



Swine Profitability Conference

**Sponsored by
Department of Animal Sciences and
Industry
K-State Research and Extension
Kansas State University, Manhattan**

SWINE PROFITABILITY CONFERENCE



Sponsored by

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Tuesday, February 1, 2011
Forum Hall, K-State Union

SWINE PROFITABILITY CONFERENCE

KSU Forum Hall
K-State Union
Tuesday, February 1, 2011



Program Agenda

Morning Program

- 9:15 a.m. Registration
- 9:30 a.m. Jack and Pat Anderson Lecture in Swine Health Management:
**Lessons from Large Production Systems that Can Help the
Competitiveness of Land-Based Producers**
Dr. Gene Nemechek, Tyson Foods, Springdale, AR
- 10:45 a.m. **What Have I Done to Make My Land-Based System Successful**
Kent Condray, Clifton, KS
- 11:30 a.m. **Lunch**
- Noon** **My Vision for Job Creation in Animal Agriculture**
Governor Sam Brownback

Afternoon Program

- 1:30 p.m. **Short and Long-Term Price Outlook: How Will Consumer
Preferences on the Welfare Front Impact Your Operation?**
Dr. Glynn Tonsor, Kansas State University
- 2:30 p.m. **How to Keep Your Swine Operation off YouTube**
Cindy Cunningham, National Pork Board
- 3:15 p.m. **Adjourn**
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Table of Contents

Jack and Pat Anderson Lecture in Swine Health Management: Lessons from Large Production Systems that can help the Competitiveness of Land-Based Producers	1
<i>Dr. Gene Nemechek, Tyson Foods, Springdale, AR</i>	
What Have I Done to Make My Land-Based System Successful	7
<i>Kent Condray, Clifton, KS</i>	
Short and Long-Term Price Outlook: How Will Consumer Preferences on the Welfare Front Impact Your Operation?	13
<i>Dr. Glynn Tonsor, Kansas State University</i>	
How to Keep Your Swine Operation off YouTube	19
<i>Cindy Cunningham, National Pork Board</i>	
 APPENDIX:	
Where has All the Research Gone?	33
<i>M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. DeRouchey, and J.L. Nelssen K-State Applied Swine Nutrition Team</i>	



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SWINE PROFITABILITY CONFERENCE

February 1, 2011

Jack and Pat Anderson Lecture in Swine Health
Management:
*“Lessons from Large Production Systems
that can help the Competitiveness of
Land-Based Producers”*



by

Dr. Gene Nemecek
Tyson Foods
Springdale, AR

Jack and Pat Anderson Lecture in Swine Health Management:
“Lessons from Large Production Systems that can help the Competitiveness
of Land-Based Producers”

Gene Nemecek, DVM
The Pork Group, Tyson Foods, Springdale, AR

The large pork production systems have increased in size, controlling a much higher percentage of the total pigs produced in the US. What does that mean for the independent land-based pork producers? Can the land based pork producers remain competitive, sustainable, and viable in today's pork industry? I will attempt to share some of the observations of the large production systems that I have made over the past 30 years. Hopefully, some of these observations will give the land based producers in the audience some areas to think about and maybe evaluate and incorporate into their pork production business.

Pork Production as a Stand Alone Business

Pork Production: A Systems Approach

The large production systems early on developed production standards that were used as guidelines for day after day production practices. These standards gave structure and consistency to the production practices which outlined how things were to be done on the farms. These standards were written down and used for training of new and existing employees. These guidelines outlined everything from feeding animals, breeding practices, building environmental management, health management, farrowing house management, pig processing, record keeping, and grow finishing management. This systems approach accomplished a uniformity of production practices across numerous operations and employees, and produced a uniform consistent end product. These standards required a constant regular update process as well to keep up with improvement in technology and production practices. The written standards for production allowed for structured process for training of new employees across the entire production system.

Pork Production: Method for Measuring and Monitoring Production Parameters

As the large production systems increased in size and complexity, it became obvious that they required a record system to measure production and financial parameters. Without a method for measurement, business decisions for improvement were difficult. Lenders began to require production and financial records to support lending decisions. The competitiveness and cyclical nature of pork production pressured production systems to adopt record systems to measure the production parameters of their business.

Record systems were developed or purchased to monitor on farm production: pigs per sow per year, individual sow productivity, farrowing rates, weaning performance, death losses, growth and feed conversions. To compliment the production records, financial record systems were developed to measure the financial impact of production practices. These record systems were used to measure farm performance differences between units and managers, as well as the production cost differences between farms. Producers must use the records, not just generate them. Pick out the few key parameters and focus on those areas.

The next step involving the production records and production cost moved forward with large production systems interest in comparing how they performed against other large production systems. That demand for comparison allowed for the evolution of independent record keeping companies that provided a confidential records comparison service that allowed for benchmarking. The benchmarking/records services allowed for large production systems to evaluate their production and cost and revenue parameters when measured against similar production systems. This benchmarking can measure and compare information such as sow productivity, grow-finish performance, caloric conversion and cost, veterinary and health cost, transportation cost, and financial returns between individual production units and between entire production systems.

Pork Production: A People Business

The large production systems realized that pork production was a business that required an investment in human capital. Efficient pork production required a continuous source of quality, talented, educated, experienced, and motivated employees. The pork industry is really a people business that just happens to raise pigs. People make the difference in a production system's success. The large production systems realized early on that they needed to hire human resource consultants to hire and train the employees needed to staff the production units and associated business entities. Company employees are continuously trained on new production practices, animal welfare standards, animal handling, company code of conduct, and harassment issues.

Pork Production: Turn Feed Ingredients into High Quality Protein

Large production systems typically are not involved in raising and producing the grains for their pig diets. Feed costs are still the highest cost in pork production, regardless of the size of the operation. The large production systems are constantly analyzing the nutritional aspect of their business in order to control feed cost, maximize nutritional efficiency, and utilize all types of available ingredients. Large production systems have either hired swine nutritionist or consultants to continuously make ration adjustments based of ingredient cost, availability, and nutrient specifications. In addition to the nutritionist's involvement, most large production systems, in an effort to control cost, have also hired consultants to provide ingredient purchasing advice. The Kansas State University Swine Nutrition Group leads the country in providing the swine nutrition guidelines for the US pork industry.

Pork Production: Herd Health

Large production systems have not been immune to the detrimental effects of swine diseases that adversely impact performance. The large productions systems realized that they needed access to updated information on disease control, testing procedures, disease prevention, and disease treatment. Most large production systems have either hired staff veterinarians or they keep swine veterinarians on retainer for advice on disease control. In many cases the swine veterinarians are the first line of information for not only disease and herd health, but also overall farm management as well. Veterinarians must continue to be educated on the continuous technology and management changes that are occurring in today's pork industry.

Pork Production: Genetics

The large production systems realized early on the importance and advantage of utilizing high producing female lines crossed to high quality terminal sires to produce a uniform, high carcass quality, fast growing, and feed efficient market hog. While genetics companies have made their product lines available to all size customers, volume purchases and the establishment of

genetic nucleus herds along with production system boar studs have allowed large systems to lower their overall genetics cost. The genetic options to produce a top quality market hog are available to all size producers but the health considerations must be a top consideration when making a genetic decision. The length of time required for generation turnover makes it imperative to make the right genetic decision as well.

Pork Production: Purchasing

Volume purchasing and discounts have become a way to reduce the cost of production for the large production systems. The large production systems obviously buy more volume: health products, vaccines, feed ingredients, equipment, and supplies. The volume pricing used by many vendors has allowed the large production systems to use it as a way to reduce their cost of production. Many smaller producers and veterinarians have joined together to form buying groups to also take advantage of the volume pricing. The opportunity to use hedging and the futures markets for forward pricing is not limited only to the large producers, but it has been used by many of the large producers to limit risk. Many large production systems have full time staff totally focused on controlling input costs. My observations have been that these experts do not always make the right decisions.

