



HAPPY TO BE BACK WITH DNA GENETICS

Every summer job Steve Illick had while growing up in Ontario, Canada had something to do with agriculture. When he finished high school he planned to head off to the Ontario Agriculture College at the University of Guelph in the fall. But first, he decided it would be a good idea to try a job in another industry to get some experience doing something different. That summer he moved to the largest city in Canada, Toronto, to work at an investment bank. Twelve years (and plenty of life experience) later, he finally traded in the suits he wore for his job in the finance sector, for a pair of coveralls and 250 sows.

"My wife and I bought our first farm in 1992 and we built our first barn in 1996," says Illick. He continues, "We started off as a 250 sow farrow-to-wean multiplier. Two years later we expanded the sow herd to 1350 head and signed a contract to be a weanling producer for a loop with a feed company in Ontario." Illick became a fully independent farrow-to-finish producer in 2003 and he switched to DNA Genetics shortly after becoming an independent producer. "We traveled down to Nebraska to see their system and we were impressed with the



maternal productivity," says Illick. He continues, "At the time we switched, we were weaning around 25 pigs per sow per year. Just over 5 years later, we broke through the 30 pigs per sow per year barrier."

Illick has always maintained a closed herd since beginning as a multiplier in 1996. The sow herd keeps an inventory of 85-90 purebred Landrace sows that are crossed with DNA Genetics' Large White line. Landrace replacements are raised in-house, along with the F1 replacements in isolated nursery and finishing facilities. When asked about selection criteria Illick states that his process is very simple, "We do count teats at weaning

and we always try to breed gilts for our Landrace replacements to reduce genetic lag. Beyond that, I trust DNA Genetics to deliver genetic improvement through the maternal line semen."

The genetic potential of DNA Genetics maternal lines coupled with good management on the part of Illick and his team have helped Gilt-Edged Farms, Inc. to realize some great productivity statistics in 2013. This incredible production has allowed Illick to reduce his sow herd to around 1200 sows while maintaining the same pig flow, reducing his overall costs without lowering revenues.



Left to Right: Ryan Maginnis, Dora Martinho, Camilo Amayo, and Kevin Eels.

Continued on page 2...

Farrowing Rate	91%
Born Alive per Litter	13.2
Pre-weaning Mortality	8.72%
Average Weaning Age	18.1 days
Litters per Year per Sow	2.52
Pigs Weaned per Sow per Year	31.0

When Illick started with DNA Genetics in 2004 he used their terminal Duroc line and while he was happy with the performance, he switched to a competitor a couple of years ago. "We switched because the competing company claimed that we would achieve superior grow finish performance versus the DNA Genetics terminal line," says Illick. He continues, "It was true that there were slight improvements in both feed conversion and growth rates but one very important factor brought me back to DNA Genetics. The competitor's pigs had good performance but they just couldn't stay alive. It seemed like any stressor would knock the pigs back. It was not uncommon for us to have a finishing crop with 8%-9% mortality." Illick and his team tried everything to try and correct the problems, "We implemented every change suggested by their technical team but nothing seemed to correct the problems we were having. We are happy to be back with DNA Genetics."

The early results with the DNA terminal line are encouraging. The first quarterly results are in and Illick is happy with the outcome:

Target Carcass Weight	103 Kg (213 lbs.)
Average Daily Gain	915 grams/2.02 lbs. per day
Feed to Gain	2.55
Nursery Mortality plus cull	1.5%
Finisher Mortality plus cull	3%

Illick has a longstanding relationship with the swine nutrition team at Kansas State University to provide his farm with independent nutritional consulting. He feels that this relationship has served him well, allowing him to keep his costs down while having access to some of the best nutritionists in North America. "In my opinion K-State is a leader in independent nutrition services, they don't over-formulate diets and they have an extensive research program to back up

their work," says Illick. He continues, "When we combine the nutritional services of K-State with the complete DNA Genetics package the result is a very competitive cost per Kg of gain, and at the end of the day cost of gain is one of the most important metrics for making decisions."

