

PROPOSING A NEW U.S. DAIRY HERD SUSTAINABILITY METRICS PLATFORM

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BUILDING ON ICAR EFFORTS



THE GLOBAL STANDARD
FOR LIVESTOCK DATA



Farm sustainability covers many areas: energy use, water use, soil health, animal health, production, etc.



ICAR has focused on information collected through milk recording as it relates to sustainability.



Quantitative measures that directly relate to agriculture sustainability are preferable to qualitative measures



Developed a list of 43 key traits and standardized calculations on how these traits can be calculated.

PROOF OF CONCEPT

Data Supplied from U.S. Records Processing Centers

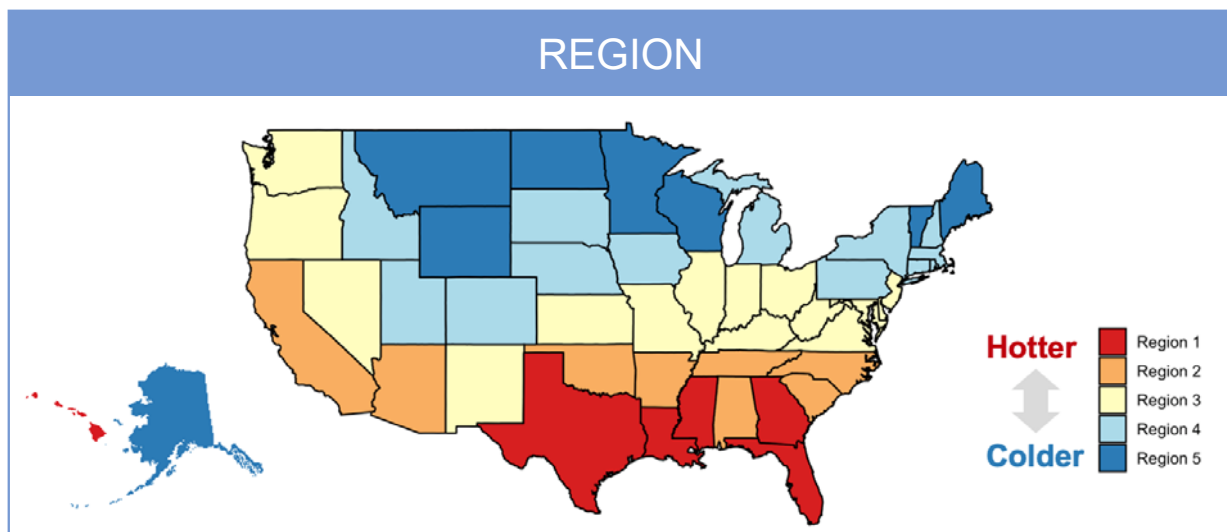


ICAR SUSTAINABILITY TASK FORCE TRAIT CATEGORIES

FEEDING & PRODUCTION	FERTILITY	HEALTH	LONGEVITY	YOUNG STOCK
AVG DIM	AVG CALVING INTERVAL	AVG SCC	AVG CULLING AGE	AVG AGE FIRST CALVING
N = 10,003	N = 9,905	N = 9,830	N = 10,041	N = 10,095