Pork Production: Marketing

The large production systems used their production volume to their advantage at a time when packers paid premiums to producers who could supply increased volume of market hogs. As packers began to buy based on carcass quality, volume pricing became less of a factor. Today pork producers, regardless of size, can still negotiate with packers to provide top quality market hogs. The biggest opportunity that all pork producers have today to maximize their revenue is to sell their hogs in the correct matrix weight range for the packer to whom they market. I will leave the issue of futures pricing of the markets hogs to someone more qualified.

Pork Production: Areas of Opportunity

The following are some additional production practices that many large production systems have implemented to improve performance, increase revenue, and to reduce production and financial risk.

- Replacement gilt production and grow-out systems that minimize disease risk, maximize performance, standardize genetic performance, and reduce overall genetics costs.
- Production management teams that are separated based on production type: genetic, breeding/farrowing, nursery, grow-finish, boar stud. The specialized production focus generally improves production performance throughout the production system.
- Three site production: separation of production age groups and all in/all out flow of nursery and grow –finish. Strategic location of production sites based on the potential for reduction of area disease exposure can reduce health risk and improve production.

- Vaccination crews that are responsible for vaccinating all the weekly production flows.
- Market hog sorting and load out crews that are responsible the marketing of the hogs.
- Truck washes with TADD systems that are production system specific to improve biosecurity: truck washes separated for sow and wean pig production, nursery, finishing, and genetics.
- Environmental management teams responsible for nutrient management.

Pork Production: Responsible Pork Production

The National Pork Board and the National Pork Producers Council have implemented and promoted the **We Care Initiative**: Pork Producer's Commitment to Doing What's Right!

1. Produce Safe Food
2. Protect and Promote Animal Well-Being
3. Ensure Practices to Protect Public Health
4. Safeguard Natural Resources in All of Our Practices
5. Provide a Work Environment That is Safe and Consistent With Our Other Ethical Principles
6. Contribute to a Better Quality of Life in Our Communities



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SWINE PROFITABILITY CONFERENCE

February 1, 2011

*“What Have I Done to Make My Land-Based
System Successful”*



by

Kent Condray
Pork Producer
Clifton, KS

What Have I Done to Make My Land-Based System Successful

*Kent Condray
Pork Producer, Clifton, KS*

HISTORY OF THE HOG OPERATION

From the middle 1950s to early 70s my father bought up to 300 weaned steers in fall and he would background them in the winter and sell them in the spring to a feedlot or finish them out. The last year we had cattle was in 1973.

Starting in the fall of 1968, with my Dad and Brother Scott, who was a freshman in high school, what started as a FFA project, turned in to my lifelong career! I was in the 7th grade and we started with 15 SPF gilts. We used what we had available, old cattle corrals for pens and barn lean to for a shed. We put farrowing stalls in the other side of barn to farrow in. We sold the gilts through Farmland's F1 gilt program for a few years. I graduated from High School in 1974 and went two years to Beloit Vo-Tech in Production Ag.

We continued to raise hogs, and in 1970 we built three open front sheds to gestate sows and feed hogs in. They were built with 10 to 12' high side walls with the thought if the hogs didn't work out they could be used to store machinery, hay or cattle. In 1971, we built a farrowing house with a solid concrete floor, and in 1974 built a Cargill floor. We were running around 125 to 150 sows: Breeding and Gestating Sows in dirt lots, farrowing in stalls on a solid concrete floor; finishing hogs on a Cargill floor or in dirt lots. This system was very labor intense.

When my brother graduated from K-State in 1976 he entered law school at Washburn, and wasn't coming back to the farm and exited the hog enterprise. That same year I graduated from Vo-Tech and returned to the farm fulltime. I ran the hog operation and helped with the grain side of the farm. I wanted to expand the hog operation with user friendly, less labor intense buildings. My father wanted to slow down but thought pigs would be a good way to market the farm's grain. He agreed to co-sign a loan for me with PCA, now Farm Credit, to expand the hog operation.

In 1979, my father exited the hog operation and I expanded to 280 sows. I built a breeding-gestation barn, farrowing house with 4-12 crate rooms and an 8 room nursery. I populated the farm with York-Duroc gilts from Fred Germann, and in 1980 we converted the old farrowing house to a grower barn, and built a 600 head MOF (modified open front) finisher barn. In 1983, we built another 600 MOF with the old Cargill floor and I was finally able to finish all our hogs on concrete. All feed was made with a tractor and grinder mixer. I had two employees, life was good. Hogs were profitable. I paid down debt and bought a few farms. In 1992, we built another 300 sow farrow to finish farm three-fourths of a mile north of the home farm. We raised F1 gilts for Craig Good with a rapidly changing industry and with most farms switching to hybrid gilts from breeding stock companies. Our F-1 gilt program didn't last as long as we would have liked it to. We were making feed for both farms with a portable grinder mixer. Running two 300 sow farms, and with the home farm needing updated, in 1998 we made the decision to convert N Farm to SEW farm, converted finisher to gestation barn, and built more farrowing rooms, increased to 1000 sows, and converted home Farm to a wean finish farm. From 1997-2006, one-half mile east of the home farm we built two 2,000 head nurseries, 180,000 bushel grain storage, and shop- office and feed mill. And from 1997-2006, one-half mile south of nursery farm built four 2,000 head finisher barns. In 2005, we doubled our sow capacity to 2,000 sows by adding another gestating barn and more farrowing

rooms. As we have expanded, we have always been short on nursery and finishing capacity and currently we are transporting pigs to Iowa to feed. This last fall we started construction on four 1,200 head wean to finish barns, four miles north west of the feed mill. With this expansion we should be able to feed all of our pigs close to the feed mill.

In the past during expansions we usually employed 4 to 6 construction workers to pour concrete; frame buildings, build gates, and install equipment. Our barns didn't go up as fast as if we contracted them out as a turnkey project. We build as a Pay as you (go) Standard. These barns we are building now we subbed out the concrete work and also the framing.

HOW I INCORPORATE FAMILY, EMPLOYEES AND NEIGHBORS

FAMILY

In 1989 I got a new boss when I married Marian Charbonneau from Concordia; we lived near my parents in the country north west of Clifton. Marian was the manager of a card and gift store in Concordia. In 2005, she closed the store and Marian was a stay at home wife and mother and has in the last year started working in our office with bookkeeping and record keeping in the finishing end, and also helping run errands as needed.

We have three daughters, our oldest Sarah graduated from high school in 2009, and is now a junior at Fort Hays State University, and was accepted into the nursing program last fall. Sarah loved to go with me when walking finishing barns. She was 4 and loved to check the pigs and by the time she was 7 she was helping sort and load fats. Sarah has worked in several different aspects of our farming operation, from helping when she was 8 move tractors from field to field (which her mom didn't know about until she was 10); she helped with concrete and framing new buildings, and also helped during summer vacation in the sow unit. Dr. Henry is still holding out hope that she will come to her senses and stop nursing school and come to KSU to be a veterinarian.

Our middle daughter, Laura, was born 17 weeks premature and will graduate in May from CCHS then go to CCCC majoring in Elementary Education. Laura is legally blind but really doesn't let that get in her way. She has also helped sort and load. Her first job was watering down the fats once they were loaded. She helps with sow records and says she has been promoted to the front office.

Our youngest daughter Andrea is a sophomore and has not really figured out what she plans to do after high school but it will have something to do with fashion or cosmetology or as our older girls say living at home with her parents.

She does not like to get her hands dirty, Laura tells the story of being gone to camp and Andrea was to do her job while she was gone, which was watering the pigs down in the semi once they were loaded. One very hot summer night, Andrea decided to spray the sky, and not the pigs. She was fired by Laura when she got home.

So it is not very likely they will return to carry on the farm operation, but time will tell.

My first employee, Randy Jackson, started in 1979 and in April will have worked for me for 32 years. He is more than an employee; he is family and currently is the sow farm site manager. His dad runs our honey wagon, mows around the farm and is 82 years old and his mom was the babysitter for our girls, their adopted grandparents.

Employees, as I've said Randy Jackson has worked for me for almost 32 years and has been involved in all of our growth. We also have several loyal employees.

