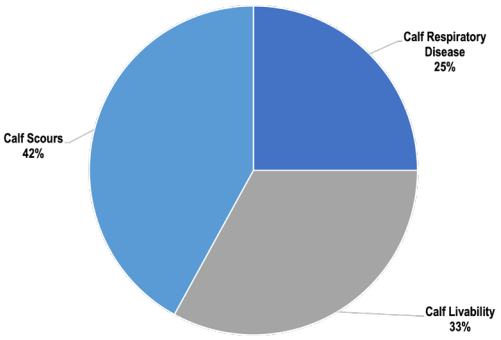
Holstein

Description of Terms

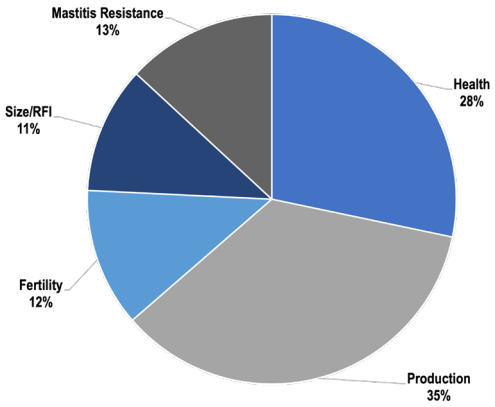
CW$

Calf Wellness Index: Places economic weights on calf wellness traits, directly estimating potential profit contribution of these traits for an individual animal. This multi-trait selection index focuses solely on calf wellness traits with unique formulas used for Holsteins and Jerseys:
Calf Livability
Calf Scours (diarrhea)
Calf Respiratory



DWP$

Dairy Wellness Profit Index: A multi-trait selection index that includes production, fertility, type, longevity, and the wellness traits, including Polled test results with unique formulas used for Holsteins and Jerseys:
Health
Production
Fertility
Size/RFI
Mastitis Resistance



FE

Feed Efficiency Index: Considers the individual feed costs to produce an extra pound of milk, fat and protein while accounting for differences in maintenance costs, housing costs and calving weights that may be attributed to the size of the cow. Cows that produce high volumes of milk without requiring high volumes of feed are rewarded in this index.
FE$ = (-$0.0025 x PTA Milk) + ($1.86 x PTA Fat) + ($1.75 x PTA Protein) + ($0.13 x PTA Feed Saved)

Feed Saved

Indicates the expected reduction of consumed feed per lactation based on evaluations for residual feed intake and body weight composite. Measured in pounds of dry matter intake. Included in the Feed Efficiency Index

FI

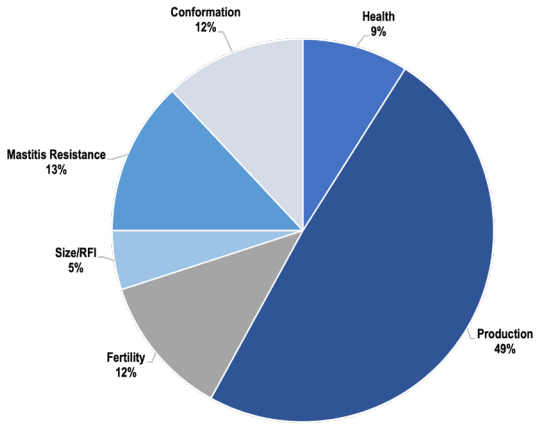
Fertility Index: Combines values from three measures of reproductive performance to provide one overall fertility score. Fertility Index = 0.4*DPR + 0.4*CCR + 0.1*HCR + 0.1*EFC

FLC

Foot and Leg Composite: The Feet & Legs Composite formula utilizes a combination of the major category Feet & Legs Score along with three linear traits. The FLC formula is as follows:
FLC: FLC = [(.05 x FA) + (.20 x RV) + (.05 x SV*)+ (.70 x FLS) - (.20 x ST)] x 1.14
FA = Foot Angle RV = Rear Legs Rear View FLS = Feet & Legs Score ST = Stature SV* = Rear Legs Side View

HHP$

Herd Health Profit Dollars: Focuses on improving production, cow fertility and mastitis resistance and it places strong emphasis on health traits utilizing health trait PTAs from CDCB. Emphasis is placed on shallow udders with correct teat size and placement and allows for comparisons with all active Holstein sires