DEFINING PEER GROUPS

Three Strata Capture Varied U.S. Systems



MAJOR DAIRY BREEDS

Holstein
Jersey
Brown Swiss
Ayrshire
Guernsey
Milking Shorthorn

SIZE

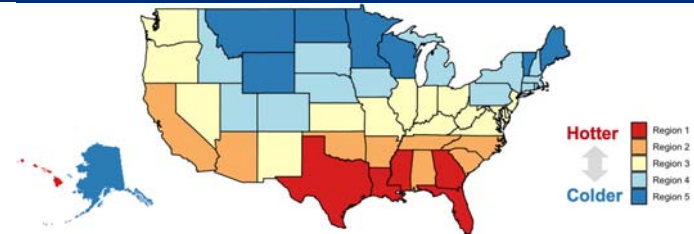


< 250

> 1000

HERD DEMOGRAPHICS

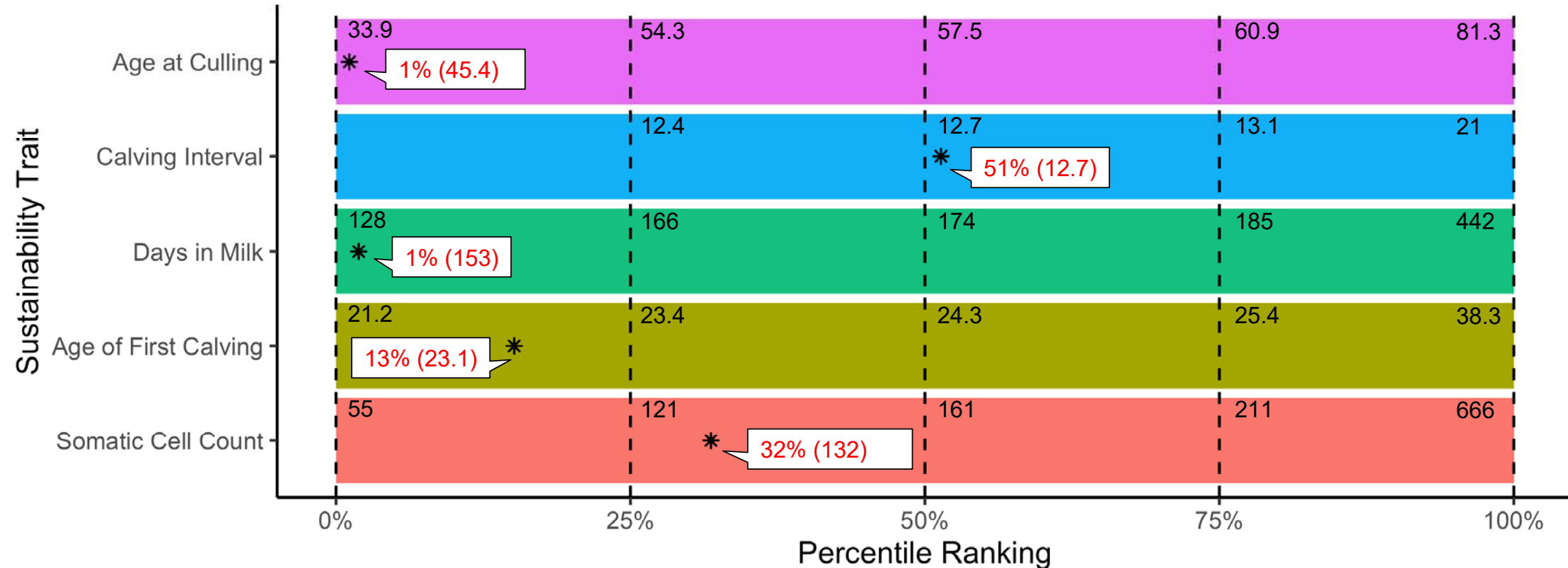
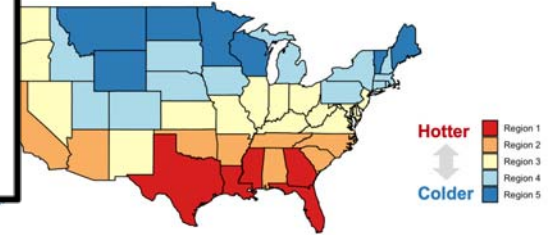
S < 250
M 250 – 999
L 1000+



	R1			R2			R3			R4			R5		
	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L
AY							7			22			14		
BS				4			30			23	3		33	4	
DL										2					
FL													1	2	
GU	1						7			17	1		26	2	
HO	46	34	19	61	68	206	900	193	55	3248	443	213	1938	629	165
JE	6	2	3	28	18	34	108	18	3	131	18	7	105	15	4
MS				1			1			2			4		
WW													3		
XB							1								
XD						4				1			1		
XX	20	17	14	34	8	24	208	26	11	407	51	18	302	41	11

EXAMPLE: PERCENTILES

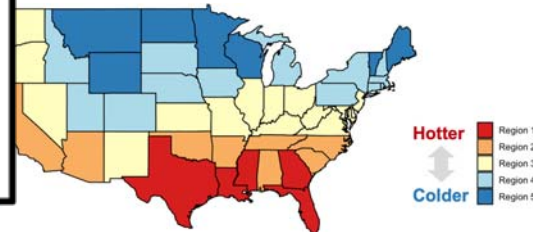
Example Herd:
Holstein
Medium (250 – 999)
Region 4
Peer Group = 443 herds



