

2020-21 U.S. Pork Center of Excellence

Impact Report

July 1, 2020 – June 30, 2021



Chairwoman's Message

What a year it's been!

With the 2020-21 fiscal year now in the rearview mirror, it's easy to see the impact U.S. Pork Center of Excellence (USPCE) programs and partners are having on our industry — and even easier to look forward with great excitement. Our purpose and mission is to develop talent that will be reinvested in the industry. It's one that comes to life through individuals building rewarding careers through every sector of it.

In this year's Impact Report, you'll read several program highlights, including:

- **Destination Pork**, which introduces high school students to the pork industry and invites them to explore career opportunities they might not have previously known about;
- **Swine Science Online**, a comprehensive distance-learning program that allows university students and industry professionals to complete courses offered by renowned instructors in swine science;
- **The Pork Information Gateway**, whose student editors don't just develop up-to-date resources used by educators, Extension, small- to mid-size farms, alternative producers and youth, but also the skills they'll take with them to their post-graduate careers; and
- **The Swine Research and Education Experience**, where students early in their college careers complete industry-focused research topics to expand their knowledge base to strengthen their network in — and connection to — the industry.

Progress should be celebrated, just as we must keep building a stronger future. USPCE, with its partners, is undergoing strategic direction plan. We are excited to share the outcome of this work with our stakeholders in the coming months.

Your support is vital to this mission, and we can't thank you enough for it. To our funding partners, we appreciate your investment in our programs, which have a direct line to the industry's future. Your contributions enable USPCE, as a nonprofit organization, to develop the next generation of swine industry leaders and to serve those who rely on USPCE-produced resources in their work.

We also share a sincere "thank you" to members who serve on committees and working groups, who instruct courses, collaborate with us and otherwise help support our efforts in ways large and small. USPCE would not be able to fulfill its mission without your support, time and expertise.

With your support, there is much to look forward to in the coming year! USPCE will continue to find new and engaging ways to educate those seeking careers in the industry to support research opportunities to create and maintain effective resources for producers and to develop talent to ensure a robust future.



Bev Durgan
Chair, U.S. Pork Center of Excellence Board of Directors
Dean and Professor, University of Minnesota Extension



About the U.S. Pork Center of Excellence

At a Glance:

For the past 16 years, U.S. Pork Center of Excellence (USPCE) has aided the industry with means to collaborate and address complex problems. The financial support from today's key stakeholders fuels the 501(c)(3) nonprofit to expose future talent and professionals to industry assets. USPCE is honored to coordinate with dedicated individuals who believe in its programs.

Vision:

USPCE facilitates stakeholder collaboration to address complex problems facing the pork industry and society through integrated education and research.

Mission:

The USPCE works with the pork industry, post-secondary educators, government and allied industries to develop education and research programs that are delivered by our partner organizations to pork producers.



Scan here to learn more!



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Thank you for your
10 years of service.



Dr. Alan Mathew
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*Thank you for your dedication
and leadership to the
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2020–21 Funding Partners

Land Grant Universities



State Associations



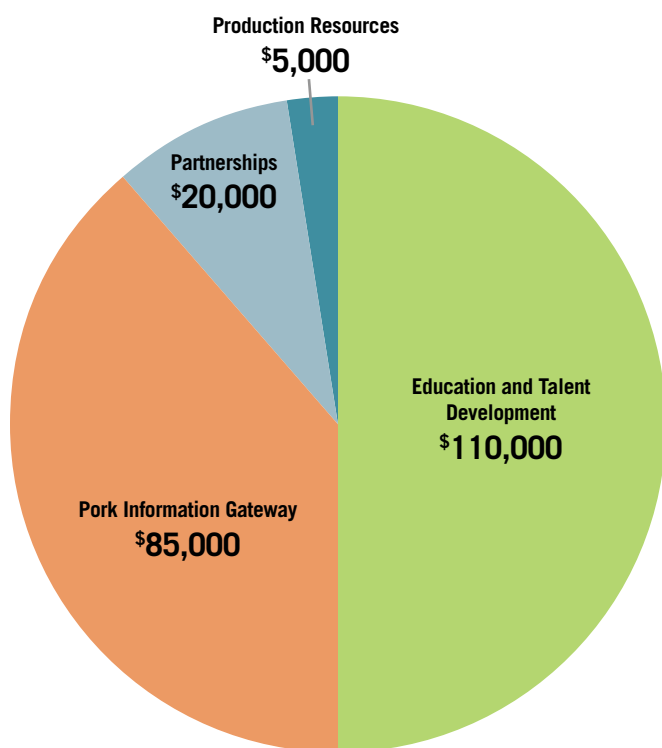
National Pork Organizations





Plan of Work

2021-22 Program Budget



USPCE is actively undergoing a strategic direction exercise. Once completed, an update will be shared with stakeholders.

