Ontario's Premier Boar Stud

News and Notes *February 2019*

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2019 - How Is It Going So Far?

Another year has begun, full of opportunities and challenges that will unfold as time passes. One thing looms large as I look ahead to this year; the quality of Ontario's 2018 corn crop has the potential to negatively affect reproductive performance in sow herds in a very big way! **Great care should be taken in sourcing clean grain to be used in sow feeds.** Everyone should work closely with their nutrition supplier to address this very real challenge.

The re-emergence of this challenge should remind us again of the complexity involved in maximizing sow herd productivity. It is not as simple as 1+1=2. There are a great number of inter-connected factors that are at play within the breeding herd. Now is an excellent time to look again at the basics of stockmanship, herd health, environment, nutrition, heat detection and overall level of breeding knowledge within the sow herd facility. Understanding and implementing the basics lays the foundation for success.

Great care must be taken in consistently following best management practices (BMP) in order to maximize sow herd productivity. A well-defined and carefully followed plan results in the greatest likelihood of success. And that is exactly what we at Total Swine Genetics wish for you in the year ahead.

Equation of Fertility

What does it take to achieve peak performance and maintain it over the long haul? Attention to detail at every level is the answer! Let's take a closer look at some of these points.

Dr. Billy Flowers, North Carolina State University, refers to the "equation of fertility" when discussing conception performance. Simply put, it is

female fertility x male fertility x breeder competence

Female fertility will vary from farm to farm and may also change from season to season. What percentage of your sows and gilts are fertile? It is not hard to believe that in most herds there may be 3 – 5% (or more) of breeding females that are not fertile. Cystic ovaries, uterus infections, body condition, environmental temperature, feed quality (especially this year), length of lactation and more can all have a negative effect on sow fertility.

Male fertility is in reality semen quality. This is most likely higher than female fertility since the semen dose has been evaluated in a lab and poor quality ejaculates have been discarded. Having said that, there are still a number of factors that can lower this score. Accuracy of processing at the boar stud, individual boar fertilization capacity, temperature control in storage, outdated semen, and sperm concentration are some of the areas that must be considered.

Breeder competence is the third factor. This area includes all that the breeding tech is responsible for. Accuracy of heat detection is key. If a sow is missed on her first day of standing heat, timing of insemination will be compromised. Breeding technicians must be very observant of all the signs of estrus that the sows are exhibiting. Time of day will effect heat detection and breeding performance. Inadequate staffing levels will cause people to rush through this task and results will suffer. A sow herd that is comfortable with, and trusting of the herdspeople will perform better. Tired techs will not be as observant and some sows will get missed. Hygiene at time of breeding is also important in preventing uterine infections and failed breedings. These are just some of the points that breeding techs must control.

Over the past year and a half, customers receiving semen from Total Swine Genetics, using genetics from 3 different genetic suppliers, have received awards for performance excellence in the breeding area. Each farm has achieved above 93% farrowing rate for a full 12 months! So what does their equation of fertility look like? In order for these results, almost everything must be near perfect. If only 3% of their sows have fertility issues and semen quality is excellent 99% of the time, then they need a breeder competence score of 97% or higher! (97% x 99% x 97% = 93.1%) If we think back to high school, many of us were satisfied with an 80 and ecstatic with a 90 on an exam, but to achieve 97% or higher as an average was unbelievable. Yet that is what these teams are achieving, and this should be every stockpersons' goal as well.

When Success is Detrimental

Yes, it is true. At times success can be detrimental. Here is an example. Imagine that you are driving a new truck. New tires, new brakes. Everything works great. Stopping distance when loaded is 200 meters. No problem. Over time you become very familiar with this truck. By driving a little faster and overloading a little you are able to be more productive each day. This results in greater revenue for you. The loads keep getting a little larger and you drive just a little faster without any issues. Then on one trip you approach an intersection fully loaded and you cannot stop on time. You end up crashing in the intersection. You ask "Why did this happen? I did everything the same." The answer is yes, you did do everything the same, but one or more of the variables had changed, and combined, they caused a failure to perform. You were not following recommended Best Management Practices. In short, you had been doing it wrong for a long time but had gotten away with it. This time, when the load was a little heavier, the brakes were older, the tires worn, and maybe even a

little black ice that you could not see or do anything about, you crashed. Quite possibly this would not have been the result if you were not speeding, overloaded, running on worn tires and brakes and if you had allowed an extra 50 meters for stopping. If you had followed BMPs this crash could have been avoided. We have seen this happen in sow barns all too often!

