



The

# DNA™ EDGE

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## BALANCED TRAITS YIELD CONSISTENT RESULTS FOR INTERNATIONAL GENETICS



Boar stud manager, Bret Miller, and general manager, Dr. Mike Woltmann have both been with the organization more than 20 years.

In the well-known book by Stephen Covey, *The 7 Habits of Highly Effective People*, one of the key messages is to begin with the end in mind. You could say International Genetics is a good example of this concept. For the past five years, International Genetics has been using the DNA Genetics Line 600 terminal boar line and the end result has been a market pig that's balanced, robust, uniform and favorably received by packers.

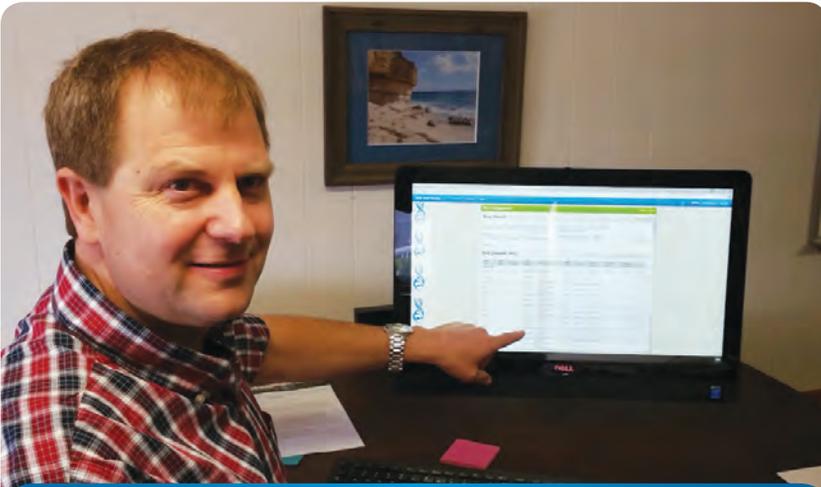
International Genetics, which is owned by Illini Farms, provides semen doses for commercial production at Illini Farms, and a sow cooperative system managed by Bethany Animal Hospital, plus several other commercial farms. An average inventory of 150 Line 600 boars from DNA Genetics provide semen to a total of 26,000 sows throughout northern Illinois. Their offices are located in Kingston, Illinois with the boars being kept at the International Genetics' boar stud which is located in Maple Park, Illinois.

When asked why they selected the Line 600, general manager, Dr. Mike Woltmann, explained "One of the criteria was the ability of a sire's offspring to perform and thrive over a wide variety of environments and management styles. We thought the Line 600 was best suited for that."

Following weaning, pigs are sent to a large number of grow-out facilities. These sites range from old to modern. However, there is one constant - the Line 600 as the terminal sire. Although there are a multitude of variables, offspring of the Line 600 perform consistently at these varied locations. "Closeout data is available on nearly all of the pigs International Genetics sires, so we are able to evaluate performance on more than 500,000 pigs on an annual basis," according to Dr. Woltmann.

Looking at closeouts, Dr. Woltmann explains how the progeny

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**Dr. Woltmann shows how HELIX™, our exclusive, industry-leading database, allows International Genetics to manage boars from a genetic standpoint on a daily basis.**

of the Line 600 has performed well for their operations. "The thing we use for evaluation is the data," he said. "We continually see improvements year over year in the key things we are measuring from a performance standpoint, especially growth rate and feed efficiency." On a number of their well-managed farms, ADG exceeds 1.7, F:G is 2.5 or less, and wear-to-finish death loss is less than 5 percent.

Packer acceptance is another key component to their company's success. The majority of market pigs are sold to Smithfield Farmland; with the remainder going to Tyson, Cargill Meat Solutions, and Indiana Packers Corporation. "They have been very happy with the finished product," said Dr. Woltmann.

