

Tracking the U.S. Dairy Herd: Insights from the National Performance Metrics

Fiona Louise Guinan, PhD

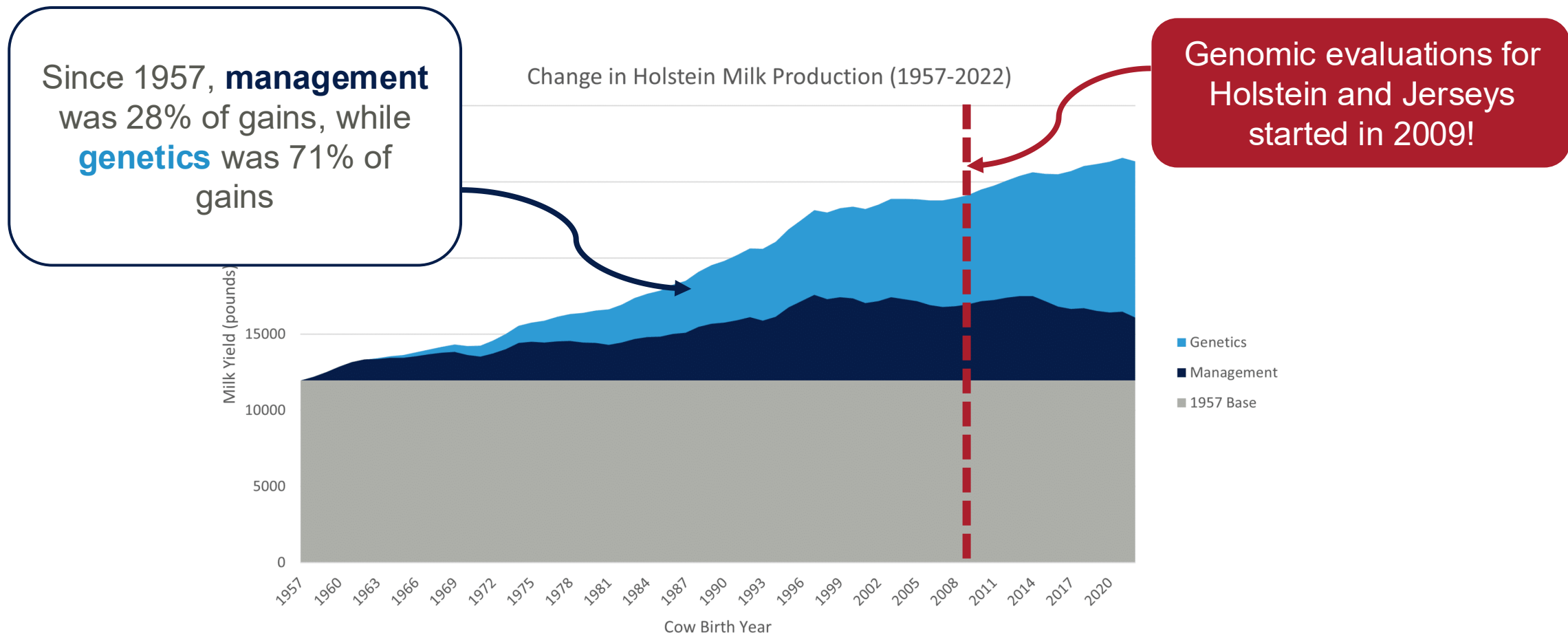
2026 CDCB Nominator and Laboratory Workshop

May 21st, 2026

Washington, DC



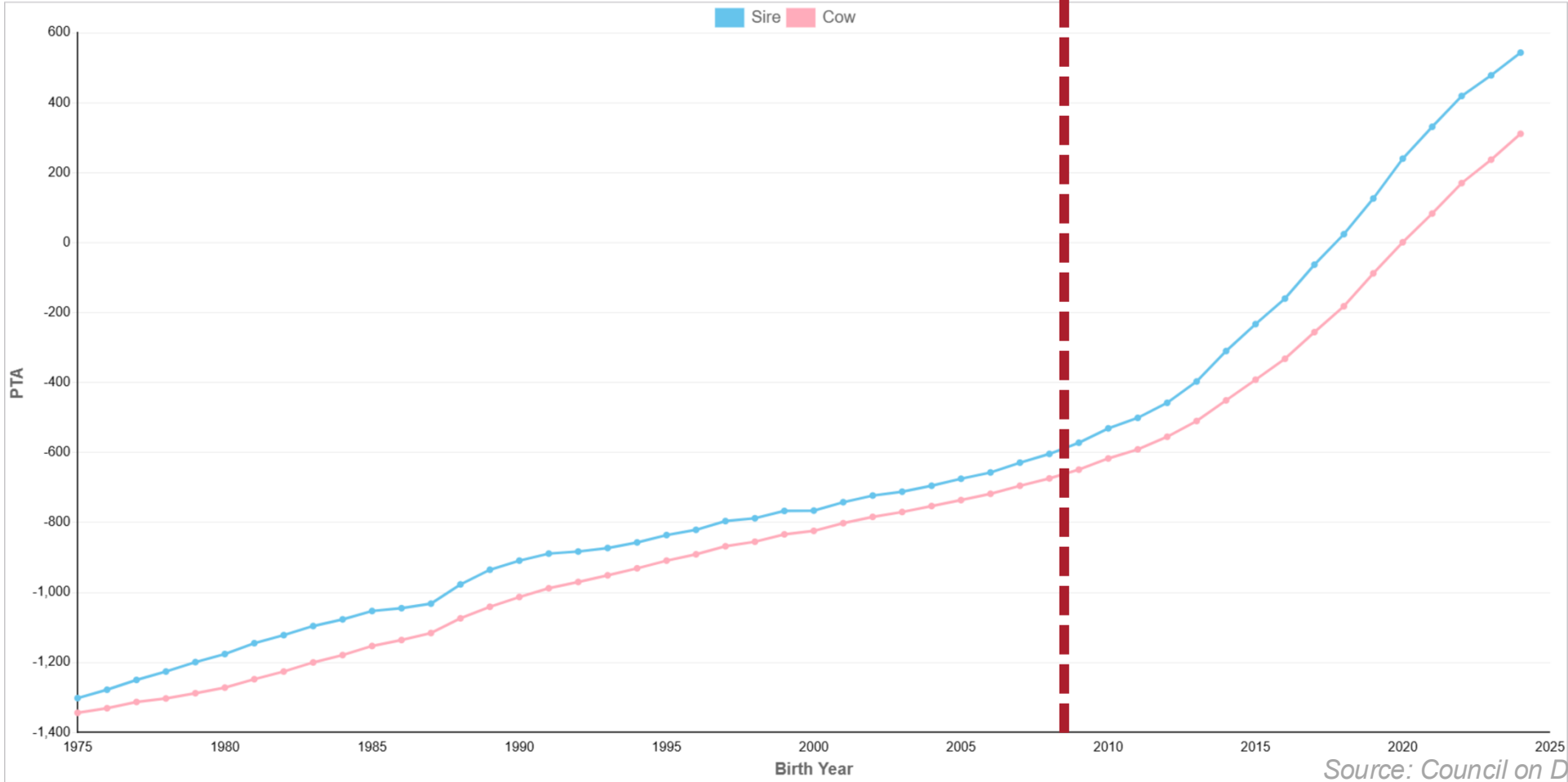
Genetic improvement of dairy cattle in the US