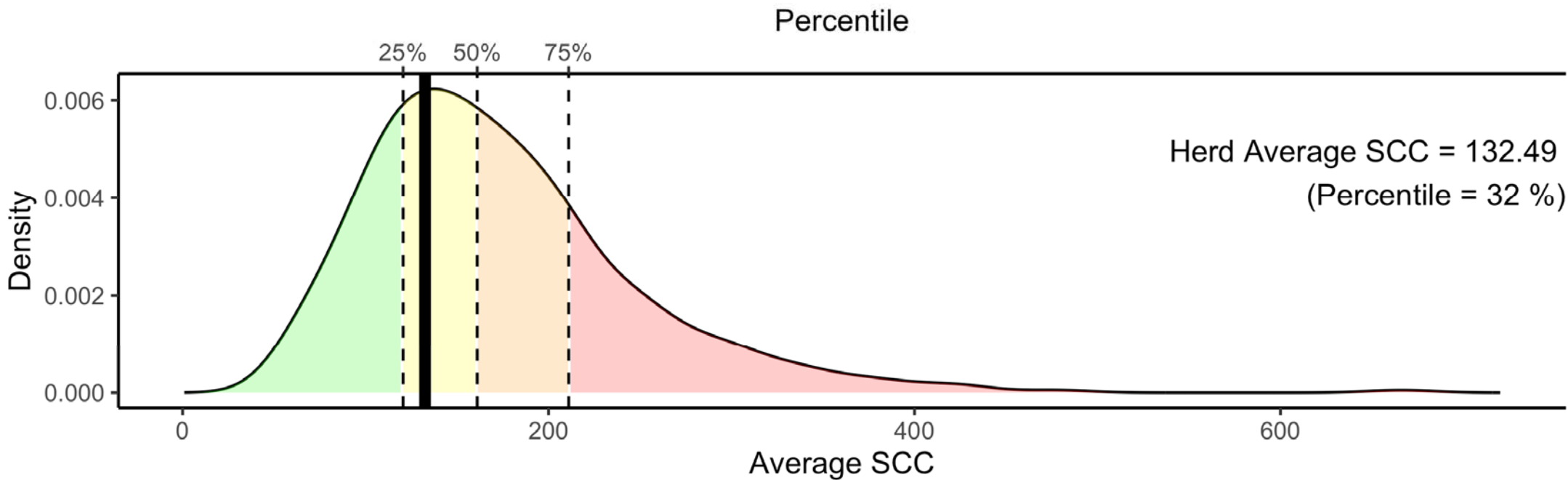
EXAMPLE: SCC

Curve Shaded by Percentiles

Example Herd:
Holstein
Medium (250 – 999)
Region 4
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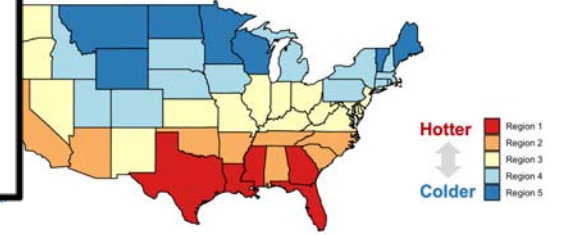
Histogram of average SCC
Grouping: HO R4 M



