

# MICHIGAN COMMISSION OF AGRICULTURE AND RURAL DEVELOPMENT

AgroLiquid Fertilizers  
3055 West M-21  
St. Johns, Michigan

## MEETING MINUTES JULY 19, 2017

### **PRESENT:**

Dru Montri, Chair, Michigan Commission of Agriculture and Rural Development  
Brian Pridgeon, Secretary, Michigan Commission of Agriculture and Rural Development  
Diane Hanson, Past Chair, Michigan Commission of Agriculture and Rural Development  
Gordon Wenk, Chief Deputy Director, Michigan Department of Agriculture and Rural Development

### **ABSENT AND EXCUSED:**

Bob Kennedy, Vice Chair, Michigan Commission of Agriculture and Rural Development  
Trevor Meachum, Past Chair, Michigan Commission of Agriculture and Rural Development

### **CALL TO ORDER AND ROLL CALL**

Chairperson Montri called the meeting of the Commission of Agriculture and Rural Development to order at 9:02 a.m. on July 19, 2017. Commissioner Pridgeon called the roll with Commissioners Hanson, Montri, and Pridgeon, and Chief Deputy Director Gordon Wenk present. Commissioner Kennedy was excused due to out-of-state business, and Commissioner Meachum was excused because of a funeral.

### **APPROVAL OF AGENDA**

**MOTION: COMMISSIONER PRIDGEON MOVED TO APPROVE THE MEETING AGENDA FOR JULY 19, 2017. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.**

### **APPROVAL OF MAY 10, 2017, MEETING MINUTES**

**MOTION: COMMISSIONER PRIDGEON MOVED TO APPROVE THE MAY 10, 2017, MEETING MINUTES. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.**

### **NEXT SCHEDULED MEETING**

The next scheduled meeting is October 11, 2017, to be held in Traverse City.

### **COMMISSIONER COMMENTS AND TRAVEL**

**Commissioner Pridgeon** reported with the appropriate warm weather, southern Michigan seems to have recovered somewhat from the wet spring and crops are only a week behind. Local wheat harvest has been decent.

**Commissioner Hanson** reported weather in the Upper Peninsula (UP) has been very wet and cold, with some growers not being able to get a single seed in the ground during May. There is concern around the dairy industry in the UP. They lost another dairy farmer in

Copper Country, creating an issue with transportation of milk from the other farms. In addition, two dairy farmers from other UP areas advised they are leaving the business. In response to question from Commissioner Montri, Commissioner Hanson advised those farmers are at retirement age, and in consideration of milk prices, the families are instead transitioning to intensive grazing and beef cattle.

She announced the annual UP State Fair will be held August 15-20, and invited everyone to join the event.

**Commissioner Montri** reported growers in her area have been fortunate in not having received any crop damage from the weather events this season. Her operation is in the midst of peak summer harvest and focused on continuing to scale-up operations. They purchased their first heated greenhouse that will provide for fall and spring transplants, as well as additional winter production. Because the deer pressure is so intense in their area, they have finally installed electric deer fencing.

As part of the Governor's signed budget, there is \$500,000 in the Michigan Department of Health and Human Services budget for wireless point of sale (POS) devices for farmers participating in federal food assistance benefits and Supplemental Nutrition Assistance Program (SNAP) Incentive Programs. This was a significant win for direct marketers.

She is involved in a national group working with the U.S. Department of Agriculture (USDA) Agriculture Marketing Service (AMS) to plan a national direct marketing workshop for 2018. Also, she is planning to attend the Joint Commission dinner with this Commission and the Natural Resources and Travel Commissions on August 9 in Jackson.

Commissioners Hanson, Montri, and Pridgeon traveled to attend today's meeting. There was no other travel submitted for approval.

**MOTION: COMMISSIONER HANSON MOVED TO APPROVE THE COMMISSIONERS' TRAVEL. SECONDED BY COMMISSIONER PRIDGEON. MOTION CARRIED.**

### **COMMISSIONER ISSUES**

Commissioner Montri reported she received correspondence from John Durling, who works with the Michigan Agricultural Mediation Program (MAMP). She shared information related to that program with the Commissioners, as well as the department's Director of Communications Jen Holton. Mr. Durling is looking to remind the Commission of MAMP and ask they share the resource with any producers that might benefit from their services.

Commissioner Montri reviewed retirement resolutions before the Commission recognizing Jim Loncar and Gary Titus.

**MOTION: COMMISSIONER HANSON MOVED THE RESOLUTIONS FOR JIM LONCAR AND GARY TITUS BE ADOPTED WITH BEST WISHES FOR THEIR LONG AND HEALTHY RETIREMENT. COMMISSIONER PRIDGEON SECONDED. MOTION CARRIED.**

## **DIRECTOR'S REPORT**

Chief Deputy Director Wenk reported MAMP representatives recently made a presentation to the department's management team.

He conveyed the Director's apologies for not being able to attend the meeting today. She was invited to join the Environmental Protection Agency (EPA) on their annual EPA Decision Makers Tour in northwest Michigan. They are reviewing various pest issues and discussing industry concerns.