*updated April 2025

Holstein

MSPD

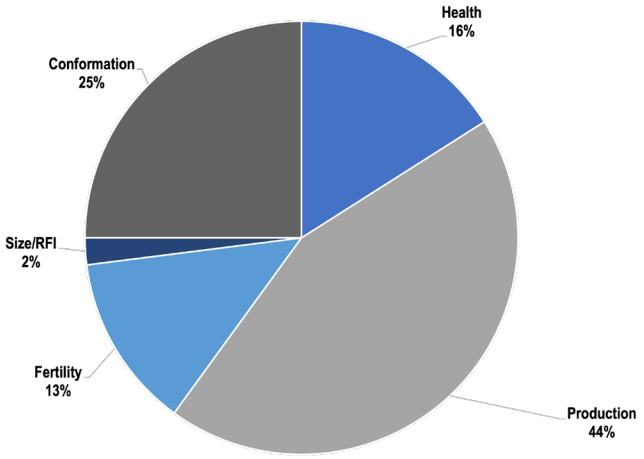
Milking Speed: A Canadian evaluation that predicts how long it will take for a cow to fully milk out. Cows are evaluated as very slow, slow, average, fast, and very fast. Higher values indicate faster milk out and are more desirable

RFI

Residual Feed Intake: The difference between an animal's actual feed intake and its predicted feed intake calculated from various energy sinks [e.g., milk production, metabolic body weight (MBW), and change of body weight (ΔBW)]. Included in the Feed Efficiency Index

TPI

Total Performance Index: This is a formula that combines type, management and production traits into one number. Very commonly used to rank bulls, TPI is the USA Holstein Association's multi trait index that ranks bulls on overall performance. TPI places more emphasis on type traits than the Net Merit formula, comparable emphasis on Fat and Protein production, and slightly lower emphasis on health traits. The traits included in the TPI formula, and their respective percentages in the formula in the chart below:



UDC

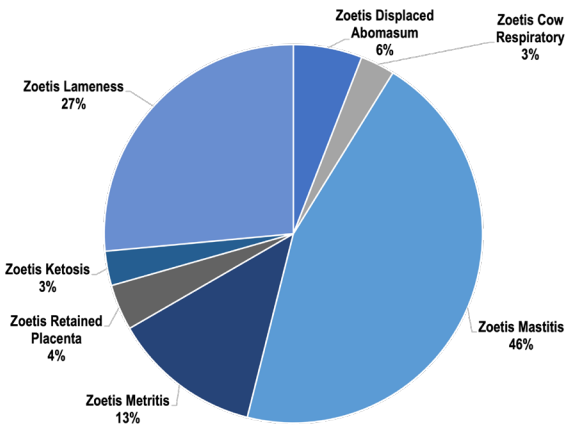
Udder Composite Index: Udder Composite describes a well formed capacious udder with strong attachment. Using bulls with a high UDC results in a lowering of the somatic cell score and daughters whose udders are trouble-free and capable of holding more milk.

UDC: [(.16 x FU) + (.23 x UH) + (.19 x UW) + (.08 x UC) + (.20 x UD) + (.04 x TP) + (.05 x RP*) + (.05 x TL*) - (.2 x ST)] x 1.16
FU = Fore Udder Attachment
UC = Udder Cleft
RP* = Rear Teat Placement
UH = Rear Udder Height
UD = Udder Depth
TL** = Teat Length
UW = Rear Udder Width
TP = Front Teat Placement
ST = Stature

WT$

Wellness Trait Index: Places economic weights on wellness traits, directly estimating potential profit contribution of these traits for an individual animal. This multi-trait selection index focuses solely on wellness traits with unique formulas used for Holsteins and Jerseys:

Mastitis
Lameness
Metritis
Retained Placenta
Displaced Abomasum
Ketosis
Cow Respiratory



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Jersey

CW$

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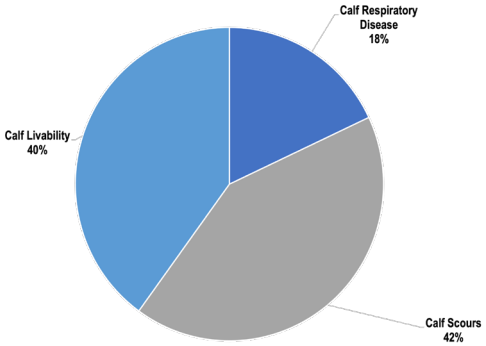

