

**MICHIGAN COMMISSION OF AGRICULTURE
Michigan Sugar Company
Bay City Conference Center
2600 S. Euclid Avenue
Bay City, Michigan 48706**

**MEETING MINUTES
APRIL 14, 2010**

PRESENT:

Todd Regis, Chairperson, Michigan Commission of Agriculture
Don Coe, Vice Chairperson, Michigan Commission of Agriculture
Velmar Green, Secretary, Michigan Commission of Agriculture
Jennifer Fike, Michigan Commission of Agriculture
Audrey Herioux, Michigan Commission of Agriculture
Don Koivisto, Director, Michigan Department of Agriculture

CALL TO ORDER AND ROLL CALL

Chairperson Regis called the meeting of the Commission of Agriculture to order at 9:35 a.m. on April 14, 2010. Commissioner Green called the roll with Commissioners Coe, Fike, Green, Herioux, Regis, and Director Koivisto present.

**WELCOME: Ray VanDriessche, Director, Community and Government Relations,
Michigan Sugar Company**

Commissioner Regis thanked Mr. VanDriessche for hosting the Commission meeting today. Mr. VanDriessche welcomed the Commission and guests, noting it was a great opportunity for Michigan Sugar to have the Commission here today. At the conclusion of the meeting, he will be making a presentation and conducting a tour of Michigan Sugar operations.

APPROVAL OF AGENDA

**MOTION: COMMISSIONER FIKE MOVED TO APPROVE THE MEETING
AGENDA FOR APRIL 14, 2010. SECONDED BY COMMISSIONER COE.
MOTION CARRIED.**

APPROVAL OF MARCH 17, 2010, MEETING MINUTES

**MOTION: COMMISSIONER HERIOUX MOVED TO APPROVE THE MARCH
17, 2010, MEETING MINUTES. SECONDED BY COMMISSIONER GREEN.
MOTION CARRIED.**

NEXT SCHEDULED MEETING

The next scheduled meeting will be held on June 16, at the Michigan Municipal League office in Lansing, and will include a presentation of the Deer Management Plan by the Department of Natural Resources and Environment (DNRE).

Although not an official meeting, on May 13, the Commission will be joining the Grape and Wine Industry Council activities in Traverse City. Details will be forthcoming.

COMMISSIONERS' TRAVEL

Commissioners Regis, Coe, Fike, and Herioux traveled to attend today's meeting. Commissioner Coe will also be attending the April 19 Michigan Wine and Food Showcase in Detroit, which is the first event for the Culinary Tourism Alliance effort.

MOTION: COMMISSIONER GREEN MOVED TO APPROVE THE COMMISSIONERS' TRAVEL. SECONDED BY COMMISSIONER FIKE. MOTION CARRIED.

COMMISSIONER COMMENTS:

Commissioner Coe reported he will be speaking on agriculture issues at the Michigan Sustainable Business Forum in Traverse City on April 29. On Friday, April 9, the second Local Food Network Farm Route to Prosperity Summit was held at Black Star Farms for the five-county region, with over 100 people in attendance. The objective of this effort is to double local food consumption within the next five years. Several firm commitments toward that goal were made, including the U.S. Department of Agriculture (USDA) and the Michigan Department of Agriculture (MDA).

On April 11-12, Michigan State University (MSU) Agriculture Department and two French professors active in the area of community agriculture and agri-tourism visited Black Star Farms. Their visit was part of an exchange between MSU and French faculty on the development of a cross exchange of ideas on developing agri-tourism in various sectors. They were very impressed with what Michigan had to offer and also made some good suggestions on what we could be doing differently.

Commissioner Green commented that most of the sugar beets in his area are nearly 50 percent planted. He attended the Clean Energy Conference recently, which included Senator Stabenow and was very well attended.

Last weekend, there was considerable discussion among the industry relative to USDA's position on Bovine Tuberculosis (TB) and how they are changing their emphasis regarding TB status within some states. Michigan is concerned by the fact that it has been a leader in electronic identification (ID) of animals and now USDA is inexplicably moving away from that requirement – a safe guard which is vitally important for traceability if a disease outbreak were to occur. He expressed his frustration with both the current U.S. and the State of Michigan administrations who simply do not understand the concerns of production agriculture.

