

# CDCB Evaluations

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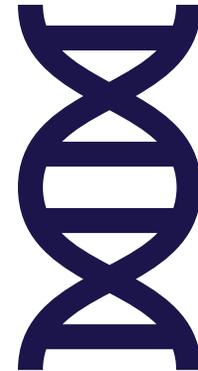
2024 CDCB Genomic Nominators and Laboratories Workshop

Tuesday, July 30<sup>th</sup> 2024



# Overview

- What is an evaluation?
- Qualifying for an evaluation
- Three CDCB Evaluation Types
- Checking to see if an animal qualifies



# What is an evaluation?

- An evaluation is a report that contains traits and indices used for breeding selection for an animal
- Traditional evaluations utilize pedigree and phenotypic data (production, composite/type)
- Genomic evaluations utilize pedigree, phenotypic, and genotypic data

# What is an evaluation?

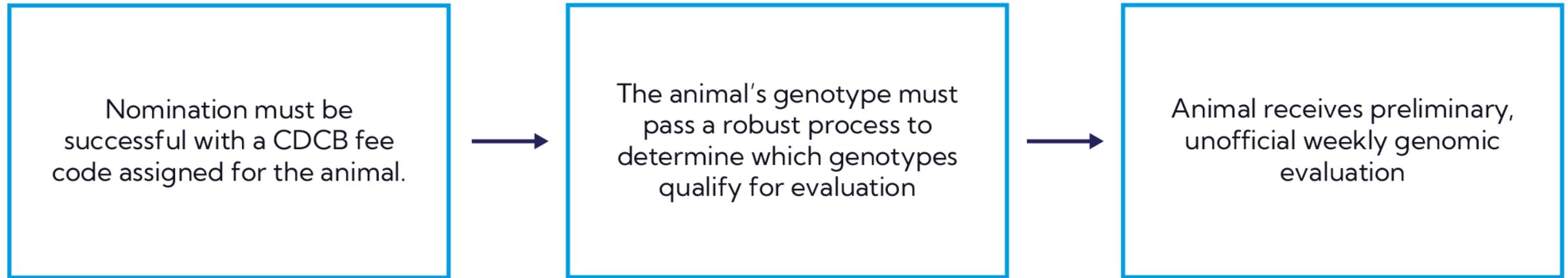
- CDCB genomic evaluations are expressed as GPTAs
  - Genomic Predicted Transmitting Ability
- We evaluate for ~50 individual traits and 4 selection indices – Net Merit (NM\$), Cheese Merit (LCM\$), Fluid Merit (LFM\$), and Grazing Merit (LGM\$)

# What is an evaluation?

- CDCB produces genomic evaluations for 5 dairy breeds:
  - Ayrshire (AY)
  - Guernsey (GU)
  - Jersey (JE)
  - Brown Swiss (BS)
  - Holstein (HO)
- CDCB also produces genomic crossbred (XX) evaluations for mixed breed animals thanks to Breed Base Representation (BBR) calculations

# Qualifying for an evaluation:

## Genomic Evaluations



1. Successful nomination and fee code assignment

2. Genotype loaded and usable

3. Animal gains a Use Weekly Timestamp



# Qualifying for an evaluation: Fee Code

## Females

Code	Fee amount	Description
1	\$0.00	US birth & yield & health & type records
2	\$1.00	US birth & yield & (health or type records)
3	\$2.00	US birth & yield records
4	\$3.00	US birth & (type or health records) (health records are probably not possible w/o yield records)
5	\$4.00	US birth
6	\$6.00	CAN birth
7	\$8.00	No exemptions
8	\$1.00	Parentage only