The Rural Development Fund Board met May 17 and awarded grants totaling \$1.5 million to 17 different organizations, each helping to promote rural development in Michigan. Information on who received the awards is available from the department.

In June, he attended the Alibaba meeting hosted in Detroit. Alibaba is an internet-based marketing organization in China started by Jack Ma. He was a university professor in China, and became aware of internet marketing potential during a visit to the U.S. Upon returning to China, where there was no internet at the time, he started a company based on that potential. Alibaba is forecasted in the next two years to do \$1 trillion worth of business. Detroit was their only event hosted in the U.S., with the intent of encouraging small U.S. businesses to market in China through their platform. At this point, China has about 400 million middle-class citizens, as compared to the total U.S. population of 300 million. Alibaba was hoping for 1,000 attendees and 100 companies, and there actually were about 500 companies and 3,000 individuals in attendance. Because of the Pure Michigan concept, Alibaba wants to create a Michigan page on their site and, coupled with China's rapidly growing market, this offers a great potential for Michigan businesses. The Director and the Governor will be visiting Alibaba to further discuss this opportunity when they travel to China next month.

## **PUBLIC COMMENT (AGENDA ITEMS ONLY)**

There was no public comment relative to agenda items.

## **GENE THOMPSON SCHOLARSHIPS: Jeff Haarer, Producer Security and Agriculture Products Unit, Pesticide and Plant Pest Management Division**

Mr. Haarer introduced Natalya Swartz, one of the 2017 Gene Thompson Scholarship winners. There were six winners this year, representing an excellent group of candidates.

He reported that several years ago, Gene Thompson, a supervisor at the then Michigan Department of Agriculture and strong supporter of the department's annual employee golf outing, passed away and the annual golf outing and scholarship program was named in his honor. Thanks to the generosity of Dr. Gordon Guyer and the event participants, the fund has awarded 37 scholarships to Michigan Department of Agriculture and Rural Development (MDARD) employees and their children since 2007, for a total of \$18,500. Four years ago, the other Quality of Life (QOL) agencies, the Michigan Department of Environmental Quality (MDEQ) and the Michigan Department of Natural Resources (MDNR), were added to the event and they are now also giving scholarships.

To assist in raising funds for future scholarships, we are excited to announce the fifth annual Quality of Life Scholarship Golf Outing honoring Gene Thompson (formerly the

Gene Thompson scholarship golf outing) will be held on September 15, 2017, at the Eldorado Golf Course in Mason, Michigan. The QOL Scholarship Golf outing registration form is available on the MDARD intranet page. The department will gladly find a team for individual golfers wishing to participate, and accept prize donations from those unable to attend this great cause. Based upon past outings, this event promises to be a good time. The Commissioners are more than welcome to join the outing.

Mr. Haarer reported Natalya is from Perry and will be attending Michigan State University (MSU). Her father Mark works in the Environmental Stewardship Division and her mother Deb is joining her today. Natalya reported she will study arts and humanities at MSU and is considering double majoring at some point. She thanked everyone, especially MDARD, as it means a great deal to be given this scholarship. She also thanked the family of Gene Thompson.

Chief Deputy Director Wenk shared a note from another scholarship winner, Mitch Yelton. Mitch said, "Unfortunately, I am unable to be at the ceremony due to a conflict with work. However, I still want to thank the Commission for the \$500 Gene Thompson Scholarship award. I am greatly honored and very appreciative of the opportunity. The scholarship, of course, will be a huge help with books, lab expenses, and other school supplies. I will be focusing on my fall class schedule in the next week. Thank you again for this award and honor."

Mr. Haarer advised they hope to maintain the scholarship tradition and continue to build the fund toward future awards. Another scholarship fund event was held last evening, the Michigan Livestock Expo Sale of Champions at MSU, which raised \$80,000.

### **RECESS AND RECONVENE**

Chairperson Montri recessed the meeting at 9:26 a.m. for a brief break to allow for a photo opportunity with the scholarship winner. She reconvened the meeting at 9:30 a.m.

### **BUDGET UPDATE: Gordon Wenk, Chief Deputy Director**

Chief Deputy Director Wenk advised it was again a good year for the department through the budget process. He recognized Bill Hamilton, from the House Fiscal Agency, who assists the department a great deal in explaining the department's priorities to the Legislature.

MDARD's fiscal year 2018 budget is \$114.7 million, including \$66 million in general funds. It represents a general fund increase of 32.2 percent, and some of that is appropriated outside of the agency. He reviewed the various enhancements included in the budget.

The Agriculture Development Division received a \$5.2 million general fund increase to support export efforts, economic development projects, and infrastructure development in rural areas. The Wildlife Risk Mitigation Program received a one-time general fund appropriation of \$1.0 million to support enhanced wildlife risk implementation for cattle producers in the highest risk region of the state for Bovine TB.

