Greetings!

In this issue of the Swine Extension Update e-Newsletter you will find both research and activities happening in Swine Extension.

Topics covered in this edition of the Swine Extension Update Newsletter include: research spotlight on what determines the social rank of a sow in a group-housing system, Renewable energy use in pork production, registration specifics for the 76th Minnesota Nutrition Conference, information about the Allen D. Leman Conference, PQA Plus Advisor Training, upcoming PQA Plus and TQA certification classes and calendar of activities.

Please forward this email to other members of our swine industry that you feel would be interested, and/or they can email me with their request to be added to the newsletter distribution list.

Sarah Schieck
UMN Swine Extension Educator

UMN Swine Research Spotlight

What determines the social rank of a sow in a group-housing system?
Yuzhi Li, Swine Behavior and Alternative Swine Production Faculty

Freedom of movement and pain management are still the
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major challenges of animal welfare to swine production. One restriction to freedom of movement is housing pregnant sows in individual stalls. To address the issue, pork producers have been gradually and cautiously moving away from individual housing towards group-housing of gestating sows. Currently, about 20-25% of gestating sows are kept in a variety of group-housing systems in the United States. However, when sows are housed in group pens, the welfare level of individual sows can vary greatly. This is because the welfare of a sow in a group depends on her social rank. Understanding the social rank of a sow will help producers identify sows that are less competitive and need special care to maintain sow welfare and performance.

In a recently completed study at the West Central Research and Outreach Center (WCROC), we investigated what makes a sow high or low ranking and how social rank affects reproductive performance of the sow. The project was partially supported by the National Pork Board. A total of 150 sows were tested over a period of 2 years. After weaning their litters, sows were moved to and mixed in gestation pens. Each gestation pen housed 15 sows with individual feeding stalls. Fighting among sows was video-recorded during the first 24 hours after mixing. Among the 15 sows in each pen, 3 groups of 5 sows were classified as high, middle, and low ranking based on outcomes (won, lost, and unsolved) of fights. Individual weight, body condition, and back-fat thickness of sows were recorded before mixing and before farrowing. Heart rate and fear response of sows were measured 5 to 6 weeks after mixing. Litter size and individual weight of piglets were recorded at farrowing and at weaning in a group-lactation system.

Results indicate that low ranking sows fought less frequently at mixing than high ranking sows, but sustained the same amount of skin lesions as high ranking sows, indicating that low ranking sows received more injuries than high ranking sows. Low ranking sows were more fearful than high ranking sows, suggesting that low ranking sows may suffer from social stress in the group housing system. Compared to high ranking sows, low ranking sows were younger and lighter during gestation. During lactation, low ranking sows had lower pre-weaning mortality of piglets than high ranking sows, which was associated with smaller litter sizes farrowed by low ranking sows. High and low ranking sows were not different in heart rate, body condition, back-fat thickness and weight gain during gestation, litter size weaned, or body weight of piglets farrowed or weaned. These results suggest that experience
(age and parity), body weight, fear response, and fighting ability collectively determine the social rank of a sow. Low ranking sows had poorer welfare than high ranking sows as indicated by skin lesions. But, social rank did not affect sow reproductive performance significantly in the group housing system studied.

[Read the full research report](https://ui.constantcontact.com/visualeditor/visual_editor_preview.jsp) to get the full report of results from this research, including use of feeding stalls to protect low ranking sows housed in groups.

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**Renewable Energy Use in Pork Production**

*Lee Johnston, Extension Specialist - Swine*

Faculty and staff at the University of Minnesota’s West Central Research and Outreach Center (WCROC) have been conducting research and outreach efforts to help agriculturalists produce food in response to concerns raised by consumers and food companies. A current project entitled the "Greening of Agriculture" is focused on reducing the use of fossil fuels in agricultural production with an eye toward reducing the carbon footprint of products leaving the farm. This project includes various studies in dairy, crop, and swine production systems but here we will focus on swine production.

