. 2001. The value of distiller’s dried grains with solubles in swine diets. Ethanol Co-products Workshop. National Corn Growers Association, Lincoln, NE. November 7-9, 2001. 12 pages.
- Shurson, G.C.**, M.J. Spiehs, M.H. Whitney, S.K. Baidoo, L.J. Johnston, B. Shanks, and D. Wulf. 2001. The value of distiller's dried grains with solubles in swine diets. Proc. 62nd Minnesota Nutrition Conf. and Minnesota Corn Growers Association Technical Symp. Bloomington, MN. September 11-12, 2001. pp. 22-52.
- Shurson, G.C.** 2001. Demand-driven, value added pork chains and trends in the U.S. Pork Industry. International Pork and Poultry Expo, Nagoya, Japan. June 4-8, 2001.
- Shurson, G.C.**, M.J. Spiehs, M.H. Whitney, S.K. Baidoo and L.J. Johnston. 2001. Feeding distiller’s dried grains with solubles to swine. Rural Economic Value-Added Mentoring Program. Iowa Department of Agriculture and Land Stewardship, Des Moines, IA. March 20, 2001. 8 pages.
- Shurson, G.C.** 2000. Nutritional modification to reduce the environmental impact of pork production. Biokyowa Amino Acids Council, St. Louis, MO. October 3-4, 2000.
- Shurson, G.C.** 2000. Increasing the use of distillers dried grains with solubles in pig diets. 16th Annual International Fuel Ethanol Workshop and Trade Show, Windsor, Ontario, Canada. June 20-23, 2000.
- Shurson, G.C.**, M.H. Whitney, M.J. Spiehs, S.K. Baidoo, and A. Renteria. 2000. The value of distillers dried grains with solubles in pig diets. Distiller’s Grains Technology Council’s Fourth Symposium, Louisville, KY. May 24-25, 2000.
- Shurson, G.C.**, M.H. Whitney, M.J. Spiehs, S.K. Baidoo, and A. Renteria. 2000. The value of distillers dried grains with solubles in pig diets. Concepts in Pig Science 2000, 2nd Annual Turtle Lake Pig Science Conference, Stillwater, MN. May 3-5, 2000. pp. 47-62.

Extension bulletins:

- Shurson, G.C.**, M. Whitney, L. Johnston, B. Koehler, R. Hadad, and D. Koehler. 2002. Designing feeding programs for natural and organic pork production. University of Minnesota Extension Service Bulletin 07736-BU.