## Males

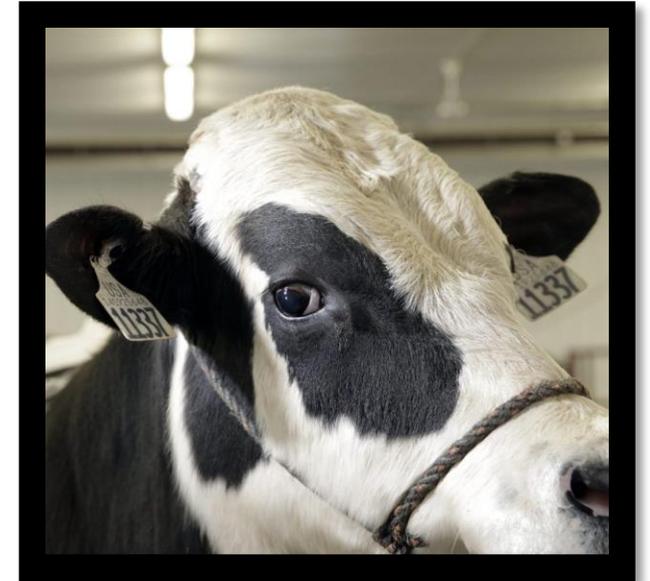
Code	Fee amount	Description
P	\$0.00	International exchange partner (code P)
S	\$25.00	Controller is a collaborator stud
1	\$25.00	US herd providing yield & health & type
2	\$50.00	US herd providing yield and (health or type)
3	\$75.00	US herd providing yield
4	\$75.00	US herd providing type or health
5	\$100.00	US herd
7	\$200.00	No exemptions
8	\$1.00	Parentage only

# Qualifying for an evaluation: Fee Code

- Fee Code Assignments: 1-7
- 1-5 = US Fee codes, assigned based on performance data contribution attached to DHIA herd codes
- 6 = Animals with Canadian (CAN) IDs only
- 7 = All other foreign animals

# Qualifying for an evaluation: Fee Code

- Fee Code Assignments: Other
- 8 = Parentage Verification Only (PVR)
- S = Collaborator Stud Fee, can only be used for bulls owned by collaborator studs



# Qualifying for an evaluation: Fee Code

- Fee Code Assignments: N
- Animal will not receive an evaluation if they are assigned fee code N
- Previously used for genotypes exchanged with Lactanet – a topic to be covered in Day 2 of the Workshop

# Qualifying for an evaluation: Fee Code

- CDCB will reassign a fee code N on a nomination if:
  - A fee code wasn't assigned in the nomination
  - If an animal has a sex conflict between the pedigree and genotype after genotype loading

# Qualifying for an evaluation: Usable Genotype

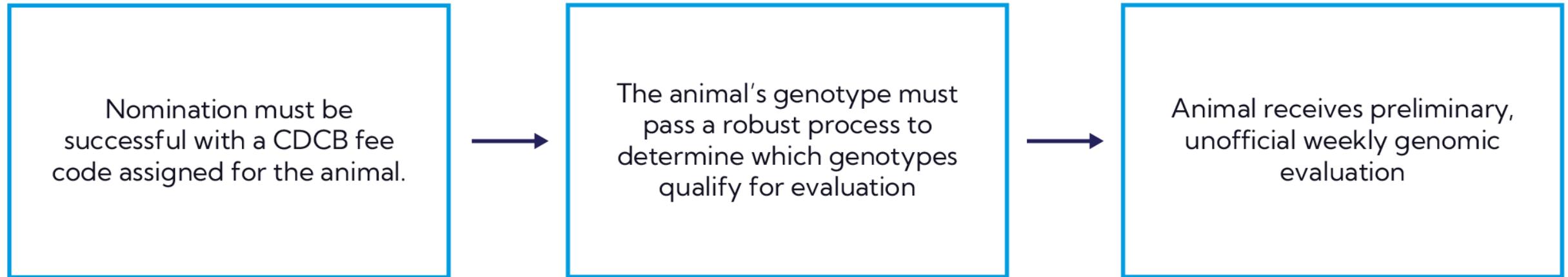
- A Usable genotype (Use=Y) is a genotype that:
  1. Has passed quality control checks
  2. Does not have a sex conflict with the animal's pedigree
  3. Does not have genomic conflicts with close relatives that make the animal's pedigree appear unreliable