*"We continually see improvements year over year in the key things we are measuring from a performance standpoint, especially growth rate and feed efficiency."*

Genetic improvement is at the heart of DNA Genetics and thanks to new technology, such as HELIX™, customers like International Genetics can use the same technology as our nucleus farms on a daily basis. HELIX™, our exclusive,

industry-leading database, allows customers to log on and see the real time indexes of the boars in their inventory. "This will allow us to better manage the boars from a genetic standpoint," Dr. Woltmann said.

According to the aforementioned book, "To begin with the end in mind means to start with a clear understanding of your destination." When it comes to the Line 600, this means: universal packer acceptance, more full-value pigs, and exceptional feed efficiency, growth rate, and uniformity through to finishing. Because of this winning combination of performance traits, DNA Genetics Line 600 has become the most widely used terminal boar line in North America. The investments we've made in continuous genetic improvement will ensure the Line 600 remains the industry leader.



**This sign was built in memory of Dr. Russell Schelkopf the company's founder.**

Illini Farms was founded in the 1960's by Dr. Russell Schelkopf a veterinarian and entrepreneur. Today the business is owned by Bernice Schelkopf, the wife of the late Dr. Schelkopf, and her three sons, Steve Schelkopf, Dr. Mike Schelkopf and Dr. Charles Schelkopf. Drs. Mike and Charles are veterinarians and their sons, Dr. Adam Schelkopf and Dr. Chris Schelkopf, continue in the footsteps of their grandfather and fathers and practice veterinary medicine as well.

Bethany Animal Hospital began in 1959 as Schelkopf Veterinary Clinic, in Sycamore, Illinois. Dr. and Bernice Schelkopf also built and operated one of the first Swine Specific Pathogen Free Laboratories from 1961-1965. 

# CONSISTENT TEMPS PRODUCE WORLD-CLASS RESULTS

Some significant investments have been made recently by DNA Genetics to ensure semen temperatures are held at a consistent 16 degrees Celsius throughout delivery. This is the temperature of doses leaving our gene transfer centers and the ideal temperature to ensure semen remains stable until it can be used for breeding in your operation.

To accomplish this, all courier vehicles in our fleet have been equipped with either sophisticated electronically-controlled semen transport units; or YETI® extreme, heavy-duty coolers.

The electronically-controlled semen transport units, which are hard-wired into the vehicle, are designed to maintain the doses at the same, optimum temperature from the time they leave the gene center until they're delivered. The units are equipped with the ability to automatically adjust the temperature inside as needed. By using this technology, fluctuation in external temperatures have little impact on semen temperature once product reaches the secure storage unit.

YETI® coolers, known for being "Built for the Wild", were created with outdoor enthusiasts in mind. They're made to protect their contents in the most punishing environments. Not that a courier's route will ever rival a high altitude big-horn sheep hunt or deep sea marlin fishing trip, but many of the same features that appeal to professional outfitters are beneficial to us. These coolers seal tighter and our testing has proven that they'll hold semen temps within 1 degree Celsius over an eight hour period without doing anything other than closing the lid.

Not only has equipment been improved, but the skills and knowledge of our people as well. During the month of March, we met with our courier team members face-to-face to conduct training with the new transport units. We also introduced a new biosecurity and temperature control

*Not only has equipment been improved, but the skills and knowledge of our people as well.*



protocol to ensure your product is being handled at the industry's highest level. Regardless of their level of experience, the entire protocol was walked through with these team members one step at a time. We also took the time to explain why these processes are in place and that every member of our team adhere to the Principles of Our Business: do what is right, do the best you can, and treat others the way you want to be treated.

Throughout this process, greater emphasis is being placed not only on quality control, but communication with you, our customers. Our plan is to make sure your product is being placed in an environment where it will maintain its maximum quality. This means checking the temperature of your semen storage unit on every delivery and contacting you immediately should there be a variance of more than 3 degrees Celsius.

We're focused, more than ever before, on product integrity and doing all we can to ensure our customers are successful. These measures allows our people to focus on the job at hand - delivering product safely, reliably, and with consistent results. But they do much more than that. These measures also allow you to focus on what you do best – providing food for the world.

At DNA Genetics, we're about having the Best People, Best Pig, and Best Genetic Option. We strive to demonstrate this every day. We believe these investments represents our commitment to providing world-class results. 

