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TN70 - capable of weaning 14+ pigs

The TN70

The new TN70 sow is entering many markets with considerable success. The TN70 incorporates the best from two worlds, namely a high producing sow with strong influence on finishing pig performance.

The TN70 parent female, an F1 combination of the Topigs Z-line (Large White) and the Norsvin Landrace, is the first new flagship product of Topigs Norsvin. Present in the Scandinavian market since 2014, the TN70 sow outperforms all its competitors. A breeding goal that includes more than 20 different traits ensures that this sow delivers prolificacy, weaning ability, and longevity with a high influence on the finisher pig.

The Norsvin Landrace is a unique maternal product with terminal characteristics and this maternal grandparent has improved slaughter pig profitability by 10 – 20%. Selected for feed efficiency and growth since 1958, the Norsvin Landrace contributes exceptional growth, feed conversion and carcass quality to the TN70, maternal by-products and terminal market hogs.

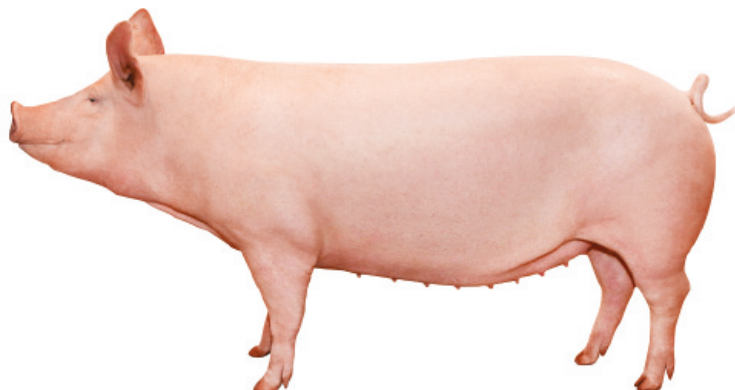
The Topigs Z-line is the ultimate baseline grandparent female whose performance rivals any parent female. The prolificacy, robustness, and easy-going nature of this sow is well documented in the North American marketplace.

Prolificacy is the key to pork production. To have large numbers of quality, weaned pigs that survive, grow efficiently during finishing,

and yield an excellent carcass, is the goal of every sow farm. The TN70 provides prolificacy, but also the capacity to wean her own pigs. **In 2016, TN70 gilts averaged 15.6 functional teats and 59.7% of TN70 gilts had 16 or more.**

TN70 Genetic Improvement last 5 Years:

- + 1.7% post-farrow survival
- + 0.6 piglets born alive
- + 40 g (0.09 lb) ADG
- + 0.07 FCR improvement



PigCHAMP EDI exchange with Topigs Norsvin

Topigs Norsvin is pleased to announce that its customers may now exchange data via PigCHAMP.

"In the past, Topigs Norsvin multipliers, InGene (internal multiplication) customers and CCPS (Combined Crossbred and Purebred Selection) customers were limited in their choice of sow management systems for data exchange," said Toon Weerts, breeding program manager for Topigs Norsvin International. "But now our customers can realize EDI exchange, including data on tattooed piglets, using the PigCHAMP module." These exchanges are the results of a collaborative, multi-year project conducted by PigCHAMP and Topigs Norsvin. "Currently, we have multiple units running on PigCHAMP exchange in the USA and Spain," said Toon, "and new requests to get more farms started are coming from several countries, including Brazil, Argentina and Russia."



Global Selection Team visits USA



The Global Selection Team with producers

The Topigs Norsvin Global Selection Team recently visited the USA as part of their continual mission to observe and evaluate Topigs Norsvin products in different environments and production systems around the world. Exterior scoring is subjective in nature, so it is important for the team to travel together and remain calibrated with one another. The team consists of Topigs Norsvin employees from the USA, Canada, Norway, and Germany.

"Visiting the USA gives our team the opportunity to see Topigs Norsvin products in big systems and tougher production environments," commented Darwin Tilstra, Director of Genetic Improvement for Topigs Norsvin USA. "Different markets present different structural challenges. Our team is the voice of the market back to R&D so that we can continue to improve our products from a structure standpoint."

