

“Is Gene-Editing a Viable Technology to Combat Swine PRRS, or Just Another Dead End?”



West Liberty FFA Chapter

310 West Maxson Avenue

West Liberty, Iowa 52776

319-627-2115

State Qualifying Date: April 15-16, 2019

ISSUE SUMMARY

List of course(s) in which instruction occurred.

- Introduction to Food, Fiber, and Natural Resources (84 students) - analyzed various reproduction methods in the livestock industry were introduced, specifically artificial insemination.
- Conservation/Wildlife (24 students) - examined how the influence of genetic technology can affect the environment through predatory species or even genetic mutation.
- Animal Science (56 students) - focused on animal physiology along with the nutrition, health, and biosecurity in food animals through various discussions and over ten farm tours.
- Food Science and Technology (29 students) - researched the roles of the Food and Drug Administration (FDA), United States Department of Agriculture (USDA), and the Food Safety Inspection Service (FSIS).
- Ag Leadership and College Career Prep (20 students) - discussed presentations strategies on how to create effective dialogue in public settings and utilized Microsoft Powerpoint .
- Livestock Management (28 students) - studied a swine unit which covered the PRRS virus. Additionally focused on genetics, reproductive health and how biotechnology is important in the food-animal industry.

What is the nature of this issue and why is this issue important now?

Porcine Reproductive and Respiratory Syndrome (PRRS) is the most important disease affecting the U.S. swine industry (Christianson, 1994). PRRS affects multiple phases of swine operations resulting in abortion, fetal death, and respiratory disease in newborn piglets. PRRS also is highly infectious, at times showing little to no symptoms, and is transmitted through various routes, with the most common transmission being airborne (Boehringer Ingelheim, 2019). As swine producers implement good production practices, adequate biosecurity, and air filtration systems, PRRS outbreaks are still prevalent (Vansickle, 2009) as losses range from \$560 - \$760 million annually (Mengeling, 2005). In 2012, there were discoveries of gene-editing technology to be used for animals, plants, and humans that could change DNA by cutting and replacing undesired traits within cells (U.S. National Library of Medicine, 2019). This is achieved using CRISPR-Cas9, a natural protein with RNA that unwinds DNA to disconnect portions that are unwanted (Personal Genetics Education Project, 2018). Using CRISPR-Cas9, Kansas State researcher Dr. Raymond Rowland was able to prevent PRRS within swine (Kansas State University News, 2019). Even though success was seen in the swine study, CRISPR is not yet perfected, as some studies show off-target mutations in DNA (Cohen, 2019). Beyond its imperfections, environmentalists are concerned with the rapid advancement of natural selection using these practices, while economists worry that implementing these changes in our food supply could affect global trade. As many parties take their positions on the issue, the producer is still dealing with the devastating disease.

Who is involved in the issue?

Swine Production Facilities: producers with farrowing operations are heavily affected by the PRRS virus which also leads to challenging losses in feeder operations. Both operations are in desperate need of gene-editing to combat PRRS (Danner, 2019).

Companies researching and utilizing CRISPR-Cas9: Since 2012, many companies have invested in CRISPR-Cas9 to implement into health, agriculture, and clean energy (Synthego, 2019). **Kansas State University College of Veterinary**

Medicine: Initial research of CRISPR on the CD163 protein in swine to prevent PRRS (Kansas State University News, 2019).

Recombinetics, Inc: leading company in developing solutions to agriculture through gene-editing technology. Also noted for developing hornless traits in cattle (Recombinetics, 2019). **Consumers:** Gene-edited traits within meat products could concern consumers, especially 67% of Americans that prioritize healthy or social-conscious food purchases (PR Newswire, 2019).

Veterinarians: Responsible for assisting with animal health and biosecurity plans to prevent PRRS (Larson, 2019). **National**

Pork Producer Council: Advocates for the swine industry and funds lobbying efforts to advance the industry (Davis, 2019).