2020-21 Program Expenses*

Education and Talent Development.....	\$69,645
Pork Information Gateway.....	\$29,824
Partnerships.....	\$1,550

*Program expenses were reduced due to COVID-19 pandemic.

Stakeholder Spotlight



Dr. Bob Thaler
 Extension Swine Specialist and Distinguished Professor
 Department of Animal Science
 South Dakota State University (SDSU)

I've been familiar with the USPCE since its inception and believe it's doing positive things for current and future pork producers and other professionals. For the past four years, I've encouraged financial support for USPCE from the South Dakota Pork Producers Council. As we all know, "people" is one of our biggest challenges, and I believe it is becoming especially critical at the master's and doctorate levels. Programs like Swine Science Online (SSO) and Swine Research and Education Experience (SREE) will pay back huge long-term benefits to the U.S. pork industry.

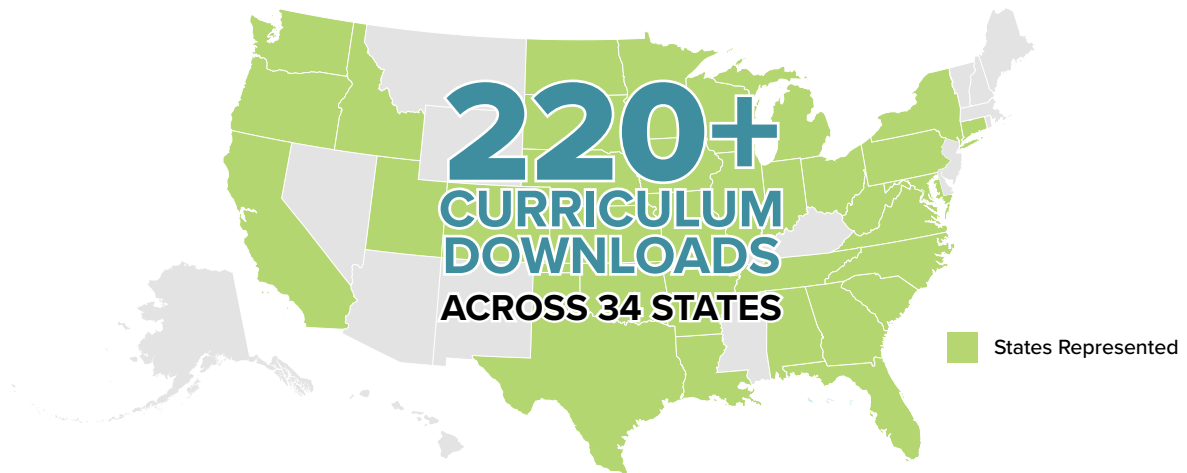
SSO opens doors to students at any university in the United States – and beyond – to study swine-focused classes from leading experts. SREE is critical in developing the professional human capital for the U.S. swine industry. It's really helped students see new paths, beyond becoming a veterinarian, to areas like ag and biosystems engineering or nutrition.



EDUCATION

Destination Pork

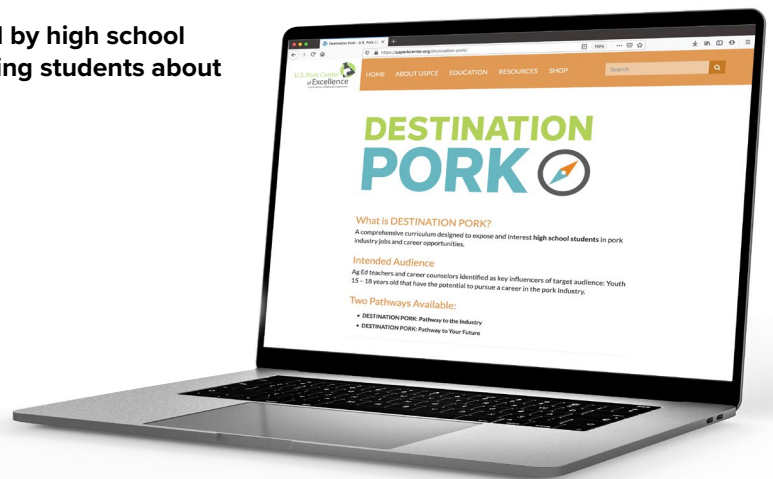
Even students in rural communities don't always have first-hand exposure to the swine industry or know what career opportunities exist. USPCE's two-part Destination Pork curriculum introduces high school students to the basics of pork production to potential careers.



