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## Using Genomics to Help Ensure an Enjoyable Eating Experience

Consumers expect an enjoyable eating experience every time they sit down for a steak dinner. A new tool offered by Pfizer Animal Genetics — the Palatability Index — delivers more information to each step in the supply chain — from producers to retailers — to ensure their cattle provide a tender, tasty, juicy and satisfying encounter for the consumer.

### Palatability Index Explained

The Palatability Index is included in an expansion of GeneSTAR®, a targeted-marker panel that also delivers information on the economically relevant traits of feed efficiency, marbling and tenderness. Alongside the addition of the Palatability Index, producers also

receive information on black coat color as part of the GeneSTAR molecular value predictions (MVPs®).

“The Palatability Index categorizes animals into one of three zones related to expected palatability: superior, acceptable or marginal based on described genetic differences in tenderness and marbling,” explains Dr. Kent Andersen, associate director of technical services with Pfizer Animal Genetics. “Based on historic genomic test results, about 20 percent of animals fall into the superior and marginal categories, respectively, while the remaining 60 percent are in the acceptable group.” The figure below illustrates these three categories.

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## From the Expert

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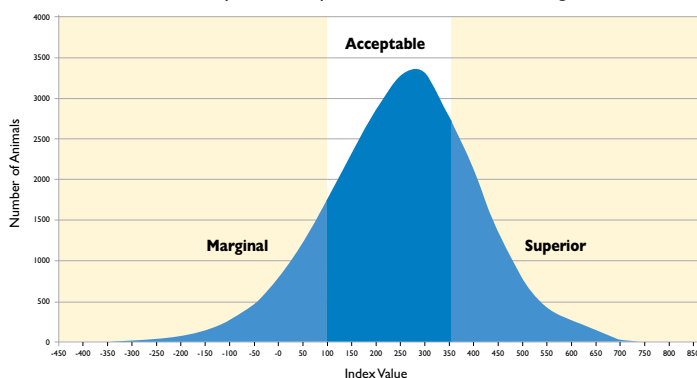
**Genomic information can positively impact replacement heifer selection and mating**

Within months of birth, genomic technology like HD 50K for Angus allows producers to make more accurate assessments of an animal’s genetic profile than is often achieved only after producing seven or eight calves with performance data.

More accurate decisions related to selection and breeding can be realized through:

- Parentage. SireTRACE® can verify parentage and facilitate more informed mating decisions.
- Economically relevant traits. GeneSTAR® delivers economically important information related to genotypes for black color, feed efficiency, marbling, tenderness and a Palatability Index.
- HD 50K. HD 50K for Angus offers a comprehensive view of a female’s genetic merit, empowering smarter mating decisions and greater lifetime profit.

Palatability Index Simplifies Selection and Marketing



Index adjusted such that 100 is the threshold for acceptable palatability.

### Superior

Scores above 355. Indicates highest level of combined tenderness and marbling (juiciness and flavor).

### Acceptable

Scores ranging from 100 to 355.

### Marginal

Scores below 100 suggest mating and management recommended for improved palatability.

## Increased Breeding Precision with SireTRACE®

Knowing and utilizing parentage information is essential for making dependable selection and mating decisions. With multiple-sire breeding pastures, it's virtually impossible to accurately match individual sires with the resulting calves. Don Nicol, a consultant who works with Pfizer Animal Genetics in Australia, says DNA parentage verification can authenticate sires with high exclusionary power, enabling more accurate pedigree information and precise breeding decisions.

**“DNA parentage verification can authenticate sires with high exclusionary power, enabling more accurate pedigree information and precise breeding decisions.”**  
**— Don Nicol**

### “Who’s your Daddy?”

SireTRACE® is a DNA-marker technology that identifies sires of calves based on a panel of genetic markers. The technology compares the markers from the calf with all potential sires, resulting in a highly reliable assignment of an individual calf’s sire.

“SireTRACE is a cost-effective genetic tool that can help producers effectively gain a ‘genetic snapshot’ of their herd,” explains Nicol. “SireTRACE can be used by commercial producers to gain a better picture of the genetic variation among their bulls and the impact they have through their progeny, as well as identify sub-fertile sires.”

SireTRACE can be especially effective in management systems where:

- Multiple-sire mating is employed and a calf’s specific sire is unknown
- When clean-up bulls are mated with females immediately following artificial insemination (AI).