Doug DeRusseau has been my nursery supervisor for 7 years; Bob Leduc has worked for me since 2004. He loves working with animals but when his brother in law offered him a job at the local brick plant he gave it a try of 3 days and called to see if he could have his old job back, okay when can you start Monday well actually I told them yesterday I wasn't coming back so I can start tomorrow, Thursday. He was gone 3 days.

My office manager Tammy Elsasser has worked for me for 5 years and keeps everything all bookkeeping, payroll sow records and oversees the feed mill.

I had been putting an ad in the local newspapers for employees to work in all aspects of the farm, in the finishers, sow unit and building construction. Many times we ran ads and no qualified people applied. The last time we placed an ad we got no inquires at all.

We became aware of a program called World Wide Farmers Exchange; they find young adults in other countries that are willing to come to the United States on a work Visa to stay 1 to 1.5 years then return home.

Our first experience came in December of 2007, a couple from the Ukraine was already in the states and the farm they had been placed at was not working out. So they would be coming, well it came to an abrupt end when the farmer had them leave earlier, they were dropped off at a hotel and driven to our farm on New Year's eve 2007. Their house was not ready, because we thought we had more time but we pulled it together and by the end of the day they had a roof over their heads and turned out to be exceptional workers. They applied for an extension on their visa and were given 6 more months so they would go home in the spring of 2009.

During that time we applied for and had another couple come from the Ukraine and that couple stayed for only one year. Because of high unemployment in this country visa extensions weren't being granted. They went home and they have in November returned to our farm under a new program for one year. The entire time they were home they worked on getting back over here.

Every employee we have had through this program has not worked out, in which case they are sent back home. My wife is like their mother and we are in turn their family. If they are sick she takes them to the doctor. Recently one of our (kids) fell and broke his arm which caused him to not work for 5 weeks. We continued to provide housing for him while he was off work.

This is like the Foreign Exchange student program for high school kids, these young people want to work and learn, and they most generally are here to earn money to take back to help family at home. One of our employees Max is married and his wife and small son are at home. He talks to them on Skype to keep in touch.

We have learned a lot about their country and we try to teach them about life in the USA, when we have family dinners they come, they go to our 4th of July celebration, Thanksgiving and Christmas. They also are invited to graduations and some birthday parties.

When we take them to the airport to send them back to their country we tell them until we see you again, because we are close to them and have plans in the future to visit their country and have them show us around.

We also have had very good luck with workers from Mexico; they speak very little English but are very willing to learn and want to have a better life for their families.

At this time we have 4 employees from the Ukraine and 6 from Mexico, kind of like the United Nations, we are the minority.

NEIGHBORS

I have several good neighbors, This is just one example: last May a wind storm took down power lines, tipped over pivot irrigation systems, and damaged many buildings in the neighborhood. Early the next morning when I finished loading hogs I got in my pickup, my cell phone had 2 missed calls (I leave my phone in pickup when loading to keep from losing it) from neighbors wanting to know if I needed help with building damage. We were lucky; we had some minor roof damage. Lost power to all farms and had 4 center pivots destroyed and 2 with damage. Both of those neighbors also had damage but were concerned about the livestock.

I have always been grain deficient always needed to feed more grain than I produce. We produce around one-half of our feed grain, and purchase the rest from neighbors. We take delivery for some at harvest, and also have neighbor deliver corn and milo throughout the year.

HOW I CAN USE LAND BASE TO MAKE MY OPERATION SUCCESSFUL

When I started farming I didn't have a written business plan (and still don't). I reinvested income back into the operation where I felt it would be the most beneficial to the farm at the time. We have around 900 irrigated acres with a crop rotation 1/3 acres planted to soybeans and 2/3 acres planted to corn annually and 2,100 dry land acres planted 1/3 acres to each crop wheat, grain sorghum and soybeans. I have all cropland custom farmed with no-till amounts to planting, spraying and harvesting. We hire an agronomist to take soil samples of all fields annually to use as a guide for fertilizer recommendations (also required for our Nutrient Management Plan approved by KDHE). He also scouts fields for weed and insect pressure every week during the growing season and also checks soil moisture on irrigated fields so we know when to irrigate. Hog manure is a great way to add nutrients to the soil. Most of our soils are high clay and hog manure seems to improve the productivity better than commercial fertilizer along with no-till practices.

Raising feed grains helps average income between livestock and grain prices. The farms I have bought have been paid for with income from hogs. In the past hogs have added value to grain in more years than not. Going forward with the export and ethanol demand for feed grains and soybeans, input cost are going to be higher. But the hog price will adjust for higher input costs in time. Until then grains will subsidize the hog operation.

The environment we do business in is always changing so we must change.

I really am not good at risk management. I am not disciplined enough, there are times I do ok other times I am terrible. There are so many variables and also basic swings. I at times forward price SBM from a processor and also at times buy corn ahead. If I can't buy enough cash corn ahead, I use futures or options for price protection. It is very hard to beat an average if marketing and buying inputs on a weekly basis.

MY FUTURE IN THE INDUSTRY

I don't spend too much time remembering the past; you must look forward and plan for the future.

It really does not look like any of my children will return to the farm. I'm 54 years old; I need to start planning an exit strategy, lease or transfer ownership in the future. I enjoy raising pigs, working with employees and allied industry people -extension, consulting vets and sales rep. etc. Kansas has a land grant university in KSU with excellent swine animal science dept. and Veterinary School. Kansas is a great place to raise pigs.

As long as this industry has adequate price discovery and packers need hogs there should be a place in this industry for efficient independent producers.

High feed cost due to demand for corn and soybeans for export and ethanol, production are going to be an issue in the future. This industry will adjust and the hog corn ratio will become favorable again.

In closing, it's not what you make in this world - it's what you give back.

SWINE PROFITABILITY CONFERENCE

February 1, 2011

*“Short and Long-Term Price Outlook:
How Will Consumer Preferences on the
Welfare Front Impact Your Operation?”*



by

Dr. Glynn Tonsor
Kansas State University

Short and Long-Term Price Outlook: How Will Consumer Preferences on the Welfare Front Impact Your Operation?

Dr. Glynn Tonsor
Kansas State University

Additional material available to producers as discussed in Dr. Tonsor's presentation is available at <http://www.agmanager.info/livestock/marketing/AnimalWelfare/default.asp>

The screenshot shows the AgManager.info website interface. On the left is a vertical navigation menu with categories like Agribusiness, Crops, Energy, Farm Management, Livestock & Meat, Policy, Decision Tools, Ag Econ News, Contributors, Programs, Sponsors, and Upcoming Events. Below this are links for KFMA, Department Theses & Dissertations, a sign-up for weekly email updates, and an RSS feed. The main content area features a navigation bar with 'Home / Livestock Marketing' and a search box. Below this is a table of links organized into columns: Market Outlook and Newsletters, Charts and Databases, Marketing Extension Bulletins, USDA News, Reports, Futures Market Prices, Budgets, Economics, LRP and Policy, Related Sites, and Cross-Subject Areas. The table lists various sub-topics like 'In The Cattle Markets', 'Livestock & Hay Charts', 'Marketing Strategies', 'USDA News', 'Projected Budgets', 'BeefBasis.com', and 'Animal ID & Traceability'. Below the table is a section titled 'Livestock & Meat Marketing: Animal Well-Being and Welfare' which contains a table of publications. The table has columns for Title, Author, Date, Factsheet, Paper, Presentation, or Journal article, and Video. The publications listed include 'U.S. Meat Demand: The Influence of Animal Welfare Media Coverage' by Tonsor (September 2010), 'Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates' by Tonsor, Olynk, and Wolf (December 2009), 'Consumer Voting and Demand Behavior Regarding Swine Gestation Crates' by Tonsor, Wolf, and Olynk (July 2009), 'Consumer Use, Perceptions, and Demand Impacts of Alternative Animal Information Sources' by Tonsor (July 2009), and 'Alternative Animal Welfare Responses: Options and Implications for Producers and Industry-at-Large' by Tonsor (March 2009). Below this table is a section 'Animal Welfare Videos by Dr. Glynn Tonsor' which features three video thumbnails with titles: 'Impacts of Animal Welfare Media Attention on Meat Demand', 'Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates', and 'Consumer Voting and Demand Behavior Regarding Swine Gestation Crates'.