The Global Selection Team is focused on the continual improvement of the extensive Topigs Norsvin external scoring system. "We want to identify new structural traits (phenotypes) for breeding value estimation that



External Scoring

would better contribute to genetic progress in sow longevity and benefit customer herds worldwide," described Lance Peterson, Multiplication and Technical Support. "During this trip we identified a number of new traits to score, and we strive to be more objective. Over time we will measure these traits and determine if they are heritable."

The Global Selection Team also visited a TN70 GDU to observe the parent gilt selection process at a US customer herd. "It is still early days for the TN70, but this product is off to a great start," reported Lars Bøgevik, Senior Genetic Technician. "The gilts were very uniform with an easy-going temperament. The farm is experiencing a high selection rate and their customers are highly satisfied with the gilts they receive."

The Topigs Norsvin Global Selection team consists of Darwin Tilstra (USA), Lance Peterson (USA), Justin Reimer (Canada), Lars Bøgevik (Norway), Torunn Asmundstad (Norway), Helge Kristian Prestrud (Norway), Lina Marie Neby (Norway), Anne Mette Nøkleholm (Norway), Øystein Rognstad (Norway), and Stefan Everwin (Germany).

Pig Atlas

Enhancing phenotypic detail to increase genetic gain in pig breeding

The Pig Atlas

Topigs Norsvin has CT-scanned (Computed Tomography) approximately 3,500 boars, annually, since 2008 to more accurately select boars with the most desirable characteristics. The information from CT provides valuable information about body composition (phenotype), which is used in the calculation of breeding values. Currently, Topigs Norsvin is implementing a virtual Pig Atlas in an effort to effectively utilize even more information from the CT-scanned boars.

The Pig Atlas method offers an opportunity for “digital” segmentation of the CT-scanned pigs (Figure 1). In principle, there is no limit for the detail level in the segmentation. However, the precision of the segmentation depends on a non-rigid transformation based on approximately 2,000 anatomical landmarks.

Applications

Currently, the Pig Atlas method is being applied to primal cuts (prediction of weight and fat / meat / bone content) and major organs. The goal is an automated method that quantifies a range of phenotypes not currently utilized in the calculation of the breeding index.

Results so far show high heritabilities for traits like loin yield ($h^2=0.42$), belly yield ($h^2=0.22$), lean meat percentage (LMP), carcass ($h^2=0.50$) and LMP ham ($h^2=0.40$) for purebred Duroc tested at the Topigs Norsvin boar test station in Norway.

For some health factors, like osteochondrosis, diagnostics are already being conducted for pigs via CT- scanning. As in human medicine,

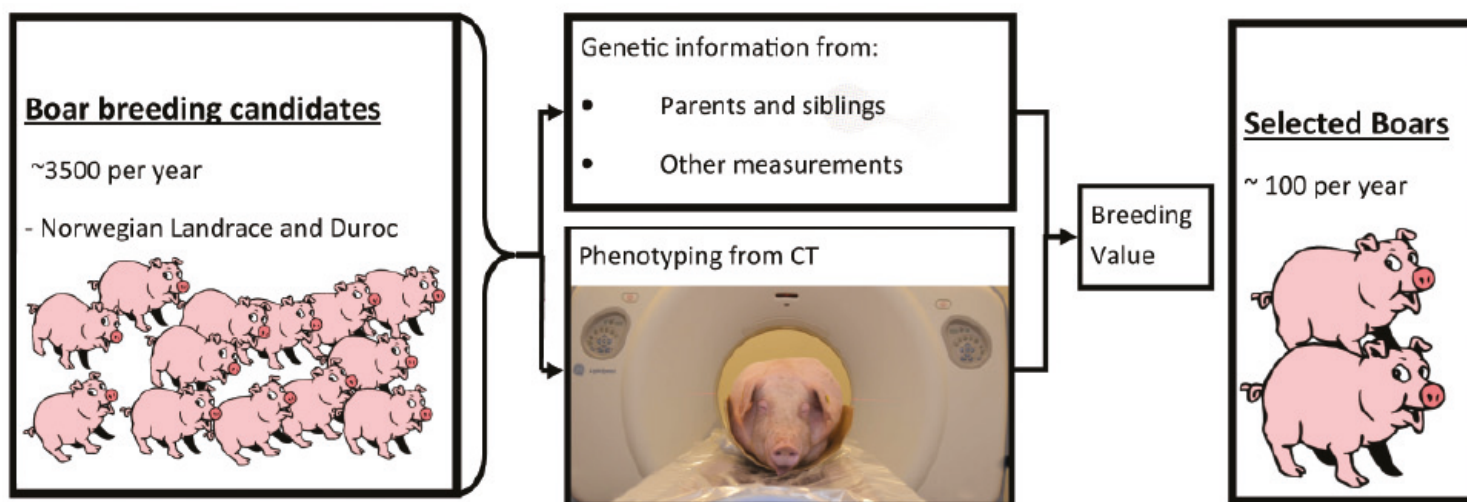
CT-scanning of pigs can provide automated diagnoses of multiple diseases as well as quantification of skeletal, muscular and internal organ phenotypes. The Pig Atlas method will continue develop new, relevant phenotypes that were not previously possible to measure accurately in a live animal.