Source: Council on Dairy Cattle Breeding

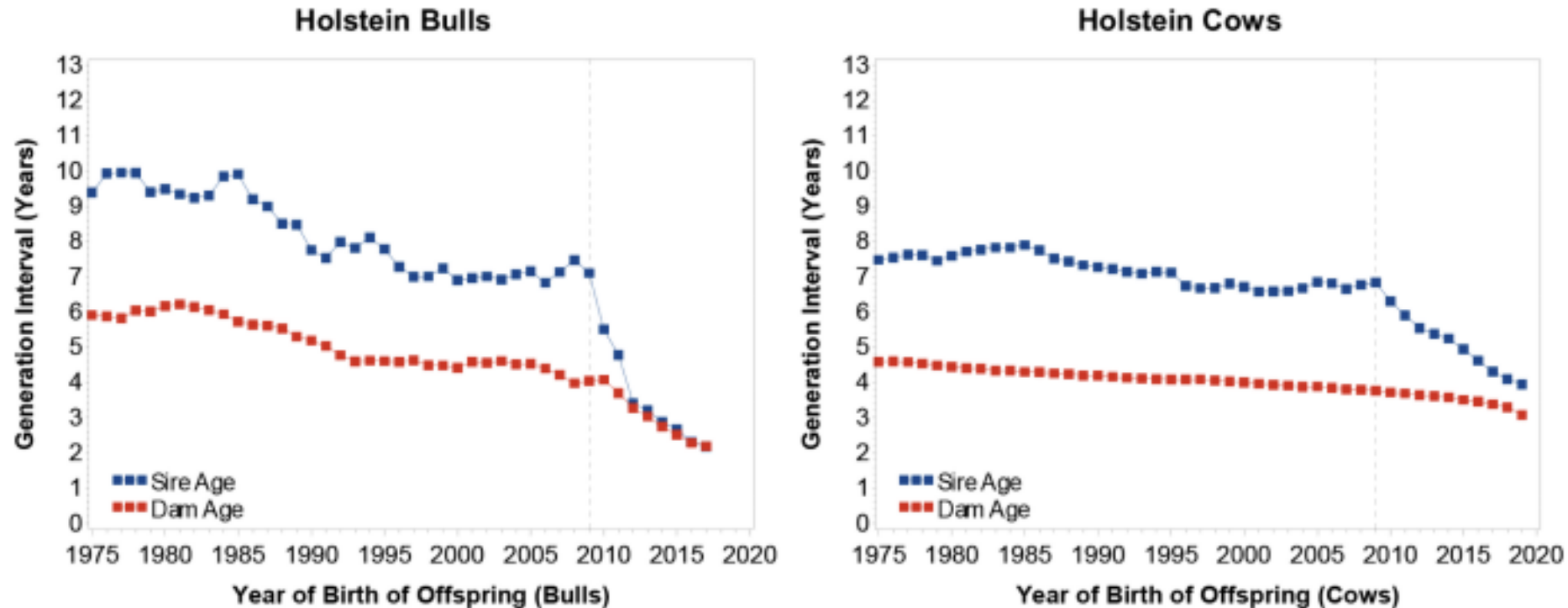
Genomics increased rates of gain

Genetic trend for Net Merit (\$)