There are several swine related studies being conducted in the "Greening of Agriculture" project. One important project is designed to characterize the electricity and heating fuel consumption on commercial swine farms. Most producers know what they pay for electricity and propane to run their barns but they have no way of accurately knowing how the various activities in their barns influence their consumption of electricity and propane. This study is designed to determine how much electricity and propane are used for different portions of the operation. This study is funded by the Legislative Citizens Commission on Minnesota Resources. For one year, we are monitoring two farrowing units, two nurseries, and two growing-finishing barns. We are measuring all the electricity and propane used in these barns and
recording the output (weaned pigs, cull sows, nursery pigs, slaughter hogs) from these barns. From the data, we will be able to determine the electricity and propane required to produce pork in each phase of production. In addition, we will be able to determine what activities in the barns are the most energy intensive activities. Read more for preliminary energy usage findings.

Register Now for the 76th Minnesota Nutrition Conference

The Minnesota Nutrition Conference is a highly regarded and well known livestock nutrition conference in the upper Midwest. For over 75 years this conference has delivered leading-edge, research-based knowledge to advance sustainable production of beef, dairy, equine, poultry and swine.

Join us for the 76th Minnesota Nutrition Conference on September 16 and 17, 2015. Details are posted on the conference website including the Program Agenda.

Register now! See Registration Information for details and a special offer from AFIA. Register online by September 9 for early bird pricing. Pre-registration is encouraged. On-site registration will be limited.

The conference will be held at Mystic Lake Casino Hotel, 2400 Mystic Lake Blvd, Prior Lake, Minnesota. Reserve a hotel room by September 1 for reduced rate. Mention "MN Nutrition Conference" when making reservations.

Conference preview:

- Pre-Conference Symposium and Complimentary Lunch - September 16
  "Role of Fatty Acids in Animal Nutrition"
  Sponsored by Milk Specialties Global

- General Session - afternoon of September 16
  Featuring topics that impact all livestock species, including alternative housing, antibiotic feed additives, impact of GMO on feedstuffs, and other presentations that reflect societal concerns in animal nutrition
Welcome Reception - evening of September 16
*Sponsored by Alltech*

Ruminant, Non-Ruminant, and Equine Sessions - September 17
Species sessions run concurrently and include University of Minnesota Research Updates

Complimentary Lunch - September 17
*Co-Sponsored by Diamond V and Nutriad*

Conference proceedings offered as a thumb drive or a printed book
*Thumb Drives Sponsored by Novus*
(choice of format to be made during online registration)

**Sponsorship opportunities are still available.** Sponsors are critical to the success of the Minnesota Nutrition Conference. See [Sponsorship Opportunities](#) for more information, or contact Val O'Reilly, Conference Communications & Planning, at [val.oireilly@gmail.com](mailto:val.oireilly@gmail.com) or 952-334-0404.

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**Get Registered to Attend the Allen D. Leman Conference**

The [Allen D. Leman Swine Conference](#) is an annual educational event for the global swine industry. It is internationally acclaimed for bringing science-driven solutions to the complex challenges facing the industry. Each year hundreds of participants from over 20 countries attend the Leman Swine Conference. Major players in swine production, animal health management and marketing, from around the world exhibit their products and services.

Join us for the **2015 Allen D. Leman Swine Conference**
on **September 19 - 22, 2015**. Details are posted on the [conference website](#) including the [conference agenda](#). Be sure to check out the [Pre-Conference Program](#).

**Register now!** See [registration information](#) for details,
[Register online](#) by August 19 for early bird pricing.
Pre-registration is encouraged.

[**Leman Conference**](#) will be held at the **Saint Paul River Centre**.
See [Conference Location and Hotel](#) for lodging information.
Depending on hotel, room block ends either August 19th or 21st so make hotel reservations prior to those dates.

Leman Conference is presented by University of Minnesota Extension, College of Veterinary Medicine, and College of Food, Agriculture and Natural Resources Sciences.