Learn more about the program by visiting usporkcenter.org/destination-pork.

The first unit, Pathway to the Industry, is led by high school agriculture teachers and focuses on educating students about pork production. Its lessons include:

- ▶ Overview of the Pork Industry
- ▶ Pig Anatomy
- ▶ The Pork Production Cycle
- ▶ Pig Caretaking and Wellbeing
- ▶ Pig Behavior
- ▶ Pork Reproduction – Breeding and Genetics
- ▶ Environmental Stewardship of the Pork Industry



The second part, Pathway to Your Future, is a series of online independent study modules introducing participants to the wide variety of careers available. Topics include:

- ▶ Value of the Pork Industry
- ▶ Challenging Misconceptions of the Pork Industry
- ▶ The People Who Work in the Pork Industry
- ▶ Personal Destination Mapping within the Pork Industry



Teacher Spotlight: Leah Hefty

Teachers who use the Destination Pork curriculum in their classes, like Leah Hefty, say the program plays a key role in educating students about the pork industry.

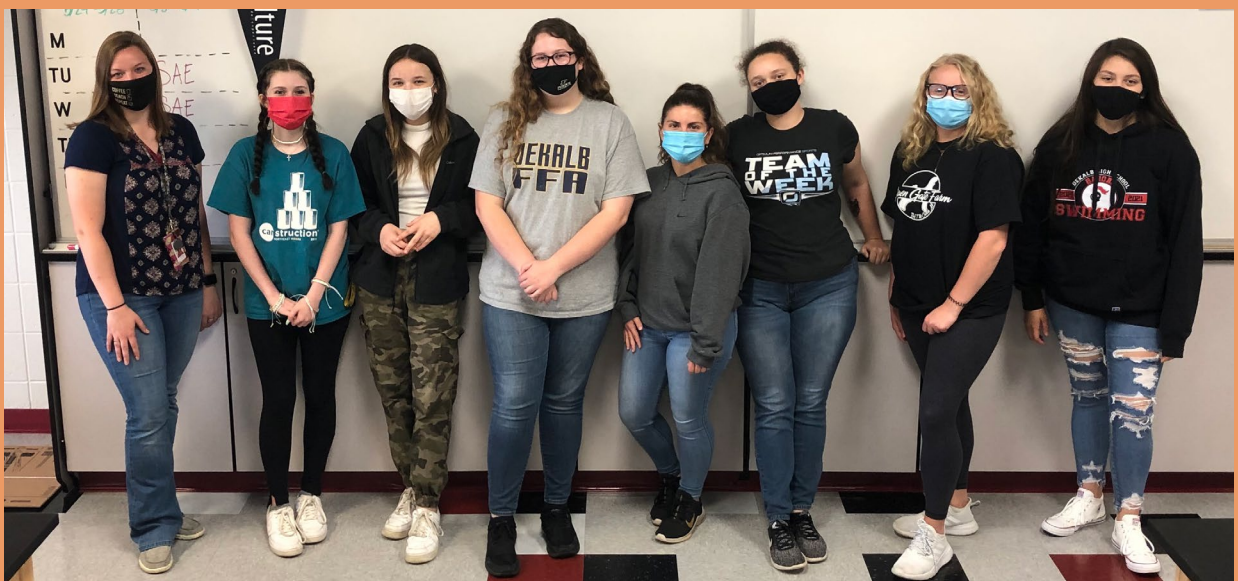
“I think it’s important to educate students about animal industries. Talking specifically about the pork industry hits home with many of my students since they show pigs in 4-H,” she explained, adding Destination Pork helps them understand the swine industry beyond the scope of 4-H and the classroom.

As a first-year teacher balancing online and in-person instruction, Hefty used the program after looking for materials to keep her students engaged while teaching about specific industries.