Commissioner Herioux reported she attended several meetings recently, including the March 24 Delta County Chamber of Commerce Business After Hours Meeting, the purpose of which was to review the schedule of events for the Upper Peninsula (UP) State Fairgrounds. Although the "Miracle of Life" exhibit is planned, the committee must find veterinarian support because the MSU Veterinarian School had to withdraw their support due to lack of funds.

On March 24, she attended a meeting sponsored by the Delta County Soil Conservation and the Army Corps of Engineers focusing on current regulations on earth changes. In particular, they addressed concerns from lakeshore property owners relative to receding lake levels and their not being allowed to groom those areas.

During the April 1 Growing UP Annual meeting, she reported on MDA budget concerns and Bovine TB. There also was a presentation on the extensive bio-energy potential for the UP. A world-wide company, Traxys, has acquired four power plants in the UP and will renovate those plants to produce clean-burning energy by using a high-bred willow tree. The tree is grown on marginal lands and is harvested every three years. Producers may grow and cultivate the trees, or land owners may provide the land for the company's production. The process has been very successful in Europe for many years. Director Koivisto advised the Department of Energy, Labor, and Economic Growth (DELEG) is involved in the project, and MDA will be monitoring its progress as well.

Commissioner Fike reported she will be traveling to the Midwest Land Conservancy Conference in Columbus, Ohio, on April 17 to speak about agricultural economic development in conjunction with her preservation efforts. The National Farm to Cafeteria Conference is scheduled for May 17-19 in Detroit and she will be attending that event as well.

The Michigan Good Food Summit, which is being managed by the C.S. Mott Group for Sustainable Food Systems at MSU, is seeking comments regarding the Draft Michigan Good Food Charter. The department has submitted comments and she encouraged fellow Commissioners to also provide comments through the web site at www.michiganfood.org. Director Koivisto advised Gordon Wenk is the department's point person in this regard.

Commissioner Regis reported Mike DiBernardo and he met with the Michigan Film Commission and are currently waiting for their response relative to developing agriculture film opportunities. He also attended the Gubernatorial Forum recently, during which candidates advised their desire to fund agriculture as an autonomous department.

He recently completed a Comcast interview featuring various aspects of Michigan's agriculture and the Commission's role. He encouraged each of the Commissioners to take advantage of interview opportunities to help promote agriculture in Michigan.

He sent a letter to the Governor advising of the newly formed Commission's Promoting Michigan Agriculture Subcommittee. Commissioner Fike and he will be meeting with the Governor's office on April 23 to begin those discussions. Also included in that letter was a request for Commissioners to meet with the Governor and/or her staff on a regular basis.

DIRECTOR'S REPORT

Director Koivisto reported on a very successful tour of Aunt Millie's facility in Plymouth, who includes several Michigan products in their ingredients. As just one example of the

growing agricultural industry in Michigan, Aunt Millie's has five plants in the state and will soon be adding a new second line to their Plymouth facility. Potential for expansion is a topic of discussion during each of the department's agricultural tours.

Issues surrounding the Civil Rights Commission Migrant and Seasonal Farmworkers Report continue to be in the forefront. MDA has attended two meetings with the Governor's Chief of Staff, the Civil Rights Commission, and the other agencies involved. Because a significant potential for problems exists, MDA is working toward a coordinated effort on the migrant issue. He advised during those meetings that, as Director of the department, he has the responsibility to sound the alarm when MDA is unable to complete their job due to a lack of the resources required. This is an important issue and we cannot wait for a disaster to happen. If MDA does not have funding to allow them to complete the inspection work, the state will have some burdens to bare going forward if problems do arise. The department simply must have the people to complete the inspections; and, while trying to communicate that message, he has collectively worked in a positive fashion to develop solutions. With the growing season beginning, we need to stay abreast of this situation. From MDA's perspective, Jim Johnson and he will be attending all meetings scheduled in this regard.