# Qualifying for an evaluation: Use Weekly

- Usable Genotype  $\neq$  Use Weekly Timestamp!
- Genotype looks correctly assigned, but there are some discrepancies in its pedigree data
- Two common cases:
  - Maternal grandsire (MGS) unlikely
  - Animal's BBR results do not agree with the animal's ID breed

# Qualifying for an evaluation:

## Genomic Evaluations



After qualifying for a weekly evaluation a *female* animal will continue receiving genomic evaluations as long as it has a usable genotype



# Qualifying for an evaluation: Female Animals

- A Use Weekly Timestamp has been applied
- At least one usable genotype
- Animal must meet *all* of the criteria before evaluation deadlines!
- Requester on nomination should match requester of genotype (unless a share file for results has been submitted)

# Qualifying for an evaluation: Male Animals

- Must meet the female qualifications, + additional requirements revolving around NAAB status and domestic vs foreign
- Easier to explain what would prevent an evaluation:
  - Foreign bull\* over 16 months of age without an AI service fee paid
  - An active AI bull (only receive triannual evaluations)
  - Some additional rules based on bull breed and ownership

\*Foreign bulls do not have *public* evaluations unless they are in AI

# CDCB Evaluations

- **Weekly:** Preliminary genomic evaluations released every Tuesday
- **Monthly:** Genomic evaluations released on the first Tuesday of a month
- **Triannual:** Genomic and traditional evaluations released three times a year in April, August, and December

# CDCB Evaluations: Triannual

- Incorporate updates to trait and index calculations
- Inclusion of new phenotypic data
- Have an earlier cutoff date than monthly evaluations to allow inclusion of traditional evaluations and evaluations from Interbull
- Triannual evaluations are public and published via the SFTP\* and WebConnect

\*SFTP files are password protected, unlike monthly and weekly

# CDCB Evaluations: Triannual

- Reminders for bulls:
  - Evaluations for bulls in AI service released in the triannual
  - Bulls enrolled in NAAB (status other than C) released only in triannual evaluations
  - Foreign bulls that are not in AI do not have public evaluations

# CDCB Evaluations: Monthly

- SNP effects are updated each month
- New phenotypic data is not applied to monthlies
- All animals (except for some bulls) receive updated evaluations each month
- Qualify as official evaluations

# CDCB Evaluations: Weekly

- Simplified evaluations
- Preliminary because new SNP effects are not applied and BBR is not included
- Intended to be used for quick herd management decisions: culling and breeding
- Not meant to be used for marketing animals or semen

# CDCB Evaluations: Weekly

- Includes all usable genotypes that have a Use Weekly Timestamp from 6PM EST of the preceding Sunday
- Limited to one weekly evaluation per animal
- After inclusion in the first weekly extraction the fee code cannot be reverted to N and genotype can no longer be withdrawn

# Checking to see if an animal qualifies

[Queries](#) [Data Exchange](#) [Special Section](#) [Top Animal Listing](#) [Summary Stats](#) [National Performance Metrics](#)

QUERIES

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

HO840003282837717

Run Query Clear

Q Search

HO840003282837717

- ID/Pedigree
- Evaluation
- Genotype**
- Progeny
- Errors
- Lactations

Requested ID Searches  
HO840003282837717 X

Evaluation Breed: HO - Holstein

Animal

Preferred ID:	HO840003282837717
Name:	COLDSPRINGS JEWEL 14624-ET
DOB:	2024-03-07
Sex:	F
<a href="#">Multi-Birth Code:</a>	3
<a href="#">ID Source Code:</a>	B
<a href="#">Pedigree Source Code:</a>	B
<a href="#">Blend Code:</a>	S

