Lactanet
Open Industry Session
Lactanet Update
Neil Petreny, CEO
June 10, 2021

1

Lactanet
June 3, 2021…
Our 2nd Anniversary
June 10, 2021

2

Lactanet
15 of our first 24 months have offices closed due to COVID…
June 10, 2021

3

Lactanet
Reflecting…what have we accomplished in our first 24 months?
June 10, 2021

4

Lactanet
1. Industry Partnerships
2. Products & Services
3. Industry & Governance
June 10, 2021

5

Lactanet
1. Industry Partnerships
2. Products & Services
3. Industry & Governance
June 10, 2021

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1. Launch of COMPASS

November 2019…

Compass

Navigate Your Herd's Success
Ma boussole génétique

Lactanet

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2. ProfiLab Bulk Tank Fatty Acid Profile

February 2020 launch with Dairy Farmers of Quebec

PROFILab

Les Producteurs de lait du Québec

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3. iDDEN Partnership

August 2020 - International Dairy Data Exchange Network

vit

RDV GmbH

iDDEN

The international dairy data exchange network

NCDX

NATIONAL DHIA

DataGene

CRV

BETTER COWS > BETTER LIFE

Lactanet

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4. Launch of DairyTrace

October 2020…

DairyTrace

Lactanet

TracéLaitier

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5. proAction Validation services for DFO

June 2021 - Assumed responsibilities in Ontario

proAction

Dairy Farmers of Ontario Milk EST. 1965

Lactanet

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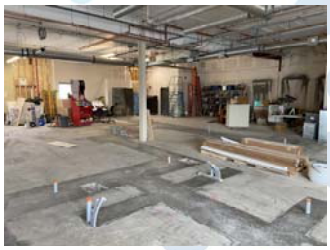
6. Milk Lab relocation to Alberta Milk Offices

Construction in Progress – August 2021 move date

Alberta milk



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7. eDHI Services

January 2020

- No farm visits
- 14,500 cows on 60 farms
- 245 cow average
- ~75% provide sensor data *(F/P/SCC)*
- Global leader integrating sensor data

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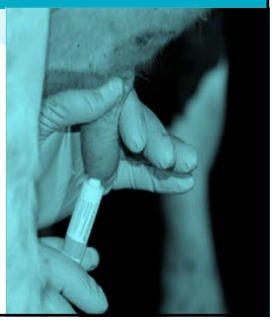
8. Selective Dry Cow Therapy Report

Fall 2020 – Winter 2021

- New service/report to help identify potential cows for no antibiotics - based on SCC data
- Consumer concerns about use of antimicrobials in food production

Information & Resources at ***www.scc200.ca***



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9. New Robot Report

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10. Virtual HMS/IPT Announcement

#1 in Canada

Part of Top 1%

Ferme Estermann inc.
Montérégie, Québec
Martin & Regula Estermann

229 vaches 1RE POSITION – STABULATION LIBRE
229 cows 1ST POSITION – FREE STALL

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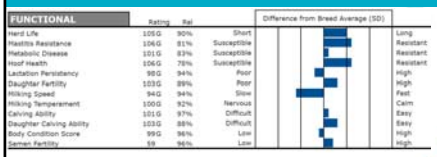
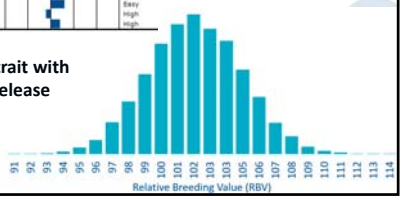
11. Feed Efficiency Evaluations



Added as a new functional trait with the April 6, 2021 official release



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12. DairyComp Sales Staff in Quebec

Camille Ross

Patricia Lavoie

DairyComp
Herd Management Software

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13. Added External Board Expertise

February 2021

Frido Hamoen, *The Netherlands*

- *Born and raised on dairy farm*
- *Education - Animal Science/Breeding*
- *CRV Managing Director – DHI & AI Services*
  - *Managing Director – Data business unit*
  - *Manager – Global Information Products*
  - *Manager – Innovation*
  - *Manager - Marketing*

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14. New Policy to Recognize Contributors

April 2021

- Feed Efficiency Only available for females in DHI herds
- Available for non-DHI herds in December

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15. Virtual Open Industry Session

Fall 2020 – June 2021

- National virtual access
- Addition of "Town Hall" open discussion session
- Simultaneous translation
- Bilingual Presentations
- Increased frequency – moving to 3x/year

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16. Non-Binding Resolutions

March 2021

- National virtual process
- March 1st deadline for 2021
- 28 resolutions – presented live
- 1,200 website viewers
- 1,113 ballots by 65 people
- 27 of 28 resolutions passed
- 3 Areas: *Genetics, DHI & Other*

www.lactanetresolutions.ca

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Our First 24 Months – *Visible from the outside…*

1. COMPASS
2. ProfiLab
3. iDDEN
4. DairyTrace
5. AB Milk lab location
6. proAction Validations
7. eDHI Service
8. Selective Dry Cow Therapy
9. Robot Report
10. Virtual Recognition – HMS/IPT
11. Feed Efficiency Evaluations
12. Dairy Comp Resources - QC
13. Virtual Open Industry Session
14. International External Director
15. Recognition of Contributors
16. National Resolutions Process

- *New website & Dynamic Dashboard Report…*

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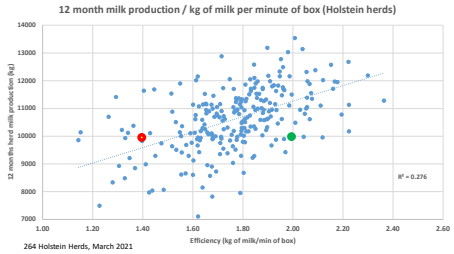
1

Outlook

- Economic impact of milking robot efficiency
- Follow-up to the Robot Report
- Development of the tool
- The current and future steps