### A Real-world Example

The figure below shows results using SireTRACE on 244 heifers by 15 candidate sires where progeny were retained through harvest.

The number of progeny produced per individual sire ranged from three to 32 head, which demonstrates the variation in bull services often evident in a multiple-sire system. The power of SireTRACE is clearly represented in this real-world example as the difference in value of progeny of the three best sires and the three worst sires is \$90.42 (\$911.51 compared with \$821.09).

“The impact of the sire differences can be great for any operation,” explains Nicol. “Once you consider the average working life of a bull is only three years and that bull will sire an average of 25 calves per year, the difference between

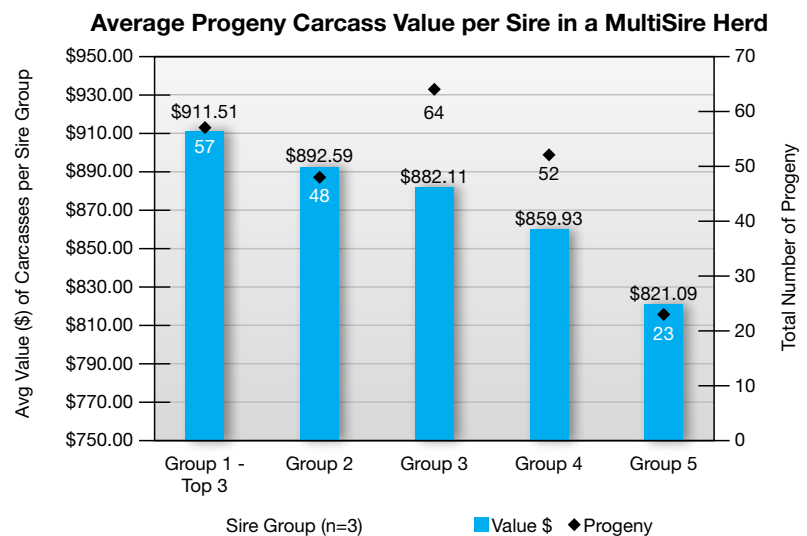


the highest and lowest sires can be almost \$7,000 in carcass value. That’s one way SireTRACE can be effective.”

### Turning SireTRACE Results into Decision-making

Beyond identifying parentage, SireTRACE offers additional opportunities for your operation, including:

- Less risk and cost per calf. Single-sire mating pastures are risky; if the bull



isn't getting cows bred for any reason, it's having a devastating effect on the next calf crop. The cost required for single-sire pastures is often greater, due to more fencing, watering points and extra labor.

- **Sire identification.** SireTRACE allows you to more efficiently identify which bulls are the sires of which offspring, thus enabling retained daughters to be sorted to breeding pastures and service sires that maximize heterosis, minimize inbreeding and are most complementary for a lifetime of mating decisions.
- **Outstanding sire identification.** SireTRACE can track outstanding daughters or carcasses back to their sire and/or dam, helping you identify superior parents. Conversely, sires that are creating problems, such as calving difficulty or lightweight calves, can be identified and eliminated.

**“The guarantee of an animal’s pedigree and the ability to make more accurate decisions in any mating system can deliver long-term benefits for your operation.”**  
— Don Nicol

“It doesn't take long to realize the additional gain that can be seen with SireTRACE, even with the cost of the technology included,” explains Nicol. “The guarantee of an animal's pedigree and the ability to make more accurate decisions in any mating system can deliver long-term benefits for your operation.”

## Using Genomics to Help Ensure an Enjoyable Eating Experience

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### The Drivers of Satisfaction

Consumer satisfaction is driven by three key factors: tenderness, flavor and juiciness. The Palatability Index utilizes information from the core traits of tenderness and marbling to rank animals for net genetic potential to produce a satisfying eating experience.

“We have MVPs for tenderness, which helps us address one of the key factors in customer satisfaction,” states Dr. Andersen. “Marbling provides us information about a steak's flavor and juiciness, and serves as a buffer against overcooking.”

Using this information the team at Pfizer Animal Genetics created the Palatability Index, where tenderness and marbling MVPs contribute equally to the index. To simplify understanding of the palatability scores, threshold values are used to categorize animals into palatability zones. Animals with scores of 100 or greater are classified into the *acceptable* zone, while those with scores above 355 possess *superior* genetic predisposition for palatability.

