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Calendar
September 11     SD State Fair: Open Class Swine Shows (8 AM), Huron
September 14     Deep Bedded Livestock Conference, Iowa State University
September 21-22  Minnesota Nutrition Conference, St. Paul, MN

Using Frost Damaged Soybeans in Swine Diets
With the cool summer and potential for an early frost, some soybeans may not make it to full maturity, resulting in green or frost-damaged soybeans (FDS). Since FDS are often discounted at the elevator, pigs provide an alternate market for them. As long as the green beans are round and not too shriveled, the main difference between them and normal soybeans is that the green beans contain more chlorophyll than brown ones. Research conducted at the SE Research Farm in 1991 demonstrated that FDS have the same feeding value as regular soybeans. When extruded FDS were used as the sole protein source, gain and carcass quality were unaffected, and due to the high fat level (18%) in extruded soybeans, the pigs fed the FDS diets actually had improved feed efficiencies (7%). Since both green and normal beans contain ant-nutritional factors, both must be heat-treated, typically extruded, before being fed to pigs. When calculating the economics of replacing soybean meal with extruded FDS, all associated costs and benefits need to be included: extrusion costs (approx $40/ton); more lbs of FDS (38% protein) than soybean meal (44 or 46.5% protein) to reach the same protein level; transportation costs to- and from the extruder; 8% product loss/shrink during extrusion; 8-10% improvement in feed efficiency due to the extra fat; any potential storage costs. However, as long as the beans are not very shriveled, contain no mycotoxins, and are properly extruded, FDS will work well for all classes of swine. It simply becomes a matter of which protein source (SBM or FDS) is cheaper. More information is available at http://agbiopubs.sdstate.edu/pub_description.cfm?Item=ExEx2014.

Light Test Weight Corn and Milo for Swine
Due to weather conditions this year, there is a real possibility of having a lot of light test-weight corn and milo (grain sorghum) available for swine feed. Depending on the price and test-weight, light grains can work well in a swine feeding program. Before considering using weather-stressed corn or milo, first make sure they are free of molds and mycotoxins. Often times stressed grains will contain mycotoxins. If that is the case, they should only be fed to grow-finish pigs at low levels. However, if the light test-weight grains are mycotoxin free, they can be fed to all classes of swine. Nutritionally, light test-weight grains will be lower in energy (less starch and more fiber) and higher in protein than normal grains. As long as test-weight is not reduced by more than 25%, daily gain will not suffer. However, the pig compensates for the lower energy
by eating more feed, which results in a poorer feed efficiency. Fat can be added to the diet to provide more energy, but at today’s fat prices, that is not economical. As with any low energy feed, the best places to utilize it are in finishing and gestation diets, and gestational feeding level will have to be slightly increased to make sure the sows are consuming enough energy. Also, it is critical that light test-weight grains be added to the diets based on weight, not volume. If a producer does not have a scale on their grinder, they may have problems getting the correct amount of light grains in their rations. Producers in the past have actually made money feeding light test-weight corn and milo to pigs. If feed efficiency is decreased by 5% and the price of the corn is decreased by 15%, the producer will spend less TOTAL feed dollars per pig since the lower feed costs will more than compensate the poorer feed efficiency. Therefore, it producers can buy light grains at harvest when the dockage is the greatest, they have the best opportunity of making money feeding light test weight grains. Additional information on this topic can be obtained from the SD-NE Swine Nutrition Guide (http://ars.sdstate.edu/swineext/SwineNutritionGuide.pdf), or contacting your local County Extension Educator or Extension Swine Specialist.

Source: Dr. Bob Thaler, SDSU Extension Swine Specialist

Stalls vs Group Housing For Gestating Sows

Certainly there are many good reasons why stalls are preferred over group housing, says Don Levis, director of the Ohio Pork Industry Center, Columbus. His experience suggests sows benefit from stalls. Farms that have both stalls and penned gestation consistently show a 3-5% difference in farrowing rate in favor of stalls, says Levis. And litter size is always a little bit less in group housing.

The Danes have developed a system that provides 37.1 sq. ft. per sow. The T-pen provides 30 sows per pen with individual, lockable feeding stalls; a 14-in. wide feed trough; solid slotted feeding stall floor; mechanical feeding system; and solid floor bedded resting area.