Commissioner Coe advised he attended the Michigan Farm Bureau (MFB) Labor Committee meeting on March 30. During that session, the Migrant Labor Housing inspection issues were discussed. MFB's message continues to be very precise, they absolutely need the inspections and they want MDA to do those inspections. In response to question from Commissioner Coe, Director Koivisto advised current legislation that provides \$5 per unit will cover less than one half of the total funding required to accomplish the inspections this fiscal year – the legislation will provide \$110,000, while \$600,000 is required. While the program can operate through September 30, 2010, the remainder is unfunded – we will begin fiscal year 2011 with no money to operate the program. This is precisely why he is sounding the alarm on this issue. Commissioner Coe reported that the MFB group members having migrant housing units on their properties advised that a \$5-10 per unit rate could be acceptable; however, the \$30 range, which would be required to provide total funding, is impossible for the producers. The message needs to be communicated that ample funding for this inspection program must be obtained without forcing the burden on the farmers.

Director Koivisto advised the current legislation ends the discussion at the \$5 per unit level. Provisions should have been provided for continued dialogue relative to the various alternatives possible; however, none of that is being pursued. In the meantime, the Legislature has advised they will not fund the program without additional fee participation. The department is placed in the position of starting the 2011 fiscal year with no funding available for the program, and yet, bearing full responsibility for those inspections. Because the department is at a crucial period, he has also been lobbying directly with various legislators on this situation, as well as discussing other critical budget issues. Either we obtain adequate funding, or the department will be in a critical state going forward. MDA lost 83 employees over the last three years and will be facing additional staffing reductions. In addition, with early retirement anticipated, staff will be decreased even further because replacement hiring will be restricted.

Just as one example, the department currently receives \$3.4 million in funding from the Refined Petroleum Fund, with the MDNRE receiving the bulk of that fund at \$36 million, and Treasury at \$15 million. In the budget process, it was proposed to remove MDA's allocation, which would be an additional \$3.4 million reduction to the department's budget. The department directly challenged that proposal on the Senate Floor and prevailed on that issue.

Commissioner Regis added the Commission needs to express their concerns relative to the various budget issues and to take every opportunity available to speak with legislators and others concerned about the situation.

Director Koivisto advised the department wanted to ensure they recognize production agriculture, and is very pleased the Commission is here today doing exactly that. Production agriculture is such a critical part of Michigan's agriculture industry and the department needs to "walk and chew gum" to ensure that, while it recognizes some of the innovative areas in agriculture, it does not forget its significant base in production agriculture – it is the heart and soul of what is happening in the agriculture industry. This is what today represents. The department will also continue to emphasize production agriculture in the media as often as possible. At the same time, progress in the new areas of agriculture will continue.

DIRECTOR'S TRAVEL

Director Koivisto has no out-of-state travel planned in the near future.

PUBLIC COMMENT (AGENDA ITEMS ONLY)

There was no public comment relative to agenda items.

LEGISLATIVE UPDATE: Gordon Wenk, Chief Deputy Director

Commissioner Regis noted in an attempt to be cost effective, it was decided to limit the number of staff attending today's meeting. Therefore, Mr. Wenk will present the Legislative and Budget Updates.

Mr. Wenk reported the Legislature returned this week from their two-week spring recess. There currently are no Agriculture Committee meetings scheduled.

Commissioners Fike and Herioux were unanimously approved by the full Senate. During the hearing, several nice comments were made by various legislators.

The Dairy Fee Bills, Senate Bills 1131-32, have been signed by the Governor and are Public Acts 41 and 42. This is reflected in the Legislative Status document. As a reminder, these fees will raise approximately \$100,000 for the Dairy Program for the current fiscal year.

Senate Bill 1138 and House Bills 5822-23, which address the shooting of feral swine running at large, are currently on the Senate floor awaiting consideration.