Source: Council on Dairy Cattle Breeding

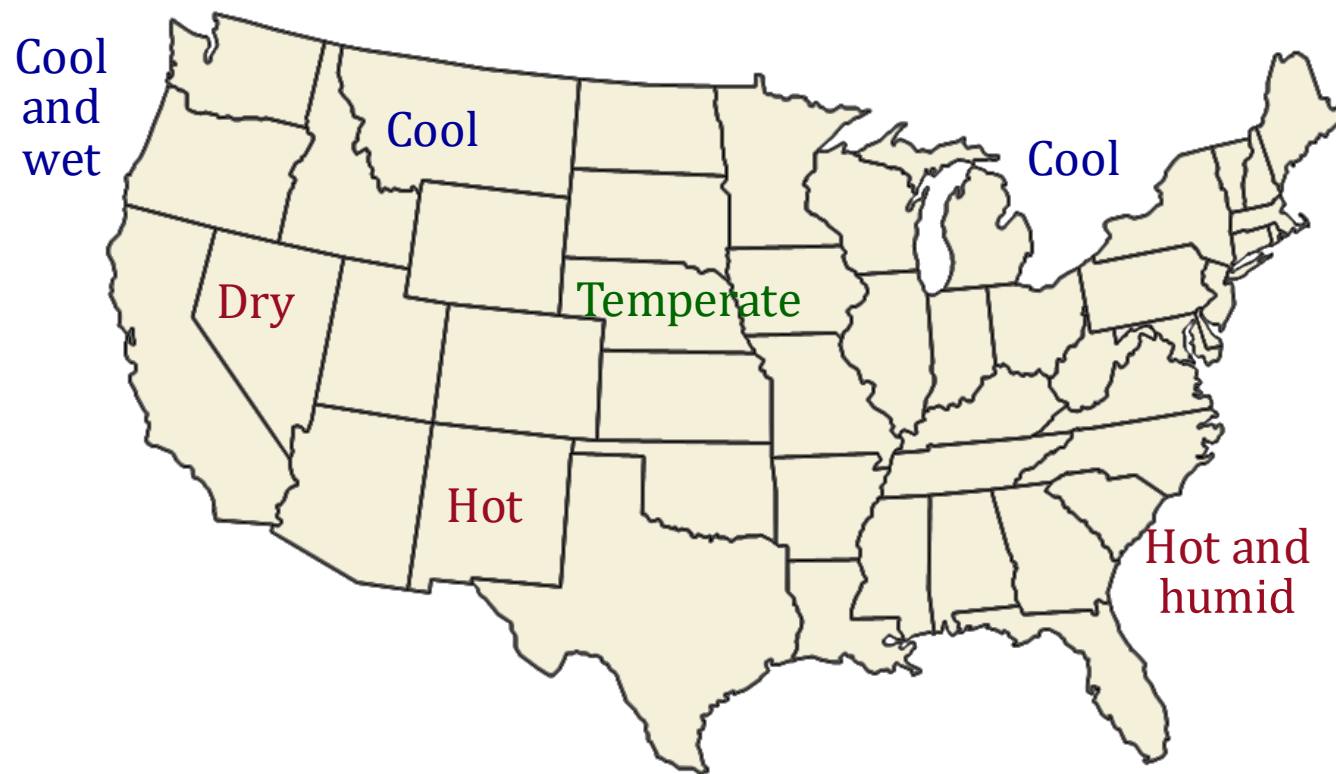
Generation intervals decreased rapidly



Guinan et al., 2023

Why is the U.S. a leader in dairy genetics?

- Population size
- Selection intensity
- Focus on dairy breeds
- Diverse environments
- Competitive A.I. industry
- Independent evaluations