The On-Farm Produce Safety Program received \$955,700 in general and restricted funds to support outreach, education, and training to assist Michigan growers with Food Safety

Modernization Act (FSMA) on-farm requirements. The Right to Farm Program received \$384,000 in general funds that allows for two additional staff to conduct increased site selection activity.

The Intercounty Drain Mapping Project received \$250,000 in one-time general funding to support a state and local partnership project to establish a statewide standard drainage infrastructure digitized mapping tool, providing accurate information to drive future management decisions. General funding of \$1.1 million will provide for enhanced staffing in the Customer Service Call Center, Emergency Management, Intercounty Drains Program, Animal Industry Division, and the Dairy Program. These enhancements will help balance existing workloads in the department.

Additional one-time funding of \$10.4 million in general funds will go to other organizations, including \$1.5 million to the Tree Fruit Commission; \$3.2 million for the MSU Fruit and Vegetable Campus/Mobile Labs and \$1.2 million to their Workforce Development Program; \$2.5 million for the MSU Animal Agriculture Initiative; and \$2.0 million to the Food Bank Council of Michigan. Other items include \$500,000 for assistance with wireless POS devices, \$380,000 will help Fair Food Network's efforts in Flint, and \$750,000 for the Double Up Food Bucks Program will help expand electronic processing statewide. There also is \$2.5 million toward a Coopersville wastewater treatment plant that will assist Continental Dairy, \$2 million for the Kalamazoo Healthy Living Campus, \$2 million toward the Rising Tide Project, \$750,000 for White Lake Township roads, \$350,000 for Whites Bridge in Ionia, and the Miracle of Life Barn in Sanilac County received \$35,000. Each of these enhancements will help support agricultural activities across the state.

#### **LEGISLATIVE UPDATE: Matt Blakely, Director of Policy Development and Legislative Affairs**

Mr. Blakely reported the Legislature is currently on summer break and before leaving, did complete a few bills, as well as budget negotiations. They are scheduled for one day next month, and in September, will return full-time. This break offers a good opportunity to conduct background research on various legislation, explore new ideas and concerns, and prepare for the fall session. An increase in constituent inquiries is anticipated, including those relative to hog raising and processing, around which he has been proactive in meeting with individuals to discuss the department's process and the responsibilities of the townships.

Senator Hune is interested in moving Senate Bills 108-9 forward, which deal with urban agriculture. Groups have communicated their concerns and the Senator would like to address those concerns, as well as develop legislative language to more clearly state the intended goal.

Senate Bill 415 addresses the gas pump skimmer issue. Much of the activity comes from out-of-state individuals and tends to target stations near major highways. The department has been actively communicating the issue to both consumers and gas stations. This bill would describe various ways gas station owners could increase their security, the easiest being tamper-proof stickers. However, those require the consumer to notice if the sticker has been violated, and the stickers could be easily purchased and replaced by a skimmer operation. The best fix, and ultimately the least expensive, is changing the locks to provide

a unique locking mechanism for the gas pumps. In response to inquiry from Commissioner Montri, Mr. Blakely explained gas does not provide a large profit margin for stations, and the cost to change a single lock is about \$10.

Senator Hansen introduced Senate Bills 439-440, which is an attempt to restructure the Michigan Grape and Wine Industry Council. Beer and liquor industry groups pay into this fund, but are currently not represented on the Council. This legislation attempts to give them that representation. While the general concept is good, there are nuisances in the bills that cause concern and he is trying to alleviate those issues.

House Bills 4186-87 represent a priority from the last session to correct a definition in the Pet Shop Act which was hastily made during the Lame Duck Session.

House Bills 4467-9 are the House versions of the Michigan Grape and Wine Industry Council bills. These were voted out of committee and currently sit on the House Floor. Over the summer, it is hoped to alleviate concerns with the legislation.

House Bills 4811-12, sponsored by Representative Victory, are the FSMA legislation. There is a great deal of effort to communicate with the industry and obtain their approval. Michigan would prefer to control the inspections and monitor implementation of FSMA, rather than the federal government. This would avoid having multiple agencies on the farms.

Commissioner Montri asked if he anticipates any major issues will be addressed in the upcoming MDARD Food Law Workgroup. Mr. Blakely advised this is a normal process whereby the federal government distributes a revised Food Code and the states then have an opportunity to adopt, which should be done within the last three codes. Since it is that time for Michigan, it offers the opportunity to update Michigan's Food Law, and along with new issues and processes, incorporate some of the federal items. Commissioner Montri advised she was involved in the previous workgroup, which was a well-facilitated and valuable process.

In response to inquiry from Commissioner Montri relative to House Bill 4162, Mr. Blakely advised Representative Lasinski is attempting to address the internet connectivity issues in rural areas. She is exploring different ways to fund broadband connectivity for a specific rural area. The Director has continually explored this issue and some success has been gained in the state, such as in the Village of Sebawaing, through local funding options that have been used previously for other utilities.