Market Outlook and Newsletters	Charts and Databases	Marketing Extension Bulletins	USDA News, Reports, Futures Market Prices	Budgets, Economics, LRP and Policy	Related Sites	Cross-Subject Areas
In The Cattle Markets	Livestock & Hay Charts	Marketing Strategies	USDA News	Projected Budgets	BeefBasis.com	Animal ID & Traceability
Livestock Outlook Radio	Livestock Databases	Financial Analysis	Futures Market Prices	Historical Budgets	NAIBER	Animal Well-Being
Cattle Finishing Returns	Beef Demand Charts	Trade and Demand	Pork Price Reporting	Production Economics	LMIC	CLPER
	Grain Supply & Demand	Price Risk Management	Interest Rate Forecasts	LRP Insurance		
				Policy		

Title	Author	Date	Factsheet, Paper, Presentation, or Journal article	Video
U.S. Meat Demand: The Influence of Animal Welfare Media Coverage	Tonsor	September, 2010	Fact Sheet (MF2951) Journal Article	WMV MP4
Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates	Tonsor, Olynk, and Wolf	December, 2009	Journal Article	WMV MP4
Consumer Voting and Demand Behavior Regarding Swine Gestation Crates	Tonsor, Wolf, and Olynk	July, 2009	Journal Article	WMV MP4
Consumer Use, Perceptions, and Demand Impacts of Alternative Animal Information Sources	Tonsor	July, 2009	Presentation	
Alternative Animal Welfare Responses: Options and Implications for Producers and Industry-at-Large	Tonsor	March, 2009	Presentation	

Animal Welfare Videos by Dr. Glynn Tonsor

- Impacts of Animal Welfare Media Attention on Meat Demand**
- Consumer Preferences for Animal Welfare Attributes: The Case of Gestation Crates**
- Consumer Voting and Demand Behavior Regarding Swine Gestation Crates**

U.S. consumers are expressing increasing interest in the production practices used in modern food production. An issue rapidly increasing in importance to consumers is the treatment of farm animals raised for meat, milk, and eggs destined for human consumption. Recently U.S. residents in several states have signaled concern for animal well-being through ballot initiatives that prohibit the use of particular practices (i.e., gestation crates/stalls in swine production).

However, a critical question remains: what, if any, influences do animal-welfare concerns have on aggregate consumer demand for meat? This publication summarizes findings and implications from a broader study that sought to address this issue. Additional information on the study is available at www.agmanager.info.

Methods

In this study, it was assumed that publicly available information influences consumer perceptions of meat product quality, which in turn influences consumption decisions. In the analysis of U.S. meat demand, consumer perceptions of product quality are presumed to be potentially influenced by media information regarding animal handling and welfare concerns.

An extensive search of top U.S. newspapers and magazines was used to develop indices reflecting public information on animal welfare that U.S. consumers received from 1982 to 2008. These indices are presented for the 1999 – 2008 period in Figure 1.

Each index has increased over time with notable increases in recent years. As expected, the index gener-

ated for articles references beef (or cattle) and animal welfare issues (*BEEF AW INDEX*) clearly experienced a sharp increase early in 2008 when the highly publicized Westland/Hallmark event occurred in Chino, California.

These media indices were incorporated in a meat demand system estimated to identify the effect of animal welfare information published by U.S. media sources on exercised beef, pork, poultry, and non-meat food demand of the typical U.S. consumer for 1982 – 2008.

Results

The estimated economic model suggests media attention to animal welfare issues has not directly impacted beef demand, yet that attention has reduced both pork and poultry demand. The analysis also

suggests media articles influence meat demand for both the quarter they are released and the subsequent quarter following the article's publication.

**As a whole,
media attention
to animal
welfare has
significant,
negative effects
on U.S. meat
demand**

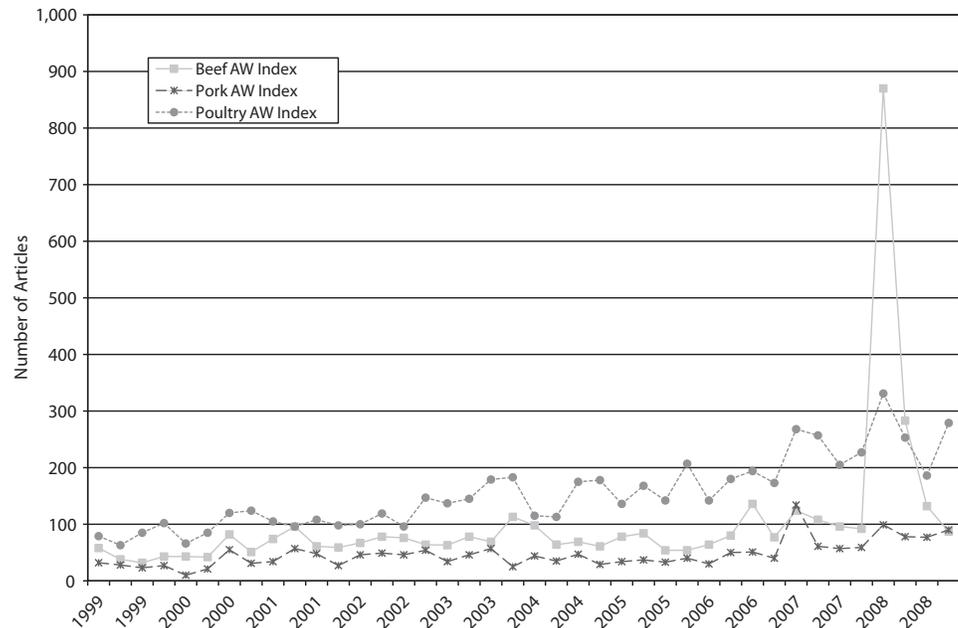


Figure 1. Species-Specific Media Indices (Number of Articles, 1999 – 2008 period).

While estimated animal welfare elasticities are notably lower than price and expenditure elasticities, this should not be mistaken for economic insignificance. For instance, between the first quarter of 1999 and the fourth quarter of 2008, the pork and poultry animal welfare indices increased by 181.3 percent and 253.2 percent, respectively. Using the estimated long-run elasticities it is suggested that pork and poultry demand increases over the last decade would have been 2.65 percent and 5.01 percent higher, respectively if media attention in the fourth quarter of 2008 was at equivalent levels as the first quarter of 1999. While the point estimates of these elasticities are smaller than price and expenditure effects, over a longer period of increasing media attention to animal welfare issues, they convey notable economic impacts to the U.S. livestock industry.

While beef demand is found to not be directly influenced by increased media attention to animal welfare issues, this should not be interpreted as the beef industry being immune. In particular, this study found increased media attention caused a reallocation of expenditures to nonmeat food rather than real-locating expenditure across competing meat products. Accordingly all three evaluated livestock and meat industries stand to lose if total meat expenditure is reduced as consumers obtain increasing amounts of media information regarding animal well-being and handling issues. More narrowly, if consumers make budget adjustments in favor of nonmeat products, the aggregate meat market loses the ability to internally compete for those funds.

Conclusions and Implications

The key findings of this study can be summarized as:

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Kansas State University Agricultural Experiment Station and Cooperative Extension Service

MF-2951

September 2010

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- As a whole, media attention to animal welfare has significant, negative effects on U.S. meat demand;
- Direct effects of media attention are primarily associated with pork and poultry demand;
- Increasing media attention to animal welfare issues triggers consumers to purchase less meat rather than reallocate expenditures across competing meats.

Core implications of these main findings:

- U.S. livestock producers and industry leaders must recognize meat demand impacts exist in discussions and negotiations regarding legislatively triggered production practice requirements;
- Influence of media on total meat expenditure suggests beef, pork, and poultry producers may be well served by collaborating in recognizing and responding to changing societal pressures regarding animal well-being.