Number of animals in April 2026 Evaluation

April 2026 Triannual Evaluation

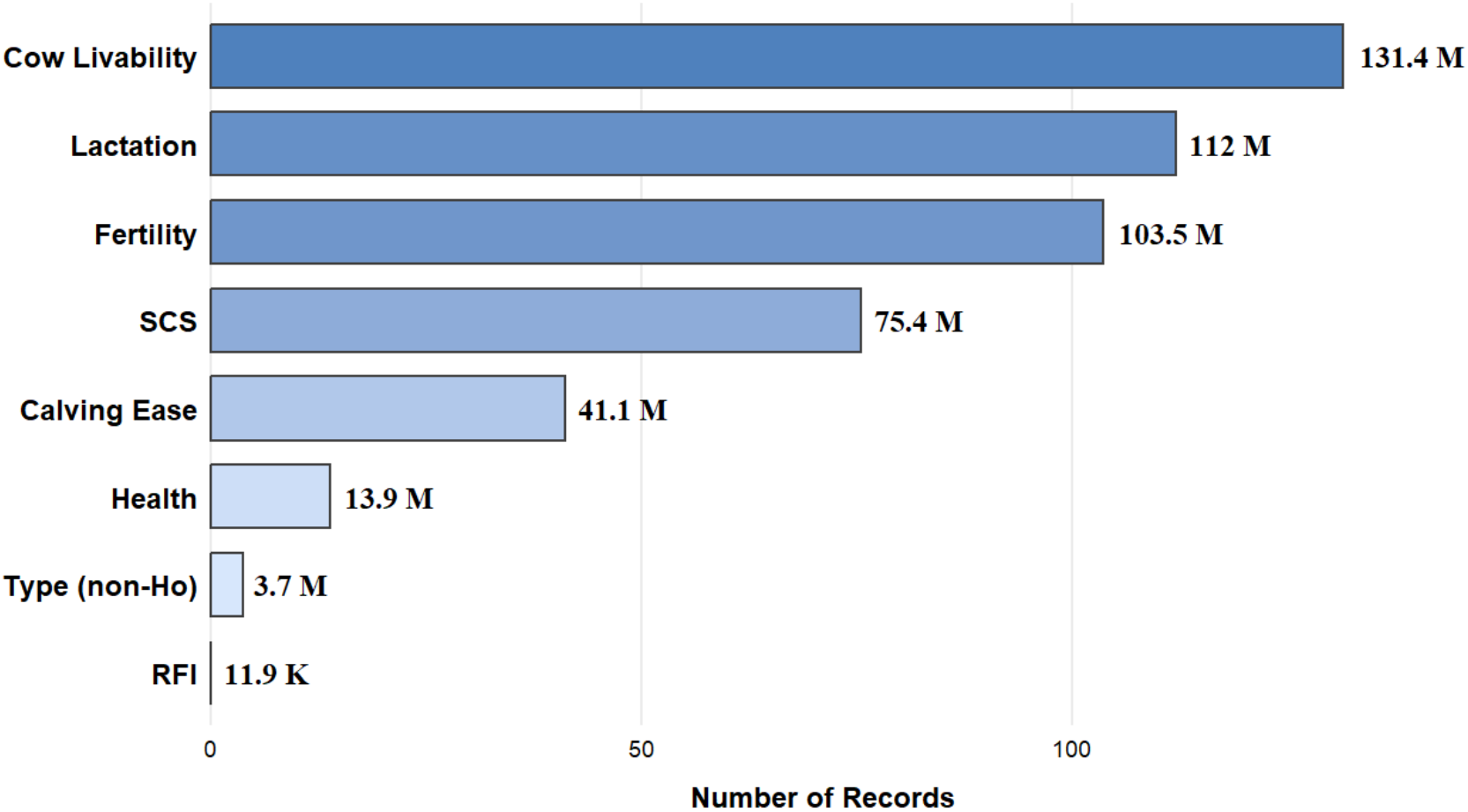
**Traditional
+ Genomic
Evaluations**

Females: 92,252,576 (99.1%)
Males: 794,592

Females: 10,507,577 (95.6%)
Males: 482,523

**Genomic
Evaluations**

Number of phenotypic records in April 2026 evaluation



**Number of records used in April 2026 evaluation run*

Number of records in April 2026 evaluation



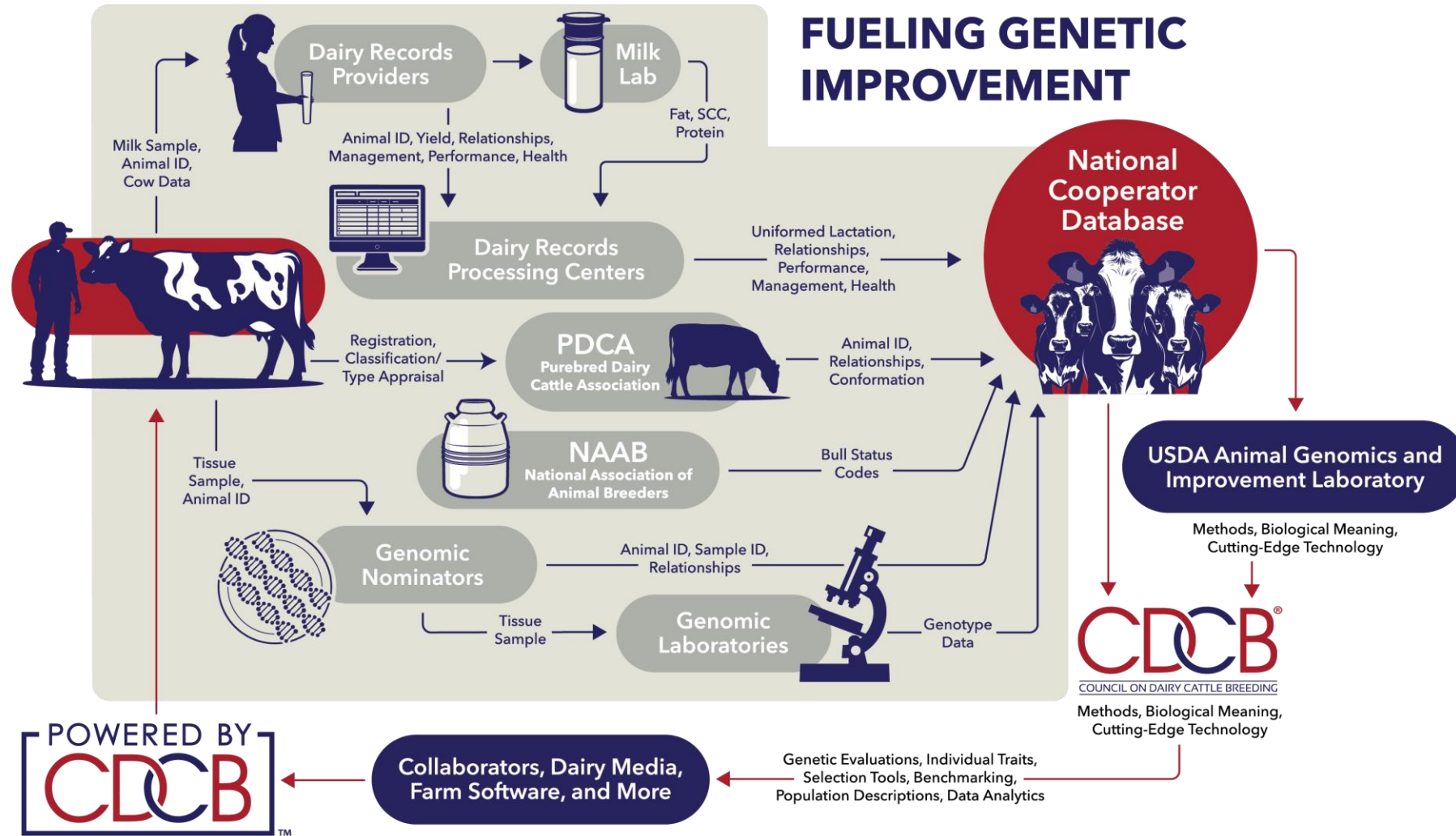
**Number of records used in April 2026 evaluation run*

Introduction to National Performance Metrics

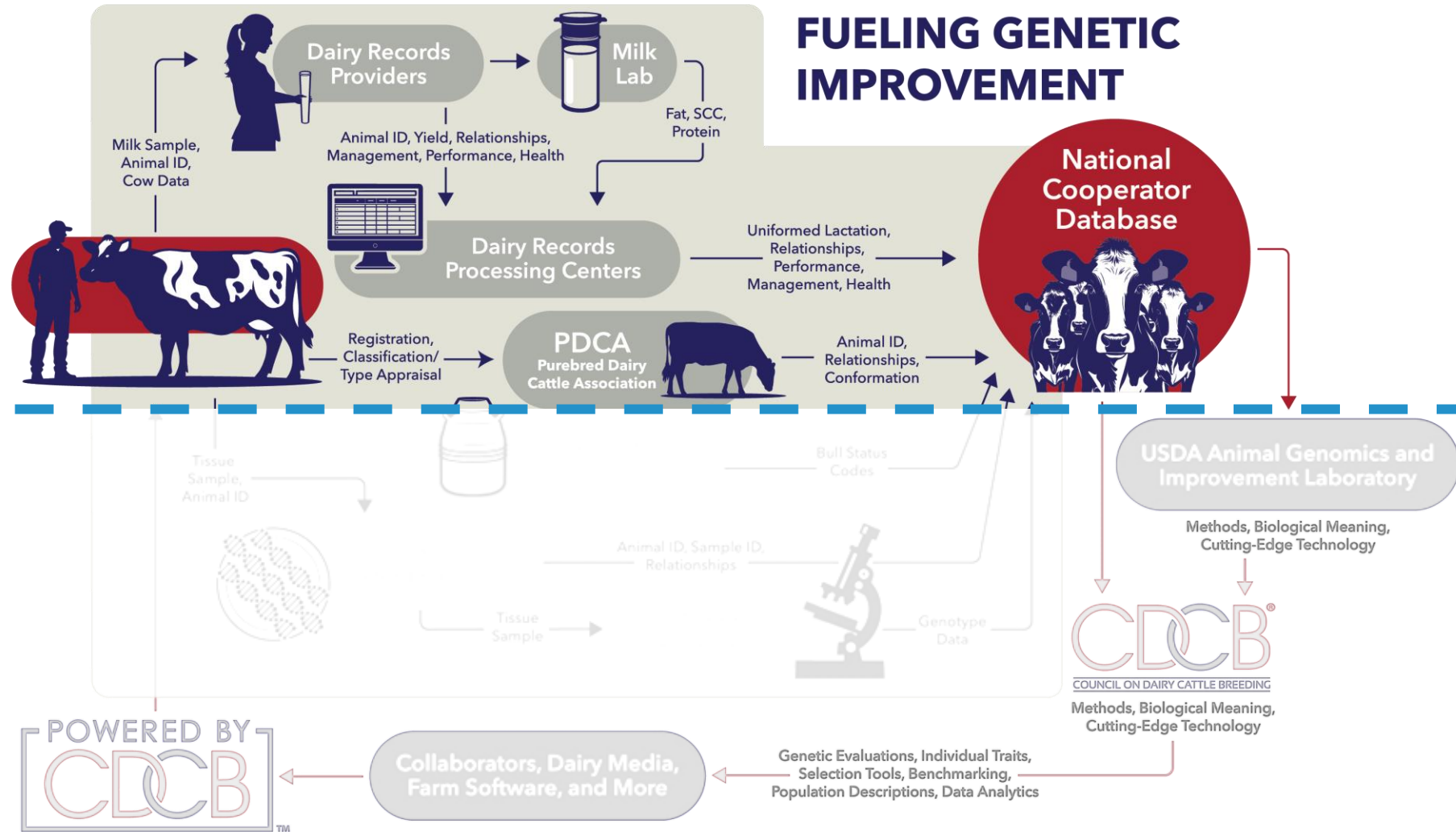
- The **National Performance Metrics** tool is a resource publicly available on WebConnect that summarizes phenotypic data stored in the National Cooperator Database
- The data come from producers participating in the DHI milk recording system and that provide permission for their records to be sent to CDCB
- Data is presented in aggregated and summarized form
- Historically calculated by USDA AGIL
- Partnership with NDHIA



NATIONAL COOPERATOR DATABASE



NATIONAL COOPERATOR DATABASE



What data are summarized?