DWP$

Dairy Wellness Profit Index: A multi-trait selection index that includes production, fertility, type, longevity, and the wellness traits, including Polled test results with unique formulas used for Holsteins and Jerseys:
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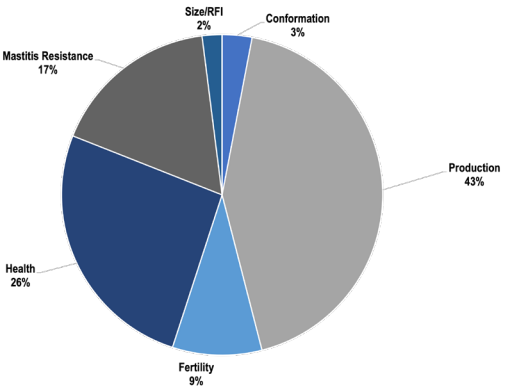
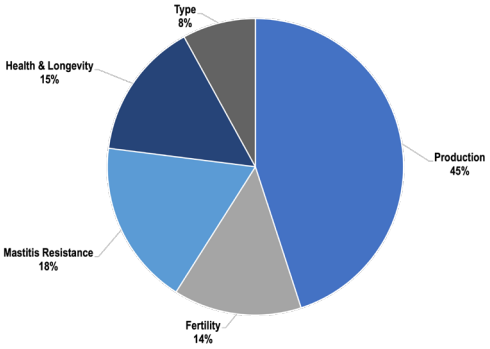
Production
Fertility
Health
Mastitis Resistance
Size/RFI



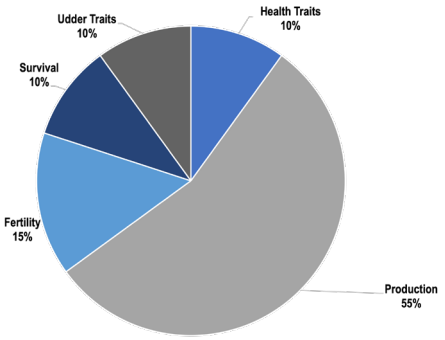
HHP$

Herd Health Profit Dollars: Focuses on improving production, cow fertility and mastitis resistance and it places strong emphasis on health traits utilizing health trait PTAs from CDCB



JPI

Jersey Performance Index: A formula for increasing production and improving milkfat and protein levels in the milk, moderating body weight in service of greater productive efficiency, and at the same time selecting for longer herd life, greater fertility, and better udder health



JUI

Jersey Udder Index

FU 0.17	TP 0.05
RUH 0.18	RTR 0.05
RUW 0.15	RTS 0.05
UC 0.07	TL 0.05
UD 0.23	

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Jersey

All

WT$

Wellness Trait Index: Places economic weights on wellness traits, directly estimating potential profit contribution of these traits for an individual animal. This multi-trait selection index focuses solely on wellness traits with unique formulas used for Holsteins and Jerseys:
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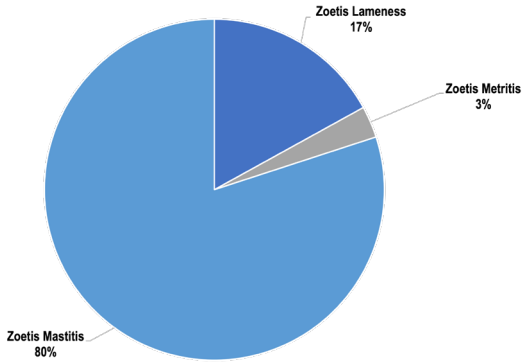
Lameness
Metritis



CCR

Cow Conception Rate: Measures the ability of lactating cows to conceive. A CCR of 1.0 equates to a 1% increase in cow conception rate

CDCB Health Traits

Health traits available for Holsteins and Jerseys evaluated by CDCB and ranked by standard PTA values. Expected resistance of an animal's offspring to the disease compared to the breed average base, expressed in percentage points.
Mastitis
Metritis
Retained Placenta
Ketosis
Milk Fever (Hypocalcemia)
DA

CM$

Cheese Merit: Designed for herds that produce milk for cheese. Generally, Cheese Merit combines the same traits as Net Merit. The differences are a negative economic weight on PTA Milk and increased emphasis on Protein Pounds – because protein has more value in the cheese market than in other markets

CODE

The unique number registered with the National Association of Animal Breeders (NAAB) with which the AI companies use to identify sires

DCE

Daughter Calving Ease: This is the estimate of the Percentage of Difficult Births in Heifers (DBH) for a bull's daughters when they calve the first time. The average for the Holstein breed is 2.7%

