

Estimating Lean Growth Rate In Grower Pigs Using Packing Plant Data

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The industry is increasingly using information on lean tissue gain to determine nutrient requirements of grower-finisher pigs. Therefore, a working knowledge of how to determine lean growth rates for a particular herd is essential when using any type of modeling or factorial approach, including NRC (1998), to determine nutrient requirements for growing-finishing pigs.

There are many different ways to determine lean tissue gain, including the use of packing plant data obtained from the final carcass to the use of real-time ultrasound. This article will give a review of a method using packing plant carcass data that can be used on any farm. The determined lean tissue gain over the grower-finisher period can then be used in any model, including NRC (1998), to determine the nutrient requirements for that particular herd.

To determine lean tissue gain over the

grow/finish period, the initial lean subtracted from the final lean gives an estimate of lean tissue gain during the grower-finisher period. To get the average daily lean growth rate, divide the lean tissue gain by the number of days in the grower-finisher period. This value is then entered into the model to determine the nutrient requirements for that herd (or pig).

More specifically, assuming that the lean content in a 25 kg pig is constant at 35% of live body weight gives the initial lean for the pig. Information from the packing plant provides the information needed to determine lean in the pig at slaughter. Taking the dressed weight and multiplying it by the % yield (obtained from the grading certificate from the packing plant) will give the lean in the carcass. However, 8 kg must be subtracted from the carcass lean to account for the weight of the head, feet, tail, kidneys and leaf fat. An example calculation using Prairie Swine Centre Inc. data is provided in Table 1.

Specifically for the NRC (1998)

Calculating lean growth rates

Required Information

- initial weight: 25 kg
- final dressed weight 89.2 kg
- average lean yield (from carcass grading slip): 60.3%
- average days in the grow/finish barn: 110

Assumptions

- difference in weight between hot carcass and cold carcass sides: 8 kg
- Lean content at initial weight: 35% of body weight

Calculations

- lean mass at initial weight
 $25 \text{ kg} \times 35\%/100 = 8.75 \text{ kg}$
- lean mass at final weight:
 $(89.2 \text{ kg} - 8 \text{ kg}) \times 60.3\%/100 = 48.96 \text{ kg}$
- lean growth rates:
 $100 \times (48.96 \text{ kg} - 8.75 \text{ kg})/110 \text{ days} = 366 \text{ g/d}^a$

Table 1

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Program funding provided by





Grand Opening

PSC Elstow Research Barn Celebrates Grand Opening, March 29, 2000

Ken Engele, BSA., A.AG

March 29 was a very special occasion, marking the official Grand Opening of PSC Elstow Research Farm Inc. Official ceremonies kicked off at 1:30pm with speeches from Mr. Joe Cumming-RM of Blucher, Mr. Ernie Spencer-Saskatchewan Agriculture and Food, Mr. Jerome Warwick-Sask Pork, Mr. Frank Quennell-University of Saskatchewan, Mr. Jim Smith-PSC Elstow Research Farm Inc. and Dr. John Patience-Prairie Swine Centre. Each speaker focused on the positive impact generated by PSC Elstow Research Farm Inc.: a new employment opportunity, a new rural water pipeline, expanded research capacity and the impact of PSC research throughout Western Canada.

The open house attracted a good cross section of pork producers, feed industry representatives, government officials and other industry personnel, as well attracting those not familiar with the industry. Over 300 people attended the official ceremonies and



Wayne Vermette, master of ceremonies for the Grand Opening ribbon cutting ceremony.



PSC Elstow Research Farm ribbon cutting ceremony, (left to right) John Patience (President/CEO), Jim Smith (Chair of PSC Elstow Research Farm board of directors) and Frank Quennell (Chair of Board of Governors U of S)

registered more than 500 people for the entire day. There was something to experience for everyone, if it was the electronic sow feeding system, intensive manure rooms or inspecting the structure of a modern commercial hog facility.

Upon conclusion of the official ceremonies, everyone was invited to tour the new facility. Instructive displays were set up in the breeding-gestation, farrowing, nursery, grower-finisher, artificial insemination lab and intensive manure rooms. People were



Don and Rose Neter discussing the nursery area with Tanya Sereda



John Beckton and Micheal Doutscher discuss gestation housing with Crystal Lavesque

greeted in each area by PSC staff, which gave a brief but detailed description of the commercial and research design features key to each specific location. As well, PSC staff was available to answer any specific questions that may have arisen on room design, barn flow, research

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Students Enjoy Hands On Experience

Mary Petersen, B.Ed

On March 30, 2000 the PSC Elstow Research Farm was host to 120 students from neighboring communities. Five schools, Colonsay, Humboldt, Aberdeen, Hepburn and Waldheim, took advantage of the unique opportunity to bring students by bus to the new 600 sow farrow to finish barn. The staff at PSC took time to ensure that students and teachers were able to experience a newly constructed modern hog barn complete with a few hogs.