“The Palatability Index simplifies multi-trait selection and helps producers evaluate animals for overall eating satisfaction from the described genetic merit for tenderness and marbling,” says Dr. Andersen. “The index zones provide information to producers that can help when making selection decisions.”

### Satisfaction for the Future

Given the already expanded number of traits available with the GeneSTAR offering, test results for black color and the Palatability Index offer a new level of information to producers for selection and merchandising.

“The technology allows producers with animals that may be lower in tenderness and marbling to achieve cost-effective genetic evaluation and improvement,” Dr. Andersen says. “For producers interested in black coat color testing, the added value from information about feed efficiency, marbling, tenderness and palatability offered with GeneSTAR MVPs can be significant in selection, mating and marketing decisions.”



## Pfizer Animal Genetics Now Running Contractual Arachnodactyly (Fawn Calf) Test

Pfizer Animal Genetics is now accepting samples for Contractual Arachnodactyly (CA) testing. CA is a genetic condition formerly referred to as Fawn Calf Syndrome. Through the collaboration with Dr. Jon Beever at the University of Illinois and the American Angus Association (AAA), the gene mutation responsible for CA has been identified and a commercial test developed and validated. Pfizer

Animal Genetics is approved by the American Angus Association as a CA testing laboratory.

From now through the end of the year, you can order CA, Arthrogryposis Multiplex (AM) or Neuro Hydrocephalus (NH) genetic condition tests for just \$20 each. And for every CA test you order, Pfizer Animal Genetics will donate \$2 to

the American Angus Foundation supporting youth activities.

Visit [www.pfizeranimalgenetics.com](http://www.pfizeranimalgenetics.com) for order forms and a sample collection guide, and to view ongoing updates and answers to frequently asked questions about CA testing. Additional questions may be answered by customer service at 877-BEEF DNA (877-233-3362).

## GeneSTAR® Now Has More Information, Greater Value

GeneSTAR®, from Pfizer Animal Genetics, now comes with two additional offerings — a Palatability Index and black coat color. These are in addition to Molecular Value Predictions (MVPs®) for feed efficiency, marbling and tenderness.

The new GeneSTAR Palatability Index combines the traits of tenderness and marbling, and helps rank animals

according to described genomic merit for qualities that impact tenderness, juiciness and flavor. The result is a composite score that helps to more readily predict which animals will contribute genetics for the most favorable overall eating experience.

GeneSTAR also now includes genotypes for black coat color as part of the standard reporting package.

These results continue to indicate if an animal is homozygous or heterozygous for black color.

For more information, producers should contact their Pfizer Animal Genetics representative, visit [www.pfizeranimalgenetics.com](http://www.pfizeranimalgenetics.com) or call 877-BEEF-DNA.

## Pfizer Animal Health Announces Reproductive Vaccine Guarantees

Pfizer Animal Health is proud to back its reproductive vaccines, Bovi-Shield GOLD® FP, PregGuard® GOLD FP and CattleMaster® GOLD FP, with risk-free guarantees of protection and performance.

Pfizer Animal Health will guarantee 100 percent of calves born to be BVD PI-free, provided that all cows and heifers have been vaccinated according to label indications approximately 30 days prebreeding with Bovi-Shield

GOLD FP, PregGuard GOLD FP or CattleMaster GOLD FP vaccines. In addition, Pfizer Animal Health will guarantee herds to be free of IBR abortions if cows and heifers were vaccinated according to label indications approximately 30 days prebreeding with the Pfizer Animal Health family of FP vaccines.

For more information about these guarantees, contact your local

veterinarian, animal health supplier or Pfizer Animal Health representative.



\*LABEL INDICATIONS: The Bovi-Shield GOLD line and PregGuard GOLD FP 10 are recommended for vaccination of healthy cows and heifers approximately one month prior to breeding. These products also can be administered to pregnant cattle provided they were vaccinated, according to label directions, with any Bovi-Shield GOLD FP or PregGuard GOLD FP vaccine prior to breeding initially and within 12 months thereafter. Failure to follow label directions may result in abortions. The Bovi-Shield GOLD line may be administered to calves nursing pregnant cows, provided their dams were vaccinated within the last 12 months as described above. Consistent with good vaccination practices, heifers should receive at least two vaccination doses, with the second dose administered approximately 30 days prebreeding.