- Data sent to CDCB via the Dairy Records Processing Centers (DRPCs)
- These summarized records include (not limited to):
 - **Format 14**
 - Summarized herd level test day data
 - **Format 4**
 - Test day individual cow level data
 - **Format 5**
 - Reproductive data



What's it for?

- Centralized view of key national performance indicators
- Standardized metric reporting across demographics
- Supports monitoring, validation, and decision-making
- Snapshot of dairy phenotypic performance across U.S. producers
 - Breed distributions, reproductive performance, phenotypic trends
 - Are we making the progress in the direction that we expect?

Key outputs

- Summary performance metrics (national level)
- Trend indicators over time (*since 1997 for majority of statistics)
- Data completeness
- Comparative breakdowns (where applicable)
 - Breed
 - Parity
 - Herd size, etc.



Who is it designed for?

- Everyone can access it! (It's a public resource)
 - Producers
 - Industry personnel
 - Researchers
 - Students
 - ...and so on



How do we use the tool?

- Step 1: WHERE can I access the National Performance Metrics on WebConnect?
- Link: <https://webconnect.uscdcb.com/#/national-performance-metrics>



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WebConnect

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Premier Dairy Genetic Information Services and Industry Collaboration

The Council on Dairy Cattle Breeding (CDCB) manages the National Cooperator Database, calculates and distributes the U.S. genetic evaluations and genomic predictions, and aggregates dairy cattle data.

Welcome to CDCB

The Council on Dairy Cattle Breeding (CDCB) collaborates with U.S. and global partners to produce premier dairy genetic evaluations and data services. These CDCB results benefit dairy farmers worldwide as they work to improve the health and productivity of their cattle. CDCB stewards the National Cooperator Database – the world's largest animal database – that integrates genomic information and more than 80 years of recorded U.S. dairy animal performance data. Through strategic partnerships with USDA–Animal Genomics and Improvement Laboratory and universities across the country, CDCB works to move the dairy industry forward with new genetic selection traits and evolving methodologies.

CDCB strives to embody its key values:

QUERIES

SEARCH FOR

☒ Cattle

☐ Goat

Animal ID (17 bytes)/ Animal ID + Sex Code (18 bytes) ▾



INPUT:

- Animal ID (17 bytes): **Breed, Country Code, and ID Number.**
- Animal ID + Sex Code (18 bytes): **Breed, Country Code, Sex Code, and ID Number.** (may be omitted leading zeros)

E.g.

- Animal ID (17 bytes): JEUSA000118662185
- Animal ID + Sex Code (18 bytes):
HO124F000007890183 or HO124F7890183

Maximum 50 items/once

Each value must be on a separate line.

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

STATE/TERRITORY

BREED



TYPE

YEAR

STATISTICS

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Participation ▾

STATE/TERRITORY All Item(s) ▾

BREED All Item(s) ▾



TYPE Specific Year ▾

YEAR 2025 ▾

STATISTICS DHI Herds (by DHI test ... ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Participation ▾

STATE/TERRITORY All Item(s) ▾

BREED All Item(s) ▾



TYPE Specific Year ▾

YEAR 2025 ▾

STATISTICS DHI Herds (by DHI test ... ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

TYPE

METRIC:

METRIC

YEAR

STATE/TERRITORY

STATISTICS

BREED

PARITY

Clear



NATIONAL PE

Six Metrics:

1. Participation
2. 305-AA Standardized Lactation Averages
3. Herd Averages
4. Cow Averages
5. Reproductive Performance
6. Recorded Breed Distributions

SEARCH FOR ☒ Cattle ☐ Goat

TYPE

METRIC:

METRIC	<input type="text" value="Cow Averages"/>
YEAR	<div><div>Participation</div><div>305-AA Standardized Lactation Averages</div><div>Herd Averages</div><div>Cow Averages</div><div>Reproductive Performance</div></div>

STATE/TERRITORY

BREED

STATISTICS

PARITY

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Cow Averages ▾

STATE/TERRITORY All Item(s) ▾

BREED All Item(s) ▾



TYPE Specific Year ▾

YEAR 2025 ▾

STATISTICS Cow Average Yields... ▾

PARITY All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

TYPE

Specific Year ▾

METRIC

Cow Averages ▾

YEAR

2025 ▾

STATE/TERRITORY

All Item(s) ▾

STATISTICS

BREED

All Item(s) ▾

PARITY

All Item(s) ▾

Run Query

Clear

METRIC:

- All Item(s) ▾
All Item(s)
AK - Alaska
AL - Alabama
AR - Arkansas
AZ - Arizona

NATIONAL PERFORMANCE METRICS

All states/territories that have/had cows participating in DHI milk recording and sharing their data with CDCB

SEARCH FOR ☒ Cattle ☐ Goat

TYPE

METRIC

YEAR

STATE/TERRITORY

STATISTICS
AK - Alaska
AL - Alabama
AR - Arkansas
AZ - Arizona

BREED

PARITY

Run Query

Clear

METRIC:

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Cow Averages ▾

STATE/TERRITORY All Item(s) ▾

BREED All Item(s) ▾



TYPE Specific Year ▾

YEAR 2025 ▾

STATISTICS Cow Average Yields... ▾

PARITY All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

TYPE

Specific Year ▾

METRIC

Cow Averages ▾

YEAR

2025 ▾

STATE/TERRITORY

All Item(s) ▾

STATISTICS

Cow Average Yields... ▾

BREED

All Item(s) ▾

PARITY

All Item(s)
AY - Ayrshire
BS - Brown Swiss
GU - Guernsey

Run Query

Clear

METRIC:

NATIONAL PERFORMANCE

Breeds include:
Ayrshire (AY)
Brown Swiss (BS)
Guernsey (GU)
Holstein (HO)
Jersey (JE)
Milking Shorthorn (MS)
Crossbred (XX-XD)