**FOOD AND AGRICULTURE INVESTMENT FUND REQUEST: Peter Anastor, Division Director, Agriculture Development Division; Tamer Afr, Great Lakes HPP, LLC; and Shawn Spencer, President, Clean Planet Foods**

Mr. Anastor advised funding is requested under the Food and Agriculture Investment Program for a project Great Lakes HPP is currently developing in Taylor, Michigan. HPP is high-pressure processing, a technology only available at 21 locations throughout the world. Michigan's small and medium-sized companies currently need to take product to Wisconsin and Illinois for HPP packaging. Bringing this opportunity to Michigan is truly exciting for the industry.

Mr. Afr advised the family farm he purchased four years ago quickly experienced financial problems, and they looked to how they could develop food services and programs to keep their farm stable year around. Jack Aronson from Garden Fresh offered him insight into HPP and began incubating their food products. In November, Mr. Aronson offered him a partnership to begin Great Lakes HPP, LCC.

Mr. Spencer advised the purpose of Great Lakes HPP is to provide food and packaging innovation, access to a food innovation center, and food manufacturers the opportunity to understand the benefits of HPP with access to research and development. This would otherwise be entirely cost prohibitive for the smaller producer.

HPP is a method of cold pasteurization, involving an incredibly high 87,000 psi of cold water pressure being applied uniformly to sealed products. This extends shelf-life of a product by 300 percent, while not impacting the taste or quality of the food. This allows a small company to grow expansively by selling to national and international markets. Garden Fresh Gourmet grew into the number-one fresh salsa company in the U.S. because of HPP. Mr. Aronson feels strongly about giving that same opportunity to others.

Besides being an HPP tolling facility, other additional value-added services will be provided, such as packaging, labeling, distribution operations, cold storage, lab testing, test kitchen facilities, and a food innovation center – all at one location.

Currently, Garden Fresh is sending \$2 million worth of product to Wisconsin for HPP. When Great Lakes HPP opens this year, that product will be processed there. Michigan-based Clean Planet Foods and the Drought Juice Company will also send all their products to Great Lakes HPP beginning in November.

In response to inquiry from Chief Deputy Director Wenk, Mr. Afr advised they will open with one HPP machine that can process 40-80 million pounds per year. The facility plan allows for potentially five machines, processing up to 400 million pounds of product each year.

In response to question from Commissioner Montri, Mr. Afr advised they plan to help their processors source Michigan product as they are expanding. They are currently working with two local companies that hope to sell their products nationally using what Great Lakes HPP can offer. In response to inquiry from Commissioner Hanson, Mr. Afr advised HPP production costs for a producer are about 16 cents per pound of product.

Mr. Anastor advised MDARD is excited to have a stable company in Michigan able to bring HPP technology to the state, offering a substantial opportunity for Michigan companies. The innovation piece of their project is what prompted the department to bring this forward for a potential grant. Initially, 30 jobs will be created, with the potential of over 100 jobs as the facility continues to grow. The department recommends the Michigan Commission of Agriculture and Rural Development approve a Food and Agriculture Investment Program performance-based grant of \$150,000 for Great Lakes HPP, LLC.

**MOTION: COMMISSIONER PRIDGEON MOVED TO APPROVE THE FOOD AND AGRICULTURE INVESTMENT PROGRAM GRANT OF \$150,000 FOR GREAT**

**LAKES HPP, LLC. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.**

**MICHIGAN AGRICULTURE ENVIRONMENTAL ASSURANCE PROGRAM (MAEAP) STANDARDS: Jim Johnson, Division Director, and Joe Kelpinski, MAEAP Manager, Environmental Stewardship Division**

Mr. Johnson noted the Commission has the statutory responsibility to annually approve the Michigan Agriculture Environmental Assurance (MAEAP) Standards, changes for which were introduced at the last meeting, with consideration for approval during today's meeting. If approved, these standards would be implemented and used for MAEAP verification for individual operations over the next year.

Mr. Kelpinski advised he would review changes to the standards by system and answer any questions. Ben Schram, co-chair of the Forest, Wetlands, and Habitat (FWH) System, is here today to answer any questions related to that system.

Commissioner Montri advised it would be helpful for producers if the standards included information about recycling. Mr. Kelpinski advised that agriculture recycling is being explored and the department is considering ways to accomplish that.

In the Livestock System, the medium-risk area should have been boxed for Question 14.03. With the recent changes in site selection, new farms will be required to complete this, it is not a self-certified process.

Changes in the Farmstead System were primarily for clarification purposes. One new question was added to address disposal of pesticide building wastewater or other rinsates. The committee decided to create a standard allowing movement to a suitable vegetation site, with agronomically correct spreading. There also were clarifications made to dry manure storage and set-back standards to appropriately distinguish it from liquid manure.

In the Field Crops, Vegetable, Nursery, Greenhouse, and Fruit Systems, additions were made for clarification, as well as addition of the new standard pertaining to the rinsates from pesticide storage facilities.