2

Great Deal of Variation among Herds



The red farm can produce: 1150 minutes x 1.40 kg/min = 1610 kg/robot/day
The green farm can produce: 1150 minutes x 2.00 kg/min = 2300 kg/robot/day or **+ 690 kg**

3

Robot Report – Provides some Findings

Key Indicators - Robot (7 days)	Results	12 months	Robot prov. avg.	Top 20%-robot
Milk/robot (kg)	2026	1888	1646	2081
Fat/robot (kg)	80.2	75.6	65.9	83.0
Milk/cow/day (kg)	38.6	36.3	34.6	36.8
Fat/cow/day (kg)	1.53	1.45	1.38	1.47
Number of cows/robot	52	52	48	57
Number of milkings/robot	147	145	131	156
Number of milkings/cow	2.80	2.78	2.77	2.76
Average milk/milking (kg)	13.8	13.1	12.5	13.4
Number of refusals/cow	1.2	1.4	2.2	2.0
Number of failures or incomp milkings/robot	3.5	4.5	(1)	
Robot free time (%)	10.6	15.1	27.6	17.9
Average time/milking (min) *	7.97	7.64	7.15	6.86
Efficiency (kg milk/min robot) *	1.73	1.70	1.77	1.96
Estimated max milk/robot (kg) *	2041	2014	2089	2312
Estimated max fat/robot (kg) *	80.8	80.6	83.6	92.2
Milk value/cow ($)	24.91	8012	7678	8206
Milk value/robot ($)	1551	1390	1275	1591

* Calculated value

- Good production
- 52 cows with milking robots

- Free time is low and near the maximum capacity of the robot
- The herd efficiency is lower than the provincial average
- The estimation of milk and fat produced at maximum capacity is lower than the provincial average

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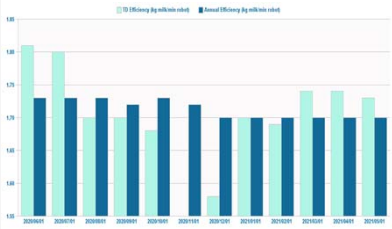
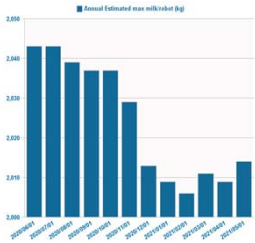
Robot Report Provides Some Findings





What cows penalize me the most?

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One More Step – Individual Efficiency

- Efficiency varies greatly from one cow to another
- There is potential for increasing revenues if the robot occupancy rate is better managed
- Provide the opportunity to select the best cows
- Being able to compare with other similar farms

Towards an interactive report to better manage individual milking robot efficiency

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A co-creation process with 11 producers using robot milking

What they told us:

- Ranking cows according to efficiency is not simple and is a long and tedious process
- Data are in various sections of the software – not efficient
- The methodology is not standard from one manufacturer to another

- Requires a tool that gathers the data in one place
- They want an efficiency index expressed in $$$
- To be given the opportunity to evaluate the value of the cow in the herd

7

Daily Data Transfer

- Lely
  - In use for 4 months
  - Daily transfer from 5 farms participating in the project

DeLaval

- Next to proceed with development

8

Summary | Cow Efficiency | Value of Cow in the Herd | Economic Value

Jane Doe Farms

Efficiency in robotic milking

Global Efficiency
kg of milk /min of box

1.81

1.77

Efficiency successul milkings
kg of milk/min of box

1.83

Milk value/min of box time

$1.46

$1.41

kg of fat/min of box time

0.74

0.71

Fat value/min of box time

$0.79

$0.76

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Summary | Cow Efficiency | Value of Cow in the Herd | Economic Value

Jane Doe Farms

Several groupings are available

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Variation of parameters according to production levels - Ferme Untel

Milk production	# of cows	Days in milk	Efficiency (kg milk/min of box)	Milk value/min of box	Box time/visit (mm:ss)	Preparation time (mm:ss)	Production /day (kg)	Fat test (kg/hl)	Protein test (kg/hl)
	nb vac	JEL	ProdMinute	LaitMinBox	Temps rob	Temps Prep	ProdJourn7j	TestGras	TestProt
< 30 kg	20	147	1.82	1.47 $	6:52	2:30	25.0	4.24	3.14
30 -45 kg	69	137	1.82	1.46 $	6:59	2:27	37.4	4.15	3.16
> 45 kg	18	152	1.75	1.43 $	6:59	2:33	49.4	4.24	3.21

Other types of tables

- Days in milk
- Nb of lactation
- Nb of robot (example robot 101, robot 102)
- Breed

As can be seen, efficiency is not influenced by milk production per cow per day

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Example of an Individual Ranking

Date : 2021-02-25
Nom de la ferme : Ferme Untel

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Animal id	N°. lac.	Days in milk	Efficiency (kg milk / Min. robot)	eff. success milk.(kg milk / Min. robot)	Milk value/min box ($)	relative value of milk value / min box	Fat/min robot (kg/min)	Fat value/min robot	Relative value of fat value/min robot	Time in robot/day (min)	Box time/visit (mm:ss)	Milking time (mm:ss)	Preparation time (mm:ss)	Milking speed (kg/min)	production/ day (kg)	Fat test (kg/hl)	Protein test (kg/hl)
		141	1.81	1.83	1.46 $	100	0.074	0.79 $	100	21.35	06:58	04:29	02:29	2.97	37.1	4.18	3.16
NoAn	NoLa	JEL	ProdMinu	Eff succe	Milk value	Ref milk va	Fat min	Fat valu	Ref fat va	Box time	Box tim	Milk tim	Prepa tim	Milk spee	Day pro	Fat test	Prot tes
777	1	26	0.97	0.97	0.71 $	49	0.035	0.37 $	47	28.6	8:00	5:25	02:35	1.43	27.8	3.66	2.98
63	1	62	1.10	1.10	0.82 $	56	0.036	0.38 $	49	25.3	11:47	9:33	02:14	1.35	27.7	3.38	3.50
97	1	102	1.20	1.33	0.82 $	56	0.038	0.40 $	51	36.8	7:09	4:55	02:14	1.74	44.1	3.23	2.86
120	1	53	1.33	1.46	0.85 $	58	0.038	0.40 $	51	29.6	6:05	3:07	02:58	2.60	39.4	2.91	2.76
80	1	31	1.33	1.33	0.89 $	61	0.038	0.41 $	52	21.6	5:23	3:08	02:15	2.29	28.8	2.96	3.02
90	3	310	0.97	1.01	0.89 $	61	0.048	0.51 $	65	20.4	10:12	7:05	03:07	1.40	19.8	5.11	3.31
106	2	309	0.92	0.92	0.89 $	61	0.054	0.57 $	73	13.6	5:56	3:26	02:30	1.60	12.6	5.98	2.83