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

STATE/TERRITORY

TYPE

YEAR

STATISTICS

Run Query

Clear

METRIC:

BREED

PARITY

AY - Ayrshire

BS - Brown
Swiss

GU -
Guernsey

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

STATE/TERRITORY

BREED



TYPE

YEAR

STATISTICS

PARITY

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

Cow Averages ▾

STATE/TERRITORY

All Item(s) ▾

BREED

All Item(s) ▾

TYPE

Year Range ▾

START

1997 ▾

END

2025 ▾

STATISTICS

Cow Average Yields... ▾

PARITY

All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

Majority of metrics start in 1997
*Reproductive records start in 2003
(when they started getting sent to
National Cooperator Database)

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

Cow Averages ▾

 STATE/TERRITORY

All Item(s) ▾

 BREED

All Item(s) ▾

TYPE

Year Range ▾

START

1997 ▾

END

2025 ▾

STATISTICS

Cow Average Yields... ▾

 PARITY

All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR

☒ Cattle

☐ Goat

METRIC

Cow Averages ▾

STATE/TERRITORY

All Item(s) ▾

BREED

All Item(s) ▾

TYPE

Year Range ▾

START

1997 ▾

END

2025 ▾

STATISTICS

Cow Average Yields... ▾

PARITY

All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

STATE/TERRITORY

BREED



TYPE

START

END

STATISTICS

Cow Average Yields (by year)

PARITY

Run Query

Clear

NATIONAL PERFORMANCE METRICS

Statistics dropdown
depends on the metric
selected

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Cow Averages ▾

STATE/TERRITORY All Item(s) ▾

TYPE Year Range ▾

START 1997 ▾

END 2025 ▾

STATISTICS Cow Average Yields... ▾

Cow Average Yields (by
year)

PARITY All Item(s) ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Cow Averages ▾

STATE/TERRITORY All Item(s) ▾

BREED All Item(s) ▾



TYPE Year Range ▾

START 1997 ▾

STATISTICS Cow Average Yields... ▾

PARITY All Item(s) ▾

END 2025 ▾

Run Query

Clear

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

STATE/TERRITORY

BREED



TYPE

START

STATISTICS

PARITY

END

Run Query

Clear

METRIC:

- All Item(s)
- 1
- 2
- 3
- 4

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC Cow Averages ▾

STATE/TERRITORY ▾

BREED All Item(s) ▾

TYPE Year Range ▾

START 1997 ▾

STATISTICS Cow Average Yields... ▾

PARITY All Item(s) ▾

END 2025 ▾

Run Query

Clear

METRIC:

Parity options
1, 2, 3, 4, 5, 6+

All Item(s)

1

2

3

4

NATIONAL PERFORMANCE METRICS

SEARCH FOR ☒ Cattle ☐ Goat

METRIC

Cow Averages ▾

STATE/TERRITORY

All Item(s) ▾

BREED

All Item(s) ▾



TYPE

Year Range ▾

START

1997 ▾

STATISTICS

Cow Average Yields... ▾

PARITY

All Item(s) ▾

END

2025 ▾

Run Query

Clear

Descriptions of statistics

METRIC:

Cow Averages

- *Test Day Yields are summarized for individual cows that have all milk, fat, protein **and** somatic cell count (SCC) data. These cows are in a U.S. herds that participate in a Dairy Herd Information (DHI) milk recording program (i.e., a DHI test plan) where the herd owner specifically elects to have samples taken for SCC testing and provides their data to the National Cooperator Database. Learn more about the National Cooperator Database at uscdcb.com.*
- *The SCC is the total number of cells per milliliter in milk. These cells are produced to fight inflammation in the mammary gland. The SCC is calculated using somatic cell score (SCS) with the following equation $[SCC = 2(SCS - 3) \times 100,000]$.*
- *Cow milking records are included for cows in U.S. herds located in one of the 50 states, Puerto Rico, or the Virgin Islands. However, data is not available from Puerto Rico after March 31, 2013, as Puerto Rico was not certified as a field service provider after this date.*
- *The dairy cattle breed, Red & White (breed code "WW"), was recorded as a separate breed until 2017. Since 2017, the Red & White herd breed has been included in Holstein. Breeds segmentation is determined by the recorded breed code.*
- *The YEAR represents the year of the sample dates. Annual data is not available until February of the following year.*

STATISTIC:

Cow Average Yields (Cattle)

- *All data is summarized from individual cow's test-day yield information from cows that are in dairy herds that are enrolled in a DHI milk recording program and the owner elects to additionally submit SCS.*
- *Somatic Cell Count is calculated from cows in U.S. dairy herds participating in a Dairy Herd Information (DHI) milk recording program. The herds can elect to submit somatic cell scores (SCS) as part of an individual cow's test-day yield information. The SCS was converted back to a milk somatic cell count (SCC) in cells per milliliter with the following equation $[SCC = 2(SCS - 3) \times 100,000]$.*

Output (table fmt)

Dairy Cattle Cow Average Yields (by year) from 1997 to 2025 for all breeds in the U.S and all parities

lbs ☒ kgs

Export CSV

Year	Total Cows	Total Herds	Herd Test Days	Cow per Herd Test Day	Average Milk		Average Fat				Average Protein				Milk (cwt)
					Mean (lbs.)	Std. Dev. (lbs.)	Mean (%)	Std. Dev. (%)	Mean (lbs.)	Std. Dev. (lbs.)	Mean (%)	Std. Dev. (%)	Mean (lbs.)	Std. Dev. (lbs.)	
1997	2,787,671	34,799	345,832	46.8	66	12.2	3.68%	0.05%	2.43	0.41	3.22%	0.05%	2.13	0.41	
1998	2,927,058	32,719	326,583	54.6	66.6	12.2	3.68%	0.05%	2.45	0.4	3.24%	0.06%	2.16	0.47	
1999	2,946,396	31,307	312,334	58.7	68	12.2	3.70%	0.05%	2.51	0.39	3.23%	0.02%	2.19	0.19	
2000	3,005,715	30,000	296,276	63.9	68.9	12.1	3.70%	0.05%	2.55	0.39	3.13%	0.03%	2.15	0.21	
2001	3,053,377	28,463	281,367	69.6	69	12	3.68%	0.05%	2.54	0.38	3.06%	0.02%	2.11	0.19	
2002	3,344,298	27,642	274,127	77.1	69.9	11.8	3.70%	0.05%	2.59	0.38	3.06%	0.02%	2.14	0.19	
2003	3,519,669	26,288	259,843	86.1	69.5	11.8	3.69%	0.04%	2.57	0.38	3.06%	0.02%	2.13	0.18	

Output (CSV fmt)

- Want to create your own graphs?
- No problem:
 - Download the CSV file and build your own graphs!