Mr. Schram explained recommended changes in the FWH System were primarily attempting to create a more useful tool for the technicians and for the landowners to implement, which created a reorganization of the standard into a more naturally-flowing document. And, rather than being a very forest-centric tool, it is more inclusive to non-forested upland wildlife habitat, as well as some sensitive wetland issues. In response to inquiry from Commissioner Montri, Mr. Kelpinski advised most verifications in this system last year were forestry related and primarily in the UP, although many included wooded wetland components. This year, they anticipate more from the wetland and habitat areas.

**MOTION: COMMISSIONER HANSON MOVED TO APPROVE THE MICHIGAN AGRICULTURE ENVIRONMENTAL ASSURANCE PROGRAM STANDARDS AS PRESENTED. SECONDED BY COMMISSIONER PRIDGEON. MOTION CARRIED.**

In response to question from Commissioner Montri, Mr. Kelpinski advised the standards will be immediately sent to MSU for printing and will be posted on the website at the beginning of the new fiscal year, October 1, 2017.

**GENERALLY ACCEPTED PROCESSING PRACTICES (GAAP): Jim Johnson, Division Director, Environmental Stewardship Division**

Mr. Johnson advised the Commission is statutorily required to annually approve the Generally Accepted Processing Practices (GAAP). As indicated in the materials provided to the Commission, there are no changes recommended this year and they can be approved as they currently exist.

Commissioner Montri inquired about usage of the practices. Mr. Johnson advised the program is beginning to see movement and he recently made a presentation to the Michigan Food Processors Association encouraging them to utilize the practices, emphasizing that improvement of the standards is based upon their use. Also, in one of our northern counties, that county decided to bow out of the zoning business, which leaves that task to the townships. One township included a reference to the GAAP as part of their requirements for food processors within their township and this recognition is good news.

**MOTION: COMMISSIONER PRIDGEON MOVED TO APPROVE THE GENERALLY ACCEPTED FRUIT, VEGETABLES, DAIRY, MEAT, AND GRAIN PROCESSING PRACTICES FOR NOISE AND ODOR AS PRESENTED. SECONDED BY COMMISSIONER HANSON. MOTION CARRIED.**

**RECESS AND RECONVENE**

Chairperson Montri recessed the meeting at 10:23 a.m. for a brief break. She reconvened the meeting at 10:41 a.m.

**DRONES IN AGRICULTURE – A REGULATORY UPDATE: John Hill, Region I Supervisor, Pesticide and Plant Pest Management Division**

Mr. Hill advised he has spent a significant amount of his 27 years with the department working on manned spray aircraft and is one of about 20 people in the country that does the commercial calibration for the spray systems. Michigan is the only state requiring those spray systems to be monitored and measured on a three-year basis, which was at the request of that industry. We are very familiar with high calibrated manned systems aircraft. And today, the use of drones, unmanned aircraft, or unmanned aerial vehicles (UAVs) are becoming popular.

Chief Deputy Director Wenk noted that Mr. Hill was recently appointed by the Governor to represent the department on the State of Michigan Unmanned Aerial Systems Task Force.

Mr. Hill advised in the U.S. today, there are 70,000 UAVs in the air commercially and the Federal Aviation Administration (FAA) expects there will be over 600,000 by 2018, predicting it to be a multi-billion-dollar industry in the U.S. MDARD needs to be proactive in its approach to working with this emerging industry and be positioned to help the industry without any regulatory impediments.

Top industries using UAVs currently are photography, real estate, surveying, and law enforcement in various capacities. Literally, the sky is the limit for possible uses. There is a tremendous potential for precision agriculture, including UAV use in crop disease detection, plant and soil moisture monitoring, crop growth monitoring, fertilizer management, inventory tracking, yield estimations, monitoring livestock for health and inventory, weed and pest detection, and application of pesticides.

Relative to FAA authority, U.S. airspace is public space, whether one foot off from the ground, or 10,000 feet in the air, and is controlled and managed by the federal government. An unmanned aircraft system (UAS) is subject to regulation – an aircraft is any device used, or intended to be used, for flight. Every UAS must comply with FAA regulations. MDARD is attempting to be in a position to help guide any agricultural business wanting to utilize UAVs in their operations be in compliance with whatever those regulations are.

Last year, the FAA finally became more involved and created definitions that allowed them to then pass some regulations. A small UAV is anything weighing less than 55 pounds. A small UAS is a small unmanned aircraft and its associated elements for safe and efficient operation in the national airspace. Unmanned aircraft is that operated without the possibility of direct human intervention from within or on the aircraft.

In August 2016, the Code of Federal Regulations (CFR) Part 107 was enacted. It basically allows small UAVs to operate with certain levels of requirements and restrictions to provide for safe airspace. Some of those include weighing less than 55 pounds, visual line-of-site only operation, no operation over groups of people not directly participating in the operation, daylight-only operation, yielding to other aircraft, maximum groundspeed of 100 miles per hour, maximum altitude of 400 feet, no carriage of hazardous materials (one of the roadblocks for some businesses currently), and making available to FAA any associated document/records required under the rule. There are exceptions and waivers if an operation can prove there is a reasonable and safe manner for operation. Those weighing more than 55 pounds are subject to additional regulations.