It is imperative that all breeding techs take some time to fully understand what the BMPs for successful sow operations are. Do not rely on an "I have always done it this way and it works" approach. Instead, understand fully the **what** and **wh**y of sow reproduction. By doing so, and following the BMPs identified, some herds have achieved over 90% farrowing rate year after year. No crashes, just the result of doing it right all the time.

Heat Detection: Do It Right!

What is the best procedure for heat checking? This is a question that is often asked by breeding technicians and barn managers alike. This is a very important question, because timing of insemination is determined by knowing when the sow first came into standing heat. Improper heat detection procedures quite often result in poorly timed inseminations, and less than acceptable results.

In order to address this topic properly we must understand the behavior patterns of an estrus sow.

Beginning of Standing Heat

Does the time of day that a sow first starts to stand have an impact on when we should heat check? **Yes!** Dr. Billy Flowers, North Carolina State University, studied a large number of gilts to determine at what time of day most came into standing heat. Heat detection was performed at 6:00 a.m., noon, 6:00 p.m. and midnight each day. This study revealed that less than 1/4 of the gilts first started to stand between 6:00 a.m. an 6:00 p.m.. The vast majority of the females came into standing heat through the nighttime hours. (chart one) This means that heat checking can be done once a day, and should be first thing in the morning.

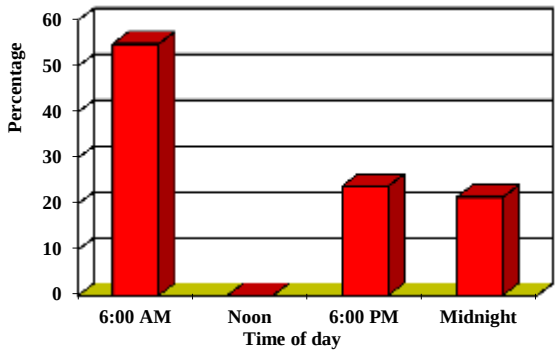

Chart one:% of gilts first exhibiting signs of standing heat by time of day.

Response to a Boar

If a sow is in standing heat and has had no boar contact for a number of hours she will respond strongly to the smell of a boar when it is introduced. She will "lock up" when pressure is applied to her back while in the presence of a boar. For the best results to this test, the sow should be able to have nose contact with the boar.

This lock up response is not something that the sow will exhibit at all times during standing heat. Research by Dr. Don Levis, Nebraska State University, found that a significant number of females would no longer lock up or exhibit the standing reflex 15 minutes after first exposure to a boar. This is due to the fact that at first exposure the sow does respond and lock up. Every muscle in her body becomes tense. After 10 or 15 minutes she becomes fatigued and will no longer stand for a boar, in fact she may even fight him off, or lay down to rest. For some sows and gilts it may be a number of hours before she will exhibit another really strong lock up response. This means that heat checking of sows and gilts must be done within 10 to 15 minutes after first contact with a boar or we may risk missing some.

Distractions

Events that distract the sows or the breeding technician must be avoided. Trying to heat check just before or just after feeding will not work as well. Moving other animals in or through the breeding area before or during heat checking will also disturb the sows and reduce the accuracy of heat detection. Workers that must rush through this area in order to get to other jobs in the barn will not be as thorough. Sows that are kept in close proximity to boars may be stimulated by their smell at times when no one is around and then may not respond to a boar when heat checking is performed.

Conclusion

- Heat check carefully once a day.
- Heat check first thing in the morning when the sows are well rested and fresh.
- Sows and gilts should have no boar contact for at least 3 hours before heat checking.
- Heat check within 15 minutes of first contact with the boar.
- Avoid all barn activities that may distract the sows or the workers in the breeding area.

Make heat checking the #1 priority in the barn, no other job has greater potential to affect total reproductive performance in a sow barn.

Outstanding performance!!!

Over the past year and a half, customers receiving semen from Total Swine Genetics, using genetics from 3 different genetic suppliers, have received awards for performance excellence in the breeding area. **Each farm has achieved above 93% farrowing rate for a full 12 months! Congratulations, well done!**