- Expressed on a $/minute basis
- Links several parameters influencing efficiency
- Make a decision about lower performing cows

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Summary | Cow Efficiency | Value of Cow in the Herd | Economic Value

À développer

Date : 25 févr. 2021
Nom de la ferme : Ferme Untel

Lactanet

Animal id	N°. lac.	Days in milk	Milk value/min of box ($)	Production/ day (kg)	Index of cow value in the derd	Cow rating	Milk value project at 305 days	Classification score	Project calving interval (days)	Reproduction status (Open, Bred, Pregnant)	SCC count average
		141	1.46 $	37.1		106	8408	83.4	367		44
NoAn	NoLa	JEL	LaitMinBo	ProdJourn	Index vac	Cow rati	Milk va	Class	proj cal	Repro sta	SCC
777	1	26	0.71 $	27.8			6192			O	41
97	1	102	0.82 $	44.1		99	7761	83	347	B	32
63	1	62	0.82 $	27.7			9499		342	O	39
120	1	53	0.85 $	39.4		108	7435			O	48
90	3	310	0.89 $	19.8		105	10386	84	382	P	28
80	1	31	0.89 $	28.8						O	177
106	2	309	0.89 $	12.6		121	11368	86	385	P	37
115	2	243	0.90 $	44.8		110	10381	82	362	P	9
47	1	249	0.96 $	37.0		109	7621	83	338	P	37
117	1	78	0.96 $	33.2		102	6816	84	358	B	19
84	1	137	0.96 $	33.2		90	6616	82	419	O	15

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Summary | Cow Efficiency | Value of Cow in the Herd | Economic value

À développer

Date : 25 févr. 2021
Nom de la ferme : Ferme Untel

Lactanet

If we replace 10 % of the worst performing cows by average cows

Cow	No of lact	DIM	Milk kg / jour	$/min of box	$/box average	Variation	min / day in robot	Potential gain ($)
777	1	26	27.8	**0.71 $**	1.46 $	0.75 $	28.6	**21.32 $**
97	1	102	44.1	**0.82 $**	1.46 $	0.64 $	36.8	**23.68 $**
63	1	62	27.7	**0.82 $**	1.46 $	0.64 $	25.3	**16.07 $**
120	1	53	39.4	**0.85 $**	1.46 $	0.61 $	29.6	**17.93 $**
90	3	310	19.8	**0.89 $**	1.46 $	0.57 $	20.4	**11.73 $**
80	1	31	28.8	**0.89 $**	1.46 $	0.57 $	21.6	**12.33 $**
106	2	309	12.6	**0.89 $**	1.46 $	0.57 $	13.6	**7.73 $**
115	2	243	44.8	**0.90 $**	1.46 $	0.56 $	31.0	**17.42 $**
47	1	249	37.0	**0.96 $**	1.46 $	0.50 $	28.6	**14.38 $**
117	1	78	33.2	**0.96 $**	1.46 $	0.50 $	23.8	**11.84 $**
84	1	137	33.2	**0.96 $**	1.46 $	0.50 $	24.1	**11.99 $**
		Total milk/da	**348.4**			**Total min/day :**	**283.3**	
								166.41 $ Total /day
								60 741.17 $ Total / year
		Minutes/day		**Milk kg/min bo**	**Milk kg/day**			
		283.3	**X**	**1.81**	**512.8**		**Difference**	**164.4 Milk kg/day**

Other economic calculations

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Conclusion

- With a quick glance, the tool points to the main efficiency results and allows the producer to:
  - Rank the cows in the herd according to the milk value/minute in the robot ($) and several other criteria
  - Draw a complete picture of each cow with several criteria linked to milking robots
  - Distinguish the cause for inefficiency: genetic potential, preparation time or a combination of the two
  - Make an informed decision about the future and the cow management in his herd

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This project is funded through the Sector Development Program under the Canadian Partnership for Agriculture, an agreement between the governments of Canada and Quebec, and through a contribution from the Producteurs de lait du Québec

PARTENARIAT CANADIEN pour l'AGRICULTURE

Canada Québec

Les Producteurs de lait du Québec

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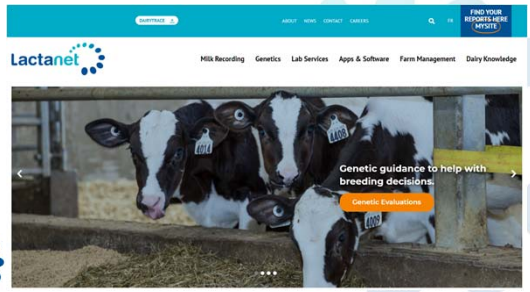
1

Lactanet.ca

- A major redesign to consolidate the Valacta, CanWest and CDN sites
- A rich source of leading-edge dairy herd management information and solutions
- A visually appealing site with many convenient access points
- Bilingual and mobile device friendly
- A dynamic site that will evolve with new features