“I was pleasantly surprised when I found Destination Pork because everything was already created,” she said. “I could do it in-person or virtually, and my students loved the courses.”

The focus on careers was key for Hefty, and the unique content resonated with her students. They took a real interest in the opportunities, she said.

“I would tell all ag teachers to use this program,” Hefty said. “The curriculum was detailed without being overwhelming. I could dive into the provided information and teacher notes, so then I could answer students’ questions as we worked through it.”



Leah Hefty and her ag students at Dekalb County Central United District in Waterloo, IN



EDUCATION

Swine Science Online

Swine Science Online (SSO) is a comprehensive university distance-learning program teaching the scientific principles and management skills involved in efficient and sustainable pork production operations. Students interested in the pork industry learn from expert swine professors in their recognized fields.

The goal of SSO is to use academic exercise and application to inspire students' career interest. It's a valuable continuing education opportunity for them, while ultimately benefiting producers by enhancing the knowledge of the employee candidate pool. Students — both traditional and non-traditional—can participate no matter where they are enrolled.



Courses are offered by

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY



NC STATE UNIVERSITY



Courses offered include

- ✓ **Advanced Swine Science,** Dr. Bob Goodband, Kansas State University
- ✓ **Basic Swine Science,** Dr. Laura Greiner, Iowa State University and Dr. Steve Moeller, Ohio State University
- ✓ **Contemporary Issues in the Swine Industry,** Dr. Jodi Sterle, Iowa State University
- ✓ **Employee Management,** Dr. Cindy Wood, Virginia Tech
- ✓ **Farrowing Management,** Dr. Tim Safranski, University of Missouri and Dr. Kara Stewart, Purdue University
- ✓ **Feed Mill Management,** Dr. Charles Stark, Kansas State University
- ✓ **Internship in the Swine Industry,** Dr. Cindy Wood, Virginia Tech
- ✓ **Marketing and Risk in the Swine Industry,** Dr. Kelly Zering, North Carolina State University
- ✓ **Nursery and Finishing Management,** Dr. Laura Greiner, Iowa State University
- ✓ **Pork Product Quality and Safety,** Dr. Dana Hanson, North Carolina State University
- ✓ **Swine Breeding and Gestation Management,** Dr. Billy Flowers, North Carolina State University
- ✓ **Swine Environment Management,** Dr. Jay Harmon, Iowa State University
- ✓ **Swine Health and Biosecurity,** Dr. Locke Karriker and Kristin Skoland, Iowa State University
- ✓ **Swine Manure and Nutrient Management,** Dr. Dan Andersen, Iowa State University
- ✓ **Swine Nutrition,** Dr. Bob Thaler, South Dakota State University



SSO by the Numbers

19 months

average amount of time for students to complete the program

82 students

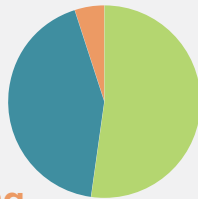
pursuing the program in the past 5 years

Student Demographics

52.4% Male

42.7% Female

4.9% Not Reporting



Active students' mean age: 25

Credit hours earned in Fiscal 2021*: 195

Credit Hours Earned Per Host Institution

76 at Iowa State University

64 at South Dakota State University

28 at University of Missouri

27 at University of Nebraska-Lincoln

*All classes, with the exception of one, are single-credit classes

Student Spotlight: Brigit Lozinski

Although Brigit Lozinski has diverse experience with the swine industry and understands most of its practices, Swine Science Online offered her some needed formality.

The program's benefits started as a complement to her education.

"As an undergraduate, I was able to better assist some of the graduate students in their research because I had formal training in the industry," she said. "And, it was great having a couple more industry and faculty connections."

The program's impact continued after Lozinski started her career as an Associate Territory Manager for United Animal Health. "I still refer to course materials from every single class on an almost-weekly basis in my position," she said. "The resources the program provides to students are phenomenal. Learning how each specific aspect of the industry applies brought everything full circle."



"The resources the program provides to students are phenomenal."



Swine Research and Education Experience

Developing a talent pipeline is a priority for USPCE. Introducing students early in their college careers to the pork industry, and cultivating their interest in research projects that support it, is an important pathway to their future careers. Under the Swine Research and Education Experience program, undergraduates and veterinary students may apply for funding for research projects in applicable areas. Beyond research outcomes, the program's value lies in building students' connection to, and careers within, the industry.