Food and Drug Administration: declared gene-editing as a drug, which includes extensive regulations and research, thus

delaying implementation within food-animal products (FDA, 2019). **United States Department of Agriculture:** responsible for regulating gene-editing within plants that currently exists in the market (USDA, 2018).

How can this issue be defined?

Our forum falls under the topic area of “Animal Issues” as listed in the Focusing on Agricultural Issues instructional materials. This issue is defined as, “Is gene-editing a viable technology to combat swine PRRS or just another dead end?” Producers have explored many options by improving biosecurity and implementing air filtration. Gene-editing is potentially the only remaining avenue for producers to prevent PRRS. As advancing technologies exist within the animal industry, there are hurdles to overcome. Food safety, environmental regulation, and trade, could lead to gene-editing not being implemented within swine operations.

ISSUE SUMMARY

Why is this issue important to Iowa?

The state of Iowa is leading the nation in swine production with over 6,000 farms marketing nearly 50 million hogs annually (Iowa Pork Producers Association, 2019). Since nearly one-third of the nation's hogs raised are raised in Iowa, the industry provides job opportunities for one in every 12 Iowans (Iowa Pork Producers Association, 2019). PRRS was first discovered in Iowa in 1987 and has created challenges for producers in spite of preventative measures taken in production facilities. Since 2009, there have been over 1,300 outbreaks of the PRRS virus, with recent studies showing outbreaks in Iowa to be 3.7 times higher than areas of lower risk (Swine Health Information Center, 2019). As gene-editing research advances to combat the PRRS virus, without approval of its use in the industry, massive losses will still occur, up to approximately \$235 million. Iowa producers have requested the National Pork Producers Council (NPPC) to lobby on their behalf. The NPPC has established their stance to have the USDA be chief regulatory oversight over gene-editing, as opposed to the FDA which regulates gene-editing on animals as a drug. Currently the USDA's Animal and Plant Health Inspection Service regulates plants that are gene-edited, therefore the organization can do the same with animals and meet regular review of the Animal Health Protection Act (NPPC, 2019). Failure to approve gene-editing in the U.S. while other countries in the European Union and even China are exploring options, puts Iowa pork producers at a competitive disadvantage. Hog production contributed \$13.1 billion dollars to Iowa's economy. In 2018, Iowa pork exports totaled to more than \$1.1 billion, with the top nations importing the goods were Japan, Hong Kong, Canada, and Mexico (Iowa Pork Producers Association, 2019).

What are the benefits?

Advocates for gene-editing technology using CRISPR-Cas9 claim it:

- Provides the swine industry with technology to eliminate PRRS and reduce up to \$760 million in annual losses.
- Improves in the overall health and well-being of swine herds.
- Provides a cost effective measure for future generations of swine genetics.
- Gives producers a competitive advantage in world trade.
- Opens a gateway to gene-edit other producers with other species

What are the risks?

Critics of gene-editing technology using CRISPR-Cas9 state that there are:

- Ethical concerns surrounding the testing of CRISPR on animals.
- Imperfections in CRISPR such as off-target mutations within cells.
- Ecological and environmental impacts of expediting natural selection.
- Lengthy regulations imposed from the FDA classifying gene-edited food products as drug.
- Potential and unknowns of losing export markets for countries who ban gene-edited food products.

What is the historical background of the issue and what caused it?

When PRRS was discovered, it evolved over time, most commonly via airborne transmission, which increased losses in swine industry as well as created difficulties when trying to control it. CRISPR, in the meantime evolved and research led to use within animal, plant, and humans. Important dates regarding PRRS, gene-editing, and regulations are as follows:

- **1973**—Dr. Herb Boyer and Dr. Stanley Cohen created the first genetically engineered organism (i.e. bacteria to confer antibiotic resistance) (Jacobsen, 2019).
- **1987**—First PRRS outbreak discovered in the United States, specifically Iowa, Minnesota, and North Carolina (Iowa State University College of Veterinary Medicine, 2019).
- **1993**—at the University of Alicante in Spain, researcher Francisco Mojica, discovered the original CRISPR (Broad Institute, 2019).
- **July 2011**—Research leads to CRISPR function within other species (Broad Institute, 2019).
- **May, 2012**—Jennifer Doudna and Martin Jinek of University of California Berkeley discovered the CRISPR-Cas9 gene targeting technology (University of California Berkeley Public Affairs, 2018).
- **January, 2013**—Dr. Feng Zhang conducts first successful CRISPR-Cas9 genome edit on eukaryotic cells (Broad Institute, 2019).
- **2016**—Recombinetics, Inc. discovers hornless cattle and other benefits through the gene-editing process (Latham, 2019).
- **2017**—Dr. Raymond Rowland, Kansas State University researcher, conducted a successful trial using CRISPR-Cas9 to target the CD163 protein to prevent the PRRS virus (Kansas State University News, 2017). The first gene-altering treatments for cancer were approved by the FDA (Jacobsen, 2019).
- **2019**—First gene-edit soybean leads to Calyso soybean oil on the shelves for consumers (Wilke, 2019).
- **July 2019**—FDA announces regulation plan with gene-editing on the use of food animals (Dumas, 2019).

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LOCAL FORUM PRESENTATIONS

WHEN	WHERE	TO WHOM	# PRESENT
February 19, 2019 (6:00pm)	West Liberty, IA	Muscatine County Swine Committee	16
February 28, 2019 (6:30pm)	Muscatine, IA	Muscatine County Farm Bureau	7
March 1, 2019 (5:00pm)	West Liberty, IA	Danner Farms Incorporated	18
March 5, 2019 (6:00pm)	West Liberty, IA	West Liberty Board of Education	28
March 7, 2019 (6:30pm)	West Liberty, IA	We Lead Area Economic Development	22
March 9, 2019 (10:00am)	Urbandale, IA	National Pork Producers Council USDA Farm Production/Conservation Team	14
March 16, 2019 (6:00pm)	West Liberty, IA	West Liberty Rotary Club	22
March 23, 2019 (6:30pm)	West Liberty, IA	State Legislators—Ag Coffee Q& A	19
March 25, 2019 (5:00pm)	Hills, IA	Stutsman Ag Products and Services	17
March 27, 2019 (7:00pm)	West Liberty, IA	West Liberty Lions Club	24
April 1, 2019 (6:00pm)	West Liberty, IA	Chamber of Commerce Board	15
April 2, 2019 (5:00pm)	West Liberty, IA	West Liberty City Council	24
April 3, 2019 (11:00am)	Des Moines, IA	Iowa Secretary of Agriculture	7
April 10, 2019 (6:00pm)	West Liberty, IA	West Liberty CDE Showcase Night	126
April 14, 2019 (5:00pm)	Ankeny, IA	NAMA—Iowa State Chapter	7

Muscatine Co. Swine Committee

Muscatine County Fairgrounds, West Liberty

Date: February 19, 2019 Time: 6:00pm

Attendance: 16



The Muscatine County Swine Committee is an advocate for pork producers in our area. We learned about the challenges of swine operations in the area as well as on-farm biosecurity measures.

February 22, 2019

RE: Ag Issues and Perceptions West Liberty FFA

To Whom It May Concern,

On February 19, 2019, the Ag Issues Team of West Liberty FFA presented to the Muscatine County Fair Swine Committee at the fairgrounds. The presentation was the topic related to gene editing used to combat the Swine PRRS virus.

Member of the committee present were; Donnie Rife, Cindy Young, Jason Feldman, Nick Marolf, Megan Marolf, Adam Maurer, Todd Denkman, along with nine other guests.

