

Pg. 4 Pg. 16 Pg. 11 Ag Night at the **NPPC Honors** Processing 'Pig Paul' **Races Plant Takes Shape**

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Change is coming. Will you be ready?

Beginning January 1, 2017, a Veterinary Feed Directive order must be presented to purchase feeds containing:

Established drug name	Examples of proprietary drug name(s)
Chlortetracycline (CTC)	Aureomycin, CLTC, CTC, Chloratet, Chlorachel, ChlorMax, Chlortetracycline, Deracin, Inchlor, Pennchlor, Pfichlor
Chlortetracycline/Sulfamethazine	Aureo S, Aureomix S, Pennchlor S
Chlortetracycline/Sulfamethazine/Penicillin	Aureomix 500, Chlorachel/Pficlor SP, Pennchlor SP, ChlorMax SP
Hygromycin B	Hygromix
lincomycin	Lincomix
Oxytetracycline (OTC)	TM, OXTC, Oxytetracycline, Pennox, Terramycin
Oxytetracycline/Neomycin	Neo-Oxy, Neo-Terramycin
Penicillin	Penicillin, Penicillin G Procaine
Sulfadimethoxine/Ormetoprim	Rofenaid, Romet
Tylosin	Tylan, Tylosin, Tylovet
Tylosin/Sulfamethazine	Tylan Sulfa G, Tylan Plus Sulfa G, Tylosin Plus Sulfamethazine
Virginiamycin	Stafac, Virginiamycin, V-Max

Tilmicosin (Pulmotil, Tilmovet), Avilamycin (Kavault), Florfenicol (Aquaflor, Nuflor) currently require a VFD order.

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Michigan Pork Producers Association 3515 West Road, Suite B East Lansing, Michigan 48823 (517) 853-3782 www.mipork.org

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For any questions regarding Michigan Pork's mailing list, advertising or content please contact Emily Walker at walker@mipork.org or 517-853-3782.

MPPA Staff:

Sam Hines

Executive Vice President hines@mipork.org

Mary Kelpinski

Executive Director Managing Editor kelpinski@mipork.org

Emily Walker

Program Director Editor walker@mipork.org

On the cover: The Clemens Food Group Pork Processing Plant consruction continues.

2016, VOL. 41, NO. 2

Spotlight

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Processing Facility Taking Shape...... 4
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Departments

President's Page	6
As I See It	8
MSU Pork Quarterly	center
Capital Update	
Pork Checkoff	20
Calendar of Events	
We're Listening	
Index to Advertisers	

Features

MI Producers Participate in Fly-in	10
NPPC Honors 'Pig Paul'	11
Consumer Connections	12
Feral Swine Briefing	13
GAAMPS Survey	14
US Pork Needs Exports	15
USFRA Searching for Standout Farmers	15
Ag Night at the Races	16
NPB Elects New Board Officers, Appoints Members	22
Meat & Poultry Industries Top \$1 Trillion Economic Output	22
Breakfast on the Farm	23
Brexit Impact Update	24

Spotlight Page

By: Emily Walker

MPPA PROGRAM DIRECTOR walker@mipork.org

Pictured below, the construction camera view of the facility being built.

Michigan Pork Processing Facility Taking Shape

ver the past several months, residents and visitors to the Coldwater area have been able to watch the Clemens Food Group pork processing facility take shape, from groundbreaking to a large structure. Located near Interstate-69, the facility is set to open Labor Day 2017.

Construction on the project began in July of 2015, but Community Relations and Workforce Development Coordinator Earnest Meily said the ball on the project started rolling nearly eight years ago.

"We started looking about eight years ago for growth and for sustainability for the future," he said. "It was two or three years now that we started working with the producers here in Michigan and the feasibility study came into play. We finally got together in the southwest Michigan area. Heading up the site selection team, it really came down to the Ag prevalence in that area, workforce availability—we felt there was a good opportunity there—, the location of the hogs, and the proximity to I-69 and 80/90. Plus, the Coldwater area has responded very well to us. They have been very welcoming and great to work with."

Meily moved to the Coldwater area from Pennsylvania, where he headed up human resources at the other Clemens Food Group processing plant.

"Part of the goal of someone coming early was to get into the community and let people know about the culture of the organization," he said. "Clemens Food Group is a six generation family owned business that focuses on building for the future through long-term relationships."

As a way to get involved with the community and to help create a workforce for the facility, Clemens Food Group has been working with the local ISD to create



a program for adults and high school students to learn more trades skills.

The facility began taking shape in Coldwater with the groundbreaking last July. Approximately 2/3 of the 660,000 sq. feet facility is now under roof.

"This past winter has been really nice for construction," Meily said. "We are pretty much on schedule with construction. The equipment, hogs and hiring process are all components that fit into the overall schedule."

The equipment is starting to be delivered, Meily said.

"Starting with the cut floor, there is a lot of equipment that needs to go in the

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plant," he said. "Early in 2017 we will be begin hooking up the equipment."

"The focus of the workforce development team will be to do the county fair circuit in the area this summer, to meet people and tell them about who we are," Melly said. "One of the keys to success is assuring we have the right management team in place. Beginning in late 2016 and early 2017, we will do information sessions describing our company and jobs we will be providing in the new facility. In February, we will start doing career fairs and continue to introduce specific jobs, environmental conditions and Personal Protective Equipment needed to prospective employees. Starting in July 2017, the production workforce will be hired and brought on. They will go through 30-60 days of production training. At start up, we might start doing only 100 animals. As quickly as possible, we want to get up to 10,000 hogs processed per day."

Meily said the hiring process has actually already begun. Approximately 10 people have been hired so far in managerial positions and are in Pennsylvania at the other Clemens Food Group plant for training. The facility will provide jobs for 835 people in the Coldwater area.

The plant is expected to process 10,000 hogs per day. This is a fresh pork facility, so there will be no further processing—a large majority of the product will be shipped to other facilities for further processing.

"As we get comfortable, we will evaluate a second shift potential," Meily said. "The biggest opportunity (for the community) will be the workforce. For a second shift there needs to be some growth. Ultimately, it will be a supply and demand decision. We feel really good about the supply."

BY THE NUMBERS:

- The facility will process 10,000 hogs per day
- Approximately 800-850 jobs will be created
- Approximately 80% of the hogs will come from CFG Producer Partners in MI, IN, OH
- Approximately **228 miles** of electrical wire will go into the facililt
- Approximately **28 miles** of refrgeration pipe and process pipe will be used
- Approximately 900 ft of pallet conveyor will be used
- Approximately 9,000 ft of case conveyor will be used
- Electrical transformers capable of providing 45
 Megawatts to the facility (1 Megawatt will power 200 homes, 45 Megawatts will power 9,000 homes
- Approximately 10,500 Ton of Refrigeration

This facility will have numerous positive impacts on the area. With this large of a plant, there will be a lot of resources going into making this plant operational. A large number of the hogs will be coming from Michigan. Meily said we are looking local for other resources too.

"We have been very diligent to look at local contractors," he said. "On the supplier side, we have people registering that may want to sell us gas, boxes and everything that the plant may need. What you do well, do better than everybody else— what you don't, find someone who does. We process pork. That is what we feel we do well. What the producers in Michigan do well is raise pork. Ultimately that is how the partnership came together. It's the same thing with sanitation, security and transportation. There will be a lot of different intersections to make this plant a success."

Meily said he thinks the facility is a good thing for the local economy.

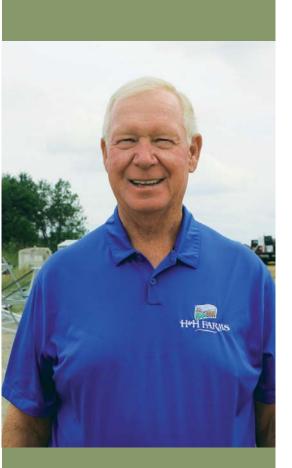
"I do think long term the plant will bring opportunities" he said. "We think the housing market is something that will need to respond."

"The Clemens Food group is a very philanthropic organization and is committed to giving back to the communities where they operate," Meily said. "As we look to the future we are excited about the partnerships we have formed and the ones we will form as we move forward with this very exciting project."

Page 5

2016, VOL. 41, NO. 2

President's Page



By: Pat Hunter MPPA PRESIDENT

"New Michigan Pork Plant a Win-Win for all Producers"

started feeding pigs in 1980. Like a lot of producers, we bought feeder pigs and put them in contract finishing barns. During that time, we hauled pigs in a small trailer that held 35 pigs and sold them at the local market. Over the years, we worked hard and grew our operation. Thorn Apple Valley, Inc., located in Detroit, was one of the largest pork processing facilities in the country at that time and bought most of the pigs in Michigan as well as in a number of other close-by states. Thorn Apple Valley processed from 9,000 to 12,000 head per day and at one time was the seventh largest pork processor in the country. Their basis was good, so the market price we received was also good. And, during that time, most pork producers made money as raising hogs was a routinely profitable business. However, in the summer of 1998, Thorn Apple Valley closed and went out of business. After Thorn Apple Valley closed, we had to take our pigs to Indiana to market them and the market basis wasn't nearly so good as it had been when we were able to market our hogs to Thorn Apple Valley in Detroit. With the switch in marketing options, we lost about \$2.00 per hundred pounds

on the basis, and the freight to Indiana. Although most producers were shipping in truck load lots by this time, it wasn't possible to make-up the money lost in additional freight charges and a lower basis. Not having a major pork processing plant in Michigan since 1998 was an economic disadvantage for Michigan producers but, despite this, Michigan producers continued was also higher transporting the pigs

Not having a major pork processing plant in Michigan since 1998 was an economic disadvantage for Michigan producers.

producing virtually the same number of pigs they had when Thorn Apple Valley was operating. I think this is probably a tribute to the business acumen of Michigan's producers as some of our neighboring states, although still larger than Michigan in terms of the number of hogs produced annually, lost quite a bit of production during this period.

In 2017, there will once again be a new large-scale pork processing facility in Michigan. The Clemens Food Group is building a new state-of-the-art pork plant just off I-69 near Coldwater in Branch County. This was made possible because of the foresight of a handful of Michigan producers. This

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forward-thinking group worked diligently on a number of efforts over the past 6 to 8 years to make the new plant a reality, including conducting an extensive economic feasibility study and engaging the assistance of the Michigan Economic Development Commission to bring the concept of a new pork processing facility to fruition. It goes without saying that these producers spent a lot of time and money to make this project happen.

