New Agreement between USDA and the Council on Dairy Cattle Breeding

Frequently Asked Questions (FAQ) - 02/06/12

The Council on Dairy Cattle Breeding embarked on an investigation in 2009 to understand how new technologies would change the future of dairy cattle management and genetics. Its goal is to continue to keep the U.S. as the leader in dairy cattle management and genetics and that our nation's genetic evaluations remain to be the gold standard in the world.

What is the Council on Dairy Cattle Breeding?

The Council was formed in the 1980's to maintain communications among the A.I. companies, purebred breeders and the dairy records organizations. It works to insure the flow of dairy records submitted to USDA/AIPL for use in genetic evaluations. The group was more formally re-established in the 1990's and now has a nine-member board of directors; three representatives from NAAB, three representatives from PDCA and three representatives from the DHI system. The three representatives from PDCA are split whereby two representatives come from the Holstein Association USA and one representative from the other breeds that are PDCA members. Each representative on the board of directors carries one vote.

Why does the Council need a new agreement with USDA?

Two key factors make the new agreement necessary.

1. First and foremost, the USDA requested that we revise our current agreement. One of the factors is that the federal government and therefore USDA are looking to make significant budget cuts. The AIPL program at USDA, which is the unit responsible for conducting the dairy genetic evaluations, is funded through USDA's Agricultural Research Service (ARS) and is primarily a research laboratory. The AIPL program has been extremely successful. However, it often comes under fire from other livestock groups because some USDA-ARS research funds are spent on the service component of providing dairy genetic evaluations and USDA-ARS does not provide similar support for genetic evaluations in other livestock species. The new agreement resolves this inconsistency for USDA and the federal dollars going to support dairy genetic evaluations can be exclusively focused on research. To show that they take this serious, they will not allow staff to attend industry events until this is resolved.
2. To maintain the large volume of high quality information provided by the industry (i.e. a national database). Genomic evaluations require a substantial volume of data in order to provide U.S. dairy producers with high quality genetic rankings. Without a new agreement, serious inequities could develop between those producers, breeders and A.I. companies that help fund data collection efforts and those groups that would like access to the data without contributing to its collection. Thus, this action would encourage cooperation among producers and their organizations that are providing the data and allow the opportunity for the industry to grow the genetic evaluation database, improve its quality and ultimately increase the effectiveness of genomic evaluations.

Did industry go to ARS/USDA or did ARS/USDA approach the industry for a new agreement?

This question was asked to Dr. Steve Kappes Ph.D, Deputy Administrator, United States Department of Agriculture at the October 25, 2011, Council meeting. According to Dr. Kappes, *"We are experiencing budget cuts like other government agencies. No one from the industry has come to us or asked us to step aside or to take over certain responsibilities. Our charge is to conduct research and we are moving away from service."*

Why should registered and commercial breeders of Holsteins and Jerseys support an industry working together to insure a national dairy database?

The U.S. is long recognized as world leader in Holstein and Jersey genetics. It is the largest exporter of embryos, semen, and registered cattle. The USDA is long respected as having some of the finest genetic researchers in the world. They have had at their disposal, maybe the largest amount of high quality data to develop their predictions. To ensure this continues, it is critical that the U.S. work together to have the most advanced genomic evaluation system through large volumes of high quality data. To allow breeders to continue their global leadership in genetics the industry needs to be:

- Committed to cooperating to ensure long term availability of a national database assuring the scope for conducting accurate and innovative genetic and management research for the benefit of dairy producers.
- Committed to high integrity and quality of data.
- Committed to making the U.S. the world standard in genetic and management tools for dairy producers.
- Developing procedures to protect sensitive data provided by dairy producers. Dairy producers want to know how and where their data are used in a non-invasive manner to their business operations.
- Providing the opportunity for protection to Holstein Association USA and American Jersey Cattle Association members and other industry participants who provided data to develop this database from being exploited by breeders in other countries who have not provided any value to the database.

Is this a proposal or has the Council on Dairy Cattle Breeding taken action?
It is an action approved by the board of directors of the Council on Dairy Cattle Breeding at the May 11, 2011 meeting to move forward with negotiating and signing the new cooperative agreement.

Who is on public record as supporting this agreement?
The following organizations are in full support of this agreement: National DHIA and regional DHI affiliates, DRMS, AgSource, American Jersey Cattle Association (AJCA), National Association of Animal Breeders and its members.