1	YEAR	TOTAL_COV	TOTAL_HEF	HERD_TEST	COW_PER	AVERAGE_I	STDDEV_MI	AVERAGE_F
2	1997	2787671	34799	345832	46.8	66	12.2	3.68
3	1998	2927058	32719	326583	54.6	66.6	12.2	3.68
4	1999	2946396	31307	312334	58.7	68	12.2	3.7
5	2000	3005715	30000	296276	63.9	68.9	12.1	3.7
6	2001	3053377	28463	281367	69.6	69	12	3.68
7	2002	3344298	27642	274127	77.1	69.9	11.8	3.7
8	2003	3519669	26288	259843	86.1	69.5	11.8	3.69
9	2004	3384259	24911	247250	90.4	69.2	11.3	3.7
10	2005	3643977	24134	243194	97	71.2	11.8	3.69
11	2006	4067783	23499	234374	113.1	71.2	11.9	3.7
12	2007	4230807	22705	226380	122.4	71.3	12.1	3.69
13	2008	4342965	22100	221381	128.3	71.6	12.1	3.7
14	2009	4402788	21029	202935	134.7	72.1	12.2	3.69
15	2010	4453977	20075	196847	143.3	72.7	12.2	3.67
16	2011	4526350	19342	189885	153.6	73.1	12.4	3.72
17	2012	4628544	18732	183773	160.8	74.2	12.5	3.74
18	2013	4616502	17938	176847	167.2	75.2	12.9	3.79
19	2014	4672890	17284	172194	176.7	76.2	12.7	3.77
20	2015	4720692	16772	165791	184.8	77.2	12.8	3.77
21	2016	4728466	16063	156199	194.4	78.1	13.1	3.81
22	2017	4714141	15240	148314	205.5	78.2	12.9	3.86
23	2018	4683230	14269	133291	221	77.8	12.9	3.91

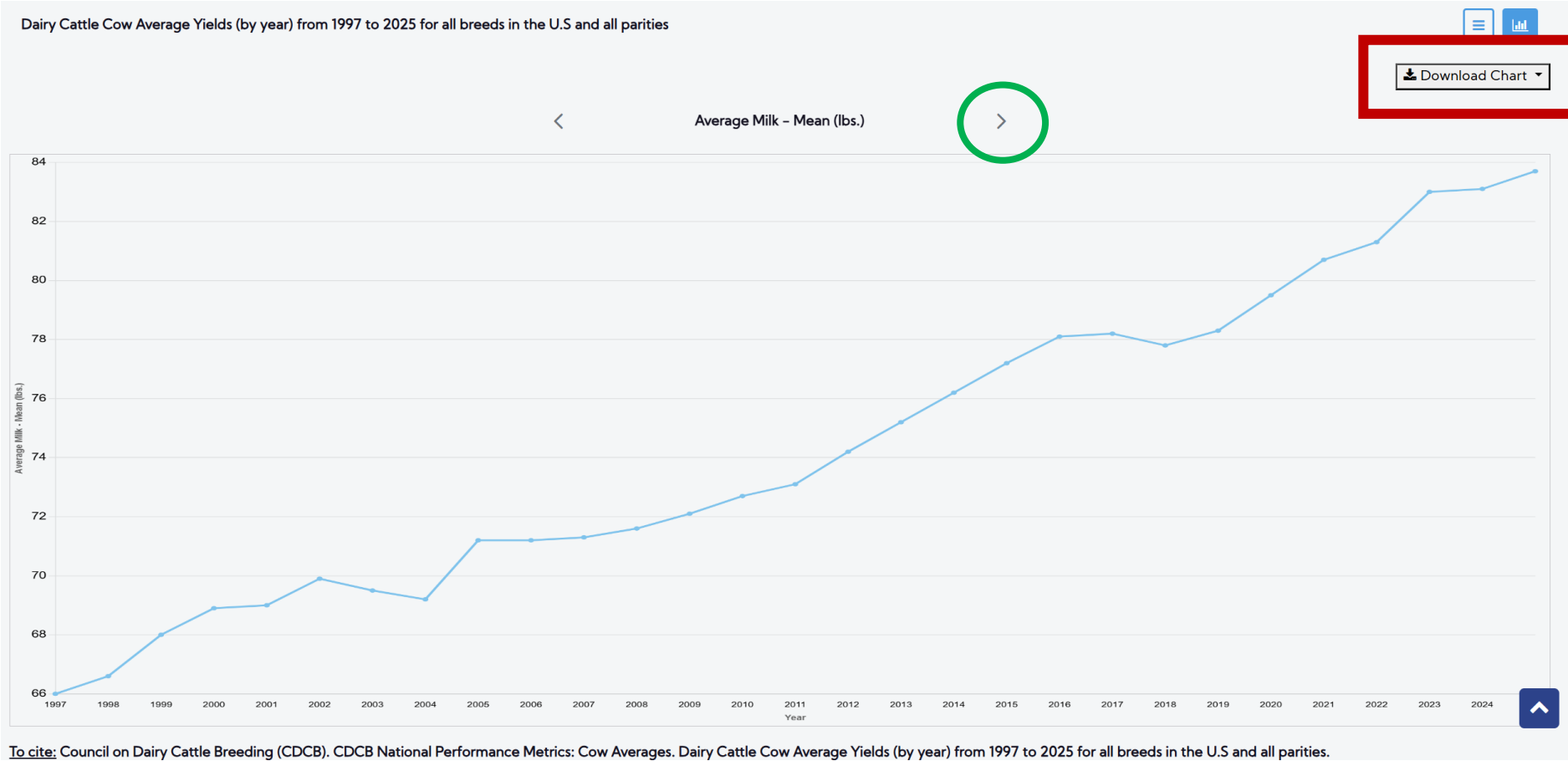
Output (graph fmt)



