

## DATA FUELS

## GENETIC IMPROVEMENT

# You Can't Manage What You Don't Measure

**Idaho dairyman Greg Andersen uses genetic data to build a stronger herd.**

**“We find great value and improved herd efficiencies gained by using genetic evaluations to select for higher yields, better fitness, and improved utility.”**

The Andersen family owns and operates three dairy sites in southern Idaho. Greg and his brother John partner in and manage WinStar Genetics, which creates elite total merit Holstein males and females through intense genetic selection and in vitro fertilization (IVF). With about 500 transfers per month, high merit embryos are placed into recipients at the partner herds or marketed internationally.

“In our donor program, we select for the top females so that we harness the female power along with the bull power to amplify genetic improvement,” said Greg.

In the commercial herds or the WinStar donor program, the genetic criteria and goals are the same – to improve yield, fitness, and functional conformation. “We try to harness the power of the best-of-the-best females, in tandem with selecting for the best males,” Greg said. “That’s how we amplify genetic improvement in our milking herds, generation over generation.”

For yield, Greg refers to Energy Corrected Milk (ECM). “We have increased energy corrected milk year-over-year, through accurate fat and protein tests on every cow and intense genetic selection,” he said. “That impacts our milk check every two weeks.”

### True snapshot of profitability

Dairying in a cheese market, Greg emphasizes the milk check is based on pounds of components, not pounds of milk. Parlor milk weights are useful, especially in between Dairy Herd Information (DHI) test days. However, Greg depends on component tests and somatic cell count (SCC) values to provide a true snapshot of each cow’s contribution to profitability.

According to Greg, making cow management decisions on milk weights alone shows an incomplete picture. In a data-driven comparison, he ranks the cows in the herd two ways, based on three DHI test days: by milk weight only and by ECM. Each ranked list separates into 10 cohort groups by percentiles. Greg found a high number – 30% – of the cows move out of their milk weight cohort (either up or down) when ECM values are compared to milk-only values. “If we use only milk yield, nearly a third of the cows are in the wrong cohort group,” he said. This can lead to mismanagement of cows or even placing more profitable animals on the cull list.

Additionally, consider the herd variation that exists in component production. There’s a wide range of fat and protein tests among individual cows. For Greg, the bulk tank simply shows the herd average, which is 4.5% fat. Yet individual cow tests range from 3.3% to 6.0%, nearly a 3-point spread (see table top of Page 2). Imagine the improvement and milk check impact when genetic selection is accurately placed on the cows that transmit higher components.



### Greg Andersen, Idaho

Managing partner at 3 family dairies

- ▶ **Seagull Bay Dairy, American Falls, ID**  
Original farm now dedicated to maternity, fresh cows, and calf raising
- ▶ **Andersen Dairy, Declo, ID**  
2,000 cows on a 60-stall rotary
- ▶ **WinStar Dairy, Preston, ID**  
700 cows milked with robots

### Participation in the integrated system

- ▶ Milk tests 8 times per year through Dairy Herd Information (DHI)
- ▶ Processes milk and health records through a Dairy Records Processing Center (DRPC)
- ▶ Classifies 1 to 2 times per year through Holstein Association USA
- ▶ Genomic tests the majority of females shortly after birth

Greg is a 3-year member and the current Chair of the CDCB Producer Advisory Committee (PAC).

**Hear More from Greg ▶**



	Fat	Protein
Bulk Tank	4.5%	3.5%
Individual Cows	3.3%-6.0%	3.0%-4.3%

The bottom line is that complete production records – milk, components, and SCC – lead to economically informed cow management decisions.

This is a leading reason for Greg’s commitment to milk testing through DHI, processing those records (along with health and breeding records) through a Dairy Records Processing Center (DRPC), and sharing that data into the National Cooperator Database, which is the engine for U.S. dairy genetic evaluations.

### The value of contributing records to the national database

Greg lays out the two-fold value of accurate individual cow data for herd management and genetic improvement:

1. Milk weights, component percentages, and SCC values are critical to make better management decisions, cow by cow or group by group.
2. Genetic evaluations provide vital information to breed better cows. The evaluations are built with accurate yield, fitness, and conformation phenotypes, or performance data, through certified organizations and collected from participating farms in the National Cooperator Database.