How does the new agreement change the way the industry works with USDA to provide dairy genetic evaluations?
The previous Memorandum of Understanding between the Council and USDA, laid out provisions committing Council participants to provide data to USDA for use in computing genetic evaluations and that USDA would only accept data that was "quality certified" by the Council. USDA was entirely responsible for maintaining the national genetic evaluation, conducting genetic evaluation research, providing the service for computing the genetic evaluations and distributing them to the industry. The new Cooperative Agreement places the responsibility for the service component of the evaluations (maintaining the national database, computing genetic evaluations and distributing them to the industry) with the Council. USDA will continue to fund researchers to develop the methods used for ensuring that data added to the database is of high quality and to maintain and improve genetic evaluation methods. USDA will continue to provide buildings and equipment to support dairy genetic evaluation needs.

Will this agreement create any changes with possible extensions with the current contract with the NAAB and USDA/ARS?
No, ARS has stated that agreement will cease in 2013 and there will be no extensions regarding the exclusivity on male evaluations.

What new financial responsibilities does the industry accept with this new agreement? –
The working committee of the Council identified and provided a budget for consideration by Council members that recommended the funding of three positions. The following is a suggestion of the committee of the additional positions needed.

- Two scientists
- One administrative person

Currently NAAB funds one of the scientist positions on its own.

How was the concept for the new agreement developed?

In October 2009, in a motion by John Meyer, CEO of the Holstein Association USA, the Council on Dairy Cattle Breeding appointed the Dairy Data Working Group (DDWG). The overall goal for the DDWG was to assure that high quality genetic evaluations for the U.S. dairy industry would be available well into the future. Specifically the DDWG was assigned to identify data needs of the future, determine the best service structure to secure the data, calculate and distribute genetic evaluations and to determine the best way to allocate the financial responsibilities. The DDWG included two representatives from the following industry groups:

DHI:	Mr. Jay Mattison – National DHI	Mr. Mark Adam – Northstar Cooperative/DHI
DRPC:	Dr. John Clay - DRMS Raleigh	Mr. Pat Baer - AgSource
NAAB:	Dr. Marj Faust - Genus	Mr. Chuck Sattler - Select Sires Inc.
PDCA:	Dr. Tom Lawlor - Holstein USA	Mr. Neal Smith - American Jersey Cattle Association
Academia:	Dr. Bennett Cassell - Virginia Tech	Dr. Kent Weigel - University of Wisconsin

The group met throughout 2010 and into the early part of 2011. In addition, they periodically had discussions with AIPL researchers and USDA administrators. Progress reports from the DDWG were presented at the April 2010, October 2010 and April 2011 Council on Dairy Cattle Breeding meetings. A new agreement with USDA was part of the recommendations from the DDWG delivered to the Council on Dairy Cattle Breeding.

What is the authority of the Dairy Data Working Group?

The dairy data working group has no authority to speak for the Council, make binding relationships or commitments on behalf of the Council on Dairy Cattle Breeding. It is only a committee of people appointed by the Council and the respective members that they serve.

Was this work transparent?

Yes, minutes were kept at each meeting. Reports were given both written and orally at each Council meeting providing this information to all segments of the industry. Most farmer directed member organizations like DHI, breed associations, and A.I. cooperatives were encouraged to give reports on these and other Council activities to their farmer-directed boards.

What other recommendations were made by the DDWG?

In addition to developing a new agreement with USDA, the DDWG also recommended forming a new organization or committee to be called the Dairy Data Alliance (DDA). The DDA would employ one administrative staff person in addition to the two staff people assigned to work at AIPL providing genetic evaluation services. Oversight would be managed by the Council on Dairy Cattle Breeding. The DDA would ultimately be responsible for carrying out the genetic evaluation services and to develop and implement methods to equitably distribute the financial responsibilities of servicing genetic evaluations to those that use the services. The goal is to distribute some of the expenses to those that are currently not providing data into the system. The DDWG recommendation to form the DDA has not been acted upon by the Council.

Did dairy producer from the various sectors of the industry provide input?