Four information stations were set up. The first station, in the farrowing room, had a sow and six piglets. As Brian Andries explained how many piglets a sow normally gives birth to and piglet teat order, the eyes of the

students rarely left the nursing sow with her piglets. When Brian picked up a piglet and gave it to a student to hold, there were giggles, smiles and bright, shiny eyes among the students. Lauren Wieler expressed her gratitude in a thank you e-mail, "I was with your tour group from Colonsay. I just wanted to thank-you for letting us come; it was very interesting. I learned a lot. I really enjoyed holding the cute little baby piglets. All my life I've wanted to hold a piglet so thank-you for letting me have that chance."



Piglets are fun to hold!

In the second station, Dr. Eduardo Beltranena, explained the merits of the feeding and housing of newly weaned piglets. A pen of 8 weaner pigs was

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Grand Opening

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features and pig production.

Several food processors including University of Saskatchewan Food Science, Drake Meat Processors, Mitchell's Gourmet Foods and Fletcher's Fine Foods were invited to participate in the Grand Opening. This provided them an opportunity to showcase some of their new and innovative products and product lines, which met with great interest from all those attending. The Elstow Ladies Agricultural Society also provided




Food displays attracted a lot of attention with their samples of pork products.

refreshments and snacks for the day.

The open house was part of a three-day Grand Opening event. Preceded by the "Focus on the Future" Conference 2000, highlighting research conducted at the Prairie Swine Centre. Followed by PSC Elstow school tours, which gave students in grades 7-10 an opportunity to examine the interior of a commercial hog facility. The open house was met with many favourable responses regarding the coordination



Paul and Judy Ulrich admire selection of pork samples brought by Fletcher's Fine Foods

and organization of the event. We would like to thank all those who attended and participated in the event, for making it the success that it was. 



Shala Christianson and guests viewing new electronic sow feeders.

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available for the students to enjoy. At each station students and teachers were encouraged to ask questions. When Eduardo explained to a curious student what it was like to be a scientist and how many years of education he had completed, the students were impressed.



"A friendly piglet"

Dr. Harold Gonyou, at the third station, explained how the electronic sow feeder feeds the sows in the group housing barn. He explained how the tag on the sow's ear will allow her to enter into the feeder and will deposit her allotment of feed into the feeder. Harold showed them how the computer tracks the feed for each sow. Students were impressed with the high tech system as a new use for a computer became evident. Jared Coffin from Colonsay expressed, "I didn't realize how high tech a pig barn can get!" When asked the gestation period, Harold gave them an easy way to remember. "I know I will always remember it takes 3 months, 3 weeks, and 3 days for a piglet to be born." Amy Cooper from Colonsay

At the end of the tour the students were entertained by Dr. Stéphane Lemay and Liliane Chénard, who not only explained the importance of ventilation in the hog barn, but had a brief ventilation

experiment for a brave volunteer. Using a heat lamp, fan and computer controller, the principles of heat radiation and ventilation rate could be felt on the volunteer's arm. Students enjoyed the pig shaped candy that Liliane gave out at the end of the presentation.

The students were surprised when each class was gathered together for a group photo, complete with two students holding two piglets. (There



Dr. Stéphane Lemay and Liliane Chénard performing a ventilation experiment with a brave volunteer.



Dr. Eduardo Beltranena explaining the feeding of weaner pigs.

were squeals of shock and outburst of laughter when one of the piglets had to go to the bathroom while it was being held.) These photos were e-mailed back to each school.

No tour is complete without some lunch and



Brian Andries passing a piglet

the local Elstow ladies group were available with an assortment of cookies, squares, juice and coffee.

The staff at Prairie Swine Centre would like to thank the students and teachers who came and enjoyed the tour. The staff were delighted with the interest, enthusiasm and attitude of the students. Although, it took some effort to set up for the tour, it was worth every second! 🐷



Dr. Herold Gonyou opening the electronic sow feeder

New Positions appointed at PSC Elstow Research Farm

Mary Petersen, B.Ed



Brian Andries

Brian Andries is no stranger to the people in the hog industry as he has been the Manager, Operations for the Prairie Swine Centre Inc. since 1992 and was employed previously (since 1979) at the Centre by the University of Saskatchewan prior to the Centre being incorporated as a separate corporation. He grew up at Lafleche, SK (south of Gravelbourg) and obtained his B.Sc. from U of S. in 1976. Brian will now expand his duties to include the new PSC Elstow Research Farm.

Brian is looking forward to the challenge of managing two unique operations. He has proven that he has excellent production skills as he has seen the barn at Floral grow from a 230 sow farrow to wean facility producing 4800 pigs per year in 1988 when he became manager to its

current 310 sow farrow to finish producing 7700 pigs per year and conducting 50 to 60 experiments per year.

The ability to balance the needs of research and keep production records in the top 10% of PigChamp statistics is one of the goals for the barn. He finds that a large part of his job is managing people; although, he has 9 people reporting directly to him, he has another 28 people who are conducting research in the barn. Brian's secret is good communication skills, the ability to stay calm in all situations and the ability to empower his people to achieve their personal best.

