BUILDING A HEALTHIER HERD WITH CALF WELLNESS

KEY TAKEAWAYS:

- CLARIFIDE® Plus is the first commercially available dairy genetic evaluation specifically designed for cow and calf wellness traits in U.S. dairy cattle. An expanded suite of genetic selection tools provides producers with highly relevant information as they seek to improve health, productivity and profitability of the cattle they care for.
- Genomic predictions for calf wellness traits provide reliable assessments of genetic risk factors for economically important health challenges in Holstein cattle. Producing robust calves able to thrive in modern dairy operations improves industry financial sustainability and animal well-being.
- The Calf Wellness Index™ (CW$™) is a multi-trait selection index that exclusively focuses on calf wellness using traits of calf livability, calf respiratory disease and calf scours to directly estimate the potential profit contribution of the calf wellness traits for an individual animal. The **Dairy Wellness Profit Index® (DWP$®)** offers similar selection emphasis to that achieved by Net Merit (NM$) on primary traits, but applies additional selection emphasis and improvement on cow and calf wellness traits.

Improving calf health and livability through CLARIFIDE Plus genetic selection offers dairy producers the opportunity to help manage herd replacement cost, reduce calf disease incidence and improve profitability when coupled with sound management practices.

ECONOMIC IMPORTANCE OF DAIRY CALF WELLNESS

Keeping calves healthy and minimizing mortality and morbidity are key investments with real future returns. National Animal Health Monitoring System (NAHMS) studies show pre-weaning death losses of 7.8% and the reasons for those losses: 56.5% due to scours, and 22.5% due to respiratory diseases.[1]

TABLE 1. FINANCIAL IMPACT OF CALF HEALTH AND MORTALITY

	Incidence (Pre-weaned)[1–3]	Incidence (Weaned)	Treatment & Labor Cost ($) per Case (Pre-weaned)
Calf Scours	23.9 – 25.3%	0.8 – 1.9%[1,2]	$11.35[5]*
Calf Respiratory	12.4 – 18.1%	5.9 – 11.2%[1,2]	$9.84 – 16.35[5–7]
Calf Mortality	4.2 – 12%	1.6 – 2.8%[1,2,4]	Cost of Raising or Replacing

* Estimated

Producing robust calves that are able to thrive in modern dairy operations potentially improves both financial sustainability of the dairy industry and animal well-being.

Use CLARIFIDE Plus to select animals based on cow and calf wellness and other important traits with a goal of a healthier, more productive herd.

CALF WELLNESS PREDICTIONS DERIVED FROM GENETIC EVALUATIONS

Utilizing the Calf Wellness Index,™ CW$™—available through CLARIFIDE Plus as part of a more comprehensive index such as DWP$®—helps build a healthier, more profitable herd.

CLARIFIDE® Plus features genetic predictions based on data collected from U.S. dairies. Calf health events are assembled from the same on-farm dairy production records as cow wellness traits, using single-step statistical methods to estimate genomic breeding values. This process includes pedigree and genomic relationships and provides a unified framework that results in more accurate genomic evaluations.[8]

REPORTING OF CALF WELLNESS TRAITS IN CLARIFIDE PLUS

For all calf wellness trait predictions, a value of 100 represents average expected risk. Values greater than 100 reflect animals with lower expected average risk relative to herd mates with lower standardized transmitting abilities (STA) values. Higher values are more desirable for all traits. Selecting for a high STA applies selection pressure for reduced risk of calf disease or mortality.

TABLE 2. GENOMIC RELIABILITY AND STA FOR CALF WELLNESS TRAITS[9†]

Zoetis Calf Wellness Traits	Phenotype Time Period	Average Reliability	Average STA	Minimum STA	Maximum STA
Calf Livability	2 – 365 Days of Age	42%	100	66	116
Calf Respiratory Disease	0 – 365 Days of Age	36%	100	83	116
Calf Scours	2 – 50 Days of Age	39%	100	85	117

Genomic STA for calf wellness traits are based on approximately 449,391 head.

†Numbers reflect data from Reference population of animals under two years of age

Three economic indexes were developed or updated to support selection for reduced risk of cow and calf disease in dairy females.

- **Dairy Wellness Profit Index® (DWP$®):** The most comprehensive multi-trait selection index available, DWP$ directly estimates the potential lifetime profit of an individual animal. The index includes production, reproduction, functional type, longevity, calving ability, milk quality, cow wellness, new calf wellness traits and economic value of polled test results.
- **Calf Wellness Index (CW$):** A multi-trait selection index exclusively focused on calf wellness traits including calf livability, calf respiratory disease and calf scours. It directly estimates the potential profit contribution of the calf wellness traits for an individual animal.
- **Wellness Trait Index® (WT$®):** This selection index focuses exclusively on the wellness traits (mastitis, lameness, metritis, retained placenta, displaced abomasum and ketosis) and estimates expected differences in lifetime profitability related to them.

These indexes provide important information for powerful selection decisions to increase the speed of dairy and calf wellness genetic progress.

To learn how CLARIFIDE Plus can help you achieve a healthier, more trouble-free herd, contact your Zoetis representative today or visit clarifideplus.com

1. USDA. Dairy 2007. NAHMS Heifer Calf Health and Management Practices on U.S. Dairy Operations, 2007. https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/dairy07/Dairy07_ir_CalfHealth.pdf.
2. USDA. NAHMS Dairy Heifer Raiser 2011: A Study of Operations that Specialize in Raising Dairy Heifers
3. Murray B. Optimizing Calf Survival at Birth. 2011. Ontario Ministry of Agriculture, Food, and Rural Affairs. http://www.omafra.gov.on.ca/english/livestock/dairy/facts/optbirth.htm.
4. USDA National Animal Health Monitoring System. Changes in the United States Dairy Industry, 1991–2002. Available at: https://www.aphis.usda.gov/animal_health/nahms/dairy/downloads/dairy02/Dairy02_dr_PartII.pdf. Accessed December 21, 2017
5. Overton M, Dhuyvetter K. Economic considerations regarding the raising of dairy replacement heifers. In: Large Dairy Herd Management. 2017;457-474. 10.3168/ldhm.0634
6. Kaneene JB, Hurd S. The national animal health monitoring system in Michigan. III. Cost estimates of selected dairy cattle diseases. *Prev Vet Med* 1990;8:127-140.
7. Sischo WM, Hird, DW, Gardner LE, et al. Economics of disease occurrence and prevention on California dairy farms: a report and evaluation of data collected for the National Animal Health Monitoring System, 1986-1987. *Prev Vet Med* 1990;8:141-156.
8. Aguilar I, Misztal I, Johnson DL, Legarra A, Tsuruta S, Lawlor TJ. Hot topic: A unified approach to utilize phenotypic, full pedigree, and genomic information for genetic evaluation of Holstein final score. *Journal of Dairy Science* 2010;93(2):743-752.
9. Data on file, January 2018, Zoetis Inc.

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