The Phenomic Gap

To take full advantage of the large amounts of genomic data now available (80K SNPs per boar), large volumes of accurate phenotypic data are also necessary; this practical problem for the utilization of genetic data, also evident in pig breeding, is known as the “phenomic gap.” As the detailed phenotypes from the Pig Atlas become available, Topigs Norsvin will develop a large data set that includes both known genotypes and detailed phenotypes.

Together, these data will provide the foundation for accurately identifying the relationships between the genotypes and the phenotypes, which will increase the accuracy of breeding values, accelerate genetic progress, and increase the probability of identifying functional mutations.

Information in this article was presented at the 48th Annual Meeting of the American Association of Swine Veterinarians (February 25-28, 2017) in Denver, Colorado by L.E. Gangsei¹, PhD; J. Kongsro², PhD; E. Grindflek², PhD; J.M. Eggert³, MS, MBA, PhD, Dipl. ACAG (¹Animalia, Oslo, Norway; ²Norsvin SA, Hamar, Norway; ³Topigs Norsvin USA, Burnsville, Minnesota). References are available upon request.



Producer Profile:

Tempo x TN70 at Milbrand Farms



Milbrand Farms is a 300-sow farrow-to-finish operation with internal multiplication near Glencoe, Minnesota that is owned and operated by Brian and Traci Milbrand. The farm serves as Topigs Norsvin USA's Commercial Product Evaluation (CPE) Unit. Milbrand Farms was among the first to test the TN70 in the USA and is now testing the combination Tempo x TN70. First impressions for the Milbrands have been very positive. "It is a perfect match."

The TN70

Milbrand Farms was among the first to test the new Topigs Norsvin F1 parent female, the TN70, beginning almost three years ago. The TN70 sow not only has a high production of piglets and high milk production, but is robust, active and has demonstrated that her piglets grow faster and provide better carcass quality. According to Brian Milbrand, "The sow recovers faster after weaning and it is easy to get her feed intake up again after farrowing."

The support team of Topigs Norsvin played an important role in implementing the new product on Milbrand's farm. "They are open in communication, open to feedback, and they respond. Our relationship is very positive." The sows have excellent underlines, are calm in farrowing, and they can milk. In their last group, 54 sows farrowed (15.4 total born, 14.1 born alive), but with 50 farrowing crates there were 703 piglets on 50 sows – that's 14.06 pigs per lactating sow and they weaned 13.9.

	Last group
Total Born	15.5
Born alive	14.1
Stillborns	7.7%
Pre-wean mortality	8.8%
Weaned pigs / litter	13.9
Weaned pigs / sow farrowed	12.9
Farrow rate	93.0%
Sow death loss	7.5%

Piglet quality is excellent – strong, healthy, uniform and active piglets. "This may be the best group of pigs we have ever raised," added Milbrand.