Currently taking pictures, even of one's own property, with a drone weighing less than 55 pounds is considered commercial use. This commercial use requires registration of the UAV and passing a test to receive a pilot certificate pursuant to Part 107. Just as with any new regulation, there are numerous people not aware the regulation even exists. If found in violation, fines are very heavy; therefore, it is important we educate the agriculture community as they attempt to expand agricultural uses.

He believes aerial imagery will be the greatest economic boon to precision agriculture with the types of cameras available today. It will provide data needed to maximize production and gain those last dollars from a farming operation. He shared videos of potential pesticide application utilizing UAVs, which would most likely be used in small production operations, especially in specialty areas or for spot treatment. Equipment is ready in Michigan with companies waiting to use it.

The Unmanned Aircraft Systems Act 436 of 2016 was signed by the Governor last December. It provides for the operation and regulation of UAS operation in Michigan. It created the Unmanned Aircraft Systems Task Force, of which he and various other state

agencies are members. The Task Force is working to provide recommendations to the Governor so Michigan can develop safe and fair regulations. The Act is also designed to prohibit any harassment or illegal activity related to the operation of UAS. Because airspace is regulated by the federal government, they are hoping to recommend state regulations to provide personal privacy protections.

In MDARD, the Pesticide and Plant Pest Management Division has created a UAV Committee which has written recommendations as we try to prepare for this emerging application industry and its potential growth. We are doing all we can to ensure the industry can get off the ground, can be recognized as national leaders, and help Michigan's economy grow in precision agriculture.

In response to question from Commissioner Hanson, Mr. Hill advised FAA has been extremely slow in their review of applications for specific UAV usage. Commissioner Pridgeon asked how difficult it is to obtain the required operator's certificate. Mr. Hill advised the online test requires a considerable amount of study in preparation, as many questions relate to airspace classifications and other pilot-related topics; and for UAS, pilot experience of three years or 200 manned aircraft hours is required. They are trying to identify ways to create regulations allowing inexperienced individuals to obtain the required skills.

**REMOTELY SENSED IMAGES TO IMPROVE NITROGEN FERTILIZER MANAGEMENT IN CORN AND WHEAT: Rich Price, Research Assistant, Earth and Microbial Science, Michigan State University**

Mr. Price advised he works with Dr. Bruno Basso at MSU in the Department of Earth and Microbial Science. He will focus today on the actual applicability of drones in agriculture, what they accomplish in Dr. Basso's lab, and how that relates to Michigan agriculture. He will explain why they use remote sensing, the types of UAVs and sensors, flight plans and imagery, and analysis and results.

Remote sensing utilizes very specific wave lengths of light to measure plant reflectance to indicate healthy plants or plant stress. Plant stress can indicate disease or something specific affecting the plant growth. Sensors placed on the UAVs have the capability of capturing the wave lengths required for stress analysis. Their lab also uses an airplane service and satellite imagery to capture data, and although there are practical applications for each method, UAVs offer the ability to capture extremely high-resolution images very quickly.

Their drones carry various high-resolution cameras and sensors that produce maps of specific agricultural regions. Those include Li-Dar (laser scanner) to measure plant height, multi-spectral imagery to show plant health and field variability, thermal imagery to indicate where water stress is occurring, and RGB cameras that can be used for scouting purposes and variability measurements. Relative to basic costs, their larger drone came from Germany and cost \$27,000, and one battery, which lasts about 20-25 minutes, costs \$1,900. Both drones are fully programmable with software development available.

Missions are carefully planned and flown in a grid-like pattern predetermined by a computer program for maximization of image resolution. With the photos produced, you can zoom

into a resolution of about seven centimeters per pixel. This resolution provides for their type of desired analysis.

A color palate is added to images to demonstrate plant height determination. Multi-spectral images provide multiple bandwidth image collection for index calculation for different purposes within the agricultural spectrum. He shared photos demonstrating the numerous imagery capabilities that can assist growers in determining the various types of specific crop status, allowing them to make appropriate management adjustments.

Their research has included analyses of overall plant health, nitrogen status of crops, pasture variability and regrowth, correlation of spatial variability, disease detection, plant water stress, and plant counts. Much of the industry is already utilizing this technology, including Monsanto and Pioneer, as well as MSU's various crop programs.

Most farmers have equipment with geomonitors that produce rate estimations of how many bushels per acre they are capturing. Dr. Basso's lab has combined that information with what they capture from remote sensing to create a history of how that specific field is responding on a spatial and temporal scale. Three years of data can provide criteria for creating consistent yield stability zone maps, providing a valuable management tool.

Commissioner Montri asked when they feel this technology will be cost effective for the industry. Mr. Price advised their current research is being funded by federal or state commodity group grants. Nothing they have is commercially available at this point. They are approaching larger industry companies to potentially obtain funding to expand their work on a more commercial basis. Dr. Bruno does have a start-up company with a licensed computer model that produces predictive agricultural information.