2

Consolidate the Valacta, CanWest and CDN Sites



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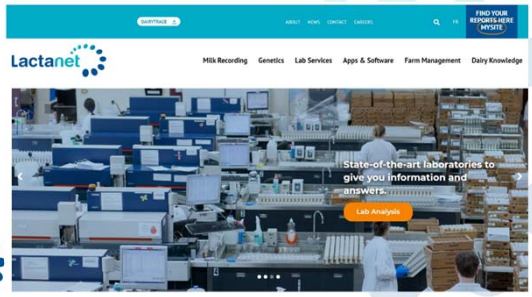
Lab Services



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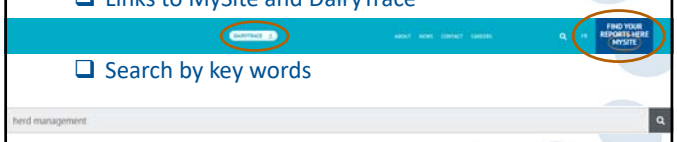
Website Overview

The home page:

- Links to MySite and DairyTrace



- Search by key words

5

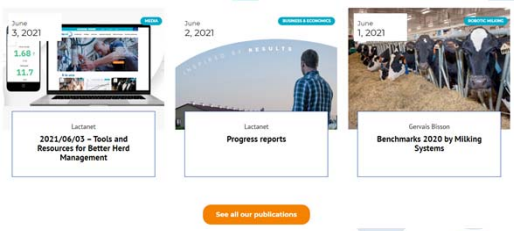
Theme Pages

- Milk Recording
- Genetics
- Lab Services
- Apps & Software
- Farm Management
- Dairy Knowledge

6

Site Overview

✓ ***You might like***: Recent news and articles



See all our publications

7

Site Overview

✓ Images related to Lactanet services:

✓ Training and events section:

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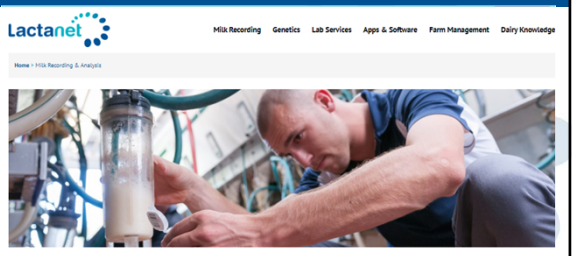
Milk Recording



Milk Recording & Analysis

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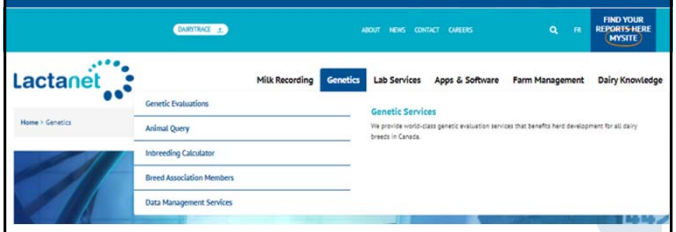
Genetics



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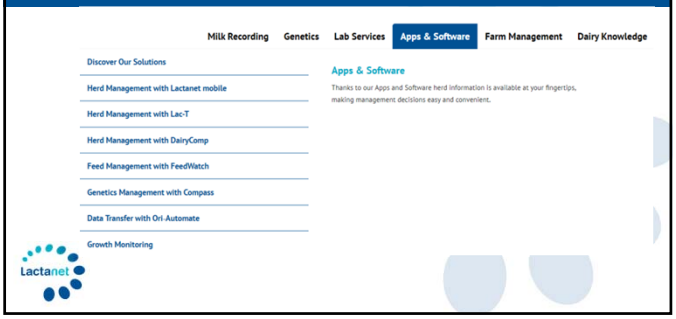
Apps & Software



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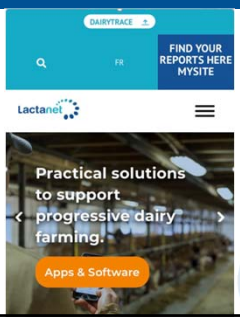
Suitable for Mobile Screens



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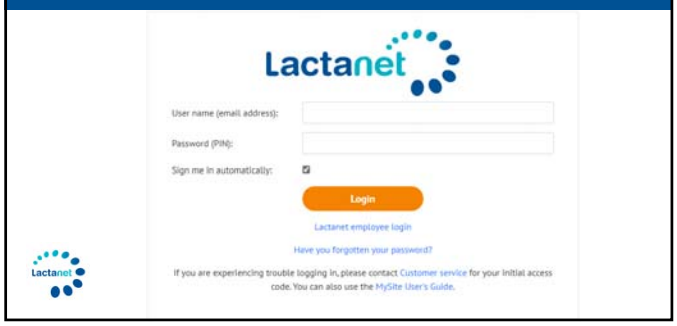
Login | Access



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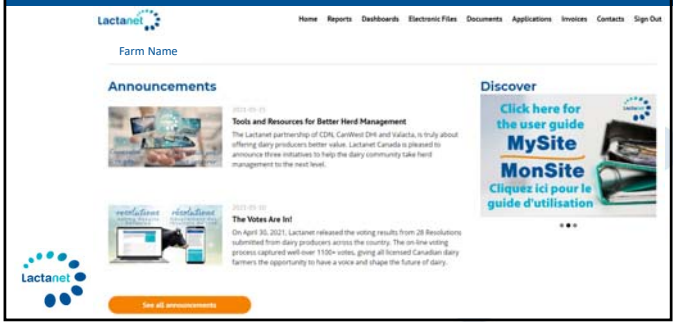
MySite



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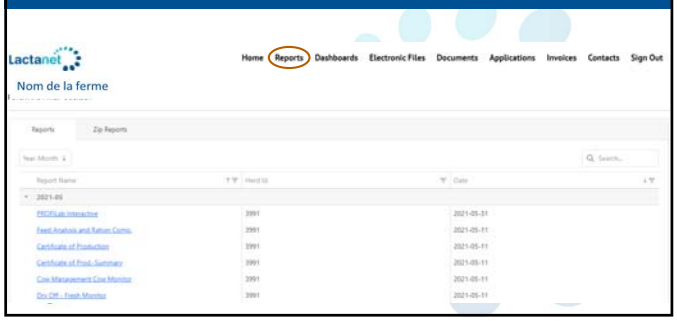
Reports Tab