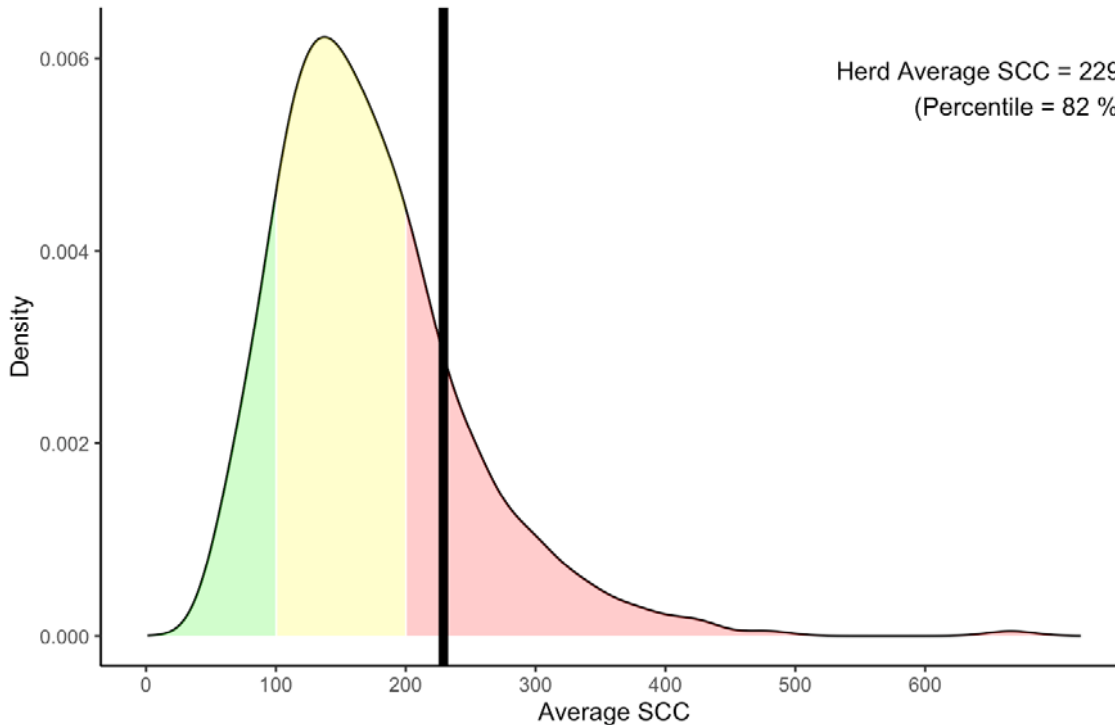
EXAMPLE: SCC

Curve Shaded by Ranges of Actual Values

Example Herd:
Holstein
Medium (250 – 999)
Region 4
Peer Group = 443 herds



Histogram of average SCC
Grouping: HO R4 M

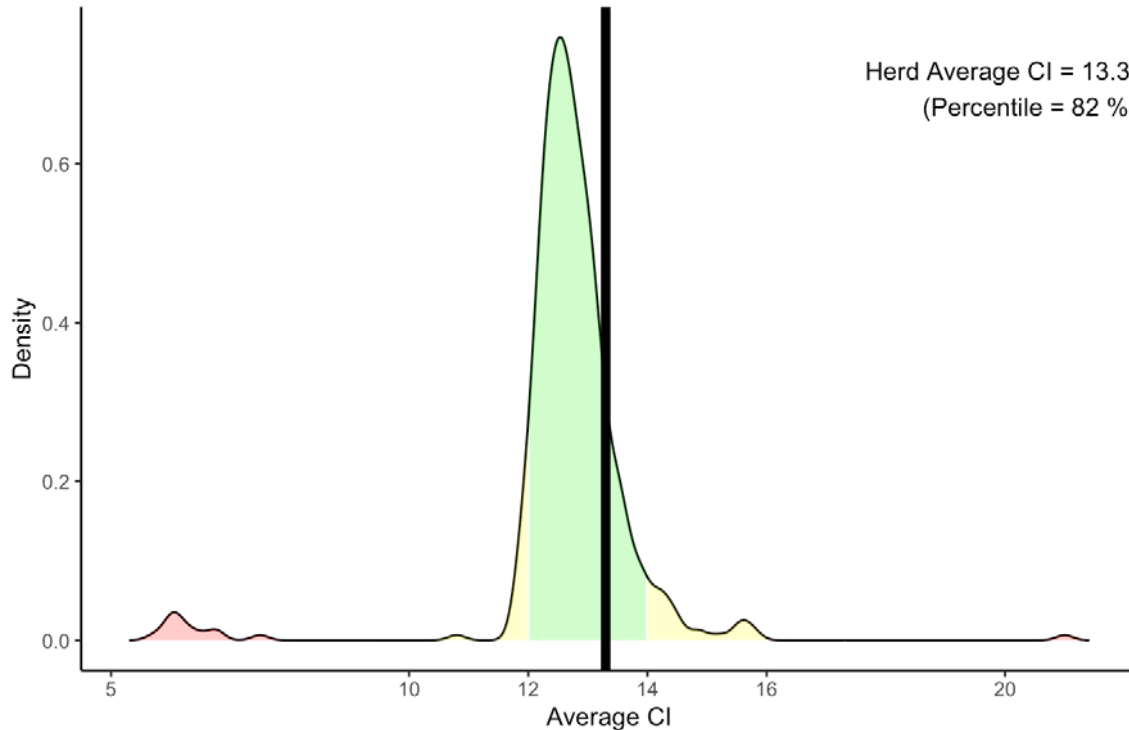


Percentile rankings are limited because someone must be last – even if their actual value is perfectly acceptable!