**AUTOMATED MILKING AT THE MICHIGAN STATE UNIVERSITY PASTURE DAIRY CENTER:  
Howard Straub III, Manager, Pasture Dairy Center, Kellogg Biological Station, Agriculture  
and Natural Resources Department, Michigan State University (MSU)**

Mr. Straub advised that in addition to managing MSU's Pasture Dairy Center, he visits dairy farms considering robotic milking to help them contemplate their options based on factors for that specific facility.

In 2007, the Kellogg Foundation donated \$3.5 million to MSU's Kellogg Biological Station (KBS) for the construction of a grazing dairy research center. Dr. Santiago Utsumi conducts and facilitates research at the center and works closely with Dr. Basso. An automated milking system was included in the design to incorporate robotics research at the center. They chose the Lely Group from the Netherlands to build the robots. On July 7, 2009, they began milking with 79 cows and 2 robots. As of July 11, 2017, those robots have completed 771,536 successful milking operations, running 24 hours per day.

They utilize the boxed design Lely Astronaut A3 Classic robotic milking machines, sold from 2005-2011, prior to the larger and improved models available today. Although the university received a price break, that unit retailed for \$4 million in 2009. Today, those same two units purchased together would cost about \$180,000 per unit. There currently are dairies with up to 24 robotic milking units and some with plans to double that capacity.

Several local large robotic dairies are either already operating, or are in the planning or permitting stage.

Each cow wears an electronic robot transponder which tracks its movement, advises the robot which cow has entered to authorize milking, and counts daily ruminating time. The cows go to the pasture, come to the milking barn, enter the milking machine, and return to pasture on their own. The robotic system provides individual cow management through appropriate milking frequency of each individual cow, which can vary from one and one-half to three times per day to the four-five times per day for cows who have just calved.

Each cow is weighed as it enters the milking machine, its teats are cleaned by brushes, and a robotic arm uses laser technology to attach the teat cups. The monitor in the box tracks milk flow and feed dispensing, and a sensor measures milk quality. The sensor also allows detection of any potential udder infection through measuring conductivity and color. This provides a safety measure as the robot will discard any affected milk and automatically wash the collection unit.

The flow sensors detect a cow's milk production from each quarter individually and the automatic detacher engages when flow slows to a certain level. The post-spray system utilizes a laser-guided system to ensure each teat is reached.

Once a specific cow's milk is deemed safe by the robot, it is moved to the milk house buffer tank, which provides temporary storage until the bulk tank is emptied and washed. The buffer tank is then also washed.

The system records a significant amount of data that is utilized for efficient herd management. This is an amazing tool for management of the dairy. In 2010, KBS produced 1.87 million pounds of milk. In 2016, they produced 3.37 million pounds of milk, demonstrating they have learned how to most efficiently manage the robots. Because they are a grazing operation, their total output is lower than that of a typical confinement dairy operation.

Robotic milking provides the ability to manage cows individually in a group setting, with increased knowledge of cow health, including production, rumination minutes, activity, weight, temperature, milk color and conductivity, estrus status, and more. It also allows for real time, up-to-the-minute herd level data, infinite report building, specifics for each farm, and flexible employee or owner scheduling.

Robotic milking challenges include robot rules for treatment of cows to prevent treated milk from reaching the milk house; information overload; cow, employee, and management training, which can be overwhelming; and the ever-changing regulatory atmosphere.

Commissioner Pridgeon asked about the predicted life span of a robotic milking machine. Mr. Straub advised they have replaced various parts and upgraded software as needed and he feels they could continue that indefinitely. Two things could affect that – whether new robots provide a benefit that warrants replacement or if regulatory changes force upgrading.

**AUTOMATIC MILKING INSTALLATIONS AND INDUSTRY AND REGULATORY CHALLENGES:  
Gordon Robinson, Dairy Supervisor, Food and Dairy Division**

Mr. Robinson advised MDARD's Dairy Inspection Program operates under the Pasteurized Milk Ordinance (PMO), and the 2017 PMO will require adoption in the near future. It will include both normal milking systems and automatic milking installations (AMI).

The PMO definition of AMI includes the milking unit, hardware and software utilized, animal selection system, cooling system, cleaning and sanitizing systems, teat cleaning system, and all of the alarms associated with that system. This creates substantial complication. FDA is taking the hard stand that because this is being done automatically without an operator making decisions, the system needs to be able to automatically do everything properly. There are numerous specific AMI items that need to be addressed and the industry feels AMIs are being placed under more scrutiny.

He reviewed AMI systems that have been used in Michigan, including DeLaval VMS, Lely Astronaut A-3 and A-4, and GEA Mlone. The GEA Monobox is coming to Michigan and the department has been working with the manufacturer and FDA to bring it into PMO compliance. It is a very compact, self-contained unit, making it difficult for inspectors to conduct testing. Not yet in Michigan are AMS Galaxy and BouMatic units.