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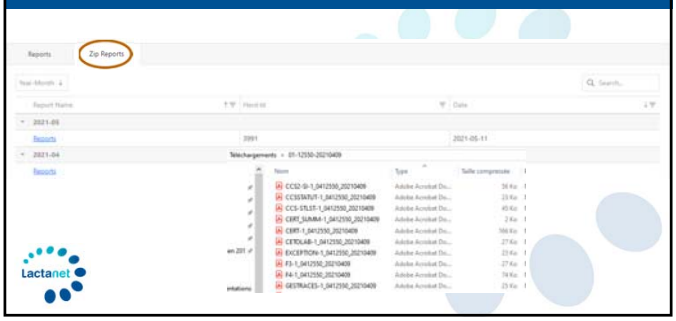
Reports Tab



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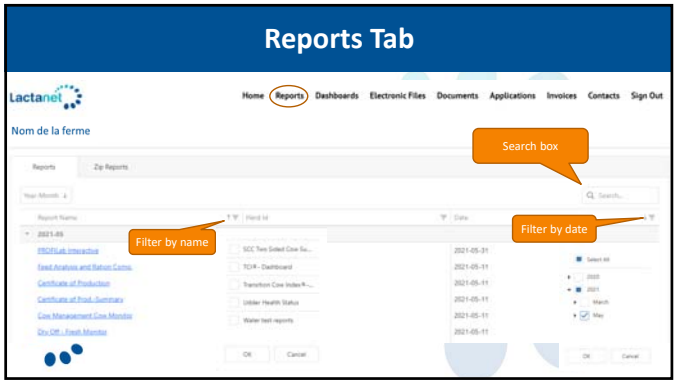
Reports Tab



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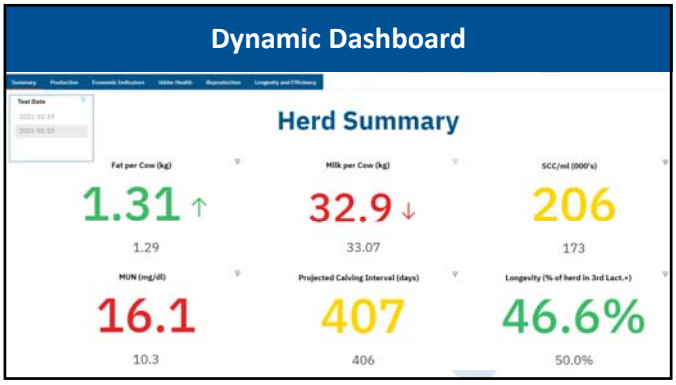
Dynamic Dashboard



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Dynamic Dashboard

- Six **topic tabs interchangeable** with one click
- **Colored indicators** with the values of the last two tests
- **Interactive Graphs**
- **Tooltip** based on the location of the pointer
- Several **Graphs** with a choice of **Reference Level** (75%, 90% and Average)

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Qualitative Color Coding of Indicators

Each indicator is assigned a color from a color-code (green, yellow or red) according to intervals specific to each management criteria

Tab	Criteria	Interval	Color
Summary	SCC	Less than 200,000	
		Between 200,000 and 299,999	
		300,000 or more	
	Urea (mg N/dl)	Between 8.0 and 11.99	
		Below 8 and 12.0 or more	
	Projected Calving Interval (days)	Less than 405 days	
		Between 405 and 429 days	
		430 days or more	
	Longevity (% cows in 3rd lact. or +)	43% or more	
		Between 35% and 43%	
		Less than 35%	

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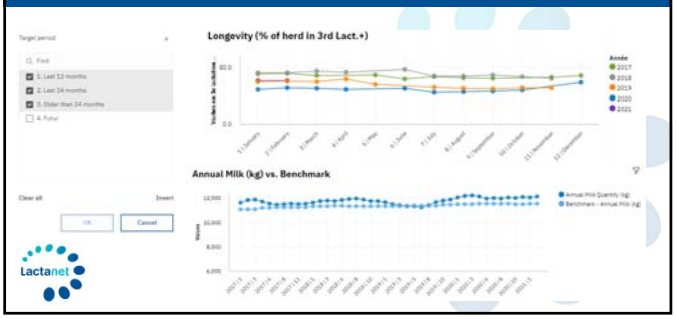
Up to 5 years of Historical Data



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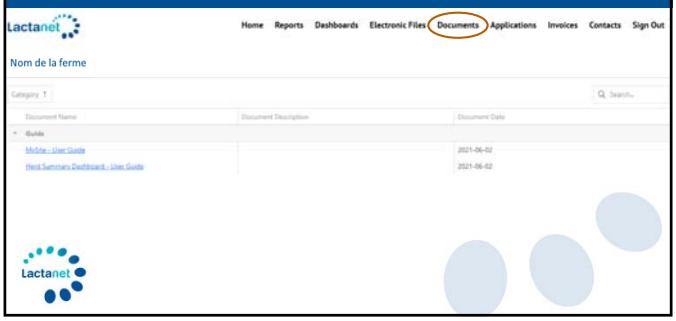
More Information



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More Information

https://youtu.be/GopeaeRxEQc

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How to Interpret and Use Feed Efficiency Evaluations

Pete Sullivan
Lactanet Canada
Open Industry Session – June 10, 2021

1

Presentation Outline

1. Interpreting Lactanet Feed Efficiency (FE) evaluations
   - Trait definition for Canada (+ other countries)
2. Industry feedback since Lactanet launch of FE
   - New evaluation service in April 2021
   - Short-term plans (2021)
3. Longer-term plans (to 2023 and beyond)

2

Lactanet FE Evaluations (Holsteins only)