While this study provides the first assessment of how media attention on animal welfare information influences consumer meat purchases, much additional research is needed. Perhaps most importantly, the changes to estimated consumer demand need to be paired with production cost impacts associated with adjustments in on-farm production practices to derive estimates of net economic influences on consumers, livestock producers, and society in general. This study supports this and related evaluations to improve the understanding of how increasing pressure to adjust on-farm practices to reflect societal pressures regarding animal well-being is economically impacting market participants throughout the livestock and meat-supply chain.



.....Notes.....Notes.....Notes.....Notes



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SWINE PROFITABILITY CONFERENCE

February 1, 2011

*“How to Keep Your Swine Operation
off YouTube”*



by

Cindy Cunningham
National Pork Board

How to Keep Your Swine Operation Off YouTube

*Cindy Cunningham
National Pork Board*

Are You Prepared for an Activist Group?

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we CARE AMERICA'S PORK PRODUCERS
DOING WHAT'S RIGHT.

pork checkoff.

Today's Session

- Climate of watchdogs
- Could it happen on your farm?
- The best defense is a great offense
- What tools are available?
- Telling your story your way

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Busy Day On The Farm

- Up & outside---coffee in hand
- Weather & markets---good
- Everything organized & working
- Cell phone rings
 - “Hi, I’m with ____, and we have damning evidence of animal abuse on your farm. I need a response from you in 10 minutes or we will call in the media.”

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Your First Thought...

- ?!#@?*&\$%^&!!
- Are you kidding me?
- Why me?
- I'm a good person
- We do things right on our farm
- What gives them the right to come in here and tell me how to run my farm?



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Your Next Thought...

- How can I get control of this
 - before it gets out of hand?
- Where do I turn for help?
- Is there really something wrong going on
 - on my farm?
- How would they find out, if I don't even know?



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Understanding The Opposition

- Who are they?
 - Well funded
 - Strategic thinkers
- Why do they care?
 - Passionate about their cause
- What tactics do they employ?
 - No rules when it comes to their cause
- When will they stop?
 - When the money train runs dry...



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Financial Support

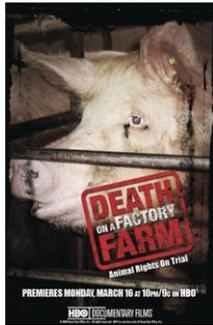
- HSUS \$130 million
- Mass SPCA \$47.9 million
- World Society for the Protection of Animals \$33.5 million
- PETA \$28.9 million
- PCRM \$7.5 million
- Farm Sanctuary \$5.1 million
- Compassion in World Farming \$4.9 million
- Friends of Animals \$4.7 million
- Animal Legal Defense Fund \$3.5 million
- Humane Farming Association \$2.4 million
- Animal Acres \$1.5 million



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Highly Visible & Graphic Campaigns



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Death on a Factory Farm---HBO



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HSUS Exposes Inhumane Treatment of Pigs at Smithfield

- Systemic abuses at factory farm
- [See extended video from the investigation.](#)
- (Dec. 15, 2010)—The Humane Society of the United States has released findings from an undercover investigation that documented the inhumane treatment of female breeding pigs and piglets at a Virginia factory farm owned by a subsidiary of Smithfield Foods, the world's largest pork producer. The investigation is the **latest examination by The HSUS into the operations of the nation's top animal agribusinesses.** It follows HSUS investigations last month into [Cal-Maine Foods](#), the country's largest egg producer, and [Willmar Poultry](#), the nation's top turkey hatchery. In each case, The HSUS found unacceptable and systemic abuses, revealing that these companies do not always observe even minimal best practices when it comes to animal welfare.



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Could It Happen On Your Farm?



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Take a Look at Your Farm?

- What procedures are in place on your farm to assure you are not the next victim of a micro-camera?
 - Hiring
 - Training
 - Day-to-day production practices
 - On-farm personnel issues
 - Employee attitudes toward animals



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Could You See This Device? Ultra Mini Pencil Eraser Sized Color Pinhole Video Camera With TinyTek Pocket DVR

The Ultra Mini Pencil Eraser Sized Color Pinhole Video Camera (CPC) can be manufactured under optical magnification with the world's smallest pocket DVR (digital video recorder) with screen in a complete covert video recording kit! MSRP: \$795.00 Your Cost Only \$449.95



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Looking For the Camera Vs. Doing The Right Thing

- Wouldn't you rather assure you are doing the right thing!
 - PQA Plus®
 - TQA®
 - We Care Responsible Pork Initiative
 - Ethical Principles

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The "WOW" Test

- Can all of your production practices pass the consumer "WOW" test?
 - Euthanasia
 - Castration
 - Tails
 - Housing
 - Transport
 - Weaning

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Two Sides To The Equation

- Assure daily production practices done correctly at the farm-level
- Work as industry to address those practices that raise questions



Your Staff--Hiring

- Not just filling boots
- Impacts bottom-line more ways than one
- And impacts each others attitudes
 - Do they like animals?
 - Are they abusive/disrespectful to others—may translate to pigs?
- *Would you want them representing you or your farm? Because they are!*



Demonstrating To Our Customers



Back To Our Busy Day On The Farm

- Up & outside
- Weather & markets
- Organized & working
- Cell phone rings
 - “Hi, I’m with ___ and we have damning evidence of animal abuse on your farm. I need a response from you in 10 minutes or we will call in the media.”



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Do You Have An Action Plan?

- Have you thought about it?
- Talked about it?
- Done advance work?

- How would you respond?



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Other Action Plans in Place

- Farm-level action plans
 - Manure management plan
 - Roster of contacts for emergencies
 - Breeding programs
 - Feeding programs
 - Pig flow plan
 - Crop rotation
 - Emergency Action Plan



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Potential Farm Plan

- Contacted by PETA/HSUS/FARM...
 - Who is the lead/team
 - What are their responsibilities
 - Is the contact legitimate
 - Who needs to know
 - Who can help
 - Get the facts straight
 - What is the plan



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Industry Assistance Is Available

- National Pork Board
- NPPC
- State Pork Association
- AASV
- Extension
- Law Enforcement



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Potential Plan Segments

- Activist Correspondence
- Employees
- Pork production
- Legal counsel
- Law enforcement
- External communications
 - Lenders, vendors, neighbors, community, media
- Industry relations



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What Do You Need To Protect?

- Your family and employees
 - Safety first
 - Keep getting the work done while you fight the battle
- Your animals
 - What if your employees all quit
 - Who cares for your pigs
- Your reputation
 - Not just issue of pride
 - Issue of being able to do business



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Activists Come Knocking

- PETA shows up at the farm
- What is your action plan?
 - Know your legal rights
 - Who needs to be called?
 - Who will handle the situation?
 - What if they are not available?
 - Can PETA enter your barns?



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Chances Are They Wont Be Alone

- News media covering the event
 - Looking for intensity, sensation, wild “sells”
- Demonstrators on your farm
 - What is your first step?
- Law enforcement levying animal cruelty charges
 - What are your rights?



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In All Cases

- All employees need to know the plan
- Who is in charge
- Who deals with this situation
- Who is their backup/assistant
 - Should be available to assist in any way
 - Take notes, listen, contact additional help



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News Media At Your Gate... pointers

- Do you talk with them?
 - The cameras are always rolling
 - The activists have told their story
- What should you say?
 - Legal implications
 - Moral implications
 - Community implications
- Do all employees know the plan?
 - “I need you to stay right there and I will get _____ to talk with you.”



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Prep Work Can Help

- Law enforcement
- Local media
- Community open house
- Community relations
- Know your supporters/detractors & what drives them
- ***Build Relationships Before You Need Them!***



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Should You Engage With Activists

- Weigh the consequences
 - Don't be held hostage
 - Don't underestimate their strategy
- ***The best way to avoid confrontation is to assure your farm is doing it right!***



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Mow-Mar As Example

- The owners of the farm were focused on doing the right thing in this situation
 - They met with PETA
 - They took corrective action
 - The industry was able to tell the story
- ***The outcome would have been significantly different had the owners not followed those steps***



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Team Effort

- Farm Owners
- New Farm Managers
- Previous Farm Managers
- National Pork Board
- National Pork Producers Council
- Iowa Pork Producer Association
- Minnesota Pork Producer Association
- American Association of Swine Veterinarians
- Hormel
- Iowa State University



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Bottom Line---

- Do the right thing
- Tell your story before someone else tells their version
- Have your alliances and reputation in order before you need them
- ***Every single situation is an industry situation in this day and age.***



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Emergency Action Plan

- Web-based www.pork.org
- Site-specific
- Share with employees
- Share with emergency responders
- ***Prior planning is the key to successful outcome in crisis situation!***



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It Happened in These States



- Ohio
- Minnesota
- Missouri
- Iowa
- North Carolina
- Texas



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You Are Not Alone

- National Pork Board
- National Pork Producers Council
- State Association
- American Association of Swine Veterinarians
- Extension

- Work as an industry response to help you!