### Data fuels genetic improvement

Independent, objective, and accurate genetic evaluations are vital for genetic improvement. “Our goals are for continual improvement. That includes improved efficiency, which obviously comes from improved yield, and also improved fertility and fitness,” said Greg. “We can do that with genetic evaluations that are reliable.

“We increase genetic progress through selection intensity and decreasing the generation interval,” he said. “Today, having more traits to select for, we can focus on direct instead of indirect selection for a trait such as mastitis resistance. Those things have resulted in tremendous increases, generation over generation.” It’s not only their IVF and embryo transfer programs that make a difference, Greg emphasizes. It’s also selecting which females will carry replacements versus terminal crosses.



*Working with the National Cooperator Database helps Andersen Dairy in two ways: genetic selection and quality management data to make informed decisions cow-by-cow or group-by-group.*

## Areas of Selection Intensity in the Andersen Herds

Yield	Fitness	Utility	Future
<ul style="list-style-type: none"> <li>▶ Increase Fat</li> <li>▶ Increase Protein</li> </ul>	<ul style="list-style-type: none"> <li>▶ Livability</li> <li>▶ Daughter Fertility</li> <li>▶ Udder Health</li> </ul>	<ul style="list-style-type: none"> <li>▶ Reduced Stature</li> <li>▶ Optimal Teat Length</li> <li>▶ Optimal Teat Placement</li> <li>▶ Moderate Dairy Form</li> </ul>	<ul style="list-style-type: none"> <li>▶ Hoof Health</li> <li>▶ Calf Wellness</li> <li>▶ Feed Efficiency</li> </ul>

U.S. genetic evaluations are produced via data provided from 10,000 herds like Andersen’s across the U.S. through an integrated system that collects and transfers information into the National Cooperator Database through certified organizations. As the steward of that database, the Council on Dairy Cattle Breeding (CDCB) publishes the U.S. genetic evaluations that have become the global standard.

“This collaborative nature brings us quality data. The fact that genetic evaluations come from an independent, third-party organization like CDCB leads to more transparency and more confidence in the evaluations. We’re able to make decisions based on an objective standard,” said Greg.



**“My data is most valuable when it’s aggregated with millions of other records and thousands of other herds. By sharing into the national database, I help secure that future by having phenotypic data with the genotypes. The phenotypes that are collected on-farm are absolutely necessary for reliable information.”**

### Performance verifies the progress

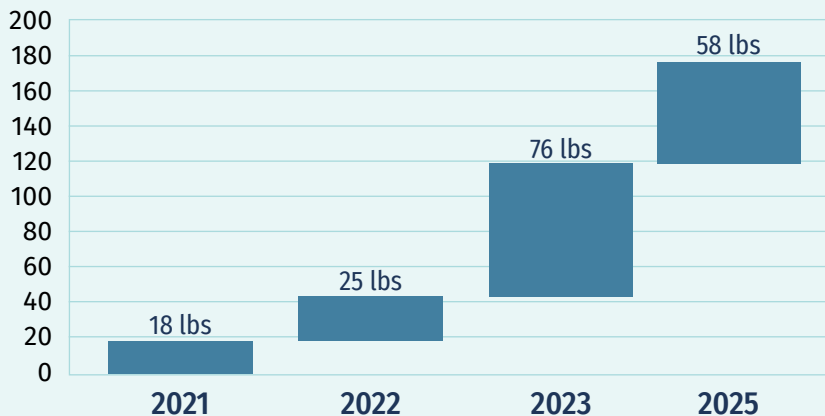
“Our confidence comes from real-world results comparing and analyzing performance of individual cows and groups of cows and from seeing that genetic selection works,” Greg said. “That’s why we measure everything, so we can continue to make progress in the areas of greatest need.”

A review of actual trends at Andersen Dairy confirms the breeding program is working. “As we select for specific areas and then we measure the actual performance in those areas, we can clearly see the improvement,” Greg said. “The improvement matches our selection and management goals.”