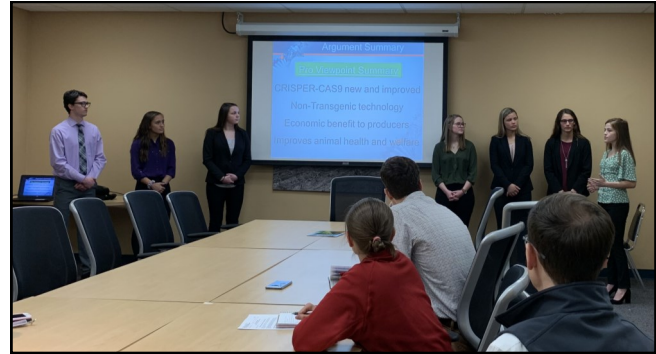
We certainly appreciated their interest in the swine industry as Iowa is the nation's leader in pork production. We are so proud of their hard work and we are certain they will do well in competition.

Sincerely,

Jason Feldman

Jason Feldman

Muscatine County Fair Swine Committee



Muscatine County Farm Bureau

Farm Bureau Office, Muscatine

Date: February 28, 2019 Time: 6:30pm

Attendance: 7



The Muscatine Farm Bureau works extremely hard to lobby with state legislatures to provide budget support on agricultural issues. We took questions on how to educate the public on gene-editing and its misconceptions.



To Whom It May Concern:

It is my pleasure to write a letter for the West Liberty Iowa Ag Issues and Perceptions team. They presented to the Muscatine County Farm Bureau Board in Muscatine on February 28, 2019 at 6:30pm. As the Farm Bureau Federation Regional Manager it has been a pleasure to work with the students and advisors of this dynamic, growing chapter.

This team present the issue title "Is Gene Editing a Viable Technology to Combat Swine PRRS or just another dead end?" Farm Bureau takes pride in supporting Iowa Farmers, and this technology is a potential gateway to defend against a devastating disease to swine producers.

Our members were extremely impressed with their conversation, the overview of controversial pros and cons, but most of all the solutions and content they gave in their question session. I have no concerns about the upward potential of this team and the talent they have as future leaders.

Sincerely,

Jerry Anderson

Jerry Anderson

Iowa Farm Bureau Federation Regional Manager



Danner Farms, Incorporated

Danner Farm Main Office, West Liberty

Date: March 1, 2019 Time: 5:00pm

Attendance: 18



Danner Farms has one of the largest feeder operations in Muscatine County feeding out over 30,000 hogs annually. We learned about the process of obtaining feeder pigs in their operation and how genetics and nutrition impact growth rates.



Plant, Nurture and Harvest, with Integrity, Innovation and Excellence

Address: 1719 155th Street - West Liberty, Iowa 52776

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March 2, 2019

To Whom It May Concern,

I recently had the privilege of enjoying a presentation by the West Liberty Ag Issues Team along with 18 members of my farm staff on March 1st, 2019 at my farm office. It was clearly evident these students had studied this topic very well and had put a lot of time and effort into their presentation.

The Ag Issues team spoke clearly and intelligently about their topic, "Is Gene Editing a Viable Technology to combat Swine PRRS, or just another dead end?" This is very relevant topic to today's society. The students had assembled a very good presentation, hitting on the many different aspects and how they are affected, both pros and cons. The students were very engaged in their parts and listed to diverse viewpoints. I especially liked the fact that they searched for the best solutions in our discussion after the presentation. I asked some very hard, thought provoking questions and the students handled them like professionals.

As a local farmer in the community, I am very proud of our FFA program, our instructors, and the administration. The West Liberty Ag Issues Team should do very well at the state competition.

Sincerely,

Billie Danner

Billie Danner

Owner - Danner Farms



West Liberty Board of Education

WLCSD Central Office, West Liberty
Date: March 5, 2019 Time: 6:00pm
Attendance: 28



West Liberty CSD

111 W 7th Street, West Liberty, IA 52776-1225
Phone: 319-627-2116 • Fax: 319-627-2963
www.wl.k12.ia.us

March 7, 2019

To Whom It May Concern:

The West Liberty High School FFA Ag Issues team made a presentation to the WLCSD school board and administrators on March 5, 2019. This was, by far, the best presentation by any FFA team during the past few years. The team completed their presentation in the allotted time. They knew their lines and they presented them with great confidence and credibility. The script was superbly written. The students were very convincing, which was a sign that they clearly understood what they were talking about.

