



The Point



Questions and answers about genomics

Jeff Ziegler, genomics program manager, Select Sires

The term **genomics** has appeared in headlines in every major dairy publication over the last nine months. Scientific advancements in DNA sequencing technology have allowed USDA to create a more accurate genetic evaluation for animals much earlier in their lifespan and at a higher level of reliability.

Genomic evaluations were part of the January 2009 sire summaries, and like any new technology there have been many questions. Outlined below are answers to some of the most often asked questions, which should help you better understand what genomic evaluations are and mean.

What is a genomic evaluation?

The accuracy of any animal's true genetic merit is composed of several components. Pedigree, performance of the animal, performance of the progeny of that animal, and now the DNA makeup of that animal all contribute to the animal's genomic evaluation. Each of these components is weighted differently within the official evaluation depending on the age and stage of the animal's lifecycle.

Genomics adds the actual DNA makeup of an animal to the animal's genetic evaluation based on performance levels of other animals with similar DNA makeup to the animal being tested. The combined genetic evaluation is referred to as a genomic evaluation.

Are all traits measured by USDA and breed associations affected by genomics?

USDA adjusts 29 different genetic traits within an animal's summary through the use of genomics. This includes five yield traits (Milk, Fat, Percent Fat, Protein, Percent Protein), seven health traits (Productive Life, Somatic Cell Score, Daughter Pregnancy Rate, Sire Calving Ease, Daughter Calving Ease, Sire Stillbirths, Daughter Stillbirths), 16 conformation traits (PTAT and 15 linear type traits), and Net Merit Dollars. Since all these traits vary in heritability, we've always seen a variation in the reliability of each of these figures. Genomics will affect each trait's reliability differently, and in actuality the biggest winners will be the health and fertility traits in their accuracies once genomically adjusted.

Continued on page 2

Stockowner annual meeting notice

The annual stockowner meeting of NorthStar Cooperative, Inc. will begin at 8:00 a.m. (EST) on Wednesday, March 11, 2009 at the Holiday Inn Muskegon Harbor, which is located at 939 Third Street in Muskegon, Michigan. Registration will begin at 7:45 a.m., followed by the meeting at 8:00 a.m. Business will be conducted between 8:00 a.m. and 12:00 p.m. only by common stockowners of record as of December 31, 2008.

The meeting's purpose is to discuss, defer or act upon any and all matters pertaining to the business and affairs of NorthStar Cooperative, Inc., which are properly brought before the stockowners in the course of the meeting. The meeting agenda will include a vote on the approval and adoption of the minimum business level to maintain voting member status.

Common stockowners will find enclosed in this newsletter a proxy which enables you to have a vote cast on your behalf without having to attend the meeting. The board of directors encourages you to submit your proxy. Only proxies received via mail or fax at NorthStar Cooperative, Inc. by 5:00 p.m. (EST) on Tuesday, March 10 or proxies delivered by hand to the corporate secretary before the beginning of the meeting on Wednesday, March 11, 2009 are valid for this meeting.

**Stockowner Annual Meeting
Wednesday, March 11, 2009
8:00 a.m.**

**Holiday Inn Muskegon Harbor
Muskegon, Michigan**

Enhancing producer profitability through integrated services.

Questions and answers about genomics

Continued from page 1

Does this mean that parent averages of the past have no value?

Parent averages are still critical to developing a genomic evaluation. This is why Select Sires is dedicated to proper identification throughout all sire development schemes. Nearly one half of a genomic evaluation for a young animal is still the former parent average as we've all known from the past. This 35-40 percent reliability evaluation will now simply have the addition of the animal's DNA makeup added to it, to achieve a genomic evaluation that grows in reliability depending on the trait being analyzed. For most production traits the genetic evaluation will receive a boost in accuracy with the addition of genomic data resulting in a reliability of 65-70 percent.

What are the methods used for genotyping?

Any DNA can be used for genomic testing. This includes whole blood, hair follicles, or tissue samples. A simple, clean sample is taken from the animal in question, the sample is properly identified with breed association verified identification numbers, and the sample is forwarded to the proper provider for genotyping and further genomic analysis.

How do I know an animal has been genotyped?

If an animal has been genomically tested, the evaluation will have a 'G' preceding the PTA, TPI™ or JPI™ value. Another obvious signal to determine if an animal's genotype has been included in his summary is to assess the reliability of that animal's evaluation. Young stock will have reliability values near 65 percent or higher. Proven animals will also receive a boost in reliability with genomic testing.

Are all Select Sires animals genomic tested?

All proven lineup Holstein and Jersey sires have already been genomic tested and are labeled as such. In addition,


all Holstein and Jersey young sires are labeled with a 'G' preceding their evaluation if they have undergone genomic testing. This assures users of the Select Sires brand that they are purchasing the most up to date genetic estimates available when they buy a straw of code 7 or 507 semen.

Genomic evaluations may literally be the most impactful event in the

A.I. industry since the introduction of frozen semen. Like with any new technology there are always lots of questions. NorthStar Cooperative is committed to helping you understand and utilize this new technology. If you have additional questions about genomic evaluations please visit with your NorthStar representative. ★


New Graduates

7HO8477 GABOR




+2,140 M	+1864 GTPI	+2.98 T
+2.59 UDC	+1.18 FLC	

7HO8559 BOGART





+1929 GTPI	+2.60 T	+2.79 UDC
+2.31 FLC	+1.0 DPR	

7HO8530 AUTUMN



+1878 GTPI	+\$577 NM	+3.5 PL
2.64 SCS	+3.63 FLC	+1.82 T

NorthStar Cooperative

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