The Insider

Topigs Norsvin Canada & USA | Fall 2018

Topigs Norsvin
PROGRESS IN PIGS

Delta Canada site opening day

In this issue:

Delta Canada Grand Opening

One year after announcing that construction had begun, Topigs Norsvin is very pleased to announce that the new Delta Canada Research Centre boar testing facility is up and running. Norway is home to the first Delta boar testing facility and has been testing Norsvin Landrace and Norsvin Duroc boars since 2008. Delta Canada will test TN Tempo and Z-Line (Large White) boars so that all the major Topigs Norsvin lines can benefit from this very comprehensive testing program that includes CT scanning.

On June 27, 2018 an open house was held for customers, pork sector partners and the general public. Approximately 1,000 people were in attendance and were allowed access to the entire facility. Topigs Norsvin staff were stationed at various locations throughout the facility to explain the purpose of each area and the functions of it.

Dignitaries with dedication plaque

The large crowd at Delta Canada opening

The facility of more than 50,000 sq. ft. is now home to 2,600 boars on a continuous basis. Each week 144 boars of the TN Tempo terminal and Z line maternal boars enter a self-contained quarantine room. Once health is verified, the boars proceed to the testing area to complete the full test for growth, feed conversion, carcass quality, conformation and ending in a full body CT scan that provides 1,100 images of each boar.

"This new test station will substantially increase the genetic progress in our Z line and Tempo. It is part of our strategy to double genetic progress in the next years. Besides improving the accuracy of our testing, it will allow us to improve faster because we can shorten the generation interval," explained Chief Technical Officer, Hans Olijslagers. "It also means that we can deliver the best genetics to our clients sooner, as we

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can now export the very best boars and semen faster and more easily to their production units."

At about 4-6 weeks of age, boars are delivered to special isolation All In/All Out nurseries. Their health is checked and they are genotyped. The top 50% of animals (those with the highest genetic breeding values) go on to further testing at Delta Canada, which is located about 30 km away from the nurseries. Delta Canada has seven main areas where the boars will spend their time during their stay:

1. Quarantine room: Upon arrival from the nurseries boars are held for health and blood testing prior to entering the main facility.

2. Testing room: Each room houses 12 pens of 12 boars for testing using Nedap IFIR (Individual Feed Intake Recording) feeders to record individual weights and feed intake.

3. Exterior scoring room: After boars complete their growth test they are assessed by trained staff for feet and leg structure as well as overall conformation to ensure boars are of good type and will have longevity.

4. CT holding room: At an average weight of 130 kg (287 lbs.) boars are placed into individual pens for sedation to prepare for the CT scanning process. A special lift and overhead crane system allows for easy lifting and movement of the boars to the CT scanning room.

5. CT scanning room: Boars are scanned with a General Electric CT scanner. The full body scan provides 1,100 images of each boar. The information collected significantly improves genetic progress for carcass and meat quality as well as skeletal structure. Over 8 million images will be stored every year.

6. Boar holding room: High genetic merit boars are held here prior to the final selection and health testing. From here boars are sent to AI Centre's and customers across Canada and the USA will be eligible for export around the world.

7. Isolation rooms: Four specialized, self-contained isolation rooms hold boars that are destined for direct entry into the Carlo AI station in Manitoba. Every two weeks one of the four rooms releases 16 boars to the AI station as approved by CFIA (Canadian Food Inspection Agency).

In addition to the "high-tech" testing areas, Delta Canada also features a visitor viewing area. This viewing area is not open to the general public but rather is a tightly controlled access area for key clients and potential clients to observe the testing process through viewing windows and via cameras showing activity in various rooms. A strict "pig free" downtime period is required prior to showering into the viewing area.

After the Grand Opening, final touches on equipment were made and then the barn was washed and disinfected prior to entry of the first boars on July 11, 2018. Boars are delivered from the nurseries to Delta in a sealed, filtered trailer to ensure the boars are not exposed to any pathogens during the delivery process. The first group of boars will be off test in late September 2018, moved to isolation rooms and then be ready for dispatch to AI stations in December.

The first boars into Delta Canada

The sealed, filtered boar trailer

Topigs Norsvin investigates gut microbiome composition to improve feed efficiency in pigs

Microbiome research is an emerging field of study in human and animal health. The microbiome can be defined as all of the microorganisms that colonize various body tissues. Recent research from the human medical field has identified important links between gut microbiome composition and critical biological pathways, such as metabolism, immune response, and behavior. Such findings have motivated researchers at Topigs Norsvin to investigate whether gut microbiome composition can be used as a new phenotype to drive genetic improvement in these crucial biological processes in pigs.

Researchers at Topigs Norsvin recently published an article in the Journal of Animal Science presenting results from a study designed to investigate differences in microbiome composition between pigs with high vs. low feed efficiency (FE). There is reason to suspect that microbial fermentation could influence FE in pigs since: (1) availability and cost of feed ingredients can dictate changes in feed composition, and consequently, fiber content within a diet; (2) certain microbiota that reside within the gastrointestinal tract produce enzymes that break down fiber and produce volatile fatty acids; and (3) volatile fatty acids are used as a source of metabolic energy for the pig. Therefore, the aims of this study were to investigate the association between FE and fecal microbiome in commercial grower-finisher pigs and the effects of diet composition and sex on fecal microbiome composition.