Three of the nine members of the Council on Dairy Cattle breeding who voted on this were dairy producers. In the other situations, these decisions were made by management from each organization with a commitment to share this information with their boards. YES, all sectors were at the table. Minutes of each session were provided to all participants. Management of each sector was provided with this data. It was up to management of the various

industry partners to communicate this to their controlling boards for feedback and review. Jersey, National DHI board representatives, state or regional DHI's, Accelerated Genetics, Select Sires Inc. and DRMS boards were informed for input. Other parties had not commented on this area.

Were there efforts made behind the scenes to address the Holstein Association's questions and concerns to NAAB regarding parentage verification and the Dairy Data Working Group?
Yes. Upon learning concerns in October 2010 a discussion took place and in January of 2011, NAAB extended an invitation to Holstein Association USA's CEO John Meyer to arrange a meeting between the NAAB Executive Committee and Holstein Association Board representatives.

How much did industry partners invest in the USDA Genomic Selection project?

- The Cooperative Dairy DNA Repository (CDDR), American Jersey Cattle Association, Brown Swiss Association and New Generation Genetics provided all the DNA of progeny-tested bull used in this project. These members coordinated and invested in the progeny testing of these sires that provided the foundation for the research.
- NAAB along with Semex invested $250,000 in funding the project directly. The Brown Swiss Association contributed an additional $15,000 towards the original testing of the Brown Swiss bulls. This funding was used to form the key genotype database for developing genomic selection methods.
- In addition, $337,000 was paid by individual NAAB members up front for genotyping additional A.I. sires. This data was not used in the original development project but provided additional scope to expand the industry leading accuracy of genomic evaluations and encouraged early adoption.
- The Holstein Association provided $15,000 to fund a post-doc position for genomic selection project.
- The Holstein and Jersey Association each paid $50,000 for SNP50 genotyping of selected cows. This genotyping was not needed for genomic selection project. It provided exposure to genomic evaluations to its members but added very little information to conduct research or improve accuracy of the evaluation.

Who is CDDR and how was it founded?
The Cooperative Dairy DNA Repository (CDDR) is an extension of the Dairy Bull DNA Repository (DBDR) started at the University of Illinois in 1993 to conduct genetic research for recessive and genomic research. CDDR contributors are A.I. organizations that provide semen to the CDDR for all their bulls as they enter into progeny testing each year, or that are in active commercial service and which have signed a Memorandum of Understanding with the USDA identifying them as such. Each Contributor must submit 10 straws from each bull they progeny test. Current contributors are ABS Global, Accelerated Genetics, Alta Genetics, Genex/CRI, Select Sires, Semex, and Taurus Service. At the start of the genomic project, several sires were added to the collection to improve the robustness of the research.

The purpose of the CDDR is to 1) collect dairy semen, DNA, or other tissue samples from all bulls entering progeny testing, maintain an ongoing inventory of these samples, and distribute samples to research laboratories for the purpose of genomic research in dairy cattle, 2) provide a single entity for collection, storage, and distribution for blood, hair, other tissues or DNA from dairy cattle, and 3) collect all data on CDDR animals and other relevant animals and distribute that information to the contributors and data analysis collaborators, according to the terms of the Memoranda of Understanding between the USDA and semen Contributors. The primary objective of this effort is to characterize the cow genome; likely outcomes include: identification of genetic markers, quantitative trait loci (QTL) and any other polymorphisms associated with genetic variation for traits of interest to the dairy cattle industry, and whenever relevant integration of this genomic information into national genetic evaluations.

Currently more than 31,000 bulls are in the CDDR inventory compared to 18,000 bulls three years ago.

How is the organization structured and how it is related to NAAB?
The CDDR Steering Committee governs the CDDR and consists of one representative of each Contributor, the CDDR Coordinator and an NAAB staff member (ex-officio, non-voting). The CDDR Steering Committee votes on contributors and collaborators, establishes and reviews on a periodic basis the procedures for storage, handling, inventory, and distribution of all semen, tissue, and DNA samples, and for access to the data contained in the CDDR databases.

The CDDR Coordinator is a research scientist from USDA-ARS-Beltsville, designated by USDA, responsible for maintaining the materials and associated information in the CDDR, maintaining the CDDR database and keeping it current. The Coordinator is also a Collaborator, which makes USDA-ARS-Beltsville a Collaborating Institution bound by the terms and conditions of the Collaborator Agreement.