Sire

ID:	<a href="#">HO840003218556317</a>
Name:	SIEMERS RZ PAZZLE 34954-ET
DOB:	2021-02-09
<a href="#">Source Code:</a>	B
Genotyped:	Yes

Dam

ID:	<a href="#">HO840003149596913</a>
Name:	COLDSPRINGS SPLENDID 10898
DOB:	2018-09-07
<a href="#">Source Code:</a>	B
Genotyped:	Yes

Maternal Grand sire

ID:	<a href="#">HOUSA000074024998</a>
Name:	PINE-TREE SPLENDID-P-ET
DOB:	2015-08-05
<a href="#">Source Code:</a>	B
Genotyped:	Yes

[Does the animal qualify for a genomic evaluation?](#)

Search

HO840003282837717

ID/Pedigree

Evaluation

Genotype

Progeny

Errors

Lactations

Requested ID Searches

HO840003282837717

Evaluation Breed: HO - Holstein

Animal

Preferred ID: HO840003282837717

Name: COLDSPRINGS JEWEL  
14624-ET

DOB: 2024-03-07

Sex: F

[Multi-Birth Code:](#) 3

[ID Source Code:](#) B

[Pedigree Source Code:](#) B

[Blend Code:](#) S

Sire

ID: [HO840003218556317](#)

Name: SIEMERS RZ PAZZLE 34954-ET

Maternal Grand sire

ID: [HOUSA000074024998](#)

Name: PINE-TREE SPLENDID-P-ET

DOB: 2015-08-05

[Source Code:](#) B

Genotyped: Yes

Does the animal qualify for a genomic evaluation?

Yes

[Does the animal qualify for a genomic evaluation?](#)

Q Search

Requested ID Searches

HO840003282837717

Nomination Status

Nomination				Edit
<u>Herd Code</u>	<u>Fee</u>	<u>Fee Assigned Date</u>	<u>Mod. Date</u>	
	1	2024-03-21	2024-03-21 01:57	



<u>Amount (\$)</u>	<u>Use Weekly</u>	<u>Mod. Date</u>
0	2024-04-06	2024-05-08 17:23

<u>Fee</u>	<u>Usability Ind.</u>	<u>Pending</u>	<u>Sire Status</u>	<u>Dam Status</u>	<u>Progeny Count</u>	<u>Tissue Source</u>	<u>Lab</u>
1	Y		1	1	0	T	Zoe

20240407 Weekly

## May 2024 genomic evaluations

April 22, 2024	International genotype exchange data due (for CDDR exchange partners)
April 26, 2024	Genomic data due
May 7, 2024	Evaluation release (8:00am ET)

<https://uscdcb.com/genetic-evaluation-schedule/2024/>

Search

Requested ID Searches  
HO840003282837717

Nomination Status

Nomination				Edit			
<u>Herd Code</u>	<u>Fee</u>	<u>Fee Assigned Date</u>	<u>Mod. Date</u>	<u>Amount (\$)</u>	<u>Use Weekly</u>	<u>Mod. Date</u>	
	1	2024-03-21	2024-03-21 01:57	0	2024-04-06	2024-05-08 17:23	
<u>Fee</u>	<u>Usability Ind.</u>	<u>Pending</u>	<u>Sire Status</u>	<u>Dam Status</u>	<u>Progeny Count</u>	<u>Tissue Source</u>	<u>Lab</u>
1	Y		1	1	0	T	Zoe



2405 Monthly and thereafter

SEARCH FOR  Cattle  Goat  Found 1/1 result sets

Search

Requested ID Searches

- HO840003282837717

**HO840003282837717**

ID/Pedigree **Evaluation** Genotype Progeny Errors Lactations



**No Evaluation Information Found!**

If animal has a usable genotype on the 2408 deadline, a 2408 triannual evaluation should be published on WebConnect on 2408 release date