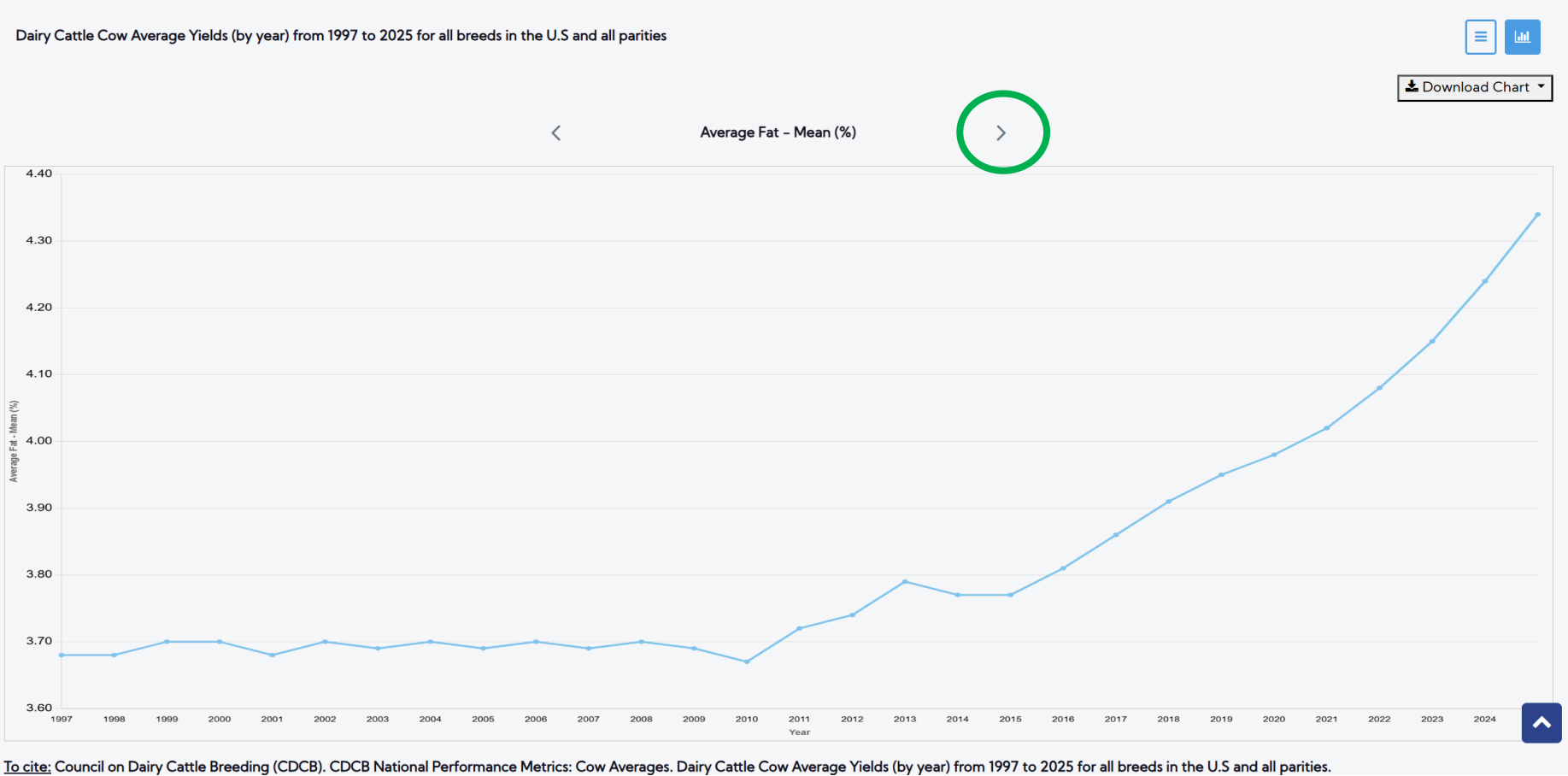
Dairy Cattle Cow Average Yields (by year) from 1997 to 2025 for all breeds in the U.S and all parities

lbs <input type="checkbox"/> kgs Export CSV															
Year	Total Cows	Total Herds	Herd Test Days	Cow per Herd Test Day	Average Milk		Average Fat				Average Protein				M (ce 10
					Mean (lbs.)	Std. Dev. (lbs.)	Mean (%)	Std. Dev. (%)	Mean (lbs.)	Std. Dev. (lbs.)	Mean (%)	Std. Dev. (%)	Mean (lbs.)	Std. Dev. (lbs.)	
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Output (graph fmt)



Output (graph fmt)



Additional resources

THE CDCB COWCAST

Episode 2: The National Herd Behind the National Metrics

The March episode of The CDCB CowCast dove into the learning opportunities in the [National Performance Metrics](#), an online resource freely available to the dairy community for herd benchmarking and research. This information comes from the farm records shared with the National Cooperator Database. The platform is a partnership with NDHIA.

Join CDCB Livestock Data Analytics Expert Fiona Guinan, Ph.D., for a demonstration of the site and more details on what the data means!



Available on →

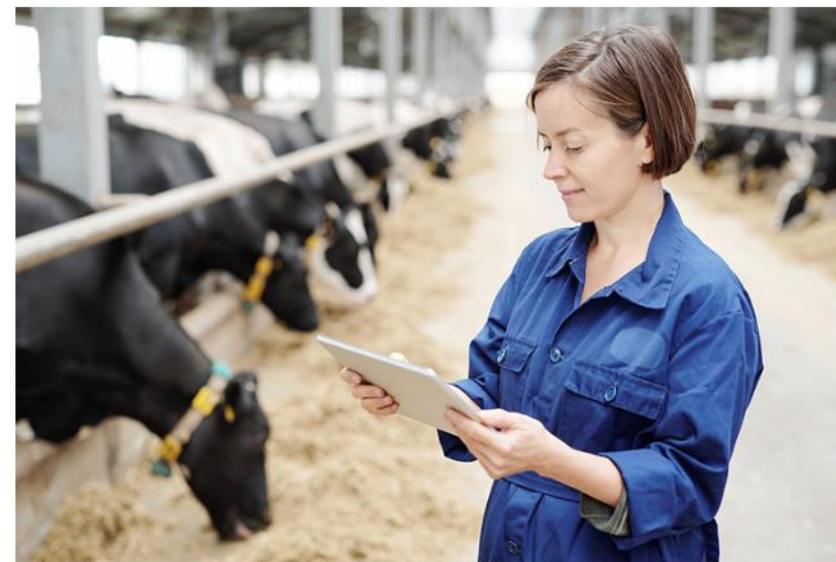


HOARD'S DAIRYMAN INTEL April 6 2026 08:02 AM



Make benchmarking quick and easy

BY KATIE SCHMITT, COUNCIL ON DAIRY CATTLE BREEDING



HOARD'S DAIRYMAN

Thank you! Questions?

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