Whether you sell your pigs to the new Clemens' Plant or not, the basis will be much better and it will enhance the demand for hogs in the Eastern Corn Belt. After Thorn Apple Valley closed, the Eastern Corn Belt hog market went from being higher than the Western Corn Belt market to being lower, and this was simply a function of having more pork processing plants competing for the existing supply of hogs in the Western Corn Belt than in the East. Having a new player in the Eastern Corn Belt will foster additional competition in this part of the country and that will be a win-win situation for all the producers in the Midwest. Construction of the new Michigan Plant is on schedule and Clemens has targeted opening the new facility in September of 2017.

Culver's raises \$56,000 to support ag education

Culver's combined free ice cream with an agricultural education fundraiser in early May to create one sweet success.

On May 5, the popular restaurant launched its "Scoops of Thanks Day" at more than 550 locations across 23 states. For at least a \$1 donation to the FFA and other local agricultural organizations, guests received a scoop of frozen custard.

According to Culver's, the campaign raised \$56,500. This

beats last year's results, which raised \$40,000.

That means the restaurant gave away more than 48,000 free scoops of its frozen custard.

"Our guests appreciate the hard work farmers put into producing our nation's food as much as we do," said David Stidham, vice president of marketing for Culver's. "We're glad to be able to set aside a day when the entire Culver's community can show their gratitude and make

svsmi@sbcglobal.net

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a contribution to support the next generation of farmers."

The company's "Scoops of Thanks Day" is just one aspect of its Thank You Farmers initiative. To date, this initiative has raised roughly \$1 million to support the National FFA Organization and Foundation, local FFA chapters and various local agricultural organizations.

Culver's launched "Thank You Farmers" in July 2013 by transforming a Wisconsin barn into a billboard to proudly thank the nation's farmers and ranchers, and invited the public to write brief thank you notes to farmers through the Culver's website and Facebook page.

This article was written by Angela Bowman and originally published by PORK Network.

2016, VOL. 41, NO. 2

James A. Kober, D.V.M., MS

As I See It



By: Sam Hines MPPA EXECUTIVE VICE PRESIDENT

"It's hard not to gloat about Chipotle's problems!"

o far, Saturday, June 18, has been an interesting morning! I came to the office early this morning to finish writing this column in order to meet Emily's deadline for getting the magazine to the printer. Since it was Saturday and no one else was in the building, the alarm system was armed. Typically, this wouldn't be an issue but, when I entered my code to disarm the system, it didn't work and the alarms began going off. Again, this wouldn't normally be a major problem because you can then call an 800 number, identify yourself, and give the person on the other end of the line your code number and they can disarm the system remotely. Well, for some reason, my code number didn't work and at that moment it became a little bigger problem. To make a long story short, the cops never came to take me away, although I may not have been too far from that eventuality. What apparently happened was that my code had either not been entered, or I hadn't received the correct replacement code, when the security system was upgraded a few weeks ago and, until today, I hadn't found it necessary to use my code to get in or out of the building. After answering a few questions, I guess I convinced the person on the phone that I was honest and she eventually gave me a code to disarm the system and turn-off the alarms.

Strangely, this morning's minor fiasco provided a good lead-in to the topic I was planning to discuss; at least the part about being honest seems relevant to the topic I was going to address. If you've followed the situation with the Chipotle Restaurant Chain over the past year, it's hard not to be amused by the Chain's current troubles. In fact, again emphasizing being honest, I'd say it's hard not to actually gloat a bit over their recent tribulations! Most of us in agriculture would say Chipotle has always been less than honest with the way it has marketed itself and, as the saying goes, "maybe their chickens have finally come home to roost," pun intended!

During its "glory days" and even now, Chipotle is notorious for vilifying modern agricultural production methods. "Food with Integrity" is its mantra and many of the claims it makes about the food it sources and uses in its restaurants have been inaccurate and downright dishonest. If you want to make your blood boil, go to the Chipotle Website and click on the animated video titled "Farmed and Dangerous" in which modern agricultural production methods are maligned with the subtle message being that Chipotle only provides, "Food with Integrity" and not the terrible, environmentallydamaging, antibiotic and hormone laced meat and poultry from 'factory farms' and the pesticide-laden fruits and vegetables from conventional agriculture. A couple of years ago they were called-to-task regarding this message and had to openly admit that not all of the products they served met the criteria they stated. However, they put out a pretty feeble disclaimer

Michigan Pork Producers Association

indicating they provide the types of products they claim, unless there aren't enough of them available and then they are forced to use products conventionally raised.

A headline earlier this week in a restaurant business blog proclaimed, "Moe's Tops Chipotle as America's Favorite Mexican Chain." The article stated, "Chipotle has fallen from being the number one pick in the category for the past three years, to being ranked below Moe's, Taco Bell, Qdoba and Baja Fresh."

If you weren't aware, leading to Chipotle's demise was the frequent bouts of food-borne illnesses experienced at a number of their restaurants during the past year or so. In fact, last February Chipotle closed all of its restaurants for a time for what it called a food safety self-check. As an observer, I certainly feel bad for those that were sickened with e-coli infections after eating at Chipotle, but I don't have much sympathy for the disastrous business downturn the Chain is now experiencing. This past week shares of Chipotle were down 18 percent for the year and were 35 percent lower than a year ago. At the same time, profit for the current guarter was expected to be down more than 78 percent. And, further adding to Chipotle's troubles, it was reported in another business blog on June 17 that earlier this year ".....angry shareholders slapped Chipotle with a lawsuit claiming executives had obscured the fact that quality protocols weren't up to snuff. It (the lawsuit) argued that withholding that vital

little nugget ensured that nobody could abandon the company before shares tumbled to their lowest levels in years." The article goes on to say, "That suit's still pending and now a small group of shareholders have filed another lawsuit: Chipotle executives, it says, abused their control of the Company, and dealt themselves excessive compensation worth hundreds of millions of dollars through a corrupt stock incentive plan." The article goes on to state that the lawsuit claims that Co-CEOs Steve Ells and Montgomery Moran relied on "insider knowledge about food-safety protocols and sold hundreds of thousands of shares in the first half of 2015 right before the food-poisoning scandal." Whether the insider trading accusations can be proven or not, it does raise questions as to why Ells and Moran suddenly saw fit to cash-in \$185 million between them and two other

Oh what a tangled web we weave, when first we practice to deceive.

top ranking executives cashed-in \$29.5 million just before the bottom fell out.

For some reason, this whole morass brings to mind what Sir Walter Scott wrote in 1808: "Oh what a tangled web we weave, when first we practice to deceive."

Although my parents and my Christian upbringing taught me not to delight in the misfortunes of others, I think I can make a compelling argument that the problems Chipotle's management is experiencing might be a worthy exception to that rule. If not, please forgive me, because it's hard not to take some pleasure in the misfortunes of this bunch of wealthy ne'er-do-wells.



Michigan Producers Participate in Washington Fly-in

ast April, more than 130 pork producers from around the country wrapped up two days of lobbying lawmakers on important pork industry issues as part of the National Pork Producers Council biannual legislative fly-in. Attending from Michigan were: MPPA President Pat Hunter, Vicksburg, Michigan producer Ed Reed, Marcellus, and MPPA Executive Vice President Sam Hines.

Producers from 20 states visited their senators' and representatives' Capitol Hill offices, urging them to back federal funding for addressing antibiotic resistance and for establishing a Foot and Mouth Disease (FMD) vaccine bank, to oppose legislation that would allow for the intrastate commercial sale of uninspected meat and to support the Trans-Pacific Partnership (TPP) agreement.

NPPC supports full allocation of the fiscal 2016 \$10 million budget request for the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) to implement the agency's Antimicrobial Resistance Action Plan and \$25 million of additional funding for research on antimicrobial resistance and antibiotic alternatives through USDA's National Institute of Food and Agriculture and/or its Agricultural Research Service.



The organization also wants Congress to appropriate at least \$5 million for APHIS to set up an offshore FMD vaccine bank and is requesting that APHIS contract for production of enough vaccine to address the early stages of an outbreak and of the millions of additional doses needed to respond to a medium- or large-scale outbreak.

"Those are critically important issues for our industry," said NPPC President John Weber, a pork producer from Dysart, Iowa. "We're very concerned about the resistance issue and about the ramifications of an FMD outbreak, so our producers let their members of Congress know we support efforts to address both matters."

On the issue of uninspected meat, NPPC opposes the "Processing Revival and Intrastate Meat Exemption," or PRIME, Act because it would create food safety risks, prevent animal diseases from being detected and addressed and undermine public confidence in the food supply.

The TPP has been the top trade priority of NPPC, which led the agricultural industry in supporting the multilateral deal, which includes the United States,

Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam. Those Pacific Rim countries account for nearly 40 percent of global GDP.

"NPPC has been a strong, consistent supporter of free trade agreements, and we support the TPP, which will be the biggest commercial opportunity ever for U.S. pork producers," said Weber. "The future of our industry is dependent on increasing exports, and if the TPP deal that was negotiated is implemented, U.S. pork exports to the Asia-Pacific region will increase exponentially.

"We appreciate the strong support we are receiving from the Obama administration and Congress to ensure that U.S. pork producers receive the full benefit of the TPP agreement," Weber said. "There are still some issues that must



be addressed, but we're confident they will be resolved, and the pork producers who came to Washington this week conveyed that message to their lawmakers.

Michigan Pork Producers Association

NPPC Honors Industry Leader 'Pig' Paul

he National Pork Producers Council, at the 28th annual World Pork Expo held in Des Moines, Iowa unveiled a commemorative painting in recognition of the contributions to the U.S. pork industry of Rolland "Pig" Paul.

The artwork, titled "Pig Paul" and painted by Iowa artist Valerie Miller, is the first of three paintings commissioned by NPPC that will be presented to pork industry leaders over the next two years. (Miller and her husband own and operate Steel Cow, which produces livestock-themed art.)

Paul was honored for his nearly 50 years of work in the purebred swine industry and for his leadership in establishing a number of pork industry organizations. He served on the boards of directors of the American Yorkshire Club and the United Duroc Swine Registry – now known as the National Swine Registry – and as field man for the Iowa Swine Breeders Association – now known as the Iowa Pork Producers Association. He helped set up 24 state pork producer organizations and was the first employee of NPPC, serving as secretary-treasurer from 1966 to 1969.

"I wasn't hired to be a great leader," Paul once said. "I was hired to furnish the leadership to accomplish the goals the producers wanted done. Producers set the laws, and I figured out the tools and means to get them done."



After World War II, Paul and his brother Jay started Paul Brothers Durocs in Dallas County, Iowa, and after moving to Missouri, he raised Duroc and Yorkshire seedstock at his Pork Plantation farm.

Among other contributions to the pork industry, Paul did research on using probes to measure backfat on hogs while attending Iowa State College. During World War II, hog farmers were encouraged to raise fat pigs for their lard,



which was used in making explosives. But after the war, consumers wanted meatier hogs and less fat.