The following members were present;

Dr. Joseph Potts (Superintendent of Schools), Jeni Laughlin (Elementary Principal), Vicki Vernon (Middle School Principal), Brietta Collier (Business Director), School Board Members, and several guests.

The topic of gene editing and the Swine PRRS is relevant and spans various issues, from market and economy, to health and wellness. I grew up on a family farm raising swine and this topic really hits home. The school board and administrators thoroughly enjoyed this excellent, high quality presentation. We believe the WLHS Ag Issues team will secure first place at the state competition. We are proud of the students and their instructor.

Sincerely,

Brenda Arthur-Miller, Principal

We had a lengthy conversation on how the Ag Issues presentation is a great way to engage with the community. Members also took questions about the agriculture curriculum.



We Lead Area Economic Development

Community Center, West Liberty
Date: March 7, 2019 Time: 6:30pm
Attendance: 22



We Lead
112 E 3rd
West Liberty, IA 52776
Tel 319-627-4045



March 9, 2019

To Whom It May Concern,

I am writing today in support of the West Liberty FFA Ag Issues Team in West Liberty, Iowa who presented to us on March 7, 2019 at the West Liberty Community Center. I am writing as the Executive Director of We Lead, which promotes Economic Development in West Liberty. I was able to hear their extremely polished and overall professional presentation. I feel as if many of the individuals in attendance appreciated hearing about an issue that affects us directly.

The following members were in attendance;

Lee Geertz (President - City of West Liberty, Cindy Mays (Vice President - Midwest One Bank) Tara Lindsay (Secretary - West Liberty Foods), Carl Gilman (Treasurer), Directors: Tom Furlong (Muscatine County Board of Directors), Steve Hanson (West Liberty Chamber of Commerce), Chad Thomas (City of West Liberty), Tim Putney, Lisa Wertzbaugher.

From the economic development standpoint, the Ag Issues Team really touched on an issue that impacts producers all across the state. The growing pressure on local farmers in our community along with other businesses to meet consumer demands is becoming a challenge. Gene editing is a potential benefit for not only swine producers but would even see benefits for turkey producers in our area. Also, I appreciate the Ag Issues Team presenting the issue in a way which includes all sides. I am honored to write this letter of recommendation for the West Liberty Ag Issues Team.

Sincerely,

Shannon McNaul

Shannon McNaul
Executive Director | We Lead, Area Economic Development
Iowa State University Extension and Outreach | Community Economic Development
112 East Third St, West Liberty, IA 52776

We Lead Area Economic Development provides funding and resources to local business owners. Sharing this presentation made the board aware of issues facing producers in our area.



National Pork Producers Council

NPPC Boardroom, Urbandale
Date: March 9, 2019 Time: 10:00am
Attendance: 14



To Whom It May Concern,

The West Liberty FFA Ag Issues FFA team presented to the National Pork Producers Council as well as some members of the Farm Production and Conservation Team of the United States Department of Agriculture about Swine PRRS and gene-editing in our Urbandale office on March 9, 2019.

Technology undoubtedly is advancing and we certainly appreciate seeing FFA members keeping up on the issues facing our industry and finding their own solutions. With Iowa being #1 in pork production, the industry needs to take a strong stance on safe technologies that improve the health and safety of our food supply.

We appreciate the effort of these young agriculturists and wish them good luck with their event!

Sincerely,

Jeremy Davis

Jeremy N. Davis
National Pork Producers Council
10676 Justin Avenue
Urbandale, Iowa 50322

NPPC has recently called for USDA oversight on the gene-editing of livestock. After the presentation, council members gave insight on how regulation in genetically engineered plants can serve as the same blueprint for livestock.



West Liberty Rotary Club

Community Center, West Liberty
Date: March 16, 2019 Time: 6:00pm
Attendance: 22



Rotary Club of West Liberty, Iowa
PO Box 301
West Liberty, IA 52776
March 18, 2019

To Whom It May Concern:

The West Liberty High School FFA Ag Issues team made a presentation to the Rotary Club of West Liberty on March 16, 2018. The students were well prepared, their presentation was very engaging. The team met their goal with respect to the time limit, and it was obvious they had spent significant time rehearsing their lines. All spoke very clearly, and they did not need a microphone. The slides projected on the screen greatly enhanced their presentation.