DOING WHAT'S RIGHT.



Every Situation Impacts Us All

- Have your house in order
- Know your plan
- Build your relationships early

- *Do the right thing every single time*



DOING WHAT'S RIGHT.



Questions



■ This message funded by America's Pork Checkoff Program.

SWINE PROFITABILITY CONFERENCE

February 1, 2011

“Where Has All The Research Gone?”



by

M.D. Tokach, S.S. Dritz, R.D. Goodband,
J.M. DeRouche and J. L. Nelssen
K-State Applied Swine Nutrition Team

Where Has All The Research Gone?

M.D. Tokach, S.S. Dritz, R.D. Goodband, J.M. Derouchey, and J.L. Nelssen
K-State Applied Swine Nutrition Team

With this title, you may think I am here to talk about the dire research situation in the U.S. swine industry. That is not the case. Research is alive and well. There is more research work and greater quality swine research today than ever in the past. This is also not a plea for more dollars for universities. The reason for my interest in this subject is that we believe we are near a critical juncture in the U.S. swine industry in terms of whether we will remain the research and production leader around the world or whether we cede our leadership role to other countries.

Why do I think we are at a critical juncture for applied swine research in the U.S. swine industry? Many of the reasons are obvious. There are fewer university swine research programs and the number continues to decline every year. Fewer young people entering universities have a farm background and thus, fewer students have interest in applied swine research careers. Increasing tuition and selective admissions (Martin, 2006) further reduces the pool of students with agricultural background and interest. Public research dollars for applied research have been on a steady decline for decades. On a positive note, these public funds are being replaced by private dollars that fund research within production systems or by funding from industry suppliers. This industry infusion of capital for applied research is the main reason that research is alive and well. However, we would contend that current excitement of applied research breakthroughs in facilities built in swine production systems will wane with time and attrition due to long-term inability to replace the current research leaders in universities and production systems. We believe one of the key answers to having a continual supply of qualified, young researchers is to develop more public/private partnerships in order to maintain the critical research elements of research integrity, peer review, and student training.

Importance of technology adoption.

We don't need to spend much time with this audience on the importance of adopting technology; however, there are some examples that demonstrate the importance so well that we want to briefly highlight them. In a recent presentation at KSU Cattlemen's Day, Dr. Ted Schroeder shared a graph (Figure 1) that shows the explosive improvements in corn yield in Iowa as a result of technology adoption (genetically modified corn). He contrasted the improvements in Iowa to the corn yields in Italy. In the early 1990's Italy had higher yields than Iowa and is one of the EU's top corn-growing countries. Typically, Italy would out yield Iowa; however, Italy has made no progress in corn yields in the last 15 years which lead to Iowa producers now having a 30 to 50 bu/acre advantage over Italian corn producers. The main difference is that Iowa improved yields through adopting genetically-engineered varieties while Italy and the EU resisted adoption of those technologies.

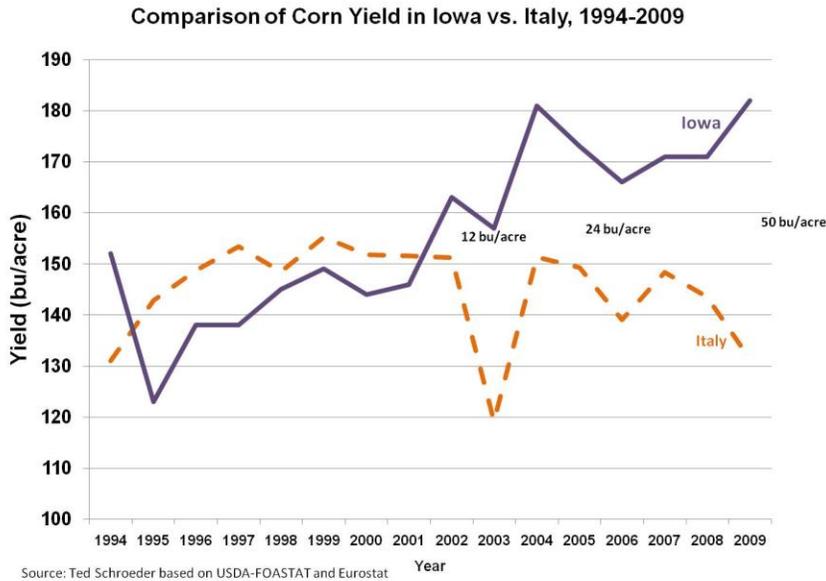


Figure 1. Comparison of corn yield in Iowa versus Italy, 1994 to 2009. Adapted from T. Schroeder, Kansas State University based on data from USDA-FOASTAT and Eurostat.

For a pork industry example, the data from a North Carolina State University study (Fix, 2007) demonstrates technology adoption very well. In this study, 1980 vintage pigs were created through frozen semen and sows unselected since 1979 and compared to 2005 genetic era pigs while feeding them diets that were common in 1980 compared to 2005 diets. Application of the technology advancements in genetics and nutrition had a profound impact on economically important traits. The combined genetic and nutrition advancements led to a 13% reduction in days to market (6% due to genetics, 7% due to feeding program; Figure 2), improved feed efficiency by 27% (7% genetic and 20% nutrition), reduced backfat by 24% (all via genetics), increased loin area by 34% (21% due to genetics and 13% from nutrition), and improved lean efficiency by 45% (22% for genetics, 23% for nutrition). The U.S. Swine industry would require an additional 12.5 million tons of feed and 5 million pig spaces if we were trying to produce today's numbers with 1980's pigs and nutrition programs.

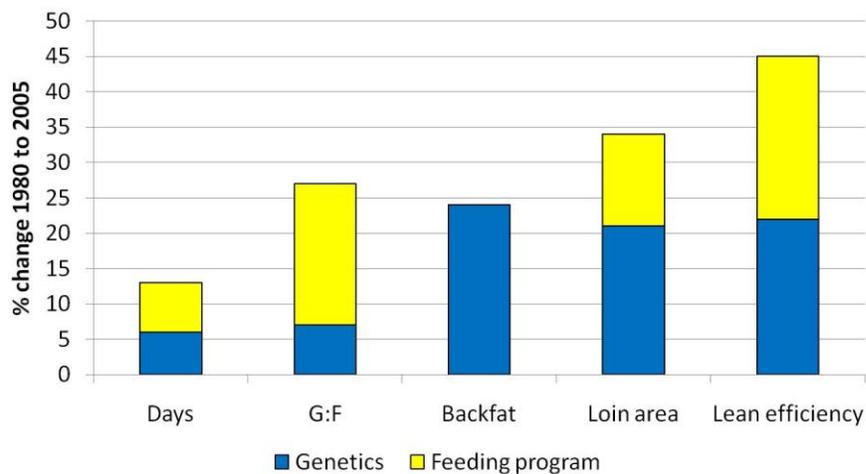


Figure 2. Influence of genetic and feeding program advancements from 1980 to 2005 on economically important traits. Adapted from Fix, 2007.