"Pig' was one of the early pioneers of the organized U.S. pork industry," said NPPC President John Weber, a pork producer from Dysart, Iowa. "We're very pleased to honor his leadership and contributions to our industry with this first commemorative painting."

2016, VOL. 41, NO. 2

Consumer Connections

By: Elaine Bristol

MICHIGAN AG COUNCIL PROGRAM COORDINATOR ttend any agricultural conference this year, and you may hear, "People don't care how much you know until they know how much you care," a quote from Theodore Roosevelt.

Consumers today are interested in being more connected with their food. This includes knowing local farmers, finding out more about farming practices and buying local products^{*}. But Roosevelt's quote and hundreds of pages of research prove that conversations that establish shared values will trump conversations based on economics, science or your super-savvy farming skills. People are now asking "should we," not "can we," which is a question of ethics, not capabilities.

Farmers are busy and I know you might be looking for the silver bullet "message" to answer consumer questions. Don't be a robot with automatic message playback. If you truly want to build trust with consumers – your customers – you'll need to actively listen, control your emotions related to your hot button topics and identify what shared values are important and why they're important.

We've all run across someone with a very clear, negative outlook about farming practices. If you're encountering someone's tirade one-on-one, allow him time to feel heard, thank him for his time and move on. That's someone who will not be receptive to anything you say. However, if you're encountering a negative person online, remember the "listeners" on social media who are following along with conversations to learn from you, the farmer. Good news, too: you don't have to participate in every conversation you're invited to. Customer service dictates that we're polite, but it's OK to agree to disagree.

We are not experts in every aspect of agriculture. Stick to what you know and write down questions you're not able to answer to direct to your network of fellow agriculturalists. Then follow through with the person who asked those questions.

Speaking of asking questions, ask for clarification about questions. What does a person mean by sustainability? What does someone mean by GMO? What's a "big" or "small" farm? Even in agriculture, we sometimes define things differently from one another. And please, let's celebrate the choices we have as farmers because those choices allow consumers choices in today's markets. Don't bash a farm method that might not work for your business – we have enough people doing that outside of agricultural production.

Farming is personal – it's what we do and for many of us, it's who we are. Share your personal passion for agriculture and relate consumer issues to your own farm life.

*Not sure how you define local, but the 2008 Farm Act considers a "locally or regionally produced agricultural food product" less than 400 miles from its origin, or within the State in which it is produced.

Michigan Pork Producers Association

With feral swine back in the news, ALM and USDA partner on informational briefing

n Monday, June 13, the Agriculture Leaders of Michigan (ALM), including Michigan Pork Producers Assocation hosted a Michigan-based USDA Wildlife Services expert at a briefing for state legislative staff on feral swine in Michigan, and efforts underway to control them.

The briefing comes on the heels of an outbreak of pseudorabies in Missouri that was likely caused by feral swine herds.

Tim Wilson of USDA-APHIS Wildlife Services led the discussion. He focused on tracking of feral pigs across Michigan, and highlighted how quickly feral swine can spread in terms of numbers and range. Because they are highly-adaptable and have few predators, feral swine are able to live almost anywhere. In addition to posing disease concerns for pig farmers and other livestock producers, feral swine are known to cause extensive crop damage.

He also outlined USDA's responsibility to locate feral swine, trap or remove them, watch for disease outbreaks, and work together with farmers, hunters, landowners and government agencies to control the problem. Since 2007, more than 100 feral swine have been trapped by Wildlife Services staff. In addition, more than 175 hogs have been killed by hunters or removed by USDA and partner agencies.

Wilson noted that Wildlife Services has worked closely with Michigan's Department of Natural Resources to step up hunter education and landowner cooperation. Feral swine sightings can now be reported directly by hunters, farmers and landowners at the MDNR website. New partnerships have also been established with those in the community who might learn about feral swine activity – including



butcher shops, taxidermists, sporting goods stores, animal control and local law enforcement, and sports clubs.

Sam Hines of the Michigan Pork Producers Association said that even with control measures in place, pig farmers are concerned about feral swine impacts.

"Controlling feral swine is a top priority for pork producers – and because wild hogs can cause significant damage to herds and crops of all kinds, this is a pressing issue for all of Michigan agriculture," he said.

This event was part of a series of monthly forums sponsored by ALM aimed at educating legislative staff on issues important to Michigan's agricultural industry.

ALM is a coalition of agricultural, commodity and agribusiness leaders committed to promoting Michigan agriculture, participating in the ongoing dialogue about issues affecting our state, and harnessing agriculture's power and potential to further grow Michigan's economy.

You can learn more about ALM by visiting www.agleadersmi.com.

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2016, VOL. 41, NO. 2

Survey on Effectiveness of Site Selection GAAMP Being Conducted



The survey is available at: https://www.surveymonkey. com/r/GAAMPproducer

Editor's Note: MPPA is encouraging producers who have utilized the Generally Accepted Agricultural Management Practices (GAAMP) for Site Selection and Odor Control for New and Expanding Livestock Facilities to complete this survey. MPPA has provided funding for the survey which is being conducted among all the major livestock species in the state. Additionally, a separate survey is being conducted among township officials. MPPA Executive Vice President, Sam Hines, has served on the Siting GAAMPS Committee since its inception and says the Committee would like to get feedback from producers that have used the GAAMP as the Committee believes there may be things that can be changed to make it a more effective tool. Hines says the Committee would also like to explore options for improving the Michigan OFFSET model that is used to predict odor impacts on neighbors and perhaps find ways to give credit to things like wind breaks and natural barriers that change how odor from a facility is dispersed. Additionally, he points out that when the OFFSET Model was developed there were only a limited number of weather stations in the state providing data and today many more exist. However, Hines says, "We need to know what producers think about the GAAMP currently, before any sweeping changes are pursued." The survey can be accessed online by using

the following link: https://www.surveymonkey.com/r/ GAAMPproducer

The GAAMP has been in existence since June 2000, and is reviewed and modified annually. The committee responsible for writing the GAAMP would like feedback on how livestock farmers think the GAAMP is working or not working. Recommendations and suggestions received in the survey will be used to improve the GAAMP. The survey should take between 5 to 10 minutes to complete.

Survey results will be compiled and a summary made available to the Site Selection GAAMP Committee. The identification of those responding will not be disclosed to anyone other than the third party contractor who compiles the responses. Furthermore, the IP address used to complete the survey will not become part of the survey results.

Please use the buttons at the bottom of each page ("next," or "previous") to navigate the survey pages. Do not use your browser's back and forward buttons, as that will erase your answers.

Thank you,

The GAAMP Site Selection Committee

Michigan Pork Producers Association

U.S. Pork Needs Exports; TPP Would Boost Them

he U.S. pork industry must continue to grow its exports and do so through free trade agreements such as the pending Trans-Pacific Partnership (TPP) Agreement, which would eliminate tariff and non-tariff barriers to U.S. products, the National Pork Producers Council reiterated today in congressional testimony.

NPPC President John Weber, a pork producer from Dysart, Iowa, told the House Committee on Ways & Means Trade Subcommittee that the 12-nation TPP would open and expand to exports of U.S. pork markets that include nearly half a billion consumers and help create more than 10,000 U.S. jobs tied to those pork exports.

"TPP is the biggest commercial opportunity ever for the U.S. pork industry," said Weber, "and NPPC strongly supports its passage and implementation."

The TPP, negotiations on which were initiated in late 2008 and concluded last October, is a regional trade deal that includes the United States, Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam, which account for nearly 40 percent of global GDP.

Weber pointed out to panel members that the TPP has

USFRA searching for standout farmers and ranchers

SFRA recently kicked off its search for the new class of Faces of Farming & Ranching. We're looking for standout farmers and ranchers who are proud of what they do and strive to be sustainable and technology-driven, eager to share their stories of continuous improvement and are actively involved in sharing those stories in public and on social media to help put a real face on agriculture.

During the submission period June 6-July 10, entrants must submit completed applications, including the contact information for two references (non-family members), plus a brief video via www.FoodDialogues.com/Faces/Apply. become the de facto global trade vehicle, with other countries in the region already asking to join it, and would set the new international trade rules and the bar for future trade agreements, including the deal now being negotiated between the United States and the European Union – the Transatlantic Trade and Investment Partnership (TTIP).

He expressed concerns about the United States rejecting the TPP Agreement, pointing out that other countries are negotiating free trade deals in the Asia-Pacific region without the United States, including the China-led, 16-nation Regional Comprehensive Economic Partnership.

"We cannot afford either economically or geopolitically to walk away from the fastest growing region in the world," Weber said. "If we do turn our backs on that region, some other country ... will write the rules for global trade, and the United States not only won't realize the benefits of TPP, it will lose market share in those 11 countries as other nations negotiate free trade agreements with them.

On the TTIP, Weber told the subcommittee that U.S. pork producers' support for a final agreement is conditioned on the EU eliminating all tariff and non-tariff barriers to U.S. pork, an outcome achieved in every other U.S. free trade agreement.

Public Notice by MPPA and the National Pork Board

The election of pork producer delegate candidates for the 2017 National Pork Producers (Pork Act) Delegate Body will take place at 10:30 a.m., Wednesday, June 15, 2016 in conjunction with the Annual Meeting of Michigan Pork Producers Association in the GreenStone Farm Credit Services Building at 3515 West Road, East Lansing, MI 48823. All Michigan pork producers are invited to attend.

Any producer, age 18 or older, who is a resident of the state and has paid all assessments due may be considered as a delegate candidate and/or participate in the election. All eligible producers are encouraged to bring with them a sales receipt proving that hogs were sold in their name and the checkoff deducted. For more information, contact Michigan Pork Producers Association, 3515 West Road, Suite B, East Lansing, MI 48823, 517-853-3782.



The Michigan Corn Growers Association, Michigan Soybean Association, Michigan Cattlemen's Association and Michigan Pork Producers Association are joining together to host the first annual Agriculture Night at the Races. This new and exciting agriculture appreciation event will bring farmers from all of these commodity groups together to celebrate their importance to agriculture. The event is open to all Michigan farmers and their families.

Each member will receive a complimentary dinner followed by a fun night of racing. Additional guests are able to attend for a fee.

