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Developing and Utilizing Visual Tools to Assist Pork Producers in Employee Training in the Evaluation of Sow Body Condition

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Abstract
The article describes development of a bilingual poster to assists pig producers in classifying body condition scores (BCS) in sows. Sows of the lowest body condition score were purchased, fed for 96 days, and photographed as each sow incrementally increased to the maximum BCS of 5. Pictures from two sows of each BCS of 1 through 5 were professionally arranged on a poster and published in a nationally distributed swine magazine. The poster was designed to assist producers in employee training at the farm level. Similar posters could be developed to improve selection and/or management skills in other livestock species.

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Introduction

Body condition scoring (BCS) is utilized on commercial sow operations to evaluate a combination of weight, backfat, and muscle on individual sows. Body condition is most commonly evaluated after sows have completed lactation and is done using a 5-point scoring system (Patience & Thacker, 1995) or a similar system. Scoring allows producers to classify sows' body condition and increase or decrease the amount of feed for thin or excessively conditioned sows, respectively, in order to maintain optimal sow performance. The goal is to increase body condition to the ideal BCS of 3 before the sow farrows her next litter (Coffey, Parker, & Laurent, 1999; Patience & Thacker, 1995).

During lactation, metabolic demands may require a sow to utilize fat and muscle body reserves to maintain energy and protein levels associated with peak milk production. When a great deal of fat and muscle are utilized as is the case when sows do not consume enough feed to meet lactation demands, sows become thin, or attain poor body condition.

Visual body condition scoring is a rapid and inexpensive methodology to determine the amount of body fat and muscle reserves each sow possesses. Determining body reserves allows producers to adjust individual sow feed allotment accordingly so that thin or poorly conditioned sows will receive more feed and overly conditioned sows will receive less feed. Adjusting feed intake according to body condition will help producers attain a more profitable operation.

Visual scoring systems have been discounted due to their subjectivity and perceived inaccuracy of scores compared to directly measuring sow backfat (Maes, Janssens, Delputte, Lammertyn, & de Kruif, 2004) or using objective flank-to-flank and heart girth measurements. It has been hypothesized that these inaccuracies may be related to a lack of evaluator training and availability of a consistent standard for body condition.

Methodology

The objective of the project described here was to develop a new visual guide that assists pig producers in accurately assessing body condition within their sow herds. To conduct this project, 29 sows with visual body condition scores of 1 or 2 and healthy in appearance were purchased from a Midwestern U.S. sow integrator. The sows were transported to an unused sow facility near Ames, Iowa, and housed in farrowing stalls (N = 17) or pens (N = 12). Sows were fed a commercially available gestation ration twice per day.

The trial lasted for 96 days, and body weight, tenth and last rib backfat, loin eye area, flank-to-flank girth, and heart girth were measured every 14 days. Sows were objectively assigned a body condition score based on millimeters of last rib backfat using the table published in the Tri-State Swine Nutrition Guide (Hill, Rozeboom, Trottier, Mahan, Adeoli, Cline, Forsyth, & Richert, 1998).

Poster Development

The original project to evaluate body condition of sows was sponsored by the National Pork Board, the U.S. pork commodity group. During this project, sows were photographed at the initiation of the trial and at each subsequent increase in BCS to visually record changes in body condition. Sows were photographed from five viewpoints (1. Front view eye level with sow, 2. Side view front from 45 degrees off sow midline, 3. Rear view at eye level of sow, 4. Rear view approximately 0.5 m above sow topline, 5. Side view rear from 45 degrees off sow midline) that illustrated the best anatomical locations to observe fat deposits, muscle shape, or lack thereof. The formation of the BCS guide required sows to reach a BCS of 5 (five sows did not complete the trial due to health related issues that originated on the farm). Each sow was photographed at each BCS of 1 through 5.

At the end of the project, the National Hog Farmer Magazine cooperated with Iowa State University Extension personnel in the development and distribution of the sow body condition poster. Two sows were selected for the poster due to their photographs best represented each BCS. Photographs of the incremental changes in BCSs were electronically arranged in photo management software, and captions beneath each score were used to describe anatomical locations of interest to accurately evaluate sow body condition. The size of the poster equaled 71.1 cm tall x 50.8 cm wide. Industry sponsorship was attained to defer some of the poster publication costs.

English captions were translated to Spanish and added to the poster in order to enhance the poster's use by the large Hispanic population working in U.S. swine production facilities. The poster was designed to be placed in gestation and farrowing barns for easy reference by employees. Additionally, handheld versions of the poster were produced for real-time comparison during body condition scoring. The National Swine Improvement Federation and the American Association of Swine Veterinarians have endorsed the poster.

Conclusion

The BCS poster was published in a swine trade magazine and was distributed to over 26,000 subscribers who are primarily swine producers and managers, allied industry members, Extension specialists and agents, and other industry supporters. The BCS poster provides a clear and easy avenue to communicate economically important principles or tasks to employees, especially those experiencing a language barrier.

Furthermore, the project demonstrates a new way of cooperatively delivering educational materials to a vast audience. Cooperation between the pork commodity group, industry sponsorship, a popular press magazine, and a state Extension service came together to deliver an educational tool that has been widely adopted and utilized at the farm level. The poster's acceptance has now gone international. The BCS poster will appear in the Chinese and Finnish pork production sectors in late 2007 or early 2008. Similar posters can be developed by Extension workers producers on a wide variety of topics depending on clientele need. Support for future posters can be garnered from a variety of sources.

References

Maes, D., Janssens, G., Delputte, P., Lammertyn, A., & de Kruif, A. (2004). Back fat measurements in sows from three commercial pig herds: relationship with reproductive efficiency and correlation with visual body condition scores. *Livestock Production Science*, 91, 57-67.

Hill, G., Rozeboom, D., Trottier, N., Mahan, D., Adeoli, L., Cline, T., Forsyth, D., & Richert, B. (1998). *Tri-State swine nutrition guide*. Retrieved April 17, 2008 from: http://ohioline.osu.edu/b869/index.html

Patience, J., Thacker, P., & de Lange, C. (1995). *Swine nutrition guide*. pp. 144-146. Saskatoon, Canada: Prairie Swine Centre.

Coffey, R., Parker, G., & Laurent, K. (1999). *Assessing sow body condition*. ASC-158. Lexington, KY: University of Kentucky Cooperative Extension Service.