Feed Efficiency

- Selecting for Feed Efficiency (FE) reduces excess feed consumed (Dry Matter Intake), above cow requirements for maintenance and production levels
- FE identifies the most efficient animals equally well, for both LARGE and SMALL genetic lines
  - **Bulls with genetics for either LARGE or SMALL body size have an equal chance** of ranking high for FE

3

Evaluations in Various Countries

Feed Efficiency (separately)

Interbull/ICAR meeting April 2021

- Canada (April 2021)
- The Netherlands (since 2016)
- Nordic Countries (Denmark, Finland, Sweden) (2021)
- United Kingdom (target August 2021)

Feed Saved = FE + Small Body Size

- Australia (since 2015)
- United States (December 2020)

4

Industry Feedback on FE Evaluations

- Pleased and supportive of the chosen trait definition
  - **Valuable new information**
  - World leading and moving in the right direction
- AI companies started **looking for high-end FE bulls**
  - **Problem:** Found very few compared to other traits
  - **Misperception:** The group of outliers available to choose from for FE is extremely small
  - **Question:** Can we improve the publication scale?

5

High-end Bulls Available (10 above breed average)

Trait	Official LPI (2006-15)	Young (2020)
Conformation	70 (2.0%)	932 (2.8%)
Herd Life	58 (1.7%)	4,293 (13.1%)
Daughter Fertility	58 (1.7%)	1590 (4.9%)
Mastitis - 1st Lactation	57 (1.6%)	750 (2.2%)
Hoof Health	87 (2.5%)	1,754 (5.4%)
Metabolic Disease	**28 (0.8%)**	762 (2.3%)
Clinical Ketosis	**6 (0.2%)**	**41 (0.1%)**
Feed Efficiency	**18 (0.5%)**	**46 (0.1%)**

Is FE scale too narrow?

6

Lactanet FE are Relative Breeding Values

- All except the production traits are expressed as RBV
- RBV have **SD=5** and **average=100 (0 for type)**, for base bulls
  - Base groups are trait specific: most recent (10 years for HO) of **proven bulls** with official proof status for the trait
  - The typical range for RBV is **85-115** (or **-15 to +15** for type)
- FE evaluations are relative to bulls with progeny proofs for FE
  - **Problem: 97%** of recent LPI bulls have a GPA for FE (no FE progeny)
    - RBV are **relative to** a small group of **only 99 proven bulls**
    - RBV scaling for FE **ignores 3,400 bulls** with a GPA

7

Including GPA Bulls in the Base Group for FE

Option 1: GPA = Proven

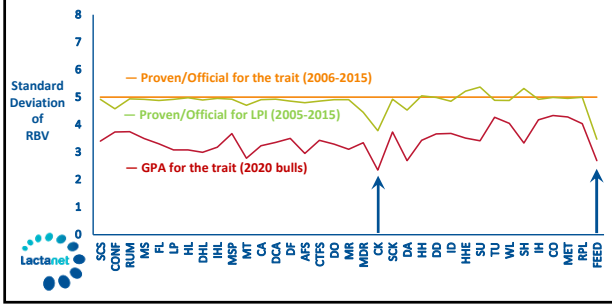
- In base if official for LPI
- Base = Proven + GPA
- **Proven + GPA: SD=5**
  For FE: GPA: SD=5
  SD > GPA of other traits

Option 2: Account for Reliability

- In base if official for LPI
- Base = Proven + GPA
- **Proven equivalent: SD=5**
  Account for lower Reliability for GPA bulls
  SD for FE similar to GPA of other traits

8

Standard Deviations are Lower for GPA Bulls



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% with GPA for Base Bulls with Official LPI

Trait	% with GPA (Holstein)	Young Bulls (2020) Average, 99% CI, Diff		
Conformation	0	+3,	+14,	11
Herd Life	0	106,	115,	9
Daughter Fertility	0	103,	114,	11
Mastitis 1st Parity	15	103,	112,	9
Hoof Health	44	104,	114,	10
Clinical Ketosis	**78**	**103,**	**110,**	**7**
Feed Efficiency	**97**	**101,**	**109,**	**8**

10

% with GPA for Base Bulls with Official LPI

Trait	% with GPA (Holstein)	Young Bulls (2020) Average, 99% CI, Diff			
Conformation	0	+3,	+14,	11	
Herd Life	0	106,	115,	9	
Daughter Fertility	0	103,	114,	11	
Mastitis 1st Parity	15	103,	112,	9	
Hoof Health	44	104,	114,	10	
Clinical Ketosis	**78**	**103,**	**110,**	**7**	
Feed Efficiency	**97**	**101,**	**109,**	**8**	
FE: GPA = Proven	**97**	**101,**	**114,**	**13**	**Option 1**
FE: Account for REL	**97**	**101,**	**111,**	**10**	**Option 2**

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Comparing the Two Options

1. Essentially sets standard deviation for young bulls (GPA) to 5 for FE
   - Could expand the scale **too much** (too narrow becomes too wide)
   - **Inconsistent** with all other traits, where standard deviation is much lower than 5 for genomic young bulls with other traits
   - As FE Reliabilities for young bulls increase **with more data**, the scale may shrink again, and all **top bulls may drop**
2. Sets the standard deviation lower than 5, to the expected level for young bulls when standard deviation for proven bulls equals 5
   - **Includes GPA** in the base, but **accounts for** lower Reliability with GPA
   - FE scale is more likely to **stay the same** over time, as we add **more data** and the GPA **Reliabilities increase** for FE

12

Plans for August 2021

- Expand the RBV scale for Feed Efficiency to some degree
  - Include **GPA in base** group for FE (Options 1 or 2)
  - Recommend to **account for Reliability** (Option 2)
    - Makes standard deviation for FE consistent with young bull evaluations (GPA) for other traits
  - Update RBV translation to kg accordingly
    - 5 points RBV would be closer to 50 kg instead of 60 kg
  - Implementation target date is August 2021

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Longer Term Plans for Feed Efficiency