Each AMI system must be commissioned and inspected. We must be certain we are protecting the cow and protecting the milk. All AMIs clean and prep the teats and attach the inflations, discard "abnormal" milk, and must provide separation of milk and CIP solution through a series of block-bleed-block valves. The FDA-trained inspector must ensure all system valves operate properly to ensure the milk in the bulk tank is safe. The big challenge for industry has been the current single-valve separation between the milk and the tank and the cleaning solution. FDA wants to see a fail-safe system with a two-valve separation, and that system has not yet been designed.

Having inspected numerous dairy operations and observed the calm demeanor of AMI milked cows, he understands the desirability of AMI systems. We began talking about AMIs in Michigan in 2013, with 86 units on 26 farms. This year, there are 177 AMIs on 42 farms. Normally, each AMI has capacity to milk 50-70 cows and costs from \$150,000-200,000 per unit. MDARD is currently working with two farms installing 24 AMIs on each farm and each farm will have capacity to milk 1,500 cows. Considering the current workforce issues existing on farms today, more AMIs are expected in the future.

Inspecting and commissioning each AMI to be PMO compliant is very complex and time consuming. Needed FDA guidance and training was very slow to develop. MDARD workload planning is expected to indicate a need for additional staff to meet the demands related to the growth of AMIs in Michigan.

PMO established deadlines for AMIs to be PMO compliant has caused recent issues. For instance, computer data must be in the FDA preferred format to ensure everything is being done properly and not all manufacturers can produce information in that required format.

Some AMI components require an engineer to remove parts for inspections, and yet the PMO states an inspector must have proper tools handy to conduct inspection. This is

another area where problems exist. One of the largest items for most farms is utilizing a butterfly valve at the bulk tank interface, because FDA specifies no butterfly valves are to be used with AMI systems. We are now producing slide valves at two-three times the cost and are working to have those changed out. Teat prep protocol must be available and very specific testing must be conducted. Also, they must ensure the chemicals used correlate to the ones in the teat prep protocol, are labeled as such, and are used properly.

The Interstate Milk Shipping Program requires a farm to have a sanitation score of 90 or higher in order to ship milk. Currently, there are several items automatically debited on surveys of specific AMI systems. This results in some farms starting at a reduced score, leaving them a small margin within which to work to meet the 90 points. The GEA Monobox AMI leaves a farm just at the 90 score minimum. This makes it very difficult for those operations. MDARD is working closely with the manufacturers to address the issues.

FDA advised they had no objections to AMIs being used on the farms, but they would be marking them accordingly. This created problems when the March 15, 2017, implementation date arrived. Instantly, each of the AMI systems we had approved would not be able to pass any Grade A milk survey and would have no market for their milk other than for manufacturing, creating a severe economic impact.

Following the spring National Conference on Interstate Milk Shipments, the industry and the Director began pushing back. FDA decided to create a task force to address AMIs and advised until further notice, computer-related verification requirements would not be debited on federal check ratings. FDA stated they would continue to work with AMI manufacturers to bring their computer systems into compliance with PMO Appendix Q. The department is hoping to make progress through that avenue.

### **PUBLIC COMMENT**

**Belinda Fitzpatrick, Lansing**, shared concerns relative to a Concentrated Animal Feeding Operation (CAFO) in Concord, which is two miles from her mother's home. Relative to the Generally Accepted Agricultural Management Practices and CAFOs, she is wondering if the department should reconsider those in relation to the residential properties in close proximity to the CAFO. It is her understanding that MDARD and the State of Michigan helped bring a processing facility to that area for slaughter of 10,000 pigs per day. She is concerned it will become a big issue, and wonders if there is an increase in these facilities, if we would surpass the regenerative ability of nature. She will investigate further and try to develop suggestions.

### **ADJOURN**

**MOTION: COMMISSIONER PRIDGEON MOVED TO ADJOURN THE MEETING. COMMISSIONER HANSON SECONDED. MOTION CARRIED.**

There being no further business, the meeting adjourned at 12:39 p.m.

Attachments:

- A) *Agenda*
- B) *Agriculture and Rural Development Commission Meeting Minutes May 10, 2017*
- C) *Michigan Agricultural Mediation Program*

- D) *Retirement Resolution for Jim Loncar*
- E) *Retirement Resolution for Gary Titus*
- F) *Director Jamie Clover Adams – Issues of Interest Report*
- G) *Gene Thompson Scholarships*
- H) *MDARD FY 2018 Enacted Budget Overview*
- I) *Legislative Status – July 2017*
- J) *Memo: Great Lakes HPP, LLC – Food and Agriculture Investment Program*
- K) *Michigan Agriculture Environmental Assurance Program Standards*
- L) *Generally Accepted Fruit, Vegetables, Dairy, Meat, and Grain Processing Practices for Noise and Odor*
- M) *UAV Use Today and Tomorrow – A Regulatory Update*
- N) *Remotely Sensed Images to Improve Management in Corn and Wheat*
- O) *Automated Milking at the Pasture Dairy Center*
- P) *Automatic Milking Installations*