# POST-CERVICAL INSEMINATION: DRIVING GENETIC PROGRESS

By Dr. John Sonderman

Post-cervical artificial insemination (PCAI) involves placing the semen in the body of the uterus. This technology has been available since the late 1980's, however, it has only been widely adopted in the last 5 years. This technique allows the female to be inseminated with a lower volume and lower sperm numbers than in traditional artificial insemination. This paper will discuss the value of PCAI in driving genetic progress to the commercial level.



— DR. JOHN SONDERMAN —

needed by an additional 50%. This allows us to spread the highest indexing boars across more sows.

## Value of PCAI on the terminal line

In a commercial system, with their own boar stud, utilizing a PCAI dose of 1.2 billion sperm vs. 3 billion sperm in a traditional dose (TRAI), allows the producer to use 40% fewer terminal boars, and improve their index by one generation of progress. Table 2 shows the improvement in the index of the terminal sire and an economic value of \$1.98. With the terminal sire representing 50% of the genetics in a market pig, this results in an economic value of \$0.99 per market pig.

## Value of PCAI on the maternal lines

In a multiplier, using PCAI vs. TRAI allows the genetic company to use 40% fewer maternal line boars to make the F1 female. Table 3 shows the improvement in index of the maternal gilts produced, because we are using less maternal boars. PCAI has allowed us to use the top 6% of maternal boars produced vs. the top 12% of the maternal boars produced for GP matings. The economic value is \$1.21. With the GP maternal sire representing 25% of the genetics in a market pig, this results in an economic value of \$0.30 per market pig.

**Table 1**  
**Advancement in Boar Utilization**

Breeding technique	Number of sows per boar	Number of boars required to serve 6 million sows
Natural Service	16	375,000
AI (3 billion sperm/dose)	200	30,000
PCAI (1.5 billion sperm/dose)	400	15,000
PCAI (750 million sperm/dose)	800	7,500
Ovulation Synchronization	1,600	3,750

**Table 2**  
**Value of Implementing PCAI in Terminal Matings**

	Value of an Index Point	Value of 9 Index Points	Value per Market Pig
Duroc	\$0.22	\$1.98	\$0.99

**Table 3**  
**Value of Implementing PCAI in Multiplier System**

	Value of an Index Point	Value of 5.5 Index Points	Value per Market Pig
Landrace & Yorkshire	\$0.22	\$1.21	\$0.30

## Value of PCAI

Table 1 shows the estimated number of terminal boars needed to service six million sows in commercial production. As you can see, moving from natural mating to artificial insemination reduced the number of boars needed by 92%. Moving from traditional artificial insemination to a PCAI dose of 1.5 million sperm reduces the number of boars

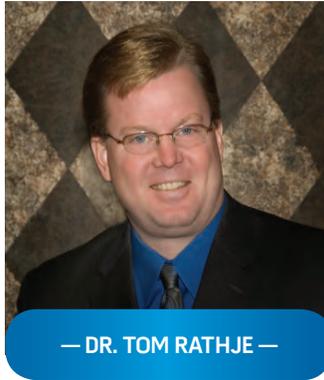
needed to service six million sows in commercial production. The potential to improve genetic progress and spread the highest indexing boars across more animals will continue to drive further implementation of PCAI. 

## Summary

There are an estimated 600,000 plus sows be mated using PCAI technology. The value of PCAI in labor savings has

# VALUE FOR THE NORTH AMERICAN MARKET

By Dr. Tom Rathje



— DR. TOM RATHJE —

One of the most important decisions that is made when choosing a genetic supplier is understanding and insuring the selection objective supports the long term goals of your business. A selection objective describes the cumulative economic value generated by all the traits under selection. The economic values must line up with the economics of your business so that over the long run, you receive value for your ongoing investment in genetics. Economic values are derived for each trait in the selection objective based on the profit resulting from a change in that individual trait. The value of average daily gain, for example, is the increase in profit from a one-unit change in growth rate. Different production systems will produce different economic values depending on the way they raise and market pigs.