- Include FE in LPI and Pro$ (Lactanet and U. of Guelph)
- Continue improving FE evaluation models to maximize and optimize the use of available data
- Develop evaluations for maintenance related to body size
- Continue to accumulate more daily feed intake data
  - Currently using feed intake on 1,500 cows (Canada) plus 3,500 cows in partner countries (USA, Denmark, Australia, Switzerland) for GPA Reliabilities of ≈40%
  - Accumulating new research-funded data until end of 2023
    - More Canadian + international data (RDGP project)
    - Expect GPA Reliability to increase over the next 3 years

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Longer Term Plans for Feed Efficiency

- What can we do for feed data recording **beyond 2023?**
  - Ongoing feed intake data collection will be needed to keep genomic predictions current
  - With a plan (and $$) for continued recording of feed intake in Canada, we can maintain our leverage for future data sharing agreements beyond 2023
  - International data sharing will continue to be very important for feed efficiency due to high recording costs

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Q&A Related to Type Composites: A Post Launch Perspective

Allison Fleming
Lactanet Canada
Virtual Open Industry Session – June 10, 2021

1

Post Launch Review of Type Composites

- April 2021 – Genetic evaluations for Conformation and the four major scorecard type traits transitioned to composite indexes
- Plan and concept discussed at previous Open Industry Sessions, but now everyone has had a chance to see composites in action
  - Received and listened to reactions, feedback, and questions following the April release

2

What was Ultimately Released in April?

- Composite indexes for Holstein, Jersey, and Ayrshire
- **Mammary System** Composite
  - Ensure neutral or positively correlated with **Teat Length** (longer)
  - Ensure neutral with **Stature**
- **Feet & Legs** Composite
  - Ensure neutral with **Rear Legs Side View**
  - Ensure neutral with **Stature**
  - For **Jersey**, the adjustments are just partial
- No secondary adjustments to Dairy Strength or Rump Composites
- Published Reliability is a weighted value of Reliability values for the specific traits in each composite

3

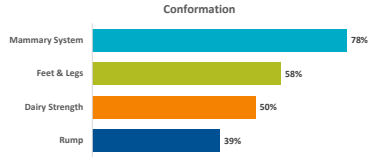
How are MACE or Foreign Bulls Evaluated?

- The exact same composite index formulas are applied to foreign bulls as domestic animals
  - Foreign bulls may have experienced greater change
- Not all linear traits are evaluated by Interbull or may not be available in certain countries
  - Bulls will have a Genomic Parent Average (GPA) or a PA for these traits which will contribute to their composite index calculations

4

What are the Trait Contributions to the Composites?

- Composite index formulas are complex and not publicly available
- Correlations between proofs provide an indication of the relationship between the individual traits and the final composite index



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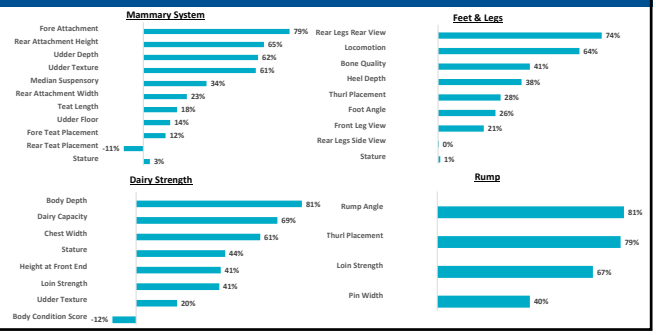
Bull Proof Correlations (within birth year) - Holstein



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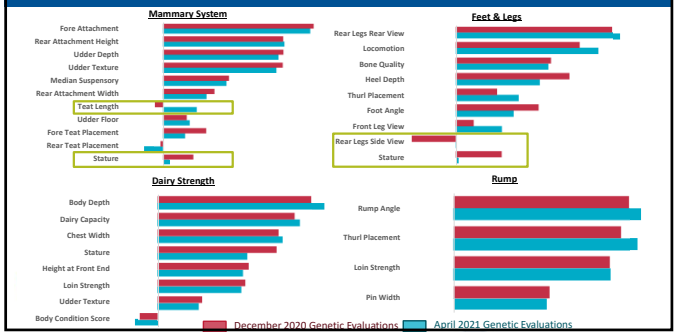
Bull Proof Correlations (within birth year) - Holstein



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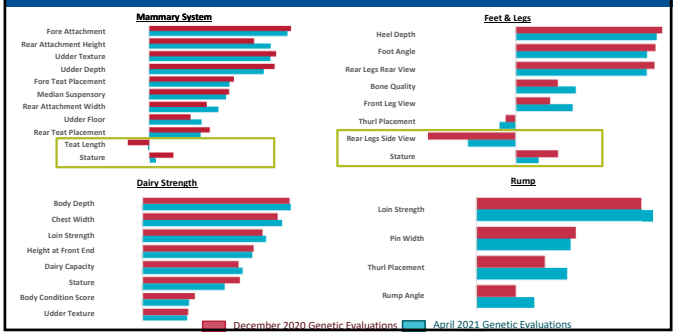
Bull Proof Correlations (within birth year) - Jersey



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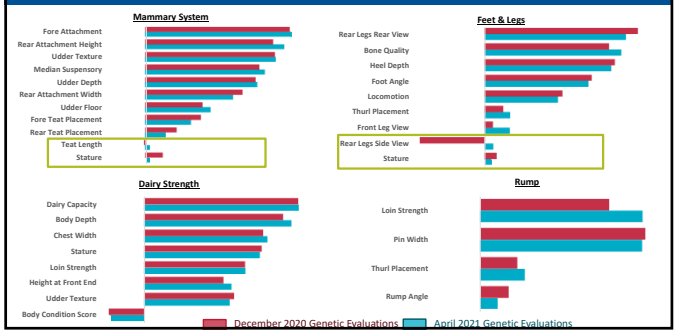
Bull Proof Correlations (within birth year) - Ayrshire



9

Why did an Animal's Evaluation Drop?