- Adults (age 12+) = \$15.00
- Kids 6-11 = \$5.00
- Kids 5 & under = Free

Location: 2060 Berlin Fair Drive, Marne, MI 49435 In case of inclement weather, visit www.berlinraceway.com

Page 16

Michigan Pork Producers Association

Ag Night at the Races Registration Form

Registration is also available online at www.micorn.org

Contact Info		
Name:		
Address:		_
City:	State, Zip Code:	
Email Address:	_ Phone:	

Tickets (List all attendees, yourself included, below)

	Name	Member #	# Tickets
Michigan Corn Growers Association			
□ Michigan Soybean Association			
Michigan Cattlemen's Association		N/A	
Michigan Pork Producers Association		N/A	
Additional adult guests 12+ (\$15 each)			
Name		-	
Children 6-11 years (\$5 each)			
Name		-	
Name		-	
Children 5 years and under (no charge)			
Name		-	
Name		-	
	Total n	umber of tickets:	
Payment information:	٨	mount enclosed:	
Check Enclosed Credit Card: Nisa MasterCard	Discover Card		
Please make checks payable to: Michigan Corn Growers As			
Card Number:		Return registra	
Expiration Date: CCV Code:	Mi	and paymer	s Association
	13	750 S. Sedona Parl Lansing, MI 4	
Signature:			

REGISTRATION DEADLINE IS AUGUST 17, 2016

2016, VOL. 41, NO. 2

Information for an Industry on the Move



Vol. 21 No.2

ork Quarterly

In This Issue...

Pg. 1 Animal Caretaker Daily Duties

Emergency Response Pg. 8 to Manure Spills

The Future of Swine Pg. 9 Castration in the United States



This newsletter is edited by: Thomas Guthrie, MSU Extension Educator 517-788-4292 guthri19@msu.edu & Emily Walker, MPPA, Program Director

Animal Caretaker Daily Duties

By: Madonna Gemus-Benjamin, Department of Large Animal Clinical Sciences MSU College of Veterinary Medicine

The Michigan State University Extension (MSUE) Pork Work Group will provide 1 or 2 examples of PQA required Standard Operating Procedures (SOP), published in Pork Quarterly articles and available on the MSUE website. http://msue.anr.msu.edu/resources/ pork_quarterly

PQA Version 3 requires that producers have written Standard Operating Procedures for specific areas of Pork production, including:

- 1. Animal caretaker daily observations
- 2. Handling
- 3. Piglet processing
- 4. Feeding and watering protocols
- 5. Treatment management
- 6. Needle usage
- 7. Biosecurity
- 8. Rodent control
- 9. Caretaker Training

Manuals and SOP's can be in paper of electronic form, but need to be accessible at the site.

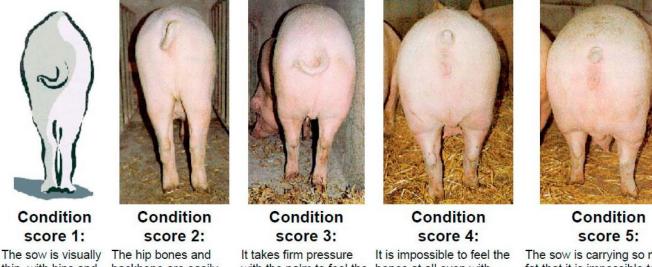
SOP: Animal caretaker daily observations: There are numerous ways to execute this procedure. The following is a template that may be useful for creating standard operating procedures that best suit your farm. Feel free to edit or change procedures as you see fit.

The overall wellbeing of animals needs to be observed daily. Daily animal observations should be documented.

• Does the site have a written SOP for caretaker training?

• Does the site have documentation of annual

MSU Pork Quarterly



thin, with hips and backbone very prominent and no fat cover over hips and backbone.

backbone are easily felt without any pressure on the palms. backbone.

hip bones and

with the palm to feel the bones at all even with hands.

The sow is carrying so much fat that it is impossible to feel pressure on the palm of the the hip bones and backbone even by pushing down with a single finger.

Figure 1. Photo credit goes to www.cqa-aqc.com/aca/documents/ACA-Appendix-10.pdf

caretaker training specific to their daily duties?

 Do all caretakers have a current PQA Plus Certification or are within 90 days from their new employment date?

It is extremely important that pigs are observed at least once daily. Doing so can help catch problems with the pigs or facilities early and decrease mortality numbers.

Caretaker training: How to observe compromised pigs.

Use the B.E.S.T. approach when observing animals for illness, injury, and general poor-doing.

• B= Body. Observe the body for any signs of damage, such as long, deep scratches or deep wounds. Observe the body condition of the animal. Check to see if any animals are arching their backs, as back arching is a sign of pain or skeletal deformity. Rumps should be free of diarrhea. Tails should be free of damage due to tail biting. Look at the bellies of pigs- bellies should not have any abnormal swelling, lumps, or bumps, and should appear well-fed and not tucked up or gaunt. Limb joints should be free from swellings and hooves should not have cracks, open sores, or other lesions. Animals should not be hesitant to move. Pigs should be breathing normally, and not thumping, open

mouthed breathing, or exhibiting other signs of labored breathing.

• E= Ears, eye, nose. Pigs should not have dull, sunken, or cloudy eyes. Eyes should not be red or appear otherwise inflamed. There should not be discharge coming from the eyes. There should not be discharge coming from the nose. Ears should be upright except in breeds with naturally droopy ears.

• S= Skin and hair. Sickly pigs may have fuzzy, dirty, hair and skin with a scaly appearance. Excessive redness and bald spots may be due to parasites. Greasy appearances are indicative of illness. Examine pigs for lesions, sores, or ulcerations along the shoulder and at the level of the joints. Check pigs for scratches greater than an inch and for deep wounds.

• T= Temperament. Typically pigs are highly curious animals and an absence of curiosity is concerning. Tails should be upright, indicating alertness. Healthy pigs that have had good caretaker interactions will approach caretakers inquisitively with their noses in the air. Tail biting, ear biting, or nosing bellies are all signs of not enough environmental enrichment.

Body Condition Score (BCS):

 Do 1% or less of the animals observed have a body condition score of 1?

2015, Vol. 20 No.1

• Have these pigs observed with a Body Condition Score of 1 been identified and receiving attention?

<u>Figure 1.</u> Pig body condition scores. Conditions between 3 and 4 prior to lactation are ideal. Low body condition scores (BCS of 1 or 2) can be due to either a lack of food, pain, or disease. High body condition scores can result in farrowing difficulties, low colostrum production, and lower milk production.

Lameness:

• Do 2% or less of the pigs observed show signs of severe lameness? Total number of breeding and non-breeding animals observed with severe lameness. Percentage of breeding and non-breeding animals with severe lameness.



Figure 2. Photo credit goes to www.pig333.com

<u>Figure 2.</u> Lameness indicates pain, and therefore is a serious welfare concern. Lameness can stem from injury, infection, or skeletal deformation. Pigs demonstrating lameness should be placed in a separate area to improve traction and allow them to eat and drink without competition. If the lameness is due to

infection, consult treatment recommendations from the veterinarian, for appropriate treatment. Severe lameness scoring include those pigs which are non-weight bearing on the affected limb when standing or walking. Pigs with severe lameness that do not show signs of improvement after two days



Figure 3

of treatment should be humanely euthanized based on the Euthanization SOP.

<u>Figure 3.</u> Animals with bursitis (swellings near areas of bony prominences) or eroded bursitis. Bursitis can indicate improper flooring and insufficient bedding. Lameness may or may not accompany bursitis. Eroded bursitis can become infected.

Tail Biting:

• Do 5% or less of the pigs observed show evidence of tail biting in the herd?

• Have these pigs observed with evidence of tail biting been identified by caretakers and receiving attention?



Figure 4. Photo credit goes to nationalhogfarmer.com

<u>Figure 4.</u> Signs of tail biting, both mild and severe. Tail biting can be the result of competing for resources. Wounds resulting from tail biting can become infected and potentially lead to septicemia and death. When an outbreak occurs, identify the biter or inciting pig and remove injured pig(s). Check environment temperatures and pig lying behaviour to reduce drafts. If appropriate, hanging a 1" light link chain suspended from the ceiling and 5 inches above the flooring will provide a chew toy and distraction for pigs.

MSU Pork Quarterly

Vulva Injuries:

• Do 5% or less of the breeding herd observed have vulva injuries.

• Have these pigs observed with evidence of tail biting been identified by caretakers and receiving attention?



Figure 5. Photo credit goes to thepigsite.com

<u>Figure 5.</u> Vulva injuries in breeding gilts/sows. These injuries are generally caused by biting and can become infected secondarily. These injuries are commonly found in group sow housing. Severe vulva injuries may result in scarring, and can lead to farrowing difficulties. Severely injured sows should be moved to a separate pen for healing.

Rectal, vaginal, or uterine prolapses:

• Do 1% or less of the pigs observed have prolapses?

• Have these pigs overserved with prolapses been identified by caretakers and receiving attention?



Figure 6. Rectal, vaginal, or uterine prolapses. There are numerous causes of rectal prolapse, including docking tail too short. Vaginal prolapse is uncommon and most often occurs in the 3rd

Figure 6. Photo credit goes to www. veterinariadigital.com/

trimester of pregnancy. Uterine prolapse is most likely to occur within 24 hours after parturition takes place. Necrotic, untreated prolapses are a cause for immediate humane euthanasia.

Sores, wounds, shoulder sores, scratches:

• Do 10% of less of the pigs observed have scratches longer than 12 inches?

• Have these pigs observed with scratches longer than 12 inches been identified by caretakers and receiving attention?

• Do 5% or less of the breeding herd observed have shoulder sores?

• Have these pigs observed with shoulder sores been identified by caretakers and receiving attention?







Figures 7. Photo credit goes to ec.europa.eu and The Pigsite.

<u>Figure 7.</u> Fresh or scabbed over sores/wounds/shoulder lesions/scratches/deep wounds. Sores/wounds/scratches may be due to equipment or other pigs. Try to determine whether damage is done by equipment or lack of space (sores). Fix any equipment which is broken or has sharp pieces sticking out in a way which can injure pigs. Animals with shoulder lesions/ sores due to rubbing indicate that some aspect of the animal's situation is suboptimal (feeding/housing/etc), indicate poor comfort levels, and suggest long term welfare issues.

2015, Vol. 20 No.1

Abscesses:

• Do 5% or less of he pigs observed have abscesses?

• Have the pigs observed with absecesses been identify by caretakes and recieiving attention?



Figure 8. Abscesses are confined pockets of pus. Abscesses may be found below the skin, within organs, or within body cavities.

Figure 8. Photo credit goes to UF/ IFAS Lee County Extension.

Abscesses below the skin can be observed visibly and by touch. Aural hematomas are also considered abscesses. Treat abscesses as guided by the farm's veterinarian.

Indoor facilities:

• Do pigs have a dry space to lie down?

• Do at least 90% of the pigs have adequate space allowance?

• Do pigs show thermoregulatory behaviors that indicate they are too hot or too cold and the air temperature at the pig level is outside the preferred temperature range for the phase of production? If so, has the caretaker taken appropriate actions to minimize heat or cold stress?