Models of technology transfer and research adoption

We often take technology development and transfer to practice for granted in the U.S. The Morrill Act began our long history of strong university research programs. The Smith-Lever Act led to development of extension programs that taught us how to extend university research breakthroughs to the industry. This model worked well for many years; however, one of the problems with the original structure and thought process is that it relied on innovations being made at the basic science level and those innovations to be forced down the chain in largely a one way communication channel (Figure 3). This is the model that most government policy is now following and has been referred to by some as the “pharmaceutical model” (Leaver, 2010). In this model, ‘blue sky’ research is done in university or research institutes with industry using the information to develop a saleable product. A problem with this research policy is the belief that all research innovation occurs at the basic research level. Because government policy follows this model, most federal dollars have been focused on basic science leading university administrators to hire faculty to pursue the basic sciences. This path increases the likelihood of researchers generating more overhead dollars to fund university operations.

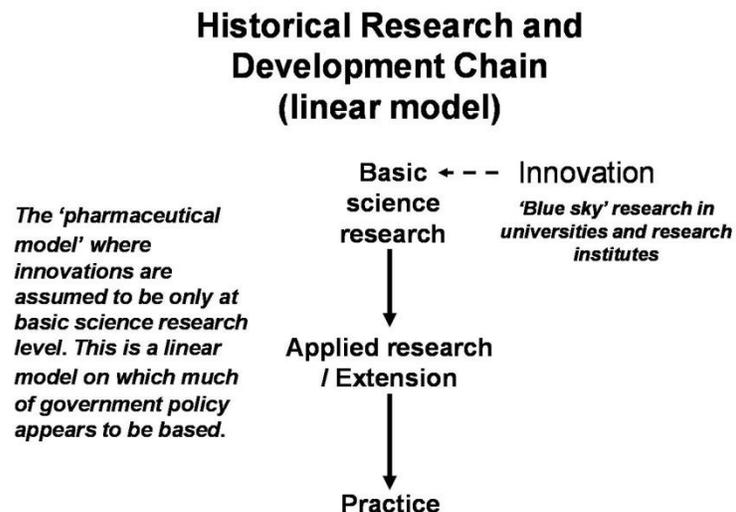


Figure 3. Historical research and development chain. Adapted from Leaver, 2010.

As Leaver (2010) describes and those of us that are involved in agricultural research and development realize, innovation can and has to occur at all levels of the research and development chain (Figure 4). Knowledge has to flow up and down the chain and influence actions at other levels rather than simply in a top down manner as much of the governmental research policy is written towards. Unfortunately, an excellent example of what can happen when one segment of the research and development chain is removed and not replaced by a comparable structure is the U.K. swine industry. The loss of some strategic and most applied agricultural research and extension in the U.K. through lack of funding has created a knowledge and innovation vacuum (Leaver, 2010; Figure 5).

Agricultural Research and Development Chain

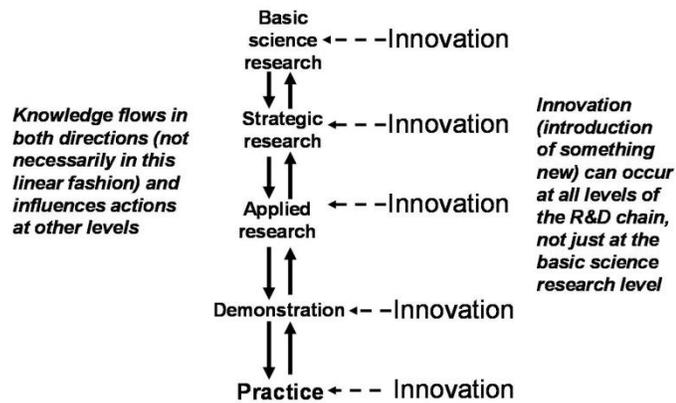


Figure 4. Agricultural research and development chain. Adapted from Leaver, 2010.

Current U.K. Agricultural Research and Development Chain

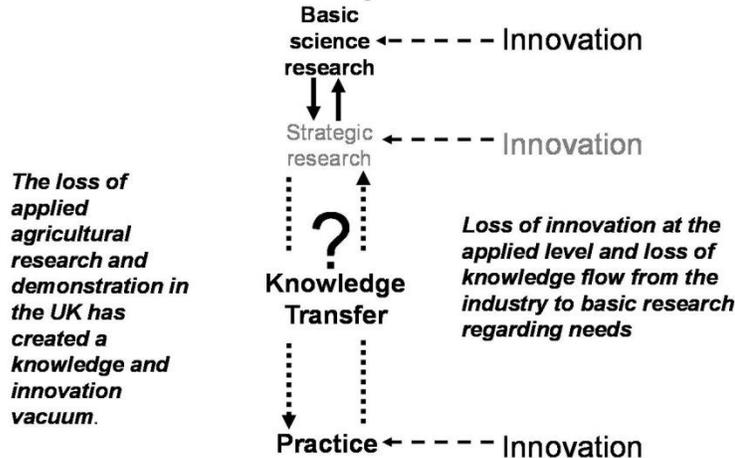


Figure 5. Research and development chain in U.K. Adapted from Leaver, 2010.

As Stuart Lamb summarized in a Pork Magazine article:

“We can’t turn the clock back, but we can learn from history and how a country’s swine industry has evolved — or devolved — and learn by others’ mistakes. The United Kingdom is one such country as its swine industry has changed dramatically.”

“Fifty years ago there were many U.K.-run Extension station farms and a country-wide Extension service. This helped pig farmers stay up-to-date and run efficient businesses. However, the Thatcher government ended those efforts, and money was funneled from applied research. That was to the U.K. pig farmers’ detriment.”

We need to learn from the U.K. history. We have been following their model by eliminating public funding for the applied research/extension parts of the research and development chain. Extension and applied research programs in most areas of agriculture, but particularly swine, are

being downsized or eliminated at most land grant institutions. As we stated above, we have a great start on replacing some of this infrastructure through private industry funding; however, we need to make sure we don't forget about some key parts of the development chain during this transformation.

Example applied research models:

We would suggest that there are three main applied research models: 1) university; 2) private; and 3) public/private partnerships. Each model has some unique benefits and downsides that must be considered.

University model. The biggest benefits of the university model are that it traditionally hasn't relied on much industry support, data is generally more unbiased than private data, and the research does not have to have immediate short-term application. This last benefit means that research can often be in areas with more long-term, exploratory focus or to develop basic knowledge that others need for their more applied research. Another huge upside of universities is that there are always young, bright inquisitive new minds that bring new ideas to the group. The recent lack of hiring at many universities has limited some of this advantage to graduate student influx rather than new faculty. The biggest downsides of university applied research models are that the data can often not be relevant or easily applicable by others. Research is often done in outdated facilities with too few of animals of the wrong genetics with the wrong health status to be readily used by producers. Most universities have not updated their facilities to match current industry standards. University models also work at a much slower pace due to regulatory requirements and other pressures on researchers' time and, for some, simply because the tenure process allows them to not be bottom-line driven and time sensitive. The other reality is that less university-only applied research will be available in the future simply due to a lack of funding of these programs.

Private model. The biggest benefits of private model are that the research can have rapid application, is relevant to the exact production system where it is being conducted, can be focused on the immediate situation, and be bottom-line driven. However, there are some downsides with private only models. Like the university model, they can lose creativity over time if new people are not infused into the group or if the system doesn't have dynamic people that are searching out new ideas and concepts to apply in the system. The bottom-line focus tends to move the thinking to the immediate and short-term which stifles creativity and can lead to fewer major breakthroughs. The biggest worry with replacing public models with private models is that there will be a void of people to replace the current generation of researchers trained in applied research that can bridge the gap between basic research and practice. We need to be cognizant of the long-term need to provide opportunities for future technologists in the swine industry to receive the proper basic training that is hard to accomplish in a private only model.

An often overlooked issue in most private research systems is the lack of peer review. Just the mention of peer review implies a long drawn-out unnecessary delay in getting data into application; however, it is a process that makes us better. We are not advocating that all data should be withheld until it gets published in a journal article, but rather that we use multiple avenues of peer review to get feedback on our research results. These could include sharing data at meetings, such as the Lemman Conference or meetings of the American Association of Swine Veterinarians or American Society of Animal Sciences, or even at local or regional meetings between production systems. These venues provide an opportunity where people can discuss and debate research findings. Peer review often allows alternative conclusions and improvements to future experiments to surface.