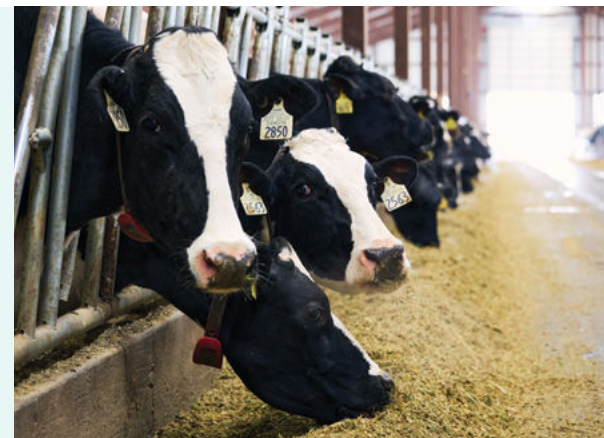
Gains in the fat and protein in the bulk tank at Andersen Dairy is further proof that the selection program is helping achieve herd productivity goals. The chart below demonstrates the change in Combined Fat and Protein (CFP) based on bulk tank data since 2021.

### Bulk Tank Data at Andersen Dairy

■ CFP Change Year Over Year



\*2024 has been removed due to avian influenza \*\* CFP per cow per year



*Elite females are selected as donors for the IVF program, based on top Net Merit \$ and TPI™, excellence in health traits, the right conformation, and high component yields. “Naturally hornless is a trait we are wanting to amplify in our population,” Greg explains, with about a third of current donors being polled.*

“We get feedback on the pounds of fat and protein we sell every two weeks,” Greg said. That progress is backed by year-over-year gains in components and ECM, especially over the last eight years. “It’s not only yield traits we’re gaining. We’re getting improved fertility, improved calving ability, improved wellness, and all of those things. We’re seeing a faster rate of genetic progress than we’ve ever seen before.”

### How other herds can see similar results

To those contributing data into the national system – thank you! You can best support our genetic evaluations and system when you:

- ▶ Continue to identify each animal with birth date, sire, dam, and a unique ear tag number
- ▶ Record health events for cows and calves in on-farm software systems
- ▶ Enter events using names that are easily recognized and usable through the system (i.e., MAST, METRITIS, RESPIRATORY)
- ▶ Check the boxes required at DHI/DRPC to permit sending your yield, health, and fertility records to CDCB

“If you are not sharing your data, you are benefiting from a system you are not invested in,” Greg said.

Every dairy can profit from accurate genetic evaluations. When you process herd and cow data and share it into the National Cooperator Database, herds also benefit through:

- ▶ Better management information by using individual cow component and SCC results
- ▶ Improved reliabilities of genetic evaluations, when increasing the number of records in the independent database used to produce evaluations

For those on the fence, Greg suggests to start by DHI testing in one parlor to see the benefits, then you may be interested in testing on other sites. Farms can join the system by contacting a DHI affiliate, milk tester, or DRPC.

“In our herds, we depend on and trust the evaluations that come out of the system,” he said. “We are eager to share our data with the national database to keep that reliability and confidence.”

## The Collaboration that Drives Data into the National Database

Genetic improvement is driven by the partnership of U.S. dairy producers and 60-plus organizations that collect and transmit certified animal data into the National Cooperator Database.

This database – with millions of cow records – is the engine that powers genetic improvement. Stewarded by the Council on Dairy Cattle Breeding (CDCB), the national database delivers male and female genetic evaluations, independent research to support new traits, national benchmarking, and accurate animal data to milk and breed better cows.

Owners and managers at 10,000 herds of all types and sizes across the U.S. contribute performance (phenotypic) and genotypic data on individual animals into this database. Millions of individual animal records – from milk components and fertility to conformation scores and health events – are transmitted and aggregated in the national database each year.

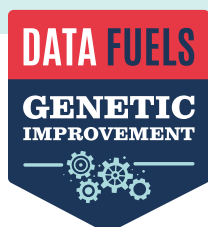
### Like an engine, all parts of the system are essential.

- ▶ U.S. dairy producers
- ▶ Dairy records providers
- ▶ Dairy records processing centers
- ▶ Breed associations
- ▶ National Association of Animal Breeders
- ▶ Genomic nominators and genotyping labs

**When farms provide animal data into the system, they fuel genetic improvement for generations to come.**



*For Greg Andersen of American Falls, Idaho, accurate genetic evaluations and intense genetic selection are keys to achieving their goals of continual improvement and better efficiency that comes from higher yields and improved fertility and fitness.*



## It all starts at the farm.

**LEARN MORE** about how herd data fuels genetic evaluations.