

Key Factors to Producing Top Genetics

Paul Trapp:

'Access to Cutting-Edge IVF Technology and Top-Ranking Pre-Release Bulls.'

American Paul Trapp works as a Product Acquisition Specialist with Canadian company Semex and has had over 20 years experience in the AI industry. HI spoke with Trapp about developments at Semex, and discussed factors involved in the successful implementation of genomic selection.

📺 DOUG SAVAGE 📺 KANYON TENNESON

Yes, Progenis Fortune has been one of our most successful sires of sons of recent times. He combines an outcross sire stack of Octoberfest-Tango-Epic with a pedigree tracing through 10 generations of VG or EX to Dellia,' explains Trapp. 'I recently saw two maternal sisters to Fortune that are performing really well at Leaninghouse in New Mexico. One is VG and the other is EX in her second lactation. At Semex we have many of his best sons including Discjockey, Fullmarks, Emerald, Embellish, Grandprix and Hemingway.'

JUDGE

Paul Trapp has judged cattle in 10 different countries around the world and is a 5-time judge at the World Dairy Expo. Paul and wife Sarah, along with sons Kole and Beau, own an elite group of Brown Swiss, Jerseys and Holsteins, and he is also a partner in Pit-Crew Genetics, which has received 32 Brown Swiss All-American nominations since 2007. Given his enthusiasm for the show ring, it is no surprise to learn that Paul is a fan of Doorman, though as he points out, as an Immunity+® sire, Doorman is also popular in commercial herds too. 'Other proven type bulls including Byway, Solomon, High Octane and Unix remain popular due to their success in the show ring,' Trapp mentions. 'And among our genomic type sires at present would be Crushabull, Hanket, Mafia, Drifter Kendal and Sidekick.' Indeed, Unix continues to be the top selling proven sire at Semex, alongside Lautrust and Impression, while the most popular young bulls include Bloomfield, Sidekick, Yamaska and Cardinals.

QUICKLY

At the time when genomics arrived on the cattle breeding scene ten years ago, Holstein

populations in many countries were clearly catching up after many years of North American dominance. At the time it could have been anticipated that genomics would help identify top bloodlines in many different countries and would make for a more level playing-field. However, as the genomic era unfolded, it seems the North American bloodlines have become even more influential on the international scene. What's been the main factors involved in that? 'North America has always been home to a high percentage of the best genetic seedstock the world has to offer. Many of the North American studs and breeders very quickly adapted to genomics, and they quickly found ways to implement it in their herds to produce seedstock,' comments Trapp. 'North American studs and breeders have access to cutting-edge IVF technology and top ranking pre-release bulls. These are two of the key factors in making top genetics for the next generation.'

EXCLUSIVITY

With the pre-release semen, how do breeders react to availability of the very top young bulls being restricted initially? 'Most of our young bulls are the result of pre-release semen, but we do add some free agent bulls to top off and diversify our product offering. The industry has used pre-release semen for a number of years now and breeders understand its role in creating the next generation,' points out Trapp. Some bulls in the market are now only ever available in sexed semen. How effective do you expect that to be in creating exclusivity of bloodlines for the owning studs? 'The purity of sexed semen is somewhere around 90% so males will be in the general population even if sexed semen is all that is available on a certain bull. Sexed semen certainly restricts bloodlines from

entering global AI product offerings, however, Semex and others will often focus on females from these bulls to bring those bloodlines into their programs via maternal lines.' So it would appear that in this fast paced genomic era, attempts to "corner the market" are likely to have only limited effect.

PROGENESIS

The Semex program brings around 330 young bulls to the market each year, including 250 Holsteins, 60 Jerseys and 20 from Ayrshire and other breeds. In the selection process, each year Semex genotypes over 3,000 bull calves in Canada, the US and Europe. 'We feel that the quality of the young bulls we're testing is every bit as important as the total number,' remarks Trapp. Semex markets these genomic bulls as Genomax sires, and while sales vary from coun-

ELEVATE LAUNCHED

Trapp mentioned the Elevate program which was launched in 2018. 'Elevate streamlines the tissue collection and submission process for genomic testing, thereby encouraging the testing of more females in the population,' explains Trapp. The program works with the Semex Solutions app to deliver results right to a cell phone, and gives fast, easy access to female genomic information to help make more accurate matings, correct parentage errors, manage inbreeding, and also includes Immunity+ results.



Paul Trapp: 'We will see a mixture of public and proprietary genetic information presented to clients.'

'Customers really see a difference in their Immunity+ sired calves'

try to country, overall around 60% of Holstein sales and over 80% of Jersey sales are from Genomax bulls. The Semex heifer program – Progenis – supplied 40-45% of the Holstein bulls last year, and it is expected to continue at that level for the coming years. Not all bulls are kept alive till they receive their daughter proof. 'Bulls are evaluated after each official proof run for their genetic and semen making capabilities. Bulls that have significant changes are removed from the program at each proof run,' explains Trapp. 'Market demand and genetic level dictate how long bulls remain in stud.'

SELECTION

A diverse group of factors is considered in the bull selection process. 'Semex sells semen in 80 different countries so we need to supply a product that can perform well under different milk pricing and management systems and fulfil different genetic needs,' continues Trapp. 'We look at the entire genomic profile of each bull. The LPI, TPI, NM, PFT, PLI & RZG are all indexes we use in the decision-making process. However, genetic selection reaches far beyond composite indexes. Productivity, fertility, efficiency and disease resistance are the cornerstones of a long and productive life for dairy cows and

these are our focus traits. If you have industry leading figures for these traits then the composite evaluations like the LPI, TPI, RZG and others will be globally competitive.'

IMMUNITY+

Of recent years genomics based testing to improve the health of animals has been adopted by a number of studs, with Immunity+ being the system used at Semex. 'Immunity+ is a game-changer,' comments Trapp. 'The heritability is 30%, and Immunity+ sired daughters have 12% less disease than herd-mates. About 20% of our product offering are Immunity+ sires and they account for 35% of our sales, so our customers are making a strong statement. Customers really see a difference in their Immunity+ sired calves, being healthier and moving through their calf raising systems more easily. Once in the milking pens, Immunity+ sired cows have less mastitis, lameness and mortality and produce higher quality colostrum. We are collecting data on multiple generations of Immunity+ use and the find-

ings are extremely favorable. Our scientific research into high immune response continues, and in 2018 we launched a genomic ranking for immune response for females through our Elevate program.'

MIXTURE

Other genomics-based health tests are now becoming available at other studs too. Is there a likelihood that we could see bull studs developing their own in-house proprietary genetic evaluations in place of the current national evaluation systems? 'We are seeing more and more commercial dairies globally incorporating genomic testing into their herd improvement strategies,' responds Trapp. 'Our Elevate® program launched last year aims at encouraging more animal testing. As the industry evolves I expect we will see a mixture of public and proprietary genetic information being presented to clients on farm.' ●