Illick couples the good performance of the farm with a disciplined approach to risk management to create a very strong business model. Illick's past work as a fixed income trader for large investment banks, gave him a level of familiarity with financial markets, which in turn gives him confidence when making risk management decisions. "The best traders I knew hammered home that no one outsmarts the market, in fact, the best people I knew in Chicago were not even right 50% of the time," says Illick. He continues, "The most

"I enjoy working with cows but at the end of the day it is the pigs that pay the bills."
Steve Illick

successful traders knew when to cut their losses and when they did happen to be right, they let it run. I try to use this principal when it comes to risk management."

Looking ahead, Illick is optimistic that feed prices have found a new plateau. The well-seasoned risk manager thinks that corn prices have found a stable trading range at current values and the role of alternative feed ingredients will continue to help keep costs down. Illick also sees good lean hog values lasting for much of 2014.

The Illick family's newest venture is a foray into the dairy business. Illick, and his wife Lorna, have two children, Katie, 17, and Charlie, 15. Both children are active in 4-H showing dairy cattle.

Illick jokes that the dairy operation is a 4-H project that got out of control, "We were keeping heifers and calves in a driving shed, until 2010 when we built a new barn with a robotic milker and today we are milking 35 registered Jersey cows." While Illick maintains the day-to-day responsibilities of the dairy barn, he is quick to point out that it is a sideline business, "I enjoy working with cows but at the end of the day it is the pigs that pay the bills."



GENETIC ADVISORY PANEL WEIGHS IN ON THE DNA GENETICS NUCLEUS PROGRAM

Since its beginning, genetic improvements in DNA Genetics nucleus populations have paralleled rates of improvement in nucleus populations in Denmark. This occurred because a significant proportion of sows in US nucleus populations were inseminated with semen from elite boars in Denmark and performance testing in US populations was for the same traits recorded in Denmark, except for feed intake.

In October, 2013, DNA Genetics announced that in the future the genetic program would be run independent of Denmark. In anticipation of this separation, two of us (Garrick and Johnson), as consultants, were asked to review their program and make recommendations for changes needed to ensure genetic gain in the US populations could continue at rates equal to or greater than those currently being achieved. At that time, feed intake data were recorded only in Denmark. Improvements in US populations occurred through imported semen of elite boars and selection on traits recorded in US herds. Data captured in the US were transmitted to Denmark for joint analyses using US and Danish pedigree and phenotypic data. EBVs were transmitted back to the US for use in selection decisions. Indexes were the same as those used in Denmark. These procedures produced significant rates of genetic improvement that were realized by North American customers.


During the review, we identified two critical changes needed to ensure the same or greater rates of genetic change could occur in the DNA Genetics nucleus populations if there was complete separation from the Danish populations. These were 1) developing an information technology (IT) program by which performance and pedigree data could be easily and accurately captured, securely stored, and readily accessed and analyzed for selection and management decisions, and 2) installation of individual feed intake recording equipment at US testing sites. We also recommended that procedures to collect genomic data be added to the program and that the economic weights used in selection indexes be reviewed to better reflect North American costs and prices.

In November, 2013, we met with DNA Genetics to review the changes made and to assess whether the program now in place can produce similar or greater rates of genetic improvement to those previously realized. The changes now in place are:

1. A database (HELIX™) developed in collaboration with a company experienced in managing large amounts of information is in place. This database interfaces with on-farm software to record pigs (soon using bar-code ear tags), record pedigree and performance data, manage inventories at sow farms, performance test sites, and boar studs, record EBVs, indexes, and genomic data, conduct in-line quality control and error correction, and securely store all

information. The data are readily accessible by geneticists at DNA Genetics for timely analysis and for use in selection decisions.

2. Construction of a new InSight™ Performance Center with FIRE™ (Feed Intake Recording Equipment) equipment to test feed efficiency on over 8,000 boars annually, more than currently tested in Denmark.
3. Addition of another well-trained PhD geneticist to the staff to facilitate implementation of an independent program.
4. A tissue collection and storage system so that in the future genomic data can be readily obtained, evaluated, and used in genetic evaluations.