The perfect match

The Topigs Norsvin support team helped with introducing the TN70 on the farm and continues to help with getting the most out of the Tempo x TN70 finishers by fine-tuning the feeding, management and all that it takes to get the maximum out of these genetics. The Tempo and TN70 are combining traits that complement one another and result in more piglets, higher weaning weights, higher daily gain and robustness.

"I think the Tempo also contributes to a higher number of piglets born," commented Milbrand, "and it definitely produces pigs that grow faster and are more robust. The TN70 sow and the Tempo terminal boar are a perfect match."



Brian and Traci Milbrand

Key appointment enhances Topigs Norsvin Business Development team



Trenton Schultz joined the Topigs Norsvin Canada Business Development Team in Winnipeg on January 30, 2017. In his new role, Trenton will be focused on business development in Manitoba and also assist in company logistics.

Trenton is a graduate from the Steinbach Regional Secondary School. Along with sales experience in Manitoba, he also has several years of experience at genetic nucleus level production, being involved in many areas of pig breeding and production. "Trenton brings considerable, well-rounded experience to the growing, dynamic Topigs Norsvin team, and will be a great asset for us" said John Sawatzky, Sales Manager, Topigs Norsvin Canada.

"I am very excited to have the opportunity to work with Topigs Norsvin," Trenton said. "I'm looking forward to further my career in sales as well as in logistics. Manitoba has many quality producers and I am proud to be a part of this industry. I am excited for the future opportunities that lie ahead with Topigs Norsvin."

Trenton can be reached at (204) 770-1885 or trenton.schultz@topignorsvin.ca

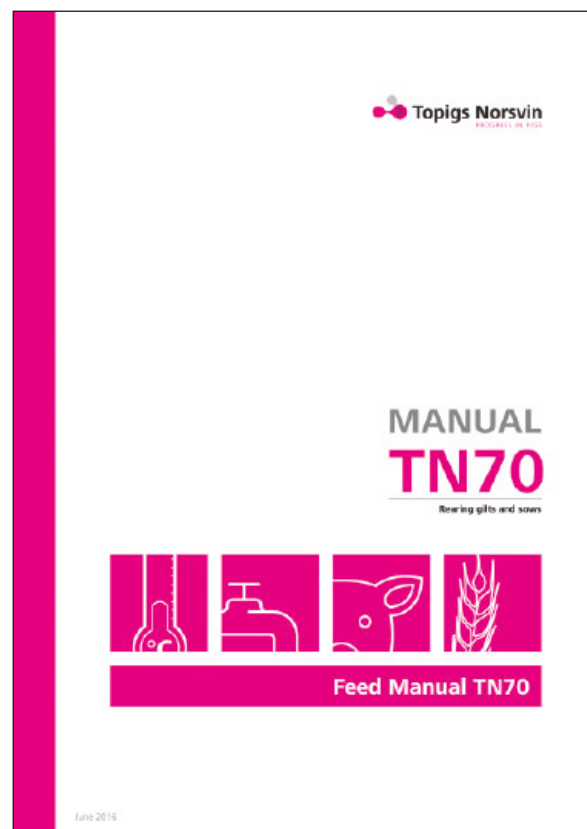
Announcing: Topigs Norsvin Sow Feed Manual

The nutritional demands of the modern gestating and lactating sow and her litter have changed significantly over time. Diets should be optimized to ensure nutritional welfare and comfort to the animals and also to minimize the environmental impact through excretions. To achieve this, a precise adjustment of the feeding level and the feed composition according to the performance level of the sows is required.

Detailed feeding manuals are available for all Topigs Norsvin product lines, and updated versions of the TN70 and Topigs 20 manuals are now available. Additionally, four white papers are being published:

- Managing Sow Body Condition
- Sow Feeding after Weaning and during Gestation
- Improving Piglet Birth Weight
- Transition Feeding and Feeding Sows During Lactation

Please contact the Topigs Norsvin representative in your area to request a copy. Links to these materials can also be found on our website and in our social media outlets.