<u>Figure 9.</u> Excessive amount of manure (not mud) present on body (percentage of manure covering body). Pigs prefer to be clean. Large amounts of manure on body indicates that their environment is not adequate for allowing pigs to behave naturally. Pigs will lie in their excrement only if they are excessively warm or if they have too little space. Excessive amounts of manure can also Figure 9. Photo credit goes to ec.europa. eu





pose as a health risk to animals and attract flies. Diseases such as Erysipelas

and PEDv have been known to re-infect farms when pigs are exposed to manure. Also, sows exposed to manure slurry during farrowing or breeding when the cervix is open, are more likely to contract bacterial disease. In the event of excessive amounts of manure on the pigs, check ventilation for proper air flow and recommended temperature settings. Check waterers for leakage or backed up manure pits and repair as needed.

Thermal Comfort/ Air Temperature:

<u>Figure 10.</u> Pigs huddling/piling due to too low of temperature.

Temperature guide based on floor type (please note that you must be aware of pig behavior and adjust accordingly).



Figure 10. Photo credit goes to ec.europa.eu

Weight of pig		Straw Bedding		Concret	Concrete		Peforated Metal		
Kg	lbs		°C	°F	°C	°F	°C	°F	°C
	5	11	27-30	81-86	28-31	82-88	29-32	84-90	30-32
	10	22	20-24	68-75	22-26	72-79	24-28	75-82	25-28
	20	44	15-23	59-73	16-24	61-75	19-26	66-79	19-25
	30	66	13-23	55-73	14-24	57-75	18-25	64-77	17-25
	90	198	11-22	52-72	12-23	54-73	17-25	63-77	15-25

Thermal Comfort/Air Temperature Table: Information adapted from thepigsite.com

Page 5

MSU Pork Quarterly



Figure 11. Photo credit goes to www. carrsconsulting.com

<u>Figure 11.</u> Pigs with visible signs of diarrhea. Numerous causes for diarrhea exist. Causes can include nutrition, disease, parasites, etc.



Figure 12. Photo credit goes to www.pig333.com

<u>Figure 12.</u> Young pigs with greasy pig demonstrate open sores. Greasy pig caused by Staphylococcus hyicus, may be more prevalent in start-up breeding herds and from sows unable to nurse correctly resulting in fighting among piglets, entry of the bacteria and open facial lesions. The preweaning survival rate is about 50%. Ensure the herd is mange free and follow treatment protocols. Ensure farrowing pens are disinfected between litters and dry at the time of farrowing. Ensure penning farrowing pens are in good condition and do not cause abrasions.

Caretaker animal observation protocol

• Caretakers need to observe pig body condition scores daily. Any animal with a BCS less than a 2 needs to receive immediate attention.

• Caretakers must observe pigs for lameness daily. Animals are lame when they cannot bear weight evenly. Lame pigs may be able to stand but reluctant to walk. Lame pigs may touch the toes of their lame leg to the ground but not actually bear weight. • Caretakers need to observe pigs for tail bites daily. Tail bite wounds can lead to infection and possibly even death if not treated. Injured animals should be treated.

• If possible, the caretaker should attempt to ID tail-biting pigs and separate them if possible.

• Caretakers must observe the breeding herd for vulva injuries which result in bleeding, large open wounds, and/or infection. Treatment and separation from the group may be required for pigs with damaged vulvas.

• Caretakers must observe pigs for prolapses of the rectum, vagina, or uterus. Treatment and separation from the group may be required. Causes of prolapse includes piling for warmth, docking tails too close to the body, and coughing.

• Caretakers need to observe pigs for any deep wounds or any openings that go through the skin. Caretakers need to note any pigs with skin penetrating wounds and pigs with scratches that are 12 inches or longer in length. It should be noted that castration incisions and wounds from ear notching or tail docking are not included.

• Caretakers need to observe pigs, especially sows with body condition scores less than 3, for scabbed over or open sores.

• Caretakers need to observe sow and piglet units and make sure that sows have appropriate room. Sows need to be capable of lying completely on their sides without their heads touching feeders, and without their hind limbs touching the back of the stall. The size of sow stalls must not cause injury to the sows. Piglets and growing pigs need to be able to lie on their side easily, without touching another piglet, and without having their heads rest on feeders (without the split suckling area).

• Caretakers need to be able to observe thermoregulatory behavior exhibited by animals and which type of thermoregulatory behavior is ideal. Piling or huddling indicates that the temperature is too low. Animals that are widely spread apart indicates that the temperature is too high. Animals which are close but aren't huddling or piling indicates that the temperature is appropriate.

• A caretaker's daily observations will require that they can distinguish ill or disadvantaged animals from

2015, Vol. 20 No.1

healthy animals and must be able to manage the animals accordingly.

• Caretakers need to observe pigs for abscesses, and note if multiple pigs have abscesses. If multiple pigs have abscesses the caretaker needs to record the approximate location of the abscesses to determine if there is a common location where they are forming.

• Caretakers need to observe the percentage of manure present on animals. Animals should have less than 50% of their body covered in manure.

• Caretaker should observe pigs for fuzzy hair coats.

• Caretakers should observe pigs for gaunt bellies.

• Caretaker should observe animals for signs of coughing or labored breathing.

• Caretakers should observe animals for diarrhea/ signs of diarrhea (manure caked on the inside/back of the legs).

• Caretakers need to observe groups for non-ambulatory animals.

• Caretakers need to observe pigs for any signs of seizures.

• Caretakers need to identify and remove any dead animals.

• Caretakers must examine pigs for any missed boars, or boars with single testicles.

• All treatments must be recorded following company and PQA+ guidelines.

Equipment daily duties

• Automated feed systems need to be examined daily so that out-of-feed events do not occur.

• Floor slats need to be observed daily. Broken slats need to be repaired immediately to prevent lameness from occurring.

• Caretakers must examine groups to determine whether or not there is adequate space for feeding and enough waterers to permit pigs to consume their daily requirements without inducing excessive fighting and competition.

• Caretakers need to examine pens and alleys for any sharp objects or broken pieces of pens/equipment which could cause injury to pigs.

• Caretakers should examine all equipment on a daily basis and record any equipment needing repairs.

• Caretakers need to check the ventilation system on a daily basis to ensure that the barn is receiving proper air flow.

• Caretakers must check all rodent traps, ensure that the trap is emptied and re-baited, and that all traps match barn map locations.

Environment daily duties

• Caretakers must observe facilities for signs indicating high humidity (water dripping from pipes, wet floors, etc).

• Caretakers must observe that manure levels are at or lower than recommended levels.

• Caretakers must note if ammonia or other gas levels are too high. When ammonia levels are too high pigs will have watery, matted eyes, and may have difficulty breathing. If this is observed ammonia measurements must be taken and recorded. If the ammonia measurement is too high corrective actions must be implemented immediately.

• Caretakers need to observe the premise around barns as well as inside barns for debris, spillage of feed or manure, and signs of vermin.

MSU Pork Quarterly

Emergency response to manure spills – Are you prepared? Part 2.

In the case of any spill, particularly manure spills, livestock producers should familiarize themselves with the 4 C's of Spill Response.

By: Shelby Burlew, Livestock Environmental Educator, MSU Extension

There are no simple solutions to a manure spill, but thinking through your specific situation, and monitoring daily can help prevent, or at least minimize, the environmental risks and potential regulatory issues. Emergency response to manure spills - Are you prepared? Part 1 (found in the March 2016 issue) detailed the importance of developing an emergency response plan in case of manure spills when manure is being stored, loaded, transported, or land applied. It is important to think through how you would respond to a number of possible spill scenarios and the best actions to take to protect nearby water sources and other sensitive areas. Michigan State University Extension recommends including the 4 C's of Spill Response in your farm's emergency response plan; control, contain, comply and clean-up.

Control: Eliminate the Source

In the case of any manure spill, stopping the source of the spill should always be one of the first steps of response. Every farm is different so the farm's response to controlling the manure spill will vary depending on the situation. What if manure is released from a lagoon or earthen basin? A simple answer may be to consider adding a clay-based soil to the berm to increase the elevation of the structure. What if a transfer pipe or other hardware breaks? Try plugging any lines or valves that are leaking. Separate pipes to create an air gap and stop the flow of manure. Stop all additional water/manure/grey water flow to the structure. What if the lagoon or earthen storage structure is leaking at the base or sidewall? Try plugging the holes with a clay-based soil. Consult a licensed professional engineer (PE) for assistance with any permanent repairs. These are just a few examples of the different scenarios and methods to controlling a manure spill.

Contain: Limit the Area Impacted

Once the flow of manure has been stopped, the spill must be contained to protect environmentally sensitive areas. Most importantly, how you react in the first 5-30 minutes will determine the eventual impact of the spill and any possible penalties. Important steps in containing a manure spill may include:

- Creating dams across streams, ditches or other drainage ways
- Plugging tile outlets or covering tile inlets
- Have a Manure Spill Response Kit handy

Comply: Assess and Report Damage

The next step in a spill response is to comply, or to assess and report any damages. It is very important to report a spill to the Michigan Department of Agriculture & Rural Development Agriculture Pollution/Spills Hotline 1-800-405-0101. If the farm is permitted with Michigan Department of Environmental Quality, the spill must be reported to either the MDEQ contact in the certificate of coverage or the Pollution Emergency Alerting System hotline 1-800-292-4706. Also, be sure to immediately report the manure spill to your county sheriff or local police.

Clean-Up: Restore the Affected Area

The last step in a spill response is to restore the affected area or clean-up. This includes having the provisions for emergency pumping and land application of manure (even when field or crop conditions would not normally be feasible). For example an emergency contact list would come in handy if you have manure in the ditch that needs to be pumped and land applied. Consider which fields are best able to handle manure without further damage to the environment or crop. Even with emergency manure application – application rates, methods of application and setback requirements must be recorded and followed.

Summary

Assess your risk, consider what the worst case scenario might be and think through a plan to address that situation. For example, knowing the down slope direction from the storage will help you know how critical the risks could be. Know how to get earth moving equipment on site immediately and plan where potential berms would need to be built to divert the flow from reaching surface waters, neighboring properties or roadways. Even when there are not imminent risks to surface waters, have plans in place to control, contain, comply and clean-up a manure spill.

The future of swine castration in the United States Part One: The issue and alternatives

By: Dr. Sarah Ison, Department of Animal Science and Extension, MSU

This article is part of a two part series on swine castration. This part provides information on the issue of swine castration, what the current situation is for United States pork producers, and introduces the alternatives to physical castration. The article provides an overview from a consumer, producer and pig perspective.