PQA Plus Advisor Training to be held in October

PQA Plus Advisors are the educators who work directly with producers to educate them on the PQA Plus program and will help producers obtain PQA Plus certification and PQA Plus site status at their respective production sites.

Upcoming PQA Plus Advisor training date and location:

- October 21st - 9 a.m. to 3 p.m., Americinn, 1406 E. Lyon St. Marshall, MN

This PQA Plus Advisor training session is for both new Advisors and recertifying Advisors. Individuals wishing to attend the training session must meet the qualifications to become a Certified PQA Plus Advisor. Qualifications include:

1. Be a veterinarian, Extension Specialist, or Ag Educator (for the purposes of PQA Plus, the definition of an ag educator is a person who spends full time in adult education or at least 50% time in production training)
2. Have a D.V.M or B.S in Animal Science (or equivalent)
3. Have two years of recent documentable swine production experience

The cost to attend is $50. Individuals wishing to attend must pre-register by contacting Colleen Carey, MN Pork Board at 1-800-537-7675 or at colleen@mnpork.com to register and obtain an application. Registration deadline is October 19th.

Upcoming PQA Plus & TQA Certification
Classes

Are you up to date with your Pork Quality Assurance (PQA) Plus and/or Transport Quality Assurance (TQA) certification? Upcoming training and certification classes include the following dates:

- Aug. 12 - Waseca, MN, Southern Research & Outreach Center, 35838 - 120th St.
- Aug. 19 - Morris, MN, West Central Research & Outreach Center, 46352 State Hwy 329.

PQA Plus certification is scheduled from 9am - noon and TQA from 1 p.m. - 4 p.m. at all locations.

For more information or to register for a course, go to [www.mnpork.com](http://www.mnpork.com) and click on Farmer Resources to view PQA Plus and TQA certification schedule, or contact Colleen at MN Pork Board at [colleen@mnpork.com](mailto:colleen@mnpork.com) or call 1-800-537-7675.

Recertify for PQA Plus and TQA Online

You can now recertify for PQA Plus and TQA online. In order to do this, you must have been certified previously in the program you need recertification in **AND** your certification in the program must still be current.

To recertify online, contact, Sarah Schieck, UMN Swine Extension Educator - [schi0466@umn.edu](mailto:schi0466@umn.edu) or (320)235-0726 x2004 or another PQA Plus Advisor or TQA Advisor to get access to the online recertification course. For TQA recertification, online recertification can only be done every other time that you recertify.

Contact Us

It is our goal to bring University research to the Minnesota Pork Industry, ensuring the continued sustainability and competitiveness of producers and allied industry. You will find a list of UMN Swine Extension team members and their
contact information on our website
(www.extension.umn.edu/swine). Sarah Schieck, UMN Swine Extension Educator - Please email or call if I can be of assistance. schi0466@umn.edu or (320)235-0726 x2004.

Upcoming Events Calendar

July 2015
July 1 - SowBridge program - “Common Mistakes that Hurt Production Performance”
July 22 - PQA Plus/TQA certification, Marshall, MN
July 27 - N212 PRRS/PED Elimination meeting @ 6p, Community Center, Prinsburg, MN

August 2015
Aug. 3 - N212 PRRS/PED Elimination meeting @ 6p, West Central Research and Outreach Center, Morris, MN
Aug. 5 - SowBridge program - “On-Farm Necropsies”
Aug. 6 - PorkBridge program - “Proper Pig Handling”
Aug. 12 - PQA Plus/TQA certification, Waseca, MN
Aug. 19 - PQA Plus/TQA certification, Morris, MN
Aug. 27 - Sept. 7 - Minnesota State Fair, St. Paul, MN

September 2015
Sept. 2 - SowBridge program - “Art of Fostering Litters”
Sept. 16-17 - Minnesota Nutrition Conference, Prior Lake, MN, Mystic Lake Casino Hotel
Sept. 19-22 - Allen D. Leman Conference, Saint Paul RiverCentre, St. Paul, MN

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