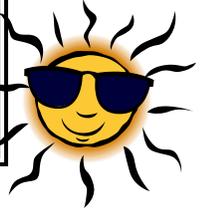




Countryside Veterinary Clinic

August 2017 Newsletter



Genomics Lecture

Peter G. Ostrum, DVM

The recent lecture on “Understanding Genomics” at the clinic provided participants a good review on genomic testing in dairy cattle. A few definitions will help you navigate the genomics discussion.

1. Genetics: the traits passed from parents to their offspring, from one generation to another.
2. Genomics: the field of study that focuses on genetic mapping, DNA sequencing and analysis of the complete genome of an organism, including the results organized in databases.
3. Gene: the basic unit of inheritance, a specific section of DNA, carried by chromosomes.
4. Genotype: the genetic constitution of an animal.
5. Phenotype: the set of observable characteristics of an animal.

You may be familiar with genomics as genomic testing has been very successful to help identify outstanding bulls and has more recently been used to identify genetically superior females. In addition, genomic testing has been used to address the disturbing downward trend in Holstein conception rates. (Murcrest Farm) Utilizing genomic technology has helped Holstein breeders identify bulls and cows with high fertility thereby improving conception, stillborn and pregnancy rates in recent years. Specifically, daughter pregnancy rate (DPR) is a key component to compare when selecting AI bulls for your herd’s breeding program. Net Merit is also a popular indice when comparing bulls and cows.

Net Merit as a Measure of Lifetime Profit

USDA August 2017 revision

- Selection index is a combination of **predicted transmitting abilities** (PTAs) and their **economic values** (genetic superiority x economic value)
- Best known selection index in US is Net Merit (NM\$)
 - *Goal: breed the most economical cow*
- Calculated by CDCB for bulls and cows, 3x per year
- Traits in NM\$ index (2017):

1) Protein	7) Feed and legs
2) Fat	8) Body size
3) Milk (volume)	9) Calving ability (CAS)
4) Productive life (PL)	10) Daughter pregnancy rate (DPR)
5) Somatic cell score (SCS)	11) Heifer conception rate (HCR)
6) Udder	12) Cow conception rate
	13) Livability

<https://aipl.arsusda.gov/reference/nmcalc-2017.htm>

While bull studs have used genomics for years, testing females at the farm level has only recently become more popular. Identifying genetically superior heifers can be begin soon after a calf is born and may provide your farm with both economic and biologic advantages. Prior to testing, a farm plan needs to be in place that addresses the following considerations:

1. Testing goals?
2. What are you going to do with the new information?
3. What is your farm's future strategy to stay competitive?

Just to test without a plan makes little economic sense. However, if you do decide to test heifers, utilizing the available indices such as "Net Merit" to rank your heifers, your options could include some of the following:

1. Sell heifers not meeting a farm established goal.
2. Breed the bottom-end replacements to beef sires.
3. Breed the top-end replacements with sexed semen.
4. Use the top-end replacements for embryo transfer or in-vitro fertilization.
5. Use the middle-end for embryo recipients.

The take home message prior to spending any money on genomic testing is to have a specific plan in place. Testing without a rational strategy is expensive and time consuming. It is also important to remember that, although one animal is ranked genomically higher than her pen-mate, environmental factors play a **huge** role in future animal performance. Excellent health, nutrition, housing and stockmanship are key for all animals to reach their full genetic potential. Without addressing these concerns expected animal performance will never be realized.

Speak to your herd veterinarian if you're thinking of utilizing genomic tests in the future. Many new tools are available to help you evaluate the potential economic gains from testing. Even if you never elect to rank your replacements, knowing about this growing technology is important to the success of your farming enterprise.

YOU'RE INVITED to a **PICNIC**

Countryside Veterinary Clinic's Farmer Client Appreciation Picnic!



Thursday August 31st
7:00 p.m. till ?
Lewis County Fairgrounds

**New – Lewis County Farm Bureau presentation of
2017 Senior Farmer Award at 8:00 p.m.**

We don't want to run out of food so please help us get close to correct number by calling (315-376-6563) texting (315-523-2488) or emailing lowvilleoffice@countryside-vet.net with how many adults and how many kids will be attending. **Door prizes will be given out – BUT you need to be on the reservation list in order to be able to win!** *(Make sure you sign in with clinic staff sometime that night!)*

Read our newsletters: Remember that if you spot your name in our newsletter and call us within 5 days of the billing date, we will give you a \$10.00 credit on your bill.