The issue

Castration of male pigs is common practice in the US swine industry for two reasons: meat quality and pig behavior. Male pigs are castrated to eliminate "boar taint", an unpleasant odor and taste in pork products associated with the production of androstenone, skatole, and indole, which increase as boars reach puberty at 4-6 months. Castration also reduces unwanted sexual and aggressive behavior, producing barrows that are easier to handle and manage as they approach market weight. The predominant method of pig castration in the United States is surgical or physical castration. Physical castration typically involves making one or two incisions to the scrotal sac, separating of the testes from surrounding tissue, and extracting the testes, which are then torn or cut at the spermatic cord [1].

There is increasing evidence that the act of physical castration is painful for the pig. Pain is not easy to measure, and animals may mask pain in certain situations. For example, a pig



may not overtly express pain in the presence of a human handler. However, studies show that vocalization and the type and intensity of movements during castration differ from piglets that are handled alone, due to pain from the procedure [2–4]. Signs of pain seen following castration include tail wagging, huddling up, trembling, stiffness, spasms and rubbing the wound on pen surfaces [3]. Other indications of pain include a reduction in feed intake and avoiding social contact with litter-mates [3,5,6]. Piglets also show an increase in the stress hormone cortisol, another sign of pain-related distress [4,7]. Additionally, the use of local or general anesthetic to block pain during the procedure, and pain relief drugs to reduce inflammation and pain after the procedure, reduced indicators of pain to some degree [3,6–16].

Societal concern regarding swine management practices has increased in recent years, resulting in the consumer-driven demand for changes to gestation sow housing in the US and globally. It is inevitable that, in the near future, concern over the use of painful management procedures in pigs will lead to a change in the use of physical castration. Evidence from other countries suggests that physical castration performed without anesthetic is considered ethically unacceptable by consumers [17] who preferred alternatives to physical castration [18]. Therefore, it is important for the industry to be aware of the potential changes with respect to this practice and be prepared to take action if, but more likely, when the need arises.

The United States is the third largest global pork producer and has almost a third of the world pork export shares. With regard to physical castration, the American Veterinary Medical Association (AVMA) recommend that it is performed between the age of 4 and 14 days, and no more than 5 days before weaning [19]. Beyond 14 days of age, the use of anesthesia and/or post-procedural pain relief is recommended and the AVMA encourage the development and implementation of alternatives to physical castration and the use of anesthesia and pain relief when performing castration. So, what are the alternatives?

Alternatives to painful physical castration

Raising entire males

Boars are more profitable with substantial performance and carcass quality advantages over physical castrates [20,21]. They are more feed efficient, eat less food, grow

MSU Pork Quarterly

faster and convert energy intake into weight gain more efficiently. This creates a leaner carcass (i.e. more meat) with lower back-fat compared with gilts and physically castrated barrows. The advantages of boars in relation to barrows has been summarized from several studies as: 1) up to 13% increase in growth rate; 2) eat up to 9% less feed; 3) up to 14% improvement in feed conversion (i.e. food to weight gain), and; 4) are leaner by 20% [21].

One option is to simply not castrate and raise boars. With this option, there is a risk of unwanted behavior and boar taint. The solution to this is to slaughter hogs before puberty, as breeding has increased growth rates, boars are reaching puberty at 220 – 240 lbs. at around 4-6 months. Slaughter plants must be equipped with fast and efficient methods to detect boar taint, to prevent tainted carcasses reaching the food chain, and impacting consumer acceptability of pork products. Accurate, cost-effective instruments to detect boar taint in slaughter plants are currently being investigated.



Another possibility is to raise entire males by breeding against boar taint or sperm sexing to produce only gilts. Sperm sexing is not economically viable for pork production as gilts are slower growing, and less feed efficient [22]. Research shows that the most important substances contributing to boar taint – androstenone and skatole - are moderately heritable [23]. This means that pigs with low levels of these compounds can be selected to breed for a reduced incidence of boar taint. The process can be enhanced with genomic selection. Once genes associated with the level of these compounds have been confirmed, individuals can be selected based on their DNA fingerprint to increase the rate of progress in breeding out boar taint. Breeds with reduced boar taint are not currently available, but could be a possibility for the future and would be an ideal way to improve efficacy and well-being through the production of entire

males. Candidate genes for genomic selection have been proposed, and breeding for reduced boar taint, including the potential adverse effect on male fertility, are being intensively studied [e.g. 24,25].

Immunological castration

Another option is to raise entire males and use immunological castration (IC). This is an immunization that uses the pigs' own immune system to produce antibodies that neutralize gonadotrophin releasing factor (GnRF) [26]. The vaccine (named Improvest[®] in the USA) consists of a synthetic analogue of GnRH, combined with diphtheria toxoid (DT), commonly used in vaccines given to children [22]. Injecting this GnRH-DT combination causes the pig to produce antibodies to neutralize it, and these antibodies will then act on the pigs' own GnRH. Ultimately, this temporarily suppresses testicular function, thereby reducing the accumulation of boar taint compounds, and eliminates compounds already present [22]. Additionally, IC has been shown to reduce unwanted sexual and aggressive behavior as IC barrows approach market weight [e.g. 24]. IC is implemented using two subcutaneous injections; the first dose acts to prime the boars' immune system, which should be given no earlier than 9 weeks of age. The second initiates the IC, creating a strong immune response and is given at least 4 weeks after the first, and (as it is reversible) between 3 and 10 weeks before slaughter. This method harnesses all the benefits of raising entire males' right up until the second dose is administered, when IC barrows show a reduction in efficiency for the short period of time before market.

Anesthesia and/or prolonged pain relief

As already mentioned, providing a local or general anesthetic during physical castration has been shown to reduce signs of pain [3,6,8,9,12,15,16]. Additionally, post-procedural pain relief reduced indicators of pain after physical castration [5,7,9,10]. Convincing evidence that pain during and after physical castration can be reduced to an acceptable level, on a commercial scale, and with the drugs available for food producing animals, is lacking. Piglets with short and long-term local anesthetic sprayed directly onto the castration wound did not show a reduction in pain [4]. Additionally, negative impacts of anesthetic techniques are possible when being administered by non-veterinarians. For example, two studies showed inadequate use of anesthetic disrupted nursing behavior [6,13], and the use of carbon dioxide anesthesia, which is aversive or unpleasant to pigs has

2015, Vol. 20 No.1

been criticized by vets [28]. Although not completely effective in all cases, post-procedural pain relief, using drugs that are available for pigs in some countries (but not currently in the USA), is more promising and easier to administer. One study showed that giving the sow an oral dose of pain relief, provided the piglets with a therapeutic dose through her milk, who then showed reduced pain following castration [7]. Additionally, providing a pain relief drug before the procedure, helped reduce pain after castration [9,10].

Castration is a complex issue affecting the entire pork production chain, from the pig, to the producer, packer, retailer, and consumer. This article introduced the issues involved, the current situation in the United States, and provided information on alternatives to the current method. Part two will describe the current situation with regard to swine castration in other large pork producing regions, discuss the practical, and economic implications of the alternatives, and suggest the potential future direction for US pork producers.

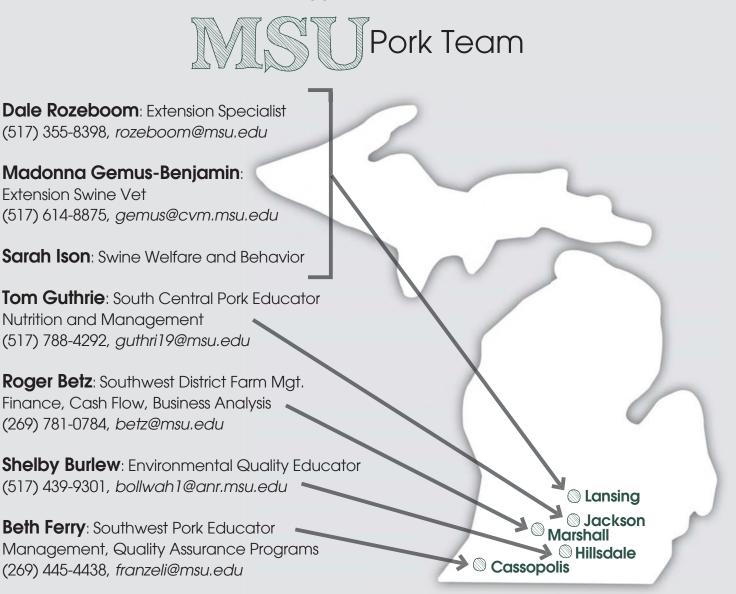
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All comments and suggestions should be directed to the:



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MICHIGAN STATE UNIVERSITY

Extension

2015, Vol. 20 No.1

Capital Update

All activities reported under this heading are financed by non-checkoff funds.

NPPC NOT IN FAVOR OF 'TTIP-LITE'

NPPC recently joined 36 other food and agriculture groups on a letter urging U.S. Trade Representative Michael Froman and U.S. Secretary of Agriculture Tom Vilsack to resolve outstanding European Union (EU) market access issues before concluding the Transatlantic Trade and Investment Partnership (TTIP) negotiations this year. The groups asked the officials to push for elimination of tariff and non-tariff barriers on agriculture exports. "If the issues our organizations have identified as serious barriers to our exports to the EU cannot be resolved satisfactorily before the end of the year, we urge you not to proceed with a "TTIP-lite" agreement, which, for the U.S. food and agricultural sector, would do much more harm than good," the letter stated. While NPPC currently supports the deal, it is skeptical of progress being made on it based on the intransigence of the EU on various issues. NPPC is concerned about the many critical ideological rifts that remain on agriculture. While the EU is willing to eliminate tariffs on nearly all goods, for example, it announced publicly it is unwilling to eliminate them on beef, poultry and pork. It also is refusing to reconsider its stance on beef hormones and the feed additive ractopamine, which is used in beef and pork production. NPPC wants in TTIP the same deal it has gotten in the 20 other free trade agreements the United States has concluded and in the TPP, which was recently finalized: elimination of tariff and non-tariff barriers on U.S. pork exports."

APHIS TO ALLOW IMPORT OF CLASSICAL SWINE FEVER VACCINE

NPPC recently urged USDA's Animal and Plant Health Inspection Service (APHIS) to authorize, under permit, importation of a vaccine for Classical Swine Fever (CSF) and live pestivirus, which is used to make the vaccine. APHIS is expected to approve shipment of the vaccine for distribution and sale for emergency use in the United States after findings from an environmental assessment found no negative effects on human health or the environment. CSF, or hog cholera, is a highly contagious disease of pigs. It is endemic in much of Asia, Central and South America and parts of Europe and Africa. CSF was eradicated in the United States by 1978, but the foreign animal disease still poses a risk to the U.S. pork industry.