Number of sows per pen needs to be researched. Currently, the number is determined by the feeding program; sow numbers to fill all-in, all-out farrowing rooms; breeding group and pen size. The number of sows per pen ranges from five to 200 head. Most likely, the establishment of large social groups of sows in an appropriate size pen allows sows to avoid or flee from physically aggressive sows. But the speculation that large, social groups of sows reduce physical aggression has not been scientifically evaluated, observes Levis.

Levis provided a few comments about the following five group sow-feeding systems:
- Floor feeding has been documented to produce the most aggression in the first 30 minutes of feeding.
- Group feeding with non-locking individual feeding stalls allows freedom of movement in a large pen and sows are fed on the floor or in a trough.
- Group feeding with or without shoulder barriers is a way to possibly eliminate dominant sow aggression. This system features trickle feeding (about ¼ lb. per minute) to keep sows in small groups ‘biologically fixed’ in a feed space.
- Group feeding with locked, individual stalls is a European design used for a variety of management practices.
- The electronic sow feeding system allows sows to be group-housed, but fed individually.
Effects of feeder-trough space and variation in body weight within a pen of pigs on performance in a wean-to-finish production system

A Swine Vet Center Summary:
Two studies were performed on the same group of pigs and took place in a wean-to-finish system. Study one (weaning to 8 weeks) looked at the effect of feeder-trough space in pens that were double-filled. Study two (week 8 to 112 kg body weight) looked at the effect of variation in pig body weight (BW) within a pen on growth rates. The three treatments were 1) Heavy BW/Low variation 2) Light BW/Low variation 3) Mixed BW/Normal variation. In summary, increasing feeder-trough space from 2 to 4 cm per pig increased daily gain after week 6 post-weaning in double-stocked pens of pigs; however, sorting pigs on the basis of BW when splitting pens did not impact growth rate or variation in BW within a pen at market BW.

SVC Take:
· The management process of sorting pigs should only be applied to pigs that are going to receive a different diet or alternative environment. This most likely only takes place at weaning. Sorting within an individual barn at the feeder pig phase should be eliminated or at least minimized.
· Adequate feeder space is essential if a grower wants to maximize growth and profit of an individual pig. The cost and labor of bringing in extra feeders to a wean-to-finish situation can be easily justified.
· The age at weaning and number of pigs per feeder may be two factors that would change the outcomes. The individual system needs to interpret how the research applies to them.
· Research on number of pigs per feeder can vary according to type of feeder (open feeder, solid hole feeder, or tube feeder).
· Feeder trough space always becomes more limiting as pigs get bigger and near market weight. There is some correlation with pen density as well. Bottom line is that it is sometimes difficult to determine if feeder space in your situation is limiting ADG. You must benchmark your numbers and if they don’t seem adequate, you must run an on-farm trial.


Minnesota Nutrition Conference Scheduled for September 21-22
The 65th Minnesota Nutrition Conference is scheduled for September 21-22 in St. Paul, Minnesota. There is a pre-conference session on “Direct Fed Microbials”, and the conference sessions include “Feeding Programs for Maximal vs Optimal Economic Returns”, and 2 Non-ruminant and 2 Ruminant sessions. Some Non-ruminant presentations include “Nutritional Value of Yeast Co-products from the Ethanol Industry”, “Current Advances in Feed Enzymes”, “Interface Between Molecular Genetics and Swine Nutrition”, and “Phosphorus Balance in Practical Swine Diets”. Online registration is available at www.cce.umn.edu/MNnutrition, and questions can be answered by Ruth Martin at 612-624-3492.

Resources Available to Deal with Weather-Stressed Grains and Alternate Feedstuffs
With the abnormally cool summer and early frost in some areas already, there is the potential for light test-weight and immature corn and soybeans. To help producers of all species, 2 new tabs have been added to the SDSU Dept of Animal & Range Sciences’ homepage (http://ars.sdstate.edu/). They are “Weather Stressed Grains” and Alternate Feedstuffs”, which are directly below the DDGS tab on the left side of the screen. For more information on these topics, contact the appropriate livestock specialist or your local County Extension Educator.

Source: Dr. Bob Thaler, SDSU Extension Swine Specialist

Impact of Livestock Operations on Neighboring Property Values

A study completed by Royal LePage Stevenson Advisors concluded that there was no significant evidence to support claims that intensive livestock operations in general or hog barns in particular have a negative impact on neighboring property values in rural Manitoba.