The microbiome is able to explain between 35 and 50% of the variation in feed efficiency

A total of 154 three-way crossbred finishing pigs (Tempo x TN20) were fed either a corn/soy (CS) or wheat/barley (WB) diet. The day before slaughter, fecal samples were collected from each pig and the DNA of each microbe present within a sample was isolated and sequenced. Statistical analyses were then performed to identify the microbes that varied between diets, sexes, and pigs with high vs. low FE.

Results showed distinct differences in microbiome composition between pigs fed different diets (Fig. 1). This result is consistent with results reported in the literature, which indicate that diet composition affects gut microbial composition. Results also showed that microbiome composition significantly differed between sexes. Furthermore, a significant association between FE and microbiome composition was detected for pigs fed the WB diet, but not for pigs fed the CS diet, likely due to higher levels of fermentable substrate (i.e., crude fiber) for pigs fed the WB diet vs. the CS diet. In summary, results indicate the possibility of improving feed efficiency in pigs by modulating microbiome composition via changes in diet formulation.

Additional Topigs Norsvin research projects are underway to further identify differences in microbiome composition based on FE at the individual level, as well as the pen level, and to characterize differences in microbiome composition based on resilience to environmental and disease challenges.

This study is part of the Feed-a-Gene Project, funded from the European Union's H2020 Program under grant agreement no 633531.

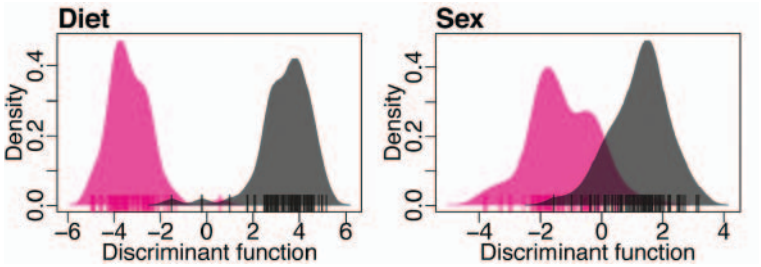
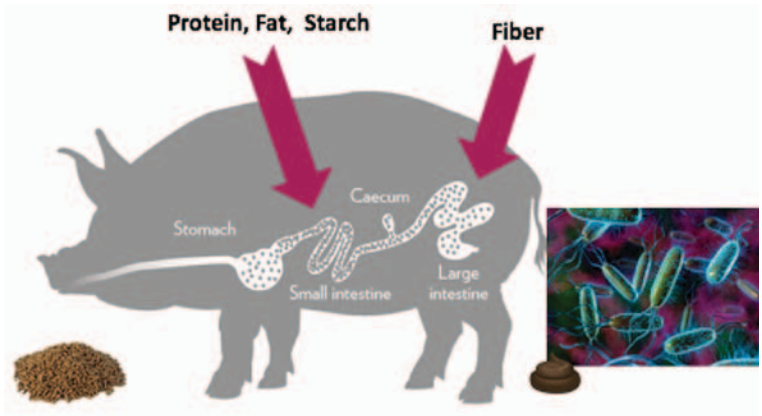


Figure 1: Graph highlighting differences in the microbiome profile of pigs fed different diets. The microbiome profile of pigs fed the corn soy diet (pink) was significantly different (P<0.05) from that of pigs fed a wheat/barley diet (black).

Wheat/Barley diet

Corn/Soy diet



Digestibility of Fiber

Producer Profile: A & A van Ginkel Pork Farms


The Van Ginkel Farm

When Arnold and Alida van Ginkel bought their farrow to finish farm near Rocky Mountain House, Alberta some 15 years ago, they were well aware of the ups and downs that farming could bring. Little did they know that a mere 6 years later, they and their family would receive news that would bring not only change, but national news attention across Canada.

Beginning in 2003 as a 130 sow farrow to finish operation, the van Ginkel's expanded to nearly double the number of sows by 2004. The Topigs herd they inherited was not high health but despite all that, the future still looked bright for the independent hog operation. But in May of 2009, all of that changed.

After some routine testing on the farm, the CFIA (Canada Food Inspection Agency) contacted the van Ginkel's and explained they were under quarantine and could not ship their hogs to market. A week later they received word the herd was positive for H1N1 and that the CFIA was going to make the news public.

At first, van Ginkel thought the government agency would simply come and cull the herd and the process of starting over would begin rather quickly. Such was not the case.

"It took a long time," he said. "They didn't know what to do. They did a partial cull, just to give me four or five weeks room." The worst part he said was the public perception.