Visit usporkcenter.org/sree to view Swine Research and Education Experience final reports.



Student Impact Statements

Participants say the SREE program has a full-circle impact: for students, for their universities and for the industry.

Annie Clark Lerner, who as an undergrad participated with a SREE project with Dr. Joel DeRouchey at Kansas State University, continued her education to attain her master's and doctorate degrees in swine nutrition. She credits the program for helping her develop the skills, knowledge and relationships that paved the way for her professional career.

“The SREE program has an impact on the swine industry long after the actual project is completed, as it provides students with specific interest in swine research the opportunity to gain experience and advance towards their goals.”

Grace Mercer, who participated in a SREE Project in 2020 with Dr. Anna K. Johnson at Iowa State University, echoed those thoughts.

“I have learned much about the research process I did not know prior to going into this project, and these skills will help me excel as I continue on to vet school and my future career.”

SREE Projects

2019-20

Evaluating Dietary Acidifiers as Alternative for Conventional Feed-Based Antibiotics in Nursery Pig Diets

- Dr. Cassandra Jones, Kansas State University

Evaluation of Changes in Heat Production of Lactating Sows with Use of Sow Cooling Pads

- Dr. Allan Schinckel, Purdue University

The Effects of Iron Supplementation Prior to Weaning on Post-Weaning Piglet Performance

- Dr. Crystal Levesque,
South Dakota State University

Effect of Corn Particle Size on Gestating Sow Fecal Microbiome and Volatile Fatty Acid Production

- Dr. Chad Paulk, Kansas State University

Effect of Light on Farrowing Performance and Behavior in Sows

- Dr. Drew Lugar, Illinois State University

Effect of Adding Coconut Oil to Sow Diets During Late Gestation on Piglet Survival

- Dr. Mark Knauer, North Carolina State University

2020-21

Nutritional Enrichment to Improve Nursery Pig Behavior During Weaning

- Dr. Anna K. Johnson, Iowa State University

Identifying Practical Approaches to Manage Castration Pain on Commercial Swine Farms

- Dr. Monique Pairis-Garcia,
North Carolina State University

Design Alternatives for Effective Manure Removal and Storage for a Research Farm

- Dr. Erin Cortus, University of Minnesota

Impact of Feeding Multiple Meals Prefarrow on Stillborn Rate

- Dr. Mark Knauer, North Carolina State University

Development and Testing of an Internet-of-Things (IoT) Based System for Remote Monitoring of Thermal Environments in Swine Barns

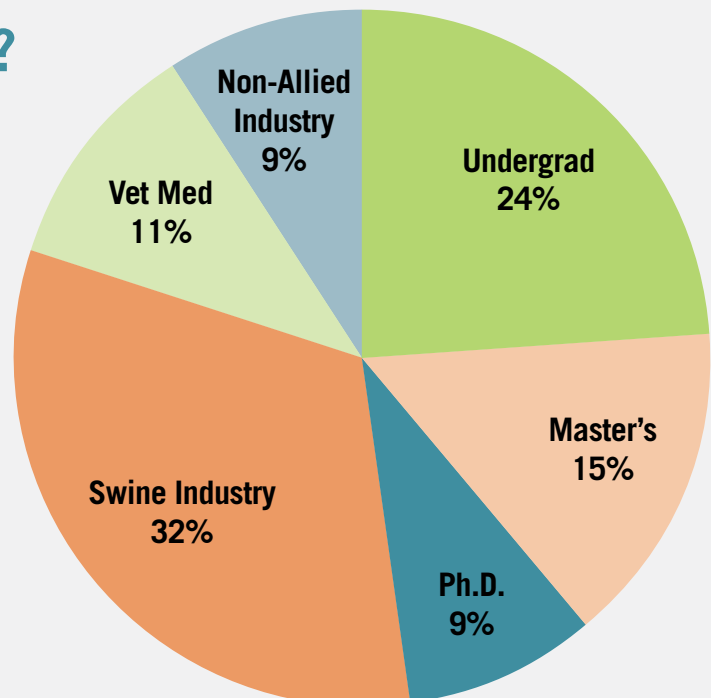
- Dr. Xufei Yang, South Dakota State University

Understanding the Relationship Between Litter Size and Functional Teat Number at Farrowing on Litter Size at Weaning

- Dr. Jeff Wiegert, Texas A&M University

Where are they now?

