

Using All the Tools in the Toolbox to Breed Your “Ideal Cow”

Holstein USA provides a wealth of information to help breeders make informed decisions

More tools are available today than ever before to help dairymen breed their own version of a “perfect cow.” It may even seem overwhelming and difficult to know where to start. Holstein Association USA offers several products and services to help breeders achieve their goals, from simple tools, to more robust programs. No matter what your long-term breeding goals are, there are a few essential tools that every astute breeder should consider adding to their toolbox.

Investing in Quality Data

Genomic testing provides access to a wealth of information, and is especially valuable for young animals that have no phenotypic information of their own. The genomic prediction provides a more accurate evaluation of the animal’s transmitting ability, with reliability typically more than double that of traditional parent average predictions. From one DNA sample, genomic testing provides parentage verification, genetic evaluations for over 30 production, health and type traits, as well as results for several genetic conditions and unfavorable haplotypes. HAUSA has partnered with Zoetis to provide a powerful tool to help interpret your genomic predictions and put the information to work for you with **Enlight**[®] (www.enlightdairy.com), which provides a variety of reports and analytical tools. Access to Enlight is free as a benefit of genomic testing with one of the CLARIFIDE[®] genomic test products available from Holstein Association USA and Zoetis.



There are a few cases where genomic testing has obvious benefits – such as comparing full siblings and having the highest reliability evaluations available for animals you plan to flush. There are many other strategies being utilized by breeders across the country, helping them find a return on their investment in testing:

- For herds with extra replacement heifers – testing heifers in the group they are considering selling as a sorting tool to help ensure they are keeping the best group of females for their operation.
- For herds doing ET and IVF work, or looking to grow their herd internally – using genomic information to decide which females should be donor dams or bred to sexed semen, and which should be used as recipients or bred with conventional semen.
- Some herds implanting embryos are also looking at the genomic evaluations for fertility and calving traits of their recipients to be sure they are not putting valuable

embryos in animals who are genetically predisposed to have difficult calvings or high rates of stillbirth.

Identifying Sires That Meet Your Goals



HAUSA’s **Red Book Plus[™]** software is a powerful sire

selection tool, designed to help breeders identify bulls that meet their own custom sorting criteria. Whether you are looking for bulls who sire moderate sized cows with high feed efficiency and superior udders, or looking for those with breed-leading type and desirable fertility, Red Book Plus is an excellent resource. Learn more about this program on the HAUSA website, under Software on the main menu, or you can view several videos about the program on the HAUSA YouTube channel. It may be downloaded from the website, and is included as part of Holstein COMPLETE[®].

Addressing Inbreeding Concerns

Many breeders are concerned about the inbreeding levels of their herds, but with discipline and planning, there are tools available to help manage it. Here too, genomic testing can provide improved insight into the actual inbreeding values for your cattle. Even amongst full siblings, great variation can be seen in genomic inbreeding values compared to pedigree estimates.

Ex: Wide variation in actual inbreeding coefficients can vary even amongst full sibling groups.

| | Pedigree Inbreeding | Genomic Inbreeding | TPI |
|----------------|---------------------|--------------------|------|
| Full Sibling 1 | 6.5 | 3.9 | 1849 |
| Full Sibling 2 | 6.5 | 5.8 | 1879 |
| Full Sibling 3 | 6.5 | 7.0 | 1856 |
| Full Sibling 4 | 6.5 | 8.5 | 1822 |
| Full Sibling 5 | 6.5 | 10.2 | 1945 |

HAUSA provides a free **Inbreeding Calculator** that can be used to predict potential inbreeding values for the mating of one female and up to ten bulls. If both the female and sires are genomic tested, the calculator will provide estimates for both pedigree inbreeding and genomic inbreeding. Over 7,000 matings are run each month through the



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Inbreeding Calculator, and it can be found by following the link on the HAUSA homepage.



Mating software is an excellent tool to help manage inbreeding on a herd-level basis. HAUSA offers the **MultiMate software**, which combines genetic data with linear classification scores (when available) to quickly provide corrective matings for several animals, while minimizing inbreeding and avoiding mating carriers of undesirable haplotypes impacting fertility and other genetic conditions. MultiMate is bundled with Red Book Plus, can be downloaded from the HAUSA website, and is included with Holstein COMPLETE.

Traditional Tools Still Have Value

For breeders who use linear type scores for mating, and there is no better system to obtain that information than the HAUSA **type classification program**. Our team of skilled, unbiased professionals travel from coast to coast evaluating over 200,000 Holstein cows each year, analyzing twenty different linear type traits.

When many Registered breeders talk about classification, they often discuss the usefulness of final score for building pedigrees and marketing animals. While those are certainly worth mentioning, even more importantly, these classification scores are the basis for genetic evaluations for type in this country. After each classification, breeders receive several reports that provide benchmarking and may identify areas for improvement. Linear scores can also be imported into mating software programs such as MultiMate.

Staying Abreast of New Traits

A phrase we use often around the HAUSA office is “constant, never-ending improvement,” and even for the breeder who is at the cutting edge of embracing technology, there is always something new coming along to help refine your program even further. New traits become available each year, and it’s important to familiarize yourself with them. Of special emphasis in recent years has been health and fertility traits, including Cow Livability, which was featured in the last issue of the *Holstein Pulse*.

Other organizations are developing their own novel predictions for several new traits with the goal of giving dairymen the information they need to breed healthier cattle. A little over a year ago, Zoetis released their dairy wellness traits, which provides genetic evaluations for mastitis, lameness, metritis, retained placenta, displaced abomasum and ketosis. Those six traits are available along with the rest of the information provided by a genomic test with their CLARIFIDE Plus® product, available through HAUSA and Enlight. Learn more about the dairy wellness traits at www.clarifideplus.com.

Thinking About the Future

Many of you reading this have probably heard that HAUSA is embarking on a multi-year project to re-write our IT database system, which will ultimately allow us to provide more efficient service and offer new products to members. As we start down this path, we’d love to hear your feedback – what new products or services would you like to see from the Genetic Services department in the future? Feel free to send me a note any time with your thoughts – Lworden@holstein.com. 🐾

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