"People were calling it 'Swine Flu' and it just looked so bad in the media," said Arnold. It didn't take van Ginkel long to decide for himself what to do. "I just decided to get rid of the herd. Most people said I was crazy. But I came here to farm. It was never an option to get out. You just start over again."

When the van Ginkels did repopulate, they stuck with Topigs (and now Topigs Norsvin) genetics, buying pure Z lines and signing up for InGene. Now they are a completely closed herd, making their own GGPs and GPs. Arnold and Alida, together with their children, Ronald, Edith, Bianca, Paul, Lydia, Daniel and Natasha are active in the Christian Reformed Church in Rocky Mountain House. The family are avid hunters and take full advantage of their proximity to the Rocky Mountains, enjoying the many hiking trails and breathtaking scenery that is literally in their backyard.


The Van Ginkel Family

Now consistently one of Topigs Norsvin's top producers across all of Canada, Arnold van Ginkel looks back on that day nearly ten years ago with positivity. According to him, H1N1 and the depopulation / repopulation was a blessing in disguise.

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"To start over with a clean herd…it made us a lot of money, I know that. On the finishing side our growth rate probably saves two weeks to market."

His numbers back that claim. Over the last five years, the van Ginkel's averaged 29.9 PSY, but their growth rate and feed conversion, using the Tempo and more recently the Talent sire, has been 944 g/day (2.08 lb/day) from 25-117 kg (55 – 258 lb) with FCR at 2.61 for the same weight range. Olymel SEC, van Ginkel's packer, has also been happy with his production, ranking him at or near the top of many of their producer performance categories.

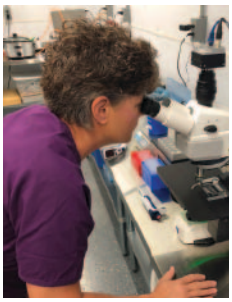
Despite the stress and uncertainty that H1N1 brought to their farms nearly ten years ago, the van Ginkel's couldn't have imagined a better outcome for their Topigs Norsvin herd.

"We would never think of turning back the clock. Things are so much easier for us now."

TN Tempo Weaner Pigs

Producer Profile: Ostler Sires

Macy Ostler (Lab Assistant) and Tawny Ostler (Owner/Stud Manager)



Topigs Norsvin USA is pleased to announce a new boar stud partnership with Ostler Sires of Frankfort, IN.

After over 22 successful years of operating an 80-boar stud known as Premier Sires, owners Chad and Tawny Ostler have expanded and reinvented their family-owned business. Ostler Sires now operates as a 312-boar stud with seven automatic collection dummies and an expanded laboratory that includes a new CASA (Computer Assisted Semen Analysis) system. In addition to an excellent track record for herd health, the Ostlers have further invested in biosecurity for their customers by making their stud fully-filtered and air conditioned.

Upgrades included more than buildings and equipment; Ostler Sires now provides Topigs Norsvin genetics to their customers as well. "We did our homework and producers told us what a great job the TN Tempo boar does in their systems," commented Tawny Ostler, "and we began to experience Topigs Norsvin's customer support at the stud long before the first boars arrived. It is clear to us that Topigs Norsvin is invested and driven to deliver even more to our stud and to our customers."

Product quality and customer service remains a top priority for Tawny, "We still deliver semen to some of our original customers that have been with us since we first opened our doors over 22 years ago.

Ostler boar pens

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Topigs Norsvin USA

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AI Stud Stations

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Carlo Genetics Inc.
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Kyla Ripley
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Topigs Norsvin Insider Quiz

How to Play

Please answer the questions in our Insider Quiz. All the answers are in this newsletter. Then fax, mail or email your answers, along with your name, address, and phone number to:
Fax: 204-489-3152
Email: info@topigsnorsvin.ca

Entries are to be received by **October 31, 2018**. The *first 10 entries drawn with the correct answers* will receive a $20.00 gift card. The Topigs Norsvin rep in your area will deliver the prize. Employees of Topigs Norsvin and their subsidiaries are not eligible.

1. The microbiome is able to explain 35-50% of the variation of what? _____

2. What is the FCR at the van Ginkel farm? _____

3. How many images are collected from each boar CT scan? _____

4. How many years has Ostler Sires been operating? _____

Name: _____

Farm Name: _____

Address: _____

Phone #: _____ Fax #: _____ Email: _____

Topigs Norsvin INSIDER Quiz Winners
Winners from the Summer 2018 issue will receive a $20.00 gift card. Here are the winners from the last issue:
Delores Kleinsasser, Huron Farms, MB; Isaac P. Hofer, Eagle Creek Colony, MT; Jayden J. Hofer, New York Farming, AB; Joseph Wollman, Long Lake Colony, SD; Tyron Waldner, Meadow View Colony, SD; Jenaya Hofer, James Valley Colony, MB; Jacob Wollman, East Raymond Farming, AB; Cliff Waldner, Trileaf Colony Farms, MB; Sammy Wipf, Rockport Colony, SD; Jared Hofer, Pembina Colony, MB. The Topigs Norsvin rep in your area will deliver your prize. Congratulations!

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