- Observed changes resulted from (a) switch to composites, (b) inclusion of secondary trait adjustments, and (c) the annual genetic base update
- Feet & Legs, Mammary System, and Conformation evaluations are affected by Stature, Teat Length, and Rear Legs Side View
- Composites are more in-line with their linear traits
  - More difficult to be an outlier for Conformation or the major scorecard traits when the animal must now excel in many of the contributing linear traits

10

Decrease in Range with Composites

- As expected, the overall range in evaluations decreased with composites, especially for young genomic bulls
- With composite indexes we now see a smaller proportion of bulls where Conformation exceeds the minimum or maximum value of the four major traits

% Bulls With CONF being Between the Minimum and Maximum of the four Scorecard Evaluations

Bull Group	Previous	Composites	Increase
Born in 2006-2015	94.6%	97.1%	2.4%
Born Since 2015	91.7%	93.8%	2.1%
Born Before 2006	76.5%	83.0%	6.4%

Note: Based on 22,238 bulls with an official CONF proof or a GPA CONF and an NAAB Controller Code

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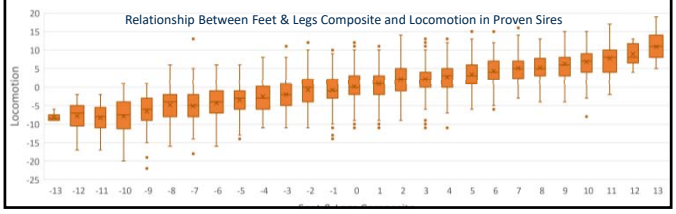
Strong for Feet & Legs, Poor for Locomotion?

- Post release comments called attention to specific bulls with good Feet & Legs composite despite being poor for Locomotion
  - In response, examined at a population level the role of Locomotion in the Feet & Legs composite for Holstein to see how we could improve



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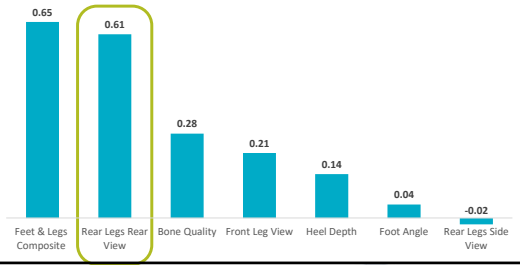
Proof Correlations with Locomotion in Holstein

- Locomotion largely coming into Feet & Legs through its correlation with Rear Legs Rear View



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Importance of Locomotion

- For cows classified for Locomotion, it will contribute to their Mobility score starting later this year
  - This data will therefore have more impact in our composite calculations in the future
- Benefit of using composite indexes is that we can make changes without waiting for data
  - Know the importance of Locomotion and the direction that the classification system is moving
  - **Adapt methodology** used to derive Feet & Legs composite weightings to have more equal contributions for both Locomotion and Rear Legs Rear View

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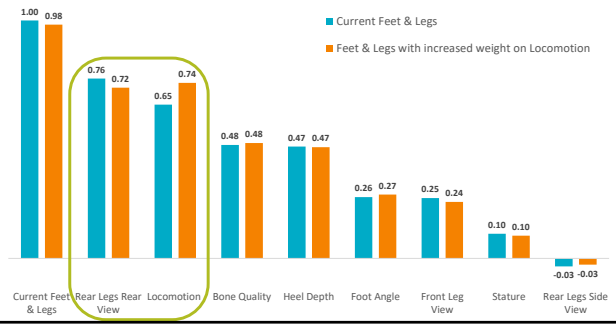
Proof Correlations in Holstein Base Bulls



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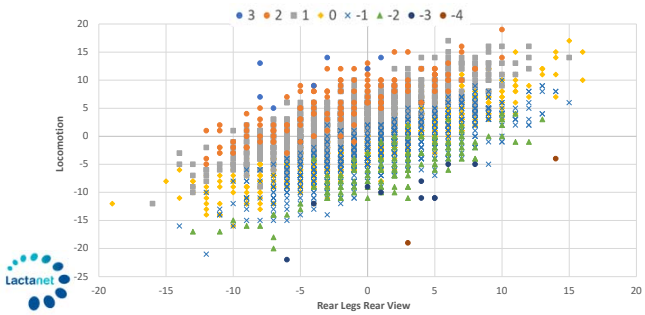
Expected Change in Feet & Legs for Proven Sires



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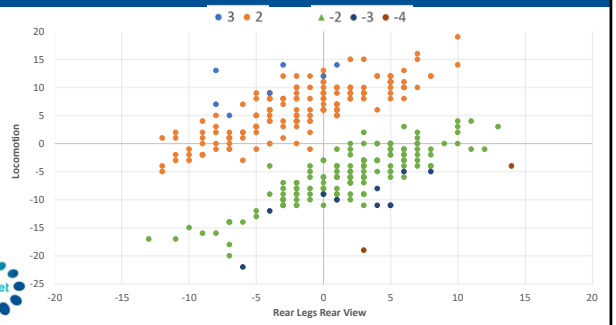
Expected Change in Feet & Legs for Proven Sires



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Future Genetic Evaluations for Foot and Mobility?

- Holstein Canada will be splitting Feet & Legs into separate Foot and Mobility sections for classification
- Requires some time to collect sufficient data to examine any next steps for genetic evaluations
- Genetic evaluations will not make the switch at the same time and will need to be conscious of international considerations

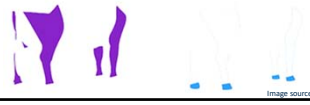

Image source: Holstein Canada

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Summary

- The big transition is over!
- Listening to feedback on composite indexes
  - Some questions but also many positive remarks
- Option of increasing the contribution of Locomotion in Feet & Legs is a small alteration that is possible
  - Will help to increase the correlation and ensure extreme values for Locomotion that deviate far from Rear Legs Rear View have more of an impact on Feet & Legs
  - Recommend implementation for August 2021

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