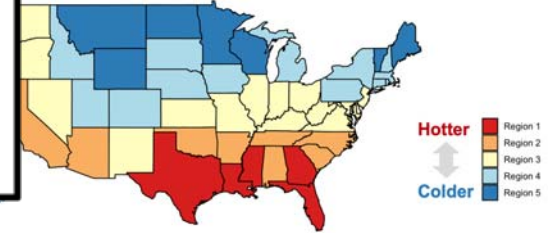
EXAMPLE: CI

Curve Shaded by Ranges of Actual Values

Histogram of average calving interval
Grouping: HO R4 M



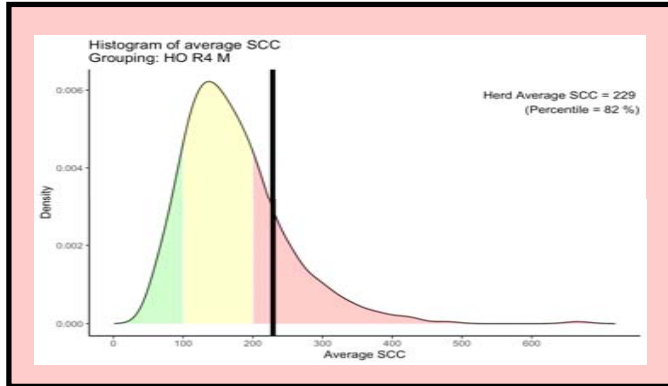
Example Herd:
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**The next challenge is
industry consensus on
optimal values for each
trait**

WEB-BASED APPLICATION

Confidential analysis; accessed privately by owners



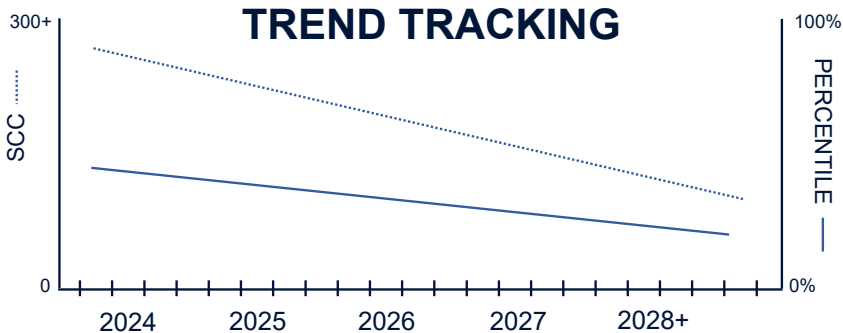
CLICK TO
LEARN MORE!

HERD XXX SUSTAINABILITY REPORT 2024

DEMOGRAPHICS:
Holstein
Medium Size (250 – 999)
Region 4
Peer Group = 443 herds



FEED/ PRO	FERTILITY	HEALTH	LONGEV	YNG STCK
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EXPANDING TO OTHER TRAITS

Relative Ease of Implementation

MEDIUM

Milk Urea Nitrogen Rates	% Cows FPR >1.3/1.5 @ 1 st Test Day
% Cows Culled (Reproductive)	% Cows with Lameness
% Cows Fertility Disorders	% Cows with Mastitis
Chronic Infection Rate	% Cows with Subclinical Metabolic
Dry Cow Cure Rate	Daily Production of Culled Animals
Fresh Cow Infection Rate	Lifetime Production of Culled Animals
% Cows Culled (Udder Health)	% Died at <60 DIM
% Cows Culled (Lameness)	% Female Young Stock Involuntary Culled
% Cows Culled (Other)	% Female Calves (Diarrhea)
% Cows FPR < 1 @ 1 st Test Day	% Female Calves (Respiratory Disease)

EASY

Energy Corrected Milk
Days Open
1st Service Conception Rate
Lactation Number
Young Stock EBV Ranking
Young Stock Sire EBV Ranking
% Calves Born Dead

HARD

Apparent Pregnancy Loss Rate
Pregnancy Rate

NO DATA

Age at slaughter (beef), Body Weight, Daily Gain, Dry Matter Intake, Feed Efficiency, Methane Emissions, % Cows with Functional BCS, Non-return Rate 56 d, Selective Dry Cow Therapy Rate

One of the last coal-powered sheep.
Most sheep are all electric now.



Dairy producers need a seat at the table

THE BOTTOM LINE

- ICAR has defined 43 traits related to dairy sustainability
- We can leverage DHI data to quantify these traits at the herd level and track progress over time
- These metrics (provided confidentially to each herd) would be a tool that empowers producers to advocate for their operation in sustainability conversations