- ID/Pedigree
- Evaluation**
- Genotype
- Progeny
- Errors
- Lactations

Run: [April 2024](#) or [History](#) ←

Evaluation Breed: HO - Holstein

Animal

Preferred ID: HO840003218556317  
Long Name: SIEMERS RZ PAZZLE 34954-ET  
Short Name: PAZZLE  
DOB: 2021-02-09  
Sex: M  
[Multi-Birth Code:](#) 3  
[Recessive Codes:](#) TP TL TD TR TC TY TV TE  
Cross References: No  
[Pedigree Comp %:](#) 100  
[Genomic Indicator:](#) 1  
Herd with most Daughters  
Herd: 0  
Number of Daughters: 0

Sire

ID: [HO840003143986308](#)  
Name: SIEMERS RENEGADE ROZLINE-ET  
DOB: 2019-04-15  
[Source Code:](#) B  
Genotyped: Yes

Dam

ID: [HO840003141495692](#)  
Name: SIEMERS LMDA PARIS 27856-ET  
DOB: 2017-07-14  
[Source Code:](#) B  
Genotyped: Yes



NAAB

[Primary NAAB Code:](#) 250HO16115  
[Current Status:](#) G  
[Entered AI:](#) 2022-04  
[Control Stud:](#) 250  
[Original Stud:](#) 0  
[Sampling Status:](#)

Merit Table and Inbreeding



Genotyped: Yes

### History

Export CSV

Eval Date	NMS		MACE	Gen Ind	DAUS	HERDS	%US								
	PTA	REL						Milk	Fat	Pro	PL	SCS	DPR	HCR	CCR
2024-04	851	77%		1	0	0	100%	547	95	48	4.4	2.75	0.0	1.8	1.2
2023-12	867	76%		1	0	0	100%	605	92	47	4.8	2.76	0.4	1.9	1.7
2023-08	849	76%		1	0	0	100%	609	89	46	4.7	2.75	0.7	1.9	1.9
2023-04	861	74%		1	0	0	100%	574	90	47	4.8	2.76	0.6	1.6	1.5
2022-12	838	74%		1	0	0	100%	546	89	43	4.6	2.75	0.5	1.4	1.3
2022-08	888	73%		1	0	0	100%	614	93	46	4.9	2.73	0.4	1.5	1.3
2022-04	884	73%		1	0	0	100%	647	95	48	4.5	2.73	0.4	1.7	1.4
2021-12	822	73%		1	0	0	100%	539	90	43	4.5	2.73	0.5	1.3	1.2
2021-08	840	72%		1	0	0	100%	505	92	41	4.7	2.72	0.6	1.2	1.4
2021-04	922	74%		1	0	0	100%	631	96	44	4.6	2.72	0.7	1.2	1.3



# Links for evaluation related content

- General evaluation information: <https://uscdcb.com/services/>
- Genomic fee codes: <https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/REFERENCES#Ref164>
- 2024 evaluation deadlines: <https://uscdcb.com/genetic-evaluation-schedule/2024/>
- Reasons that fee code would be reassigned to N by CDCB: [https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Reasons\\_that\\_the\\_fee\\_code\\_would\\_be\\_reassigned\\_to\\_N\\_by\\_CDCB](https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Reasons_that_the_fee_code_would_be_reassigned_to_N_by_CDCB)
- Reasons that a genomic evaluation was not released: [https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Reasons\\_that\\_a\\_genomic\\_evaluation\\_was\\_not\\_released](https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Reasons_that_a_genomic_evaluation_was_not_released)
- DOB limitations for foreign bulls: [https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/DOB\\_limitation\\_for\\_foreign\\_bulls](https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/DOB_limitation_for_foreign_bulls)
- Genomic evaluation distribution formats: [https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Genomic\\_evaluations\\_format\\_\(CSV\)](https://redmine.uscdcb.com/projects/cdcb-customer-service/wiki/Genomic_evaluations_format_(CSV))

**Thank you for your attention!**