Council on Dairy Cattle Breeding

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CDCB changes to evaluation system (December 2017)

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Publication of AH2 – Second haplotype affecting Ayrshire fertility

by Daniel Null, John Cole, Jay Megonigal and Ezequiel Nicolazzi.

Starting December 2017, the CDCB will publish the second Ayrshire haplotype affecting fertility. The publication of this important information for the Ayrshire breed is possible thanks to the research led by AGIL researches and the cooperation with CDN, who confirmed the preliminary results obtained in the US population. Dan Null's presentation at ADSA2017 can be found **here**. AH2 information will be shared using the same value expression as all the other haplotypes published previously: 0 – not a carrier; 1 – carrier. Since this information is not typically shared in Formats 38 and 105, no changes will be applied to those formats.

Test run for health traits and GL evaluation on females

by Kristen Gaddis, Paul VanRaden, John Cole, Duane Norman, Leigh Walton and Jay Megonigal.

CDCB will share with nominators, breeds and DRPC preliminary test files (Format 38, Format 105 – where applicable -, genomic CSV and XML) for the upcoming official health trait evaluation in April 2018. These test files, that will be released one/two weeks after the release of the official triannual evaluation, will include the new 6 health traits (Hypocalcemia, Displaced abomasum, Ketosis, Mastitis, Metritis, Retained placenta). For more information please see here.

Please note that test files should not be shared to the public, used for selection purposes or to compare CDCB results with already available health evaluations, as these files will include only a subset of the phenotypic data that will be included in the official release in April 2018. Also note the NM$ in the test file will not include the health traits in the formula. The purpose of the test run is to provide partners enough time to adapt to the large change in formats and content. The test 105 files will also include the GL evaluation on females, officially published only for males until April 2018.

New phantom groups in productive traits for polygenic effect

by George Wiggans.

The investigation of the impact of the introduction of the exclusion of animals with unlikely paternal or maternal grandsires from getting a genomic evaluations led to the review of the unknown parent groups for polygenic effects for the genomic models currently used by CDCB. After extensive testing, the number of unknown groups in the polygenic effect component for yield traits was increased from 3 or 4 to 6 in all breeds, to more accurately represent the genetic trend for animals with partially unknown pedigree. This new unknown parent grouping in the polygenic effect component was introduce beginning with in the November 2017 genomic run.

Updates on composites in all breeds

by Paul VanRaden.

Definitions of udder and feet / leg composites for Holsteins were updated to match those introduced by Holstein Association USA in August 2017 (see **here**). Both composites now adjust for the correlated influence of stature, and the formula for udder composite now assigns intermediate optima to both teat length and rear teat placement. A new body weight composite for Jerseys was introduced based on American Jersey Cattle Association and University of Wisconsin research and was also applied to Brown Swiss because neither breed scores body depth. The formula assigns 28% of relative emphasis to stature, 28% to strength, 9% to rump width, and -35% to dairy form because thinner cows weigh less. The body weight composite as previously defined by Holstein USA is applied to Holstein and the other breeds.

Changes in age grouping for sire conception rate (SCR) on Holstein

by Duane Norman, Jana Hutchison and Jay Megonigal.

A change is being made in the way Holstein bulls are grouped by age for SCR. The relationship between age of bull and number of inseminations has changed substantially since 2008 when SCR was introduced. In 2008, most bulls had limited semen produced between ages of 2 and 4½ years. Today the majority of inseminations is from young genomic bulls, in that age range. Thus for the 2 to 4½ age range the number of groups has been increased to 3. At the same time, bulls 6½ years and older were reduced from the previous 5 age groups to 2 because there are fewer services from old bulls. This change will produce a relationship between age and SCR that resembles more closely a smooth biological curve, thereby producing SCRs that are slightly more accurate.

Excluding animals with unlikely grandparent information

by George Wiggans

Effective with the October 3rd, for genotypes loaded *after* that date, the CDCB has started excluding animals with an unlikely grandsire from getting either a weekly or monthly genomic evaluation. The introduction of this exclusion was delayed due to an extensive investigation of the impact on the evaluations of the animals that lose their dam information. This investigation led to a new definition of phantom groups for production traits in all breeds, as reported above. To assist nominators in adapting to this change, the genotype query was modified to support modification of either the animal's pedigree to change or blank a parent, or the parent's pedigree to change or blank its sire. The designation of a grandsire as unlikely was modified to improve it accuracy. The threshold of conflicts varies with the number of SNP on the chip and is affected by the presence of other bulls with similar numbers of conflicts.

Changes in web functionalities

by Rohith Shetty and Ezequiel Nicolazzi

In October 9th, CDCB completely renewed its web infrastructure. A new, more modern, website is now available at www.uscdcb.com hosted on a brand new underlying IT infrastructure. These changes, among other benefits, are the last of a series of ongoing efforts of the CDCB staff to improve collaborator's data security while improving user experience.

Evaluation results, files and statistics are now available in the menu named "What We Can Do For You". The password to the public files, previously shared in the general menu, are available in the "**Evaluation Results**" section, under the title: "Access to tri-annual public files PASSWORD".

Please note that all users are now required register to access CDCB queries (including those accessing the "Public queries"). The access is free and all queries maintain the same functionality. In order to register your account, you can go to the following link and click on "Request New Account". If you have questions or require assistance, please contact ezequiel.nicolazzi@uscdcb.com

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