The topic (gene editing used to combat Swine PRRS) was relevant, especially given the agriculture impact in our community and the state. The students showed that they understand the importance of hearing all voices as they delve into an issue and search for solutions. It is great to see that they are learning how to listen respectfully to all points of view surrounding an issue. Our Rotary club members enjoyed this presentation and asked some good questions afterwards. We have extended the invitation to the WLHS FFA to return and present other topics at future Rotary meetings. We are confident the WLHS Ag Issues team will do very well at the state competition. We are proud of the students and their instructor.

In Service,

Anna Hansen

Anna Hansen, Officer 2018-19
Rotary Club of West Liberty

We were invited by several Rotary members who are livestock producers in the area to present. We entertained several questions about what FFA members could do in the near future to improve agriculture and advocacy of the issue.



State Legislators—Ag Coffee Q&A

Community Center, West Liberty
Date: March 23, 2019 Time: 6:30pm
Attendance: 19



David Kerr
STATE REPRESENTATIVE
Eighty-Eighth District
Statehouse: (515) 281-3221
e-mail - david.kerr@legis.iowa.gov

HOME ADDRESS
19798 90th Street
Manning, Iowa 52640



House of Representatives
State of Iowa
Eighty-Seventh General Assembly
STATEHOUSE
Des Moines, Iowa 50319

COMMITTEES
Public Safety, Vice Chair
Agriculture
Environmental Protection
Natural Resources

APPROPRIATIONS SUBCOMMITTEE
Transportation, Infrastructure, and Capitals

This event was extremely helpful discussing how the USDA and Iowa legislature can influence the implementation of gene-editing. Several attendees asked questions on the difference between gene-editing and GMO's.

March 23, 2019

On March 23, 2019, I held a public forum in West Liberty, Iowa to discuss agricultural-related issues with the community, during which the West Liberty FFA made a short presentation. The topic that the FFA members chose to discuss ("Is Gene Editing a Viable Technology to combat Swine PRRS or just another dead end?") is a timely one that impacts our nation, the state of Iowa, and our local communities.

It was an honor to have the FFA participate, and the members should be given much credit for an outstanding presentation.

With kinds regard,

David L. Kerr
Iowa State Representative District 88



Stutsman Ag Products and Services

Stutsman Headquarters, Hills
Date: March 25, 2019 Time: 5:00pm
Attendance: 100+



ELDON C. STUTSMAN, INCORPORATED
P.O. BOX 250
HILLS, IOWA 52235
Nationwide Wats Number: 800-669-2281 • Local: 319-679-2281 • Fax: 319-679-2900
e-mail: info@stutsmans.com • website: www.stutsmans.com

March 26, 2019

To Whom It May Concern,

I along with 25 other Stutsman's employees and over 100+ had the great pleasure of listening to the West Liberty FFA Ag Issues Team on March 25, 2019 at our customer appreciation night.

The West Liberty team presented about the gene editing and its potential benefits to combating the Swine PRRS virus. Personally as a livestock producer I was glad to hear that the students are taking a lead role in addressing this issue from a "grassroots" effort. I was greatly impressed to see this issue being brought to others intention as it will affect livestock producers all across the nation. At Stutsman's we take great pride in supporting many farmers and agriculturists all across the United States. The students showed that they greatly support our vision as well.

We are well aware of the many state championships and high accolades the students of West Liberty have earned within the past few years. We were most certainly impressed with their presentation!

We found their presentation to be very conversational, students showed strong emotion and passion on their opinions, and they gave great perception of all individuals involved. I highly predict a great showing of their team at state convention.

Sincerely,

Kelsey Morris

Kelsey Morris
Stutsmans, Inc.