Confidentiality is another issue that can be problematic with the private only model. In some cases it can lead to “selective” publication of results. The only data that often gets circulated from the private applied research systems is data that shows the product in a positive light. Because University applied research programs have pressure for publications and abstracts, it is more likely that negative results or no response trials will still find their way into experiment station reports, abstracts, and papers. Because of the desire for confidentiality and lack of desire to publish, only those with a vested interest (usually suppliers) will share the results of research trials being done in many private-only models. We are often told that this is not a problem because “we will just test the product in our system before implementing”. In reality, you cannot test everything or waste time and resources in testing products or concepts that shouldn’t be tested. Also, we find that products get implemented into the system based on past relationships because there simply isn’t enough time for everybody to test everything. Lowering the confidentiality bar by building collaborations between production systems or by publishing trials at some point after being done will be required if the U.S. swine industry is to continue the pace of technological improvement that we have experienced in the past. The research programs in some private systems have already taken this step. In other systems, the CEO’s (usually not trained in the research process) believe the need to protect the applied research investment via confidentiality outweighs the benefits that they receive from sharing information with others. This attitude has got to change. No swine production system has the expertise in all the areas that can be accessed through sharing of information and peer review.

Another problem that can occur in private systems is that the CEO may not value research highly and, thus, straps the researchers with other “more important” responsibilities in the company, thus, greatly diluting the private research efforts over time. There can be a tendency for private businesses to “try this new idea” as opposed to a systematic, valid, research approach. This is particularly true when management training is in a field where the value of the scientific approach is not fully understood or appreciated.

Public/Private partnerships. When done correctly, we believe the third model can encompass many of the benefits of the university model and private models while minimizing the downside. There are more and more examples of these types of partnerships being developed in the swine industry including the Maschhoff/University of Illinois partnership and the New Horizon Farms/Kansas State University team. The benefits that can be captured include the relevance of data, large system application, creativity, peer review, and the ability to add areas and depth of expertise that cannot be afforded within the production system. Certainly, there are downsides with these arrangements. The production system needs to recognize the commitment to research in added labor, equipment and any potential effects on pig flow and production. On the other hand, the university needs to recognize the commitment in resources the production system has made and not apply treatments or procedures that are overly disruptive to the production system.

The production system also has to be willing to give up some level of confidentiality. Also, decisions usually must be made on a team basis rather than an individual basis. Although we see the team decision making process as a benefit, some researchers (and university administrators) can view it as a downside because of the difficulty in determining who should get the credit.

Our belief is that much of the value in an internal production research program lies in the ability to execute change based on the data. Our observation is that production systems with excellent processes in place to execute change also have greater confidence to submit their internal research data to external review. Their belief is that the major technologic advantage is from adoption. Therefore, a model of being exposed to more outside ideas brings more opportunities for implementation and more opportunities to profit from the partnership.

Research model needs.

Whether the research model is a university, private, or public/private partnership, we believe there are a few key requirements to make it successful long term.

Creativity. No matter where the applied research is being conducted, continual infusion of new ideas and new people is required. You have to be very careful to not squash the ideas of the “non-insiders” that bring suggestions to the research team. This can be a problem in a university or private system. Time is one of the biggest constraints on creativity. As a person becomes more successful, more requirements are placed on their time leaving less time to be creative. Researchers within universities and production systems have to find time to be creative. This can come through forced research meetings, brainstorming sessions, professional meetings, or other avenues. Besides time being required to allow those in the research team to be creative, adding outside people with new perspectives is another way to enhance creativity. People can be adding through hiring or, less expensively, by partnering with others whose expertise brings new ideas to the research team.

Dollars. Research and development is expensive. Partnerships between university and private systems have allowed us to spread the costs over multiple organizations and leverage expertise and resources; however, research still costs money. We believe it is a major mistake for a production system to view research as a profit center. The entire focus of the research unit changes once it is turned into a profit center. Instead of focusing on the biggest needs of the system, the focus becomes where we can find the necessary dollars to pay salaries and keep the research program running. Thus, you will fail to answer relevant questions and be driven by whoever can bring the most dollars to the table. For a veterinarian, this will most likely be an animal health company. For a nutritionist, it will most likely be an ingredient supplier. You will also find yourself compromising on experimental design and interpretation to satisfy the sponsor so they will fund more research in your facility. Bottom line is that you need dollars to run a research program, but don't let the dollars drive your research program.

Research mentality and commitment. Before a production system decides to build a research barn or start a research program, they need to determine whether they truly have the mentality and commitment to doing it correctly. For us, this entails two parts. First and simply, will the research get done according to protocol? For example, if the agreement is that pigs need to be marketed a certain way in order to collect carcass data, will they actually be marketed that way. This is a very simple example, but inability to follow the agreed upon protocol is one of the biggest problems that we find in trying to conduct field research. There must be a champion with the research mentality in the upper management team of the production system or organization. Without a champion, short-term costs or “the way we always do things” will win out over proper experimental design.

Rigor in execution is the second part of research commitment. There must be rigor in protocol development, experimental design, execution, data capture, analysis, and interpretation. Lack of discipline in any of these areas usually results in failure of repeatability of results and failure of the research to have a true impact on the production system. Several examples can be given where lack of rigor could impact experiment results including: allotting pigs to treatments without balancing for genetic lines, gender, or location in barns, weighing on scales that have not been calibrated, not validating pig counts and carefully documenting pig removals, not treating all pigs on test in the same manner, not having sufficient replications to draw conclusions, or using the wrong

statistical methods to analyze data. Over time, the lack of rigor will lead to lack of trust in the research results and lack of need for the researchers involved.

Peer review. We have already discussed the importance that we place on peer review. As stated peer review is one of the most frustrating and humbling parts of being a researcher. However, you must expose your warts to the outside world and accept criticism that comes in order to improve on the process and obtain new ideas from others to apply in your system. Peer review helps to force rigor back into your process control. It is simply too embarrassing not to have rigor when you expose yourself to peer review.

Credibility. In order to have value to the U.S. swine industry or within the production system, the research program has to have credibility. By credibility, we mean can the results be trusted and repeated by others. Unfortunately, you do not have to have credibility to get research funding. We all know of researchers that appear to be able to find a positive response to anything tested, no matter how many others have not been able to show those benefits in the past or in the future. We believe that very little data is outright made up; however, burying negative data sets, repeating trials until you convince yourself that you have the “right” results, or finding conclusions not supported by the data will all impact credibility.

Sometimes credibility isn't that easily or greedily lost. Lack of rigor in experiment execution can lead to loss of credibility. Lack of open sharing of data can lead to loss of credibility. For example, if a research system conducts three trials with a feed additive and only one shows a positive response and that is the only data shared with the outside world, credibility is lost to those that cannot repeat the results over time. We all know that results aren't 100% repeatable and, thus, we should be careful to deem somebody as not credible based on a single instance or two; however, serial violations to our trust and confidence will cause loss of credibility. As university researchers, if our research is not credible, producers will fail to gain benefit from our recommendations and we will eventually lose their support. If the research program within a production system loses credibility, the system will eventually ignore their research results and not implement them leading to lack of need for the research program within that system.

Summary

We are not pessimistic so the glass is not half empty, nor is it really half full, it has just moved to a different table. Applied research is alive and healthy in the U.S. swine industry; however, we do believe that the future is in danger due to loss of funding and increased privatization. Leaders in many of our private and public systems are getting older and will eventually need to be replaced. Our applied research models need to provide a place for training this next generation of applied researchers. By developing more public/private partnerships, we believe we can meet the applied research needs of the industry and train the next generation. Researchers in these public/private partnerships must remain an unbiased source of new creative ideas. The research needs to be focused on the long-term priorities of the partnership and not be driven by outside funding sources focused on placement of product in the production system. Because fewer universities will be involved in applied research, those in these public/private partnerships will have the opportunity to be well funded. To be successful long term, these research models must have creativity, dollars, a research mentality and commitment, peer review, and credibility. We have an increasing number of examples in our industry where this is occurring. As an industry, we need to learn from and improve on these models to keep the U.S. swine industry in the leadership role as the research and production leader around the world.

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