DPR

Daughter Pregnancy Rate: Measures the cow's ability to begin cycling, show estrus, conceive and maintain pregnancy and is highly correlated with PL. A DPR of 1.0 equates to a 1% increase in pregnancy rate during a given 21 day estrus cycle. Every 1.0 PTA increase in DPR indicates 4 fewer days open

DTRS

The number of milking daughters this sire has in his proof

EFC

Early First Calving: Places an economic value on the ability of virgin heifers to reach maturity and enter production, indicating whether heifers will calve earlier or later than breed average. One standard deviation (+/-1.0 EFC) is equivalent to approximately 3 days, with positive values being favorable for younger age at first calving

*updated April 2025

FAT
The average fat production of a bull's daughters in a 305 day lactation (expressed in pounds)

FAT%
The average fat% of a bull's daughters

GL
Gestation Length: Expressed as the number of days greater than or less than the average gestation length for the breed. The typical range is +/-5days. In general, gestation length has decreased over time for breeds that have selected for lower calving ease (i.e.Holstein), as calving ease and gestation length are highly correlated. Gestation Length is available for all dairy breeds

HCR
Heifer Conception Rate: Measures the ability of virgin heifers to conceive. An HCR of 1.0 equates to a 1% increase in heifer conception rate

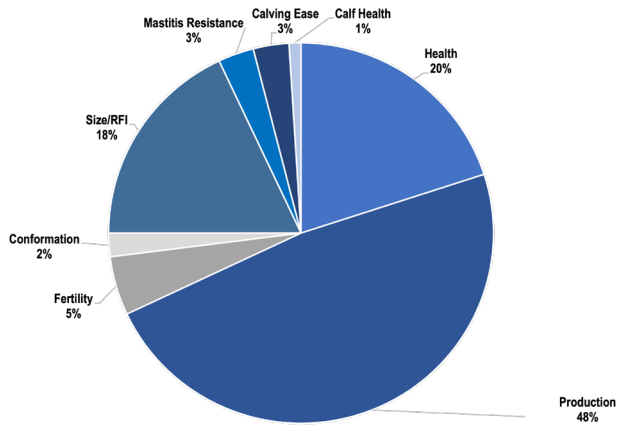
HERDS
The number of herds where this bull's daughters are milking

KC
Kapa Casein: This indicates the "type" of Casein (milk protein) a bulls daughters will have – AA, AB or BB

LIV
Livability: The percent of a bull's daughters above or below the average of the breed that remain alive in the herd until they can be culled and provide a source of income for the herd

MILK
The average milk production of a bull's daughters in a 305 day lactation (expressed in pounds: 1 kg =2.2 pounds)

NM$
Net Merit: Economic value which combines the value of production, health, fertility and type scores. NM$ the expected lifetime profitability of a bull's average daughter as calculated by the USDAAIPL.



PL
Productive Life: A score used to identify the productive months of life a cow will have compared to herd mates. A PL of 1.0 equates to one additional month of production in the herd. PL gives the greatest weight to the first 305 days (10 months) of lactation, as cows are most profitable and productive in early lactation

*updated April 2025

PRO
The average protein production of a bull's daughters in a 305 day lactation (expressed in pounds). Protein in USA evaluations is TRUE protein, which is 0.2% lower than Crude Protein

PRO%
The average protein % (True Protein) of a bull's daughters. To convert from True Protein to Crude Protein, add 0.2% to the True Protein value

PTA%F, PTAF
Predicted ability of sire to transmit genetics for fat production, this is the amount of fat a bull's daughters are expected to produce above contemporaries

PTA%P, PTAP
Predicted ability of sire to transmit genetics for protein production, this is the amount of TRUE protein a bull's daughters are expected to produce above contemporaries

PTAM
Predicted ability of sire to transmit genetics for milk production. The pounds of milk produced by a bull's daughters above contemporaries

PTAT
Type: Conformation improvement expected from a bull's daughters compared to contemporaries

REGNAME
The herdbook name of the bull

SCE
Sire Calving Ease: This is the estimate of the Percentage of Difficult Births in Heifers (DBH) when they calve the first time. The average for the Holstein breed is 2.2%

SCE OBS
Number of calvings observed

SCR
Sire Conception Rate: A male fertility trait that is NOT genetic,there is no way to predict this at this time using genetics. An SCR of 1.0 indicates a 1% increase in conception rate when compared to average.

SCS
Somatic Cell Score: Measures a bull's milking daughter's susceptibility to mastitis. The USA herd average is set to 3.00 (as zero) with lower proof values indicating lower somatic cell count

*updated April 2025