DNA Genetics has three nucleus populations (two maternal and one terminal) at five sow farms with approximately 1200 sows in each population. Performance testing occurs at four sites, with one equipped for recording individual feed intake of boars. Sufficient data recording and storage procedures are in place for analyzing data for genetic selection. Based on this, DNA Genetics has the capability to achieve selection intensities, accuracies of selection, and generation intervals that can produce rates of genetic progress equal or greater than those previously realized by the connection with Denmark. DNA Genetics has a well-trained staff of geneticists capable of independently running a genetic improvement program. The nucleus populations are closely linked with large multiplier and commercial sow herds and plans are being developed to use data from those herds to enhance accuracy of selection for maternal traits. With the program in place and plans for the future, DNA Genetics is positioned to independently run a genetic improvement program that can produce rates of improvement as great, or greater, than those realized previously. 

Dr. Rodger Johnson
Omtvedt Professor Emeritus
Animal Science Department
University of Nebraska

Dr. Dorian Garrick
Lush Chair in Animal Breeding & Genetics
Department of Animal Science
Iowa State University

Dr. Jack C. M. Dekkers
C.F. Curtiss Distinguished Professor
and Section Leader of Animal Breeding and Genetics
Department of Animal Science
Iowa State University

DNA GENETICS CELEBRATE 10 YEARS OF EXCELLENCE!



Brett Bonwell



InSight™ Performance Center

DNA Genetics will be celebrating its 10 year anniversary in January of 2014. Even though our name has changed, we are still the same people with the same genetics. We continue to be committed to being the best supplier of swine genetics to pork producers worldwide.

Commitment – DNA Genetics has grown from a start-up venture in 2003 with little customer base to becoming the second largest supplier of swine genetics in the U.S. and Canada. We have done this by establishing a substantial North American base of Danish genetics. Our AccuGain™ genetics program, at the same time, has produced yearly genetic improvement, second to no one during these 10 years.

Our newest commitment is our InSight™ Performance Center that will test over 8,000 boars annually on FIRE™ (Feed Intake Recording Equipment) to move our industry leading feed efficiency to a new level.

Best People – I am privileged to work with the best team of people in any industry at DNA Genetics. Our team is committed to producing, selling and servicing the best product to our customers. They truly exemplify what teamwork represents.

Quality drives our team. We all work hard so that the animals are healthy, genetically superior, perform in your system, and that you have seamless interaction from our team of professionals. We live by three business principles:

- Do what is right
- Do the best you can
- Treat others the way you want to be treated

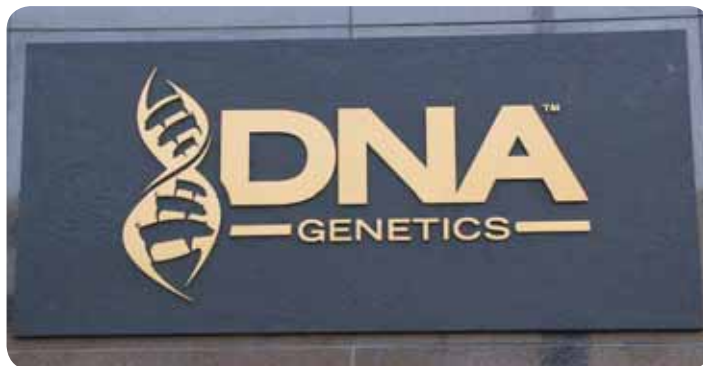
Best Pig – Our focus has always been on producing the best pig for our customers. We have a passion for doing the things it takes to meet this goal. Our business model has been to let the results be our advertising. With the growth in market share the last 10 years, our results speak for themselves. Our AccuGain™ genetic program will move

the rate of genetic progress to a higher level so that we will continue to have the best net profit per pig for our customers.

The future looks bright for our customers, team members and DNA Genetics.

Future – In celebrating our 10 year anniversary of business, we look back and are very thankful for the blessings we have had. The success of our customers is what has made DNA Genetics successful. We will always work hard to continue to have the best people and the best genetics in this industry.