There have been two "cottage food" bills introduced that would amend Michigan's Food Code to allow for production of items from home kitchens with some labeling

requirements indicating it was not inspected by MDA. Because there are a number of reasons food from home kitchens has historically not been allowed to enter commercial channels, the department does have concerns in terms of how it would conduct follow-up or impose regulations if there were food safety concerns. MDA is working with the bill sponsors to develop acceptable language. In response to inquiry from Commissioner Fike, Mr. Wenk advised he will obtain the department's recommendations on these bills and forward those to the Commission.

Relative to implementation of the Smoke-Free Air Law, the department is working with the Michigan Department of Community Health (MDCH) and the local health departments (LHDs). With implementation of the Smoke-Free Air Law, MDCH is the lead state agency and MDA has agreed to assist them. If a complaint is received, the local health department would respond. Commissioner Coe noted that because the guidelines are very broad, it will be difficult for the hundreds of small farm markets to interpret the law. He suggested that MSU Extension may be able to assist with communication to the local farmers through their local county offices. Mr. Wenk advised some additional legislation may be required to clarify the law as it applies to outdoor operations.

A new law passed a year ago allows for a check-off on taxes that provides money for a grant program to benefit local animal shelters for the purpose of spading and neutering, educational programs, etc. The first of those grants were recently distributed. MDA is working with the Legislature to ensure the department is following the intent of that legislation.

BUDGET UPDATE: Gordon Wenk, Chief Deputy Director

Mr. Wenk advised MDA's budget, House Bill 5875, passed the House on March 25, with 61 votes in support and 45 votes in opposition. It included \$77.1 million as a total budget, including \$29.3 general fund. This represents a \$552,000 general fund increase from the Governor's proposal; however, still is a 4 percent overall decrease from last year.

The bill restores the Dairy Program funding, maintains the Motor Fuel Program, and partially restores the Migrant Labor Housing Program. Holes still exist for the Michigan Agriculture Environmental Assurance Program (MAEAP), Right-to-Farm, Migrant Labor Housing, Producer Security, Pesticide and Plant Pest Management, and Animal Health and Welfare Programs. There also is an unidentified budgetary savings of \$347,100. It does not look very good for the next year.

The next steps include the Senate Appropriations Subcommittee meeting on April 27, with their reporting out the bill on May 4. The Senate Appropriations Committee and the full Senate action will follow. The differences between the House and Senate versions of the budget will then need to be reconciled in a Conference Committee before going to the Governor for action.

At this funding level, the department would still incur staffing reductions over and above what would be realized by early retirement. MDA's program needs are based on 600 people and it is currently operating with 450. In response to question from

Commissioner Green, Mr. Wenk confirmed if the MAEAP program were transferred to MSU, it would in effect be discontinued because no funding would be appropriated. The Legislature has been informed of the problems that would arise for the agriculture industry in that instance. Director Koivisto advised the federal government is so impressed by our MAEAP program, they actually want to duplicate it – and, the state wants to end the program.

The only action that will solve the department's budget dilemma is to advise agriculture needs a higher target. Otherwise, one program would simply be sacrificed for another.

Commissioner Regis noted that he, the Director, and the Budget Officer attended a meeting in January with the Governor's Office and the State Budget Office. The message was very clear – that if they continue down the road of budget reductions to the department, critical agriculture programs will not be operated. Each of the Commissioners and our agriculture partners need to continue to communicate that message to the Legislature and the Governor's Office.

Commissioner Fike questioned the philosophy of a government that continues to impose reductions on the operation of an industry that continues to grow in our state.

MICHIGAN CORN UPDATE: Clark Gerstacker, President, Corn Marketing Program of Michigan

Mr. Gerstacker provided an overview of the Corn Marketing Program of Michigan (CMPM) and the Michigan Corn Growers Association (MCGA). MCGA is a grassroots-membership organization that was established in 1972 and is the only voice focused solely on the concerns of Michigan corn producers. The CMPM, established through vote of the state's growers, is a check-off funded program for the industry at the cost of one penny per bushel of corn. It is operated by a nine-member Governor-appointed grower/farmer board which sets direction for the programs in which they invest, such as research, education, market development, new product uses, etc.