The Steering Committee may consider new Contributors which are A.I. organizations willing to provide semen to the CDDR for all bulls as they enter into progeny testing each year, or that is in active commercial service and must have a signed Memorandum of Understanding with USDA**.**

Six of the seven current CDDR Contributors are NAAB Regular Members with the other being Semex. NAAB provides administration and coordination services for the CDDR.

What is the decision body and process?
CDDR Steering Committee is the decision making body with each committee person having one vote.

How will the CDDR function with the Council:
As the administrator for CDDR, NAAB on behalf of the CDDR will have an MTA (contract) with the CDCB providing CDCB access to the CDDR genotypes for use in calculating U.S. genomic evaluations.

Is it true that the CDDR has recently begun collaborations with Italy and the UK to conduct additional genomic evaluation research?
Yes. Collaboration agreements have recently been signed with ANAFI, the Holstein genetic evaluation center in Italy, and DairyCo, the entity responsible for genetic evaluations in the UK. The agreement is that each country will share its database of genotypes on A.I. sires with the other countries for use in calculating genomic evaluations. The benefit of this exchange is that it will immediately add over 3,600 SNP50 genotypes on proven A.I. sires that we can add to the predictor group of animals that serve as the basis for U.S. genomic evaluations. This will broaden and improve the accuracy of U.S. genomic evaluations and keep the U.S. genomic evaluations the leader of genomic evaluations provided in other countries. Italy and the U.K. will also contributed resources to genotype over 4,000 ultra-high-density SNP chips to that will enable the U.S. to move forward with new research to increase the accuracy of genomic evaluations even further. For the benefit of the U.S. breeders, the industry is working aggressively to make the U.S. evaluation the global standard and ensuring U.S. producers the finest tools to make genetic progress available in the world.

Why was this done?
To improve and expand the level of reliability for U.S. genomic evaluations, expand the robustness and breadth of pedigree diversity on behalf of breeders and to utilize the newest high density SNP chips for these evaluations.

Are other agreements being discussed?

Yes, CDDR and the American Jersey Cattle Association are in discussion with Denmark to double the size of the Jersey population for genomics. Also, the Brown Swiss Cattle Breeders Association is in discussion many other countries about a type of global consortium for Swiss.

When will Holstein breeders in the Italy and the U.K. receive direct access to U.S. gPTA values for genomic-tested males?

Breeders in the Italy and the U.K. will have the same restricted access to male gPTA values as breeders in the U.S. and Canada until 2013.

Why were other countries not sought?

CDDR was waiting until the industry united so that all parties could be at the table.

How is the industry working to develop a business structure to provide service and secure our industry leading management and genetic research program for U.S. dairymen long into the future?

The Council has formed a business development group of six individuals representing the four sectors of dairy industry. Those members are: Mr. Jamie Zimmerman, DairyOne; Mr. Jay Mattison, National DHI; Mr. John Meyer, Holstein Association USA; Mr. Neal Smith, American Jersey Cattle Association; David Thorbahn, Select Sires; and Mr. Doug Wilson, CRI. The purpose of this group is to build a service model that will allow the industry to work together for the benefit of the producers in an efficient and proactive manner.

Has this group met yet and if so what have they accomplished?

This group has met face to face three times and has had one additional teleconference.
The group established the goals listed below that the business structure should accomplish.

1. Assure producers the data used was done so with permission granted by the producer who paid for the data.
2. Encourage genomic testing of males and female dairy animals.
3. Encourage the genetic progress of the U.S. dairy herd.
4. Complete fairness to all participants.
5. Long term stability of the data base for the benefit of producers.
6. Honor the service requests made by the USDA.

It has considered several alternatives business structures and ways of financially supporting the services provides. It is currently working out the details on a couple of the most promising ideas so that the one can be recommended to the Council in April. The plan is to select the plan that most nearly address the goals listed above and maximize the use of this data and secure it long into the future for U.S. dairy producers.

When can the industry expect the recommendations from this committee for the Council and producers consideration?

The Council is expecting a formal proposal from the committee for the meeting in April 2012. These recommendations should be followed by a release of the recommendations for the Council members to take back to their respective farmer-owned businesses for input as to whether this is in the best interest for U.S. dairymen. The request of this committee is for a review of this information to be placed on Council member websites and for a release to be circulated for to most dairy magazines. This will allow the opportunity for dairy producers to provide input upon the recommendations so that revisions and a final decision can be made on this issue. Once completed and accepted the expectation is that a new agreement with the USDA-ARS would be signed as well.