

The Net Merit \$ index will be revised for the August 7, 2018, genetic evaluation release. Some common questions about the revision are answered here, and further materials will be made available before the August release.

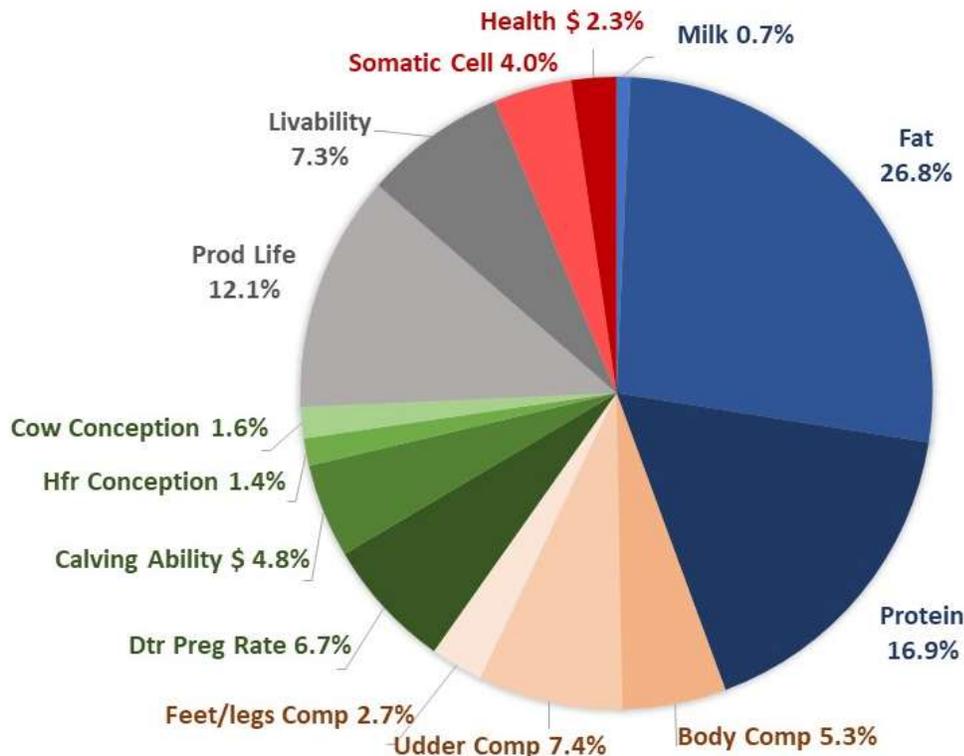
Why is Net Merit \$ (NM\$) being revised?

Net Merit is updated periodically to include new traits and to reflect prices expected in the next few years. This 2018 version marks the seventh update since the index was introduced in 1994. Initially, Net Merit included five traits, and the 2018 update will include 14 traits or sub-indexes that combine information from 35 individual traits. The evolution of NM\$ demonstrates the increased focus on research and adoption of new fitness and fertility-related traits, like Heifer and Cow Conception Rates (in NM\$ in 2014) and Livability (added in 2017). As these new traits have been incorporated into NM\$, the emphasis on yield traits has declined, helping to breed cows with improved health and reproductive performance. Also, since 1994, emphasis has shifted from milk volume to fat and protein yield, reflecting changes in milk processing and pricing.

How are the new CDCB health traits incorporated into NM\$ 2018?

Starting in August for Holsteins, NM\$ and three other CDCB economic indexes will include the six new disease resistance traits: clinical mastitis (MAST), ketosis (KETO), retained placenta (RETP), metritis (METR), displaced abomasum (DA) and milk fever (MFEV). These six traits, launched in April, will be incorporated in NM\$ through the new sub-index, Health Trait \$ (HTH\$), at a relative value of 2.3% for NM\$, 1.9% for Cheese Merit \$, 2.3% for Fluid Merit \$ and 2.1% for Grazing Merit \$. The new Health Trait \$ sub-index will not be published separately and is similar to the calving trait sub-index (CA\$). Relative emphasis on most other traits will be slightly reduced due to the addition of HTH\$; however, yield trait emphasis increased slightly and somatic cell score (SCS) emphasis will decrease greatly because of correlated health costs now assigned directly to HTH\$.

WEIGHTING OF TRAITS IN 2018 NM\$ (HOLSTEINS)



For relative values in Cheese Merit \$, Fluid Merit \$ and Grazing Merit \$, consult the [expanded AGIL article](#).

As CDCB health traits are only available for Holsteins, will NM\$ be revised for other breeds?

The NM\$ revision for non-Holstein breeds will be very slight and only impacted by economic value changes. Currently, evaluations for stillbirth and health traits are computed only for Holsteins. Because the incorporation of health traits is the major change in the 2018 NM\$ revision, other breeds should see very minimal change in Net Merit \$. The CDCB is committed to increase the data flow for other breeds to allow disease resistance evaluations and subsequent future updates to NM\$.

For Brown Swiss, relative values of the other traits each increase in all the indexes by a factor of approximately 1.02 because the emphasis on HTH\$ is excluded. For the remaining breeds, relative values of the other traits each increase by a factor of approximately 1.07 for NM\$, FM\$, and GM\$ and by a factor of approximately 1.06 for CM\$ because CA\$ and HTH\$ are excluded.

How does the 2018 NM\$ correlate to current Net Merit?

The 2018 NM\$ has a correlation of 0.994 for recent Holstein bulls, compared to current NM\$ ([VanRaden, 2017](#)).

Are there changes being made to NM\$ that are not related to the health traits?

Adjustments will be made to the relative economic value for each trait, with economic value defined as the added profit caused when a given trait changes by one unit and all other traits in the index remain constant. The economic value of a trait may change when other correlated traits are added to an index. The value of milk, fat and protein – as well as feed costs – will also be updated to reflect current economics. These values are updated based on information from USDA Agricultural Marketing Service and U.S. dairy industry experts.

How were the economic values of the health traits calculated?

Economic values of the six disease resistance traits were obtained as averages of two recent research studies. [Liang et al. \(2017\)](#) estimated direct treatment, labor and discarded milk costs for health disorders from veterinary and producer survey responses, and [Donnelly \(2017\)](#) obtained health treatment costs from eight cooperating herds in Minnesota. Also factored in were some yield losses associated with health disorders, which are not fully accounted for in published genetic evaluations for yield traits.

Who is responsible for the Net Merit update?

Maintaining an index that is as current and relevant as possible is truly a collaborative effort. USDA's Animal Genomics and Improvement Laboratory (AGIL) provides much of the research to update the NM\$ indices. CDCB applies that research to the routine genetic evaluations after the research phase is concluded and results have been tested, reviewed and accepted by representatives of the U.S. genetics and data recording organizations. Several university researchers have also conducted applied research and been involved with development of previous NM\$ revisions, and dairy industry experts provide helpful insights on income and expense formulas.

Where can I go for more details?

A detailed article has been authored by Paul VanRaden and John Cole of AGIL and Kristen Parker Gaddis of CDCB. Read more at "[Net Merit as a measure of lifetime profit: 2018 revision.](#)" Find resources [here](#) on the individual health traits launched in April 2018 by CDCB.