Corn is America's largest crop. There are nearly 300,000 corn producers in the U.S. who produce more than 40 percent of the world's corn. More than 11,000 of those producers are in Michigan. Being Michigan's second largest commodity, the corn industry added more than \$1 billion to the state's economy in 2007. Various statistics regarding the 2009 corn crop were reviewed, including acres, yields, and various usages. In 1951, the average national corn yield was 36.9 bushels per acre and is predicted to be greater than 200 bushels per acre by 2020. Technology has, and will continue to make that increase possible. We do have sufficient corn production to meet food, fuel, and fiber needs going forward.

In 2008, 24 percent of Michigan corn was fed to livestock, 40 percent was shipped out of state, 19 percent was used in ethanol production, 6 percent was used for miscellaneous purposes, and 11 percent was carry over for the following year. As we continue to produce more corn, we need to grow each of these uses to maintain a steady percentage, with pressure being on development of new uses.

Specific details related to ethanol production were highlighted. A bushel of corn yields 2.8 gallons of ethanol, 17.5 pounds of dried distillers grains (DDGs), and 17 pounds of CO₂. With more than 200 ethanol plants nationwide, the industry supports 400,000 jobs. In 2009, the ethanol industry reduced U.S. oil imports by 364 million barrels, a value of \$21.3 billion. Michigan's ethanol industry adds nearly \$600 million to the state's economy each year. Review of Michigan's ethanol consumption indicates a potential in-state ethanol growth capacity of 466 million gallons per year. Today, the U.S. is 75 percent dependent upon foreign oil and the corn industry offers a tremendous opportunity in the renewable fuels arena.

Corn has multiple other uses – anything that can be made from a barrel of oil can be made from corn. Those include fabric, plastics, cleaners, sanitizers, fuel for heat, carpet, tile, cat litter, hangers, bags, salt substitute, packing material, pharmaceutical chemistry industry, and the various uses of succinic acid. And, corn offers many benefits, including that it is biodegradable or compostable, competitively priced, environmentally friendly, lessens U.S. dependence on foreign oil, and provides a 100% renewable resource. The corn industry enjoys a very bright future and is in the right place in today's economy.

In response to question from Commissioner Coe, Mr. Gerstacker advised that genetically modified corn may be corn bore resistant, roundup resistant, and contain other growing traits that are introduced through plant breeding. This has contributed significantly to yield increase and sound science is, and will continue to be, an integral part of the corn industry.

MICHIGAN DRY BEANS UPDATE: Robert Green, Executive Director, Michigan Bean Commission

Mr. Green noted the Michigan Bean Commission (MBC) was established by Public Act 114 of 1965, which is a check-off funded program with the primary objectives of research and promotion. The act allows the Commission to conduct research in the agronomic and health areas, publish information, participate in trade meetings and trade shows, and maintain information on competitors. The Michigan Bean Commission is not allowed to market beans, but assists producers as much as possible. Under the law, MDA is mandated to enforce the law, coordinate reapportionment, conduct referendums, and its Director serves as Ex-Officio of the commission.

Michigan is known world-wide as a top producer of dry edible beans. From 1903, when statistics were first recorded, to 1998, Michigan was the number one producer of all dry beans in the U.S. We since have dropped to number two.

The Michigan Bean Commission is 100 percent grower funded, currently representing about 220,000 acres in 38 counties. The \$150 million per year production is number one in black beans, small red beans, and cranberry beans. Approximately every other row of beans is exported, with Mexico being the largest market for Michigan beans. Michigan produces 75 percent of the U.S. black beans and over one half of those are exported to Mexico, carrying a premium in that country.

The domestic market consumption has increased from 6.3 pounds per person in 1985 to 6.7 pounds per person in 2008. This increase is driven by a rising interest in nutritional

content of food, increased interest in ethnic food, and a shift in population makeup. Various health benefits of incorporating beans in the diet were noted, including the potential risk reduction of heart disease and certain cancers.

One of the largest potential markets is Cuba. Cuba imports over 100,000 metric tons of beans per year, with black beans representing 60,000 metric tons of that total. Even though there are many challenges that come with exporting to Cuba, including travel restrictions, coordination of flight security, and restrictions within the country, Cuba offers a significant marketing opportunity in the future.