Although Brian lives at the PSC Floral site, he does manage to find time for golf, curling, ball, movies and sharing the good company of his many friends.

The Prairie Swine Centre is pleased to introduce Troy Donauer as the new Farm Manager of the PSC Elstow Research Farm Inc. He grew up on a mixed farm at Grenfell, SK (east of Regina). and is a graduate of the U of S having obtained his Bachelor of Science degree in 1993. Troy brings to the position 5 1/2 years of experience working at the Prairie Swine Centre in the farrowing/breeding barn. Troy was selected for this position because of his proven production skills, his good communication skills, his demonstrated

personal growth in his previous position and his knowledge of the requirements of research. Although the emphasis at the Elstow barn will be on production, there is still the need to balance the needs of the ongoing research.

Troy and his wife, Anne will soon take up residence in the new house at the PSC Elstow Research Farm Inc. that is located north of the hamlet of Elstow. Not only are they looking forward to the move to Elstow, but are also



Troy Donauer

expecting their first child in August.

Troy has many interests that take up his recreational time. He enjoys playing hockey, hunting, and horseback riding. He and Anne currently have 3 horses which they enjoy riding. Last year, they took two of their horses to the Cypress Hills and explored the many horse trails while enjoying the uniqueness of the Cypress Hills. 🐷

Continued from page 1

model, the lean growth rate together with the diet DE content of feed intake information are entered to determine nutrient requirements. Therefore, it is important to measure the feed intake of the same pigs that provide the lean growth data.

Be aware of some factors to consider when using this method to determine nutrient requirements. First, this approach cannot estimate a nutrient

requirement higher than the level fed to the pigs whose performance was measured. For example, the approach estimates the amount of lysine needed to reach the measured level of performance. If the requirement estimate is near the amount fed, it is possible that lysine intake is limiting performance, and that the pig is capable of growing more rapidly with more lysine. In that case, it is important

to repeat the measurements with a higher dietary lysine level.

Requirement estimates made previously may no longer be appropriate after significant changes in genetics, health, stocking density, temperature or other factors. Close monitoring of performance and nutrients supplied in the diet will maximize productivity of that herd. 🐷

Herd Health

Mary Petersen, B.Ed

Hog barns require managers to have an in depth knowledge of all aspects of the establishment and maintenance of high herd health. The ability to manage the health of a herd is a task that requires constant vigilance, skills and knowledge. The participants, who attend the PSCI course Herd Health delivered at Watrous, SK and Olds, AB, agree that the complexity of the skills and knowledge required is enormous, but with a course such as Herd Health to assist their increase of knowledge, the task becomes more manageable. "I will have a better handle on common things to work from that I didn't have before."

Dr. Jim Sawatsky and Dr. Greg Muench, who jointly taught the course at Watrous divided the knowledge and skills required to manage a herd into manageable




Olds, Alberta. Jan. 11 & 12

Participants spent time in groups calculating dosages and discussing withdrawal times.

Lastly, when Sawatsky and Muench handed the participants production records from a hog barn and asked a simple question, "Is there a problem with this herd?" students were challenged to hone their analytical skills, work with their group and come up with some answers. The participants agree, "the case studies presented made us think, learn to use PigChamp and read reports."

At the end of this 15 hour course, there was consensus that the establishment and maintenance of high herd health was made more manageable by participating in this course. All participants agree that the most valuable components of the course is the time spent with people from other barns, the time to ask questions, the challenging case studies and working

with a group to solve problems. Thanks to Jim Sawatsky, Greg Muench and Henry Gauvreau for delivering this course to hog producers in Saskatchewan and Alberta. 

Coming Events

Manure Management Conference 2000
June 26 – 28, 2000

•
Western Nutrition Conference
Winnipeg
September 27 & 29, 2000

•
Swine Technology Workshop
Red Deer, Alberta
November 1 & 2, 2000

•
Sask Pork Symposium
November 14, 15 & 16, 2000

•
Sask Pork Semi-Annual Meeting
November (watch for exact dates)

•
Hog & Poultry Days
Winnipeg Convention Centre
December 6 & 7, 2000

•
Alberta Pork Annual Meeting
December 6 & 7, 2000

•
Banff Seminar
January 23 – 26, 2001

•
Manitoba Swine Seminar
International Inn, Winnipeg
January 31 & February 1, 2001

•
Alberta Pork Congress
March 14 – 17, 2001



Dr. Henry Gauvreau instructing "Herd Health" at Olds College, Jan. 11 & 12

portions. First, they encouraged all participants to sharpen all of their senses. Participants listed the diseases that they could detect by using each of their senses – sight, hearing, smell and touch. They were challenged to use their senses together with common sense whenever they entered the barn. Early detection is the key to maintaining a healthy herd. With years of experience in the hog industry, Sawatsky was able to give the participants real case studies to heighten their analytical skills.

Second, no course on herd health would be complete without a section on swine diseases and the methods of transmission and prevention. Dr. Henry



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