"What is significant is the fact that house prices within one to two miles proximity [to hog barns] are not significantly different from prices at four to five miles distant," says Royal LePage Stevenson Advisor Brett Ferguson.

Source: Manitoba Pork/ News Release, Aug. 24, 2004
Source URL: http://www.mani

Chromium tripicolinate supplementation of diets fed to reproducing sows

A cooperative research study involving 353 litters was conducted at three stations to determine the effects of graded levels of supplemental Cr from chromium tripicolinate (CrPic) on reproductive performance of sows and preweaning performance of their pigs. Primiparous and multiparous sows were fed fortified corn–soybean meal diets with supplemental levels of 0, 200, 600, or 1,000 ppb Cr (as-fed basis). Each station used at least three of the supplemental Cr levels, with two of those levels being 0 and 200 ppb. Supplemental Cr increased the number of pigs born live per litter (9.49, 9.82, 10.94, and 10.07; quadratic, \( P = 0.05 \)) and sow lactation weight change (–0.2, 0.8, –4.1, and –3.9 kg; linear, \( P = 0.01 \)) but decreased individual birth weight of total pigs born (1.61, 1.57, 1.47, and 1.56 kg; quadratic, \( P = 0.10 \)). Tissues were obtained from a subset of sows from one station after they had completed three parities on the study. The content of Cr in the adrenal gland (16.4, 20.0, 34.0, and 48.4 ppb), kidney (35.8, 56.4, 132.6, and 176.0 ppb), and liver (22.8, 37.4, 87.6, and 92.2 ppb) was increased linearly (\( P = 0.001 \) to 0.005) by increasing CrPic supplementation. The results suggest that the supplementation level that maximizes the biological response is above that currently allowed. Additionally, supplementation of Cr at 1,000 ppb (five times currently permitted supplementation levels) was not detrimental to sow performance, even when fed continuously for three parities. There may be merit to continued research to evaluate higher supplementation rates.


Effect of housing system and boar exposure on estrus expression in weaned sows

Reproductive efficiency depends on detection of estrus, which may be influenced by housing and boar exposure. This experiment investigated the effects of housing system and boar contact on measures of estrus in weaned sows. Mixed-parity sows were
randomly assigned to be weaned into gestation crates away from boars (AWC, n = 45), into pens away from boars (AWP, n = 42), or into pens adjacent to a mature boar (ADJ, n = 46). Estrus detection was initiated at approximately 0700 (0 h) and again at 0.25-, 0.5-, 1-, 2-, 4-, and 8-h intervals beginning on d 4 and continuing through d 7 following weaning. Estrus detection involved observation of the standing response after application of nose-to-nose boar exposure, backpressure, and side rubbing. For the AWC sows, a mature boar was moved to the front of the crates for a 10-min period and then removed. Sows housed in AWP were moved approximately 15 m to an empty pen adjacent to a mature boar for a 10-min period, and then returned to their pen. Sows housed ADJ were not moved and estrus detection was performed in their home pen for a 10-min period. The proportion of sows expressing estrus within 7 d from weaning was lowest for ADJ (80%, 37/46) compared with AWP (98%, 41/42) and AWC (96%, 43/45; P < 0.05). There was an effect of interval from weaning to estrus on the percentage of sows expressing estrus, but there was no interaction with treatment. Sows in AWC and AWP (4.7 d) had decreased (P = 0.01) intervals from weaning to estrus compared with ADJ (5.2 d). The duration of estrus was also shorter (P < 0.001) for ADJ (45 h) compared with AWC (58 h) or AWP (62 h). After detection of the first standing response on the first day of estrus, only 62 to 82% of sows were detected standing over the next 2 h for all treatments. However, at 4 to 8 h, this increased to 85 to 98% for the AWC and AWP sows, but <73% of the ADJ sows were detected during this period. On the second day of estrus, estrus expression was not influenced by interval for the AWC and AWP sows and was between 90 to 100% during the 8-h period, whereas ADJ sow detection rates were between 68 to 88%. These data suggest that housing sows adjacent to boars negatively affects estrus expression and detection. In addition, refractory behavior occurs in approximately 30 to 40% of sows and is influenced by housing relative to the boar, day of estrus, and interval from last boar exposure.

Source: Effect of housing system and boar exposure on estrus expression in weaned sows.

For comments or questions about this newsletter or if you want to subscribe, contact Dr. Bob Thaler, SDSU Extension Swine Specialist at 605-688-5435 or robert.thaler@sdstate.edu