

PACE AND GENOMICS: Q & A

Since the official release of Genomic proofs in January, there have been numerous questions floating around about how Accelerated Genetics will handle the PACE young sire proving program and how genomics really affects the A.I. business. Accelerated Genetics thought it would be a good idea to address some of these questions and provide the solid answers from Dr. Ole Meland, Vice President of Genetics at Accelerated Genetics and Dr. Mike Cowan, Vice President of Research at Accelerated Genetics and General Manager of Genetic Visions, Inc.



MELAND



COWAN

reaping the benefits and Accelerated Genetics will have an even greater return to active service. Accelerated Genetics firmly believes in validating what the genomic research has shown, by continuing our PACE young sire program. Young sires will continue to go through our PACE program, randomly sampled by herds all over the United States.

Further, Accelerated Genetics genomically tested all proven sires in the Holstein and Jersey breeds. This policy was initiated so that our sire's evaluations would be more accurate and to help better manage our bull populations. PACE customers are already benefiting from genomic testing and selection.

Q: Is Accelerated Genetics going to continue having PACE young sire herds?

A: Our PACE program is the backbone of our company and it will continue to be an important program in proving our genetic strength. Putting our 'PACE Proven' logo on sires that graduate from our program is a standard. At this time, we plan to continue to offer our high standard of reliable proven sires for our customers.



Q: What is different about the PACE program today?

A: Today, the PACE program is better than it was a year ago, as more value has been added to it through our genomic testing of all Holstein and Jersey young sires before they enter the program. Thirty-four percent of the young sires have already been culled prior to sampling due to low genomic proofs. Thereby increasing the overall genetic value of all PACE young sires. PACE herds are

Q: What do customers receive if they are in the PACE program?

A: Customers involved in the PACE program receive many benefits. First they get the best future genetics today, thus accelerating the genetic levels in their herds. And they receive credits for the information they provide for the program. Further, with Accelerated Genetics having one of the best young sire graduation rates in industry, these customers have the satisfaction of knowing they contribute to this success by participating in the program.

Q: Are PACE young sires being selected differently?

A: We have also incorporated the use of genomic scanning for acquiring young bulls for our PACE program. Meaning we are selecting sires with the highest quality genomic proofs while keeping a diversified pedigree. With the help of genomic testing we will continue to be selective when we bring in sires and it is another tool that we use in sourcing the best genetics of the future. Overall, the PACE herds will have the advantage of much better genetics due to removal of bottom end bulls prior to sampling.

Q: What is the difference between PACE young sires and GeneFORCE™ sires?

A: GeneFORCE is a group of genomically superior young sires. The GeneFORCE sires are an elite group of young sires that have already been sampled through our PACE program. Producers can use GeneFORCE sires with confidence. The young sires' information now includes a combination of genomic and traditional summary data. This increases the reliability of the young sires information and gives a more accurate estimation of each sire's true transmitting ability.



Q: What is the approximate reliability for bulls with a genomic only proof?

A: Expect most young Holstein bulls with genomic proofs to range between 62 and 72 percent reliability for all traits. Jersey young bulls will be a bit lower in reliability.

Q: Are GeneFORCE bulls being used as sires of sons?

A: Yes, Accelerated Genetics is currently using GeneFORCE sires as sires of sons for a small percentage of our matings. Our sire selection program incorporates many traits combined together in a customized selection index which includes production, type and management traits.

Q: Where does Accelerated Genetics conduct their genomic scanning?

A: All of our sires are genomically scanned through Genetic Visions, Inc., Accelerated Genetics research subsidiary, located in Middleton, Wis. Once the genomic scan data is complete, the raw data is forwarded to the USDA where they transform the information into genotypes using their reference populations. The USDA then uses a subset of genotypes to calculate a Genomic PTA for each of the 29 traits presently listed.

Genetic Visions, Inc. has been leading the industry in bovine research since 1988. Genetic Visions recently achieved Illumina's CSpPro Certification for Infinium Whole-Genome Genotyping. While this certification is not required for a lab to conduct genomic scans, the certification demonstrates that additional steps are in place to maintain quality assurances. At present there are three commercial labs in the United States conducting bovine genomic scans.

Further, Genetic Visions is the only research lab with extensive records and blood work of bull dams existing prior to 1996. This crucial information helped the USDA complete the genomics evaluations now adopted by the rest of the industry!

Q: Can producer's get there own Holstein or Jersey animals genomically tested?

A: Currently, only NAAB members can receive Genomic PTAs for males, but dairy producers can test and receive Genomic PTAs for all females. Most females are tested through the Holstein Association USA or the American Jersey Cattle Association. At present the Holstein and Jersey breeds are the only dairy breeds with genomically scanned reference populations large enough to provide Genomic PTAs. Once DNA from a cow or heifer has been scanned, information converted into genotypes and Genomic PTAs calculated, the breed association provides the owner with the results and publishes the results on an official pedigree.

In closing, further research at the USDA and Genetic Visions will increase the reliabilities of future sire evaluations and further uncover the bovine genetic map, continuing genetic progress at an increasing rate. Accelerated Genetics and Genetic Visions are dedicated to continuing research dedicated to the discovery of genetic selection or omission tools to advance genetic progress for cattle producers around the world. Accelerated Genetics will continue providing the best genetics available through the PACE young sire sampling program and GeneFORCE elite genomic young sire groups.

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