Several farmers, who attended the customer appreciation night, have been impacted by the PRRS virus. Many were unaware of the gene-editing technology and benefits it could provide to their operations.



West Liberty Lions Club

West Liberty Country Club, West Liberty

Date: March 27, 2019 Time: 7:00pm

Attendance: 24



WEST LIBERTY
Lions Club
West Liberty, Iowa

To Whom It May Concern,

I along with 23 other Lions Club members had the pleasure of hearing the West Liberty Ag Issues team at the West Liberty Country Club on March 27th. The topic "Is Gene Editing a Viable Technology to Combat Swine PRRS, or just another dead end?" was very informative.

As local veterinarian in West Liberty I invited the group to speak about an important topic facing food animal health and safety. Over the past two decades I have worked proactively with swine producers on preventative care and management in order to prevent disease. Swine PRRS has notably been extremely challenging to control in larger operations.

We all appreciated the gene-editing concept shared. They received many questions in about a 20 minute period. They did a fantastic job of answering the questions with facts but also did a great job of defending their opinion.

It was a great pleasure listening to them and they will do a fantastic job at state.

Sincerely,

Dr. Leon Larson

Dr. Leon Larson D.V.M.
West Liberty Veterinary Clinic
Lions Club Member

Two current licensed veterinarians on the Lions Club invited our members to discuss, in detail, the PRRS virus, animal health issues, preventative care, and swine facility improvements. We enjoyed the challenging questions.



WL Chamber of Commerce Board

Liberty Social Club, West Liberty

Date: April 1, 2019 Time: 6:00pm

Attendance: 15



West Liberty Chamber of Commerce
119 E. 3rd St. - West Liberty, IA 52776

To Whom It May Concern:

The West Liberty High School Ag Issues team presented to the West Liberty Chamber of Commerce Board of Directors the morning of April 1st, 2019. We had a total of 15 guests, which included our chamber board and several community members.

The Ag Issues team presented in their allotted time and handled themselves in a professional well versed manner. They were very informative with their topic on gene editing technology and its ability to fight against Swine PRRS. The team did a wonderful job of keeping their presentation a forum but yet having conversation amongst them. We have a very livestock based community, so this was a great topic for everyone to learn from and give more insight on the topic.

Our board thoroughly enjoyed being a part of this project and giving the team an audience to practice. We wish them the best of luck and know they will represent West Liberty Well.

Sincerely,

Stephanie L. Martin

Stephanie L. Martin
West Liberty Chamber of Commerce
Chief Operating Director

The West Liberty Chamber of Commerce Board involves numerous business in our area, especially West Liberty Foods, a major turkey processor. We shared with representatives from that company how gene-editing could help turkey producers.



West Liberty City Council

City Hall, West Liberty

Date: April 2, 2019 Time: 5:00pm

Attendance: 24



RE: West Liberty FFA Agriculture Issues Team

I had the pleasure of hearing the West Liberty FFA Ag Issues team at our City Council meeting on April 2nd at City Hall at 7:00pm. In attendance at our meeting was our council along with 18 guests of the community. Each year we typically see a few presentations from the FFA and we are always impressed with their professionalism and poise. The FFA members presented about the topic "Is Gene Editing a Viable Technology to Combat Swine PRRS or just another dead end". Following the presentation we had some in-depth discussions on how this technology could even help with turkey producers which tie mainly to our largest employer West Liberty Foods.

Other important members in attendance were; Lawrence McNaul – City Manager, Kary Kinmouth – West Liberty Police Chief, Diane Beranek – Council Member, Joey Iske – Council Member, Cara McFerrer – Council Member, Melody Russell – Council Member, Jacob Lane – West Liberty Index Reporter

I sincerely appreciated hearing from the team. As they compete at state I am confident this group will be successful as they have covered the topic in great detail.

Regards,

Robert Hartman
Robert Hartman
Mayor

We were invited by the council to discuss how they could potentially help farmers in the area. We shared that being able to have a small livestock facility within city limits would allow us to provide hands-on opportunities and local literacy.



