

Monthly Webinar Review: Sire Selection Considerations for Dairy Producers



By: Donna M. Amaral-Phillips, Extension Professor and Dairy Nutritionist

Selecting AI sires is a very important management decision which will impact future production, health and economic return of the future generations of cows in a dairy herd. With the use of genotyping in both dairy cows and sires, genetic progress has increased at a more rapid rate. Genomic testing accelerates the reliability estimate of genetic evaluations. Consequently the selection of parents for the next generation of animals, including AI sires, can be done at a younger age. In late 2014 through 2015, approximately 25,000 Holstein females (3000 for Jerseys) and 2500 Holstein males (250-300 Jersey males) were genotyped each month. In a recent DAIReXNET webinar entitled “Sire Selection Considerations for Dairy Producers”, Dr. Chad Dechow from Penn State University sorted through how to focus on important traits when selecting AI sires. A summary of his discussion is outlined in this article.

- The use of genomics testing has decreased the interval between generations of AI sires. Before genomics, the generation interval was around 7 years. The generation interval for today’s AI sires is 2 to 2.5 years or about half of the previous interval.
- Dr. Dechow commented that the use of genomic testing has not changed the number of bulls entering AI, but rather sires are used differently. AI sires enter AI line-ups at an earlier age prior to the availability of daughter performance data.
- Herds using AI sires are making genetic progress. Commercial dairy herds and elite cow herds (those breeding the next generation of bulls) do not differ in the average rate of genetic progress, but rather differ in the time period it takes to get to the same genetic merit. Currently, the average commercial herd’s genetics are about 5 years behind those of elite cow herds. Dr. Dechow pointed out that herds using below average AI sires are further behind this average lag period for commercial herds. Thus, re-emphasizing the importance of selecting genetically superior AI sires in a breeding program.
- Dr. Dechow made this point several times: “Good bulls are Good bulls.” It is better to use a high ranking mature bull than a middle of the road young sire. He contended it is not essential that commercial herds use young sires!!! Mature bulls produce more semen than young bulls and, as such, their semen is usually more economical. On the other hand, if you are marketing dairy cattle, you probably need to use AI young sires. He cautioned against comparing proofs from young sires to proven bulls. Young sires proofs need to be compared only to those of other young sires.
- Dr. Dechow compared the weighting of various traits to calculate Net Merit \$ to other indexes calculated by the breed associations (for example, Holstein Association TPI). These indexes offer options for various herd breeding goals. All of these indexes take into consideration milk protein and fat yield, productive life, mastitis resistance (SCS and udder traits), fertility, calving ability, body size, and feet and leg traits. Breed

Educational programs of Kentucky Cooperative Extension serve all people regardless of race, color, age, sex, religion, disability, or national origin.

associations tend to put more emphasis on protein yield and less on fat yield and productive life than Net Merit \$. Productive life relates to how long a cow will remain in a herd. For example, daughters of sires with a higher productive life are less likely to die or leave a herd within the first 60 days in milk.

- Dr. Dechow indicated that you can breed for healthier cows. However, he also showed data that management impacts the genetic expression of traits, such as those associated with ketosis, mastitis, high mortality, or rates of culling within the first 60 days of milk.
- Dr. Dechow suggested that producers first focus on selecting the top sires using a selection index that reflects the herd's breeding goals. Then, look at specific traits that fit the specific herd's management. His specific examples included:
 - For herds with older facilities with smaller freestalls, producers may want to avoid bulls which sire daughters with taller stature. Essentially one is selecting the type of cow that matches the facilities the best.
 - For herds with higher mortality rates (7-9% annual death losses) or that struggle with cow health, he suggested that they use Net Merit \$ as a selection index since it places more emphasis on productive life. He suggested that producers avoid using sires with higher genetic merit for dairy form since their daughters tend to be more angular, thinner, have more problems maintaining body condition after peak production, and have a higher incidence of ketosis.
 - In herds where cow health is well managed (mortality 2-3%) and which have good reproductive, mastitis prevention, and nutrition programs, producers might want to put more emphasis on yield traits and less on productive life.