A summer 2021 study surveyed 36 students involved in a SREE project between 2014 and 2020. The survey sought feedback on SREE programing and how it impacted their future endeavors.





RESOURCE

Pork Information Gateway



Educators, extension, small- to mid-size farms, alternative producers and youth all use the Pork Information Gateway (PIG), a free online resource library written and reviewed by academic and industry experts. Fact sheets, videos, how-to guides and more, encompassing eight key production management areas, are available at porkgateway.org.

Pork Information Gateway Analytics

Number of users: 376,502 **Page views: 630,633**

Data from July 1, 2020 – June 30, 2021

An area of significant investment, USPCE funds stipends for graduate/post-doctoral students and their faculty mentors to serve as PIG's subject area editors and to make continual updates to the platform. Not only does the investment in these students help them develop skills that can be applied in their future careers, and the pork industry more broadly, it helps nurture their connections within the community.

Top Viewed Resources on the Pork Information Gateway from July 1, 2020 – June 30, 2021

1. Cooked Color in Pork
2. Whole Hog Value Calculator
3. Baby Pig Management Birth to Weaning
4. How to Monitor and Assist Difficult Farrowing
5. Identification of the Sick or Compromised Pig

Editor Spotlight: Tori Abner-Walters

Tori Abner-Walters found that the skills she honed as a PIG student editor from 2019 through 2021 have been pivotal in her career. As a technical communication specialist for Pig Improvement Company (PIC), Walters works with the technical services and marketing teams to disseminate information and gather materials for producers.



"I'd say 75% of my experience for my job came from my time as a Gateway editor and the other 25% from what I learned on the farm," Walters said.

As a student editor, she'd consult with previous authors and current experts on the specific topic — something she continues to do every day. Serving as a student editor also helped her develop relationships with a range of swine professionals, expanding not just her knowledge, but her network.

"As a graduate student, I gained more experience than just completing a research project and writing a thesis," she said. "I'm confident in what I do every day because of the training that USPCE provided and the skills I gained while serving as an editor."



With a blend of hands-on learning and online classes, students can gain the skills needed to excel through the USPCE's Professional Swine Manager program. Developed in 2013 in partnership with the National Pork Board, this community college curriculum includes seven courses. Courses qualify as credit towards an associate degree and cover all aspects of pork production and management responsibilities.

Frank Phillips College in Borger, Texas, pioneered a program in which college instructors connected students, high school students and pork production companies. The culmination is a short internship at one of those companies, providing a hands-on, real-world learning opportunity for the students and serves as a talent pipeline tool.

Available Courses

- Employer/employee issues
- Facility maintenance
- Introduction to U.S. pork production
- Agribusiness internship
- Swine record systems
- Breeding stock management
- Nursery and finishing management

Technical Knowledge

- Production
- Maintenance
- Management

Professional Development

- Internship
- On-farm opportunities
- Networking

NATIONAL SWINE REPRODUCTION GUIDE

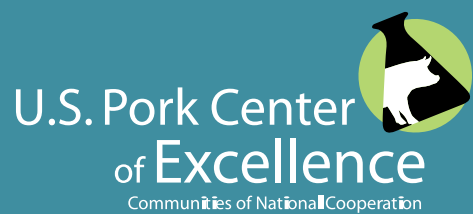
A TROUBLESHOOTING AND MANAGEMENT GUIDE

All producers, regardless of the size of their operation, can find answers to their questions in the National Swine Reproduction Guide. The online troubleshooting and management tool was developed by swine reproduction physiologists and veterinarians and is built as a decision tree. A sequence of steps and a robust search function guide users to solutions for the problem at hand, from replacement gilts or sows to boars and semen quality. The comprehensive tool includes more than 1,000 fact sheets and reference materials to aide in management decisions for consulting veterinarians, Extension and producers.



National Swine Nutrition Guide

Producers may not have their own nutritionist on hand to help them formulate diets on a least-cost basis and to evaluate the nutritional adequacy of existing diets. That's where the USPCE's National Swine Nutrition Guide comes in. It includes several components: a textbook that includes a total of 35 nutrition fact sheets with nutrient recommendations and feeding guidelines, the Recommended Formulation Booklet containing nutrient recommendation tables and a Diet Formulation and Evaluation program.



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