CANADA ENTERS INTO STRATEGIC PARTNERSHIP WITH PACIFIC ALLIANCE

Canada recently became the first observer country to enter into a strategic partnership with the Pacific Alliance. The alliance, formalized in 2012, is a free trade area that includes Chile, Colombia, Mexico and Peru, which account for more than one-third of Latin America's GDP. Costa Rica began the process of joining the Pacific Alliance in 2014. The declaration identifies six areas for increased cooperation between Canada and the alliance: trade facilitation and promotion; education and training; small- and medium-sized enterprises; science, technology, and innovation; responsible natural resource development and corporate social responsibility; and environment, including climate change and ocean conservation. Over the next few months, the countries will begin working to strengthen opportunities in each of these areas. A joint statement on the signing of the partnership said that it will "allow the development of concrete initiatives to support Canada's and the Pacific Alliance's economic players, especially small and medium sized businesses." The United States has free trade agreements with all four alliance member countries (and one with Canada) and joined as an observer to the alliance in 2013.

NPPC HAS SUCCESSFUL WORLD PORK EXPO

More than 20,000 visitors recently attended NPPC's 28th annual World Pork Expo June 8-10 at the Iowa State Fairgrounds in Des Moines. Among those visitors were more than 1,100 international guests from about 40 different countries. The world's largest pork-specific trade show and exhibition featured 350 exhibitors, showcasing the latest technology and products from the pork industry. NPPC staff and board members were on hand to discuss the work NPPC does on behalf of the U.S. pork industry. NPPC Strategic Investment Program members on Thursday heard from USDA's Agriculture Marketing Service Deputy Administrator Craig Morris on his agency's involvement in the pork industry, including the Mandatory Price Report, and USTR Chief Agricultural Negotiator Ambassador Darci Vetter on the importance of the Trans-Pacific Partnership. Activities throughout the week included business seminars, new product tours, PQA Plus training, a golf tournament, junior swine show and open clay target shoot. Visitors were treated to high-quality pork products and live music from Kasey Muessigmann and the Surf City All Stars.

NPPC SAYS 'GIPSA' RULE, TPP COULD AFFECT PRODUCERS

Although the U.S. pork industry is in good economic shape, pork producers' future fortunes can be affected – for good or for ill – by opportunities and challenges with which they are presented, the National Pork Producers Council recently told members of the House Committee on Agriculture's livestock subcommittee, which was continuing a series of hearings on the rural economy.

A challenge of particular concern to the pork industry is proposed rules from the U.S. Department of Agriculture related to the buying and selling of livestock, said NPPC board member David Herring, a pork producer from North Carolina who testified before the Subcommittee on Livestock and Foreign Agriculture.

USDA is reproposing parts of the so-called GIPSA (Grain Inspection, Packers and Stockyards Administration)

Rule, which first was proposed in 2010 to implement provisions included in the 2008 Farm Bill. The regulations, however, went well beyond the Farm Bill provisions and would have had a significant negative effect on the livestock industry, according to analyses. A November 2010 Informa Economics study of the rule found it would have cost the pork industry more than \$330 million annually.

Tens of thousands of comments, including 16,000 from pork producers, were filed in opposition to the rule, and Congress several times included riders in USDA's annual funding bill to prevent it from finalizing the regulation. But no rider was included in USDA's fiscal 2016 bill.

"We have grave concerns [the reproposed GIPSA Rule] will mirror the 2010 proposal," Herring told the livestock panel. "If it does, the livestock industry will be fundamentally and negatively changed."

Another potential challenge, said Herring, is an outbreak in the United States of Foot and Mouth Disease (FMD), which, if it occurred, would immediately stop U.S. meat exports. He called on Congress to appropriate funds to set up an FMD vaccine bank to deal with an outbreak.

Herring also reiterated NPPC's support for the Trans-Pacific Partnership, telling the subcommittee the benefits of TPP will exceed all past free trade agreements and represents a great opportunity for U.S. pork producers and for the entire U.S. economy.

The TPP, negotiations on which were initiated in late 2008 and concluded last October, is a regional trade deal that includes the United States, Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam, which account for nearly 40 percent of global GDP. The countries combined have more than 800 million consumers.

"Because other Asia-Pacific trade agreements are being negotiated without the U.S.," Herring testified, "the United States can't afford either economically or geopolitically to walk away from the fastest growing region in the world. Congress must pass the TPP, and it must do so soon."

2016, VOL. 41, NO. 2



Reports on checkoff-funded promotion, research and consumer information programs.

NATIONAL PORK BOARD NAMES WILLIAM EVEN AS CHIEF EXECUTIVE OFFICER

William J. Even, an agriculture-industry leader with substantial senior management experience in crop and livestock production, joined the National Pork Board as its new Chief Executive Officer on June 6, 2016. Based in South Dakota, Even was Global Industry Relations Lead with DuPont Pioneer.

"As a fourth-generation farmer, I have deep, personal knowledge of the challenges facing today's pork producers and I am impressed with and completely support the Pork Checkoff's strategic plan that guides and directs its programs," said Even. "I look forward to working on behalf of America's more than 60,000 pig farmers to build consumer trust, drive sustainable production and grow consumer demand for pork."

Before joining the National Pork Board, Even managed DuPont Pioneer's global industry relations strategy. In that role, he built collaborative stakeholder relationships in the areas of seed, biotechnology, biofuels and farm policy. Prior to that position, he served as DuPont Pioneer's Commercial Unit Lead for South Dakota, North Dakota and northwest Minnesota where he was responsible for leading seed sales, operational marketing, agronomy, training, demand planning, precision agriculture and policy needs in the region.

From 2007 to 2010, immediately prior to joining DuPont Pioneer, Even served as South Dakota's Secretary of Agriculture. During his tenure, he managed six department divisions including Agriculture Regulatory Services, Agriculture Development, State Fair, Wildland Fire, Resource Conservation and Forestry, and Agricultural Policy. He also served as Deputy Secretary of Tourism and State Development, Director of the Governor's Office of Economic Development, State Energy Policy Director, and policy advisor for South Dakota Governor Mike Rounds.

"Bill's stellar career in public service has been devoted to defining ag policy and implementing the often difficult changes needed to continuously improve," said Derrick Sleezer, National Pork Board president and a pig farmer from Cherokee, Iowa. "His ability to build trusted relationships is critical to the U.S. pork industry. I feel confident in his experience and discipline needed to build and lead teams to meet the growing demand for protein in the U.S. and abroad."

Even holds a degree in agricultural production from Lake Area Technical Institute, a Bachelor of Science in agricultural business and minor in economics from South Dakota State University; and a Juris Doctorate from Drake University Law School, where he was an Opperman Scholar.

He and his family own and operate a fifth-generation diversified crop and livestock operation near Humboldt, South Dakota, where they raise corn, soybeans, wheat, alfalfa and cattle. The farm was homesteaded in 1883 by his great-grandfather and Even began farming in 1983. He and his wife, Janell, have three children and currently live in Humboldt, South Dakota, before relocating to the Des Moines area.

Even began on June 6, and his first week as CEO included attending the National Pork Board's June Board of Directors meeting and World Pork Expo.

Jon Leafstedt, Jim Gerardot, and Ed Yuhas, principals with Kincannon & Reed, a global executive search firm focused on the food and agribusiness industry, assisted the National Pork Board and its search committee in the recruitment of Bill Even as Chief Executive Officer.

U.S. PORK 2016 EXPORT DATA SHOWS IMPRESSIVE PROGRESS

For the first four months of 2016, U.S. pork and pork variety meat exports totaled \$1.8 billion in value and 1.26

Michigan Pork Producers Association

billion pounds in volume, down 9 percent in value and unchanged in volume compared to the same time period last year.

"U.S pork exports are gaining strength this year but will still face challenges with increased global competition and a stronger U.S. dollar," said Becca Nepple, vice president of international marketing for the Pork Checkoff. "The Checkoff is committed to bolstering its partnership with international customers through additional funding of in-country promotions of U.S. pork with the U.S. Meat Export Federation."

Looking at April data alone, U.S. exports to China (excluding Hong Kong) surpassed export volume to Japan for the first time. Combined exports to China and Hong Kong for the first four months of 2016 were up 78 percent in volume (up 117 percent for China alone) and 54 percent in value.

"Central America also has been an emerging and important destination for U.S. pork exports as the U.S. pork industry has focused on market development and value-added promotions," Nepple said. For January through April, exports to the region were up 22 percent in volume and 23 percent in value compared to 2015.

"However, exports in volume to Mexico, Japan and South Korea were below last year during the same time period. Development and relationship-building programs are working toward regaining lost market share due to the West Coast port slowdown, ongoing competition and currency challenges," said Nepple.

On average through April, 2016 U.S. pork and pork variety meat exports accounted for 24 percent of total pork production. Export value averaged \$45.73 per head back to pork producers.

The top U.S. pork export markets during the first quarter of 2016 were Mexico (470.4 million pounds and \$355.9 million in value), Hong Kong/China (389.2 million pounds and \$330.6 million in value), Japan (281.8 million pounds and \$489.9 million in value), Canada (139.3 million pounds and \$239.1 million on value), South Korea (113 million in pounds and \$129.4 million in value) and Central/South America (81.5 million pounds and \$86.7 million in value).

PORK CHECKOFF IGNITES THE SUMMER GRILLING SEASON

This summer, the Pork Checkoff is encouraging consumers to fire up the grill through a multi-platform media campaign that highlights why pork is the undisputed star at every barbeque. For the first time, America is witnessing grilling from the perspective of The Grill and Gloria, co-stars and "spokes-grills" for the Grill For It! campaign.

"We are building on our target's love of pork with a fun campaign that celebrates all the ways to make pork on the grill," said Randy Brown, chair of the Pork Checkoff Domestic Marketing Committee and a pig farmer from Ohio.

Through Labor Day, the Checkoff is featuring the two grills in an integrated marketing campaign across both general and Hispanic markets. The campaign includes radio and online advertising, print and digital media buys and public relations efforts.

The lively voice of The Grill is actor and comedian David Koechner, known for his roles in the movie, "Anchorman," and the TV series, "The Office." In addition to videos, consumers can follow The Grill's commentary on all things grilling on his blog, GrillForlt.com.

The Grill For It! integrated campaign was adapted to iPrende el Sabor! for the Hispanic market. The campaign is encouraging Latinos to turn up the flavor on the grill via a series of video vignettes. The vignettes feature Gloria, voiced by Mexican actress, comedian and singer Angelica Vale. In May, Vale showcased pork with 21 media outlets and will team with the Checkoff this summer for a food and entertainment media event in Los Angeles.

The integrated campaign has already garnered consumer attention. The YouTube video view completions for the first three weeks of the campaign exceeded 5.8 million. Hispanic media coverage to date has generated 390 media stories. Campaign elements can be found at PorkBeInspired.com and PorkTeInspira.com.