The future looks bright for our customers, team members and DNA Genetics. We will continue to work together for our “win-win” relationship. We look forward to many more years of success together.



ACCUGAIN™ IS OUR COMMITMENT TO YOU



Dr. Tom Rathje

Implementing a genetic improvement program is, without doubt, a long-term commitment that requires investment and dedication. The key ingredients that combine to produce a consistent, measurable result are not found in the latest markers identified by a genome wide association study, nor in the latest line cross to produce that new terminal boar or even in the infusion of genes from a far away place. Instead, the ingredients for success are found in the people, the investment in facilities and herds, the right technology and a commitment to extensive performance data collection in order to optimize the simple equation for response to selection:

$$\textit{Gain} / \textit{year} = (r * i * \sigma) / t$$

The symbol t , indicates generation interval, which is minimized by the high replacement rate of the herd. The symbol r is the accuracy, which is influenced most by the amount and quality of phenotypic data and, in pigs, is the value on which genomic selection has its greatest impact. The symbol i is selection intensity, and is a direct result of the size of the nucleus herd and the number of males tested in order to find the top 1% or higher. Finally, the symbol σ , is the genetic variation for the trait, which is a function of the heritability. It is possible to produce more progress in traits with higher heritability (e.g., backfat) than with traits of lower heritability (e.g., litter size). A Genetic supplier's ability to maintain optimal levels for each of these components creates your competitive advantage as a customer. Many suppliers have failed due to shortchanging one or more of these components.

DNA Genetics has developed the AccuGain™ system for genetic improvement which reflects our commitment to you. AccuGain™ addresses each of the components above and is composed of the following principles:

- **Culture of Discipline.** We commit to operating world-class facilities by a team of professionals focused solely on genetic improvement and maintaining herd health.
- **Robust Nucleus.** Size matters, and we have committed to operating a nucleus system of over 1100 sows in

each line. This size of herd, combined with downstream data from multiplier and commercial operations, optimizes selection intensity and keeps inbreeding at a minimum.

- **Maximum Nucleus Turnover Rate.** There is an optimum replacement rate to drive genetic change and it is high: 130% in maternal lines, 140% in terminal lines. It is also expensive because most females are used 1 or 2 parities before being replaced. Despite the cost, implementing high replacement rate targets are part of our commitment to provide industry leading rates of genetic gain.
- **Commitment to Performance Testing.** Not only does this include performance testing of nearly 50,000 males and females annually, but it also includes reproductive data from multipliers and customers. In addition, we will incorporate the commercial level data from pedigreed F1 sows and single-sire matings to produce terminal pigs.
- **Helix™ Genetics Database.** Next to performance testing, investment in Information Technology is part of the lifeblood of successful genetic suppliers. Our new database, Helix™, uses the latest in .NET and database technology to manage all of our performance and genomic data as well as provide support for decision making to optimize genetic gain.
- **Wholly-owned DNA Gene Transfer Centers.** Ownership brings control. In our case, this means minimizing genetic lag between our nucleus and your commercial herds by turning boars to insure the latest genetic advancements are available in our active boar pool. This model also means a commitment to utilizing the latest reproductive technologies to leverage high indexing boars across more sows. We are not driven by doses produced, but by sows influenced.

In future newsletters, we will go into more detail on each of these principles, with the goal of demonstrating the impact on your commercial herds. Our owners and team have gone to great lengths to insure the transition to DNA Genetics results in an even more competitive product for you and your operation. We appreciate your business and are driven to make a 'new and improved' pig every day.





PRSR STD
US POSTAGE
PAID
NORFOLK NE
PERMIT NO 86

2415 13th Street
Columbus, NE 68601

Return Address Requested

At DNA Genetics, we know what it takes to compete in today's North American pork industry. We're committed to rapidly advancing genetics in measurable ways that pay dividends to the people we serve.

With maternal and terminal lines second to none, and a team of experts behind them, we want to be your genetics partner.

1-888-326-2733

www.DNASwineGenetics.com