There are distinct differences between the North American production systems and markets compared to the same Europe. In North America feedstuffs, labor costs and building costs are generally lower. Loin eye depth is measured and paid for as an indicator of wholesale cut value whereas in the Danish model in particular, all emphasis is on backfat. Pig are managed in all-in, all-out flows with distinct time periods versus continuous flow. However, the unique North American component with the most profound influence on economic value is the drive toward heavier market weights. Pigs marketed at 290 pounds compared to 225 pounds place different values on key traits, particularly growth and feed efficiency. In addition, making pigs leaner (less backfat) is steadily being de-emphasized and even discouraged by North American packers. The production and market characteristics demand an index with a response tailor-made for the North American producer.

Heavier pigs fundamentally change the definition of throughput by increasing the economic value of growth and leaving the relative value of feed efficiency unchanged, or even slightly less, compared with a fixed light-weight system. Pig mortality is relatively more important to heavier

weights and the timing of mortalities has a profound impact on profitability. Feed intake is logically an important contributor to survivability (pigs that can maintain energy intake through a challenge are more likely to continue to thrive). In the lower market weight systems of Europe, feed efficiency dominates the index even at the expense of growth rate and feed intake (a large emphasis on feed efficiency can reduce intake). The heavy emphasis on feed

efficiency for low market weight systems is not incorrect, but is not the best pig in the long-term for the North American market.

The prior objective and current objective for the DNA Line 600 Duroc is shown in the following table that shows which traits were used to derive the economic values. The take-home message is that the current selection objective is designed to directly enhance the performance of the pig in large all-in/all-out production systems by producing increased lifetime gain, maintaining and even allowing for an increase in intake (which produces gains in feed efficiency), slowing the decrease in backfat while increasing carcass premiums through upward pressure on loin depth.



## The current objective and prior objective for the DNA Line 600 Duroc

Current Objective	Prior Objective
ADG from birth to 77 days of age	ADG from birth to 66 pounds
ADG from 77 days of age to 290 lb.	ADG from 66 pounds to 220 pounds
Feed intake from 77 days of age to 290 lb.	Feed Efficiency (66 to 220 pounds)
Backfat Depth at 290 lb.	Backfat Depth at 220 pounds
Loin Eye Depth at 290 lb.	



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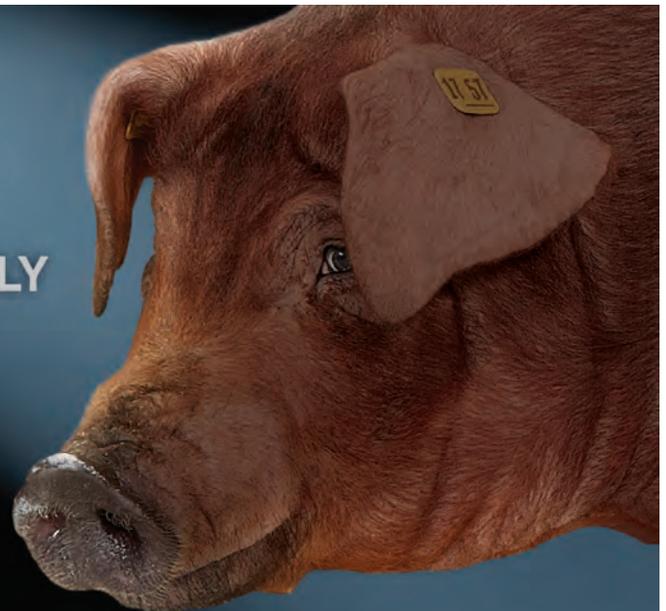
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**NORTH AMERICA'S MOST WIDELY  
USED TERMINAL BOAR LINE.  
SURPRISED? DON'T BE.**



Did you figure the leading boar was from the company that rolls out line after line? Truth is, the top boar isn't the result of acquisitions or crossing lines — it's the product of rigorous, continuous improvement. It's the Line 600 Duroc from DNA Genetics. And from now on, that should surprise no one. [dnaswinegenetics.com](http://dnaswinegenetics.com)