In response to inquiry from Commissioner Coe, Mr. Green advised the biggest threat to the bean industry in Michigan is imports. It is currently projected by the Economic Research Service of USDA that within five years, we will import more beans in the U.S. than we export, the largest of those importers being China. He also advised, because MDA's inspection program ended on October 1, 2009, it now costs the industry over \$1 per bag to complete needed inspections, which a few years ago cost only 6-7 cents.

He reported loss of the department's seed and fertilizer inspection program has forced the industry to rely solely on the integrity of those providing those products. In response to inquiry from Commissioner Coe, Mr. Wenk advised total cost for the seed testing program was about \$350,000-400,000 per year and the cost to operate the fertilizer inspection program was approximately \$400,000-500,000. These are other areas where the overall reduction in staff has impacted the department's ability to administer the programs that it would like to operate. Program needs were established around having 550-600 people and we currently have only 450 to complete the department's work. Program demand cannot be met.

MICHIGAN MILK PRODUCERS UPDATE: Clay Galarneau, General Manager, Michigan Milk Producers Association

Commissioner Green introduced Mr. Clay Galarneau, who was recently named General Manager of the Michigan Milk Producers Association (MMPA) and has been with MMPA for over 25 years. Mr. Galarneau reported MMPA was formed in 1916 and currently has 2,200 members representing 1,400 farms in Michigan. Members are located in Michigan, Ohio, Indiana, and Wisconsin. MMPA, which is the 11th largest dairy cooperative in the U.S., markets 3.9 billion pounds of milk annually.

MMPA has factory locations in Ovid and Constantine, Michigan, and their headquarters are in Novi, Michigan. Of the 3.9 billion pounds marketed in 2009, 37 percent went to bottled milk, 34 percent to the Ovid and Constantine plants, 20 percent to cheese production at Leprino Foods, and 9 percent to other manufacturers.

Michigan's dairy industry ranks 8th nationally and dairy is the top ranking segment of Michigan's agriculture industry, contributing 25 percent of the state's agriculture cash receipts. The \$1.9 billion annual average Michigan dairy farm receipts combine with the \$4.0 billion from the dairy foods processing industry for a \$5.9 billion per year impact on Michigan's economy. In the last ten years, Michigan's dairy industry has averaged approximately three percent growth per year. Michigan ranks fifth in the milk production per cow, producing 22,445 average pounds of milk per cow per year, which indicates the

producers clearly understand and apply the technology necessary to compete in this market.

There are several key issues facing Michigan's dairy industry today, which include 1) milk prices for dairy farmers dropped significantly in 2009; 2) milk prices in 2010 were not as strong as anticipated; 3) farm production costs continue to increase; 4) ongoing state budget issues for MDA, MSU Extension, and MSU Ag Experiment Station, 5) increasing regulatory requirements; and 5) declining number of large animal veterinarians. The market outlook for U.S. milk prices and costs of production were also reviewed. Discussion ensued relative to the causes for the increase in feed costs. However, Michigan dairy farmers actually enjoy an advantage, because most of them grow their own corn.

There are opportunities that exist for Michigan's dairy industry in the future. Michigan's dairy industry is growing in both milk production and processing capacity. This growth spurred the \$62 million MMPA Ovid Plant expansion, which increased capacity by 2 million pounds per day. Also included was a new powder dryer project, which was a crucial need to meet market fluctuations. MDA was very helpful in MMPA's obtaining assistance through an Agricultural Processing Renaissance Zone designation for the expansion project.

Other opportunities for Michigan's dairy industry include increased supplemental out-of-state milk sales and increased U.S. dairy product export sales over the long term. Michigan provides some of the balancing supplies for the southern states when they experience their drop in production during the heat of the summer. Since November of 2009, MMPA has exported over 1.8 million pounds of butter for an approximate \$2.8 million in total sales and an increase in that demand is expected. With its availability of agricultural land, temperate climate, abundant water, agriculturally-based infrastructure, and access to population centers, Michigan enjoys a distinct advantage for dairy production in the future.