Iowa Department of Agriculture

Iowa Department of Agriculture, Des Moines

Date: April 3, 2019 Time: 11:00am

Attendance: 7



Mike Naig
Secretary of Agriculture

West Liberty FFA Ag Issues Team,

We enjoyed your visit to the Department of Agriculture on April 3, 2019 to give your presentation entitled "Is gene-editing a viable technology to combat Swine PRRS, or just another dead end?" Our team enjoyed the presentation and discussion that followed.

The members of the team did an excellent job giving all perspectives of the issue, both pros and cons.

The experts from the Department of Agriculture in attendance included:

- Mike Naig, Iowa Secretary of Agriculture
- Keely Coppess, Director of Communications
- Kathryn Polking, Meat & Poultry Inspections Bureau Chief
- Andrew Hennenfent, Emergency Management Coordinator for Animal Health
- Maison Bleam, Federal Liaison
- Jacob Swanson, Legislative Liaison
- Maddy VanderLinden, Executive Assistant

Sincerely,

Mike Naig

Thank you again for making the trip and elaborating on a very important issue facing agriculture. We wish you well at state and in the future.

The Department of Agriculture visit with key players involved with our issue involved discussion regarding legislation, meat quality inspection practices, as well as strategies on how to engage the public with advancing technologies.



West Liberty FFA CDE Showcase

West Liberty Fairgrounds, West Liberty

Date: April 10, 2019 Time: 6:00pm

Attendance: 126



WEST LIBERTY FFA ALUMNI

The West Liberty FFA Alumni members and other community supporters had the opportunity to listen to the Ag Issues Team from West Liberty FFA on two separate occasions. The forum was held for 126 people at the Career Development Showcase Night held on April 10th. This Showcase night is sponsored by the FFA Alumni every year to share with community members, administrators, and local business the CDE's going to state competition.

Notable members in attendance were; Robynn Anderson – Muscatine County Agriculture in the Classroom Representative, Brenda Arthur-Miller – West Liberty High School Principal, Tim Nichols – Muscatine County Fair Board Member, Matt Daufeldt – Muscatine County Fair Board Member, Kory Kaalberg – Local Farmer and Alumni Member, Mike Meyers – Local Farmer and Alumni Member, Mike Buysse – ASAP Agriservice West Liberty, Fay Cline – H.D. Cline Company of West Liberty

During this time we also took the time to ask them challenging questions on their material and it was obvious that they did their homework. We were greatly impressed. This group showed an incredible amount of confidence using data and references to support their answers. I highly recommend the Ag Issues team to give presentations to other Ag industry representatives in the future.

Sincerely,

Pam Meyers
West Liberty FFA Alumni Secretary

Numerous Muscatine County ag business representatives attended this event and challenges the presenters with questions on the impact gene-editing could have on the environment along with consumer misconceptions.



NAMA—Iowa State University Chapter

Fairfield Inn and Suites, Ankeny

Date: April 14, 2019 Time: 5:00pm

Attendance: 7



April 14, 2019

The West Liberty Ag Issues team presented to the National Agri-Marketing Student Chapter of Iowa State on April 14th at the Fairfield Inn and Suites in Ankeny, Iowa.

NAMA members present were;

Ryan Calvert, Alyssa McMichael, Rebecca Ley, Skylar Bloom, Ben Ostendorf, Connor Royer, Dylana Luett, Mitchell Halat

The presentation highlighted the topic "Is Gene-Editing a Viable Technology to Combat Swine PRRS, or just another dead end?" The presentation gave an overview of the pro and cons from various viewpoints. Following the presentation we asked them a lot of questions about the future of the swine industry. They were very detailed in their responses as well as showed a lot of passion about the agricultural industry.

We wish them the best of luck at state competition!

Sincerely,

Alyssa McMichael
National Agri-Marketing Student Chapter – Iowa State Member

NAMA is the nations largest association for professionals and agribusiness. Presenting to the Iowa State Chapter taught members strategies on how to engage with the public on controversial issues.