"A creative, fun approach to marketing is a great way to break through all of the seasonal clutter to resonate with consumers," Brown said.

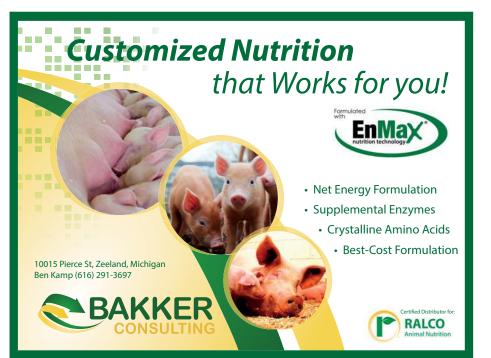
2016, VOL. 41, NO. 2

National Pork Board Elects New Board Officers, New Board Members Appointed

he National Pork Board recently elected Jan Archer, a pork producer from Goldsboro, N.C., as president of the organization. The National Pork Board is comprised of 15 farmer-directors representing America's pork producers. Archer and her husband Jack own Archer Farms LLC, a sow farm that markets 28,000 weaned pigs annually and raises corn, soybeans and hay. She also operates Archer Consulting, an enterprise that provides personnel training to the pork industry, including certification in Pork Quality Assurance Plus®, Youth PQA Plus® and Transport Quality Assurance® for producers and allied industry representatives. Elected as vice president was Terry O'Neel, a pork producer from Friend, Neb.; Steve Rommereim, a pork producer from Alcester, S.D., was named treasurer. Derrick Sleezer, a pork producer from Cherokee, Iowa, will serve as immediate past president. The four executive officers will serve one-year terms in their positions beginning July 1. Archer and O'Neel were confirmed to serve a second three-year term. Also appointed as board members to the National Pork Board were Gene Noem of Ames, Iowa; Alicia Pedemonti of Hopkinton, N.H.; and Michael Skahill of Williamsburg, Va.

Meat and Poultry Industries Top \$1 Trillion in Economic Output

study released recently by the North American Meat Institute (NAMI) showed the economic output in 2015 of the meat and poultry industries was \$1.02 trillion. That accounts for almost 6 percent of U.S. GDP. The sectors combined created more than 54 million jobs, with \$257 billion in wages. In addition to processing, wholesale and retail jobs, the meat and poultry industries also created more 2 million jobs associated with supplying the industries. The analysis also indicated that the sectors



added \$108 billion in tax revenues to local governments and \$3.2 billion in state sales tax. The study also broke down the economic impact of the industries in each congressional district and ranked them on total economic value. "We are proud that we provide millions of quality jobs in every state and every sector of the U.S. economy and that these jobs ensure people in North America and around the world have access to our high quality, nutritious and affordable products," said NAMI President and CEO Barry Carpenter.

BREAKFAST ON THE FARM

Join us for Breakfast on the Farm this summer

ducational farm tours are providing the consumer an opportunity to see how modern farms work and to interact with producers and agribusiness professionals.

For the past four years, MPPA has joined Breakfast on the Farm (BOTF) in their mission to engage with consumers by bringing the "little pig barn" to the BOTF events.

These events offer producers an opportunity to talk with attendees about how pigs are raised. The barn also gives

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810.632.3600 MGermane@GECenvironmental.net visitors a mini visual to help them better understand the farming process.

We would love to have more pig farmers join us at the events to help share the story of pig farming with the public. Please contact me to sign up at walker@mipork.org or 517-853-3782. This year's events will be held:

August 13: Tuscola County Breakfast on the Farm hosted by Zwerk & Sons Farms, Vassar, Mich.

August 27: Lenawee County Breakfast on the Farm hosted by Hartland Farms, Clayton, Mich.

Since 2009, more than 74,740 children and adults have attended Breakfast on the Farm events throughout Michigan to learn about where food comes from. At these events, attendees had a chance to learn how cows are milked, pet a calf, take wagon rides, see tractors and eat ice cream. Questions about farming and food production are encouraged.

BOTF gives consumers and farm neighbors a first-hand look at modern food production, and the farm families who work hard to produce a safe, wholesome food supply for Michigan communities and the world.



2016, VOL. 41, NO. 2

ALM Update: Brexit Summary and Considerations

he U.K. recently sent a shockwave through global markets by voting to leave the European Union by a margin of more than 1 million votes nationwide. Adding to the shock of the results, and likely further roiling markets, most polls and betting markets had predicted a likely win for the "Remain" camp.

The run-up to the vote was marked by a bitterly divided campaign, one that was as much about immigration fears as it was about the global economy. It was also marked by a generational and geographic fault line. Among young voters in Britain, 64% voted to stay – and Scotland, which overwhelmingly voted to stay, is now seen again on the cusp of an independence vote.

The consequences of the leave vote will be felt worldwide, even here in the United States, and some British voters say they now regret casting a vote to Leave. "Even though I voted to leave, this morning I woke up and I just — the reality did actually hit me," one woman told the news channel ITV News. "If I'd had the opportunity to vote again, it would be to stay." Meanwhile, Google reported sharp upticks in searches not only related to the ballot measure but also about basic questions concerning the implications of the vote – after the vote occurred.

The "Brexit" will cause profound implications for markets and economies around the world. It will also have major impacts on global agriculture. Most of all, because the implications of the vote will play out over the coming weeks, months and years, and because no EU nation other than Greenland has ever made the decision to exit, there is virtually no precedent and tremendous uncertainty surrounds the Brexit.

Markets were immediately impacted. The British Pound (GBP) dropped 30 percent versus the dollar overnight, its largest drop in more than 30 years. Markets in the U.S. and abroad suffered major losses in the immediate aftermath, with trading defined by investors looking for safe havens. Gold and U.S. Treasuries saw increased interest.

There will be major economic and market uncertainty driven by the fact that the EU has to deal for the first time in its history with a major member state that wants to quit. Policies, trade deals and regulations that affect energy companies remain in place for now, but are prone to uncertainty as London and Brussels renegotiate their relationship. Bank Credit Suisse predicts "profound implications for the UK" with a 1% drop in GDP in the rest of this year, "driven by a halt in business investment as firms react to the uncertainty", and shrinkage of 1% in 2017 rather than growth of 2.3%. UK-based bank Barclays (whose shares dropped nearly a third over 24 hours) expects "global economic growth to stagnate".

Another impact of last Thursday's vote is the increased cost of food in the U.K., because of its reliance on imports, the president of country's National Farmers Union told The Guardian. The other top concerns are trade negotiations and the potential for import tariffs being slapped on British goods by the European Union, as well

> as whether U.K. farmers will receive the same amount of subsidies as they did under the EU.

In Europe, the political fallout has been swift and dramatic. David Cameron has announced his resignation as Prime Minister, even



with senior "Leave" campaign managers asking him to stay on. He has indicated he will remain for about three months. The opposition Labour Party is not doing much better at giving the British people something certain to hold onto. Leader Jeremy Corbyn announced 10 new shadow cabinet positions Monday after multiple resignations.

While the UK remains a member of the EU until it has negotiated its exit, which some estimates say that process may take up to two years. However, there appears to be little sympathy in the EU for delays in beginning the exit process. Divisions are opening among Europe's leaders over how to handle Britain's exit from the union, FU Parliament officials called on the UK to "deliver now" on its Brexit vote. Angela Merkel's office has said London should "take the time to reconsider the consequences."

Observers say the quick and forceful response from many EU nations is meant to discourage referendum votes in other EU nations, including the Netherlands and France, where activists are already calling for votes of their own. Many have speculated that Scotland, which overwhelmingly voted to "Remain" will make another attempt to declare independence, and some leaders in Ireland have called for a referendum on breaking away from the UK and uniting with Ireland. Meanwhile, Ireland sees an opportunity to reunite their own island.



Calendar of Events

13-17 Michigan Livestock Expo

July:		st Lansing, Mich.
August:	13	Tuscola County Breakfast on the Farm
	13 Ha	AG Venture Day rbor Beach, Mich.
	27	Lenawee County Breakfast or the Farm

13-15 NPPC Fall Legislative Action Sept.: Conference Washington D.C.

> 21 **MPPA Board Meeting** East Lansing, Mich.

2016, VOL. 41, NO. 2

on

We're Listening

Dear MPPA,

On behalf of the North Huron Elementary Ag-STEM Extended Day Program I would like to thank you for your donation and contribution. Being able to supplement what we discuss during our sessions with take home materials really helps us in educating students about agriculture. Thanks again!

Sincerely, Rebecca Gulliver, North Huron School

Dear MPPA,

Thank you for your donation to the Michigan State University College of Agriculture and Natural Resources. Your contribution, designated to the Great Lakes Leadership Academy Program Endowment Fund, is greatly appreciated. Gifts like yours are critical to the success of our programs and our students. These dollars make it possible for scholarships, fellowships, research opportunities, technology needs and community outreach to happen.

Sincerely, Douglas Buhler, Interim Dean, College of Agriculture and Natural Resources & Director, MSU Ag BioResearch

Dear MPPA,

Thank you for your donation to this year's 5th Annual Hillsdale County Ag Council Project RED Student Bags. 460 fourth grade students from 21 classrooms in Hillsdale County attended the event. We appreciate the part you play in providing edcational information from your commodity.!

Sincerely, Jan Sober, Hillsdale County

Dear MPPA,

Thank you for your contribution to the Michigan FFA Endowment. This endowment will help our students to develop premier leadership, personal growth and career success. Thank you for all of your support.

Sincerely, Michigan FFA State Officer Team



Michigan Pork Producers Association

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2016, VOL. 41, NO. 2

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- 24 Albright Swine Farms
- 22 Bakker Consulting
- 23 Germane Environmental Consulting, LLC
- **13 High Lean Pork**
- **11 JBS United Feeds**
- **13 Morrow & Parent Farm**
- 28 Swine Systems
- **7** Swine Vet Services
- **10 United Producers, Inc**
- **9 Wooden Farms**

Productive maternal females are the foundation to our program. Our high health, closed herd of 1,100 pure Landrace sows crossed on 100% Swedish large white boars, produces maternal females to be utilized as parent or grandparent lines.





Swine Systems' Swedish genetic lines originate from a program that has been evaluating genetics for efficient, lean quality production for over 70 years.

Swine Systems' program allows producers to purchase boars or gilts for their own production. Retailers or consumers can also purchase processed meat from our program.

12.20

Harlow and Curt Bailey Schoolcraft, Mich. 269-372-6936 Consulting Veternarian James A. Kober, DVM



Mark and Bud Runyan Urbana. Ohio

Urbana, Ohio 937-653-4060 937-869-6083 (Mark's Cell)

june16magazine.indd 28

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