Topigs Norsvin Canada

Contacts

John Sawatzky

Sales Manager
(204) 981-0243
john.sawatzky@topignorsvin.ca

Gordon Edwards

Ontario Sales Manager
(519) 440-8128
gord.edwards@topignorsvin.ca

Rick Beunen

Ontario Business Development
(519) 317-7403
rick.beunen@topignorsvin.ca

Glenn Kuhn

Alberta & Saskatchewan Business Development
(403) 302-7925
glenn.kuhn@topignorsvin.ca

Art Friesen

Alberta & Montana Business Development
(403) 382-9741
art.friesen@topignorsvin.ca

Geraldo Shukuri

Technical Advisor
(204) 918-5794
geraldo.shukuri@topignorsvin.ca

Trenton Schultz

Manitoba Business Development
(204) 770-1885
trenton.schultz@topignorsvin.ca

Canada

AI Stud Stations

Magnum Swine Genetics Inc.

Fort Macleod, AB
Andrew Buesekom
(888) 553-4844

Carlo Genetics Inc.

Ste. Anne, MB
Kyla Ripley
(204) 355-4012

Total Swine Genetics Inc.

Tillsonburg, ON
Stuart De Vries
(800) 844-9913

C & M Genetics

Lucan, ON
Dr. Corneliu Oltean
(888) 259-7594

Sunrise Genetics

Amherst, NS
Mike MacDonald
(902) 661-7883



Topigs Norsvin USA

Contacts

Jon Feitz

Director of Sales
(574) 220-1969
jon.feitz@topignorsvin.us

Craig Jarolimek

Sales & Marketing
(701) 866-4444
craig.jarolimek@topignorsvin.us

Ron Ledger

Multiplication & Sales Support
(309) 267-9006
ron.ledger@topignorsvin.us

Curt Hull

Multiplication & Sales Support
(952) 607-9936
curt.hull@topignorsvin.us

Adam Campbell

Sales and Business Development Manager
(513) 314-3636
adam.campbell@topignorsvin.us

Randy Leete

Sales and Business Development Manager
(712) 249-0973
randy.leete@topignorsvin.us

USA

AI Stud Stations

Grand Vertex

Canton, IL
Doug Groth
(217) 357-2811

Eastern Iowa AI

Spragueville, IA
Doug Peterson
(563) 689-6661

Mar-Ke Semen Service

Sharon, WI
Keith & Marie Rithamel
(262) 736-2345

Ai Partners-Skylab

Morris, MN
Bruce Zierke
(320) 760-3504

Whole Hog AI

Hartington, NE
Ron Brodersen
(402) 254-2444



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@topignorsvin.ca

Entries are to be received by April 30, 2017. 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.

Topigs Norsvin INSIDER Quiz Winners

Winners from the last issue will receive a \$20.00 gift card. Here are the winners from the last issue: Moses Maendel, Blue Clay Colony, MB; Melvin Waldner, Eagle Creek Colony, MB; Matthew Wurtz, Jamesville Colony, SD; Johnny Hofer, Oak Lane Farms, SD; Miranda Hofer, James Valley Colony, MB; Josiah Maendel, Sturgeon Creek Colony, MB; Stanley Hofer, Pembina Colony, MB; Ben S. Entz, Roseglen Colony, AB; Donovan Hofer, Willow Creek East Barn, MB; John Kleinsasser, Midland Farming Co Ltd., AB. The Topigs Norsvin rep in your area will deliver your prize. Congratulations!

What is the pigs weaned / litter in the last group of TN70s at Milbrand Farms? _____

Who is the Director of Genetic Improvement for Topigs Norsvin USA? _____

How many SNPs are available for each boar in genomic data collection? _____

Which record keeping system is the latest to realize EDI exchange with Topigs Norsvin? _____

Name: _____

Farm Name: _____

Address: _____

Phone #: _____ Fax #: _____ Email: _____

Topigs Norsvin Canada
201-1465 Buffalo Place
Winnipeg, MB
Canada R3T 1L8
www.topignorsvin.ca

Topigs Norsvin USA
12750 Nicollet Avenue S, Suite 300
Burnsville, MN
USA 55337
www.topignorsvin.us