In response to inquiry from Commissioner Fike, Mr. Galarneau advised that during the period of high production cost, retirement of producers actually remained fairly constant. However, there is a trend toward consolidation and larger farms. In response to inquiry from Commissioner Coe, Mr. Galarneau advised the growth in California was driven by the state's significant investment in their agriculture and dairy industries, in particular, making land and water available.

In response to comment by Commissioner Green, Mr. Galarneau reported Leprino Foods is the largest manufacturer of mozzarella cheese in the country, with two plants located in Michigan. In 1987, MMPA invested with Leprino in a joint venture to convert two MMPA plants into facilities for their cheese production, and today they represent 20 percent of MMPA's business.

Mr. Galarneau reported there are numerous dairy farmers who have been forced to use their equity and are struggling to keep their operations solvent. Fortunately, it does appear the financial picture will be improving for the industry. The main concern for them will be to rebuild those equities that have been destroyed. In response to question

from Commissioner Coe, Mr. Galarneau advised that historically, the financial picture for the dairy industry is normally very cyclical. Commissioner Herioux advised that, in six months, one can lose two-three years of progress. It will take their operation five years to gain back what they lost in 2009.

Director Koivisto added that, from the department's perspective, the three agriculture production groups represented here today, as well as Michigan Sugar, are part of those organizations that have done an excellent job in advocating for MDA. They have stood up when it really counts.

AGRICULTURE PROGRAMS AT SAGINAW VALLEY STATE UNIVERSITY: Christopher Schilling, Ph.D., Professor and Chair of Engineering, Saginaw Valley State University

Dr. Schilling reported that in February 2010, *Science* magazine reported the world faces an unprecedented challenge of meeting projected increases in food demand, given record constraints in agricultural and financial resources. At the same time, *Mechanical Engineering* magazine warned of a second challenge that world energy demand is expected to double between now and 2030. Because fossil energy is so vital to the mass production of food, it's no surprise these two industries are today forming creative, strategic partnerships to solve two problems at once: rebuilding the energy infrastructure while using less fossil fuel to feed the world. Researchers at Saginaw Valley State University are focused on various agri-energy projects to meet these challenges.

Sustainable intensification will provide for growing more food with the same land area, less environmental impacts, and less fossil fuel. Jobs in the food and energy fields will continue to grow, from three billion in 1960 to an estimated over nine billion by 2050.

World energy demand should double by 2030. Before this happens, expect a major expansion/repair of the energy transmission grid and significant renovation and new construction of power plants. The grand challenge is sustainable intensification: how we grow more food and produce more energy with less fossil resources. We need to look no closer than Europe; they are already on this path. The agriculture industry and the energy industry are married in Europe and that will become much more so here in the U.S.

U.S. production of soy biodiesel is approaching 2 billion gallons per year, and can be improved by finding better uses for its main byproducts, corn biomass and glycerin. Glycerin itself can actually provide a less expensive fuel oil blend source and offers a definite environmental benefit. Wood-like, biodegradable materials can be manufactured from plant biomass.

Distiller's grain is a by-product of ethanol processing that is sold as animal feed; however, that market was saturated. With industry support, SVSU developed a process that allows blending two classes of wastes into plastics. The generic process cross-links just about any polysaccharide to just about any protein, rendering them moldable with ordinary plastic manufacturing equipment. Potential applications include disposable packaging, landscape structures, disposable concrete forms, biodegradable plant pots, fillers in engineered plastics, jewelry, and furniture.

Also being studied at SVSU are food production systems in population centers – how to grow more food economically with less and how to do that on a brownfield. Greenhouses integrate hydroponics and vermiculture for year-round fruit and vegetable production. Aquaponics (a combination of hydroponics and aquaculture) was developed at SVSU by a multi-disciplinary team. The system features: an economically designed aquaponics system to efficiently grow fruits and vegetables with minimal horizontal space, fertilizer, and water; vermiculture to efficiently convert campus food waste and paper waste into organic fertilizer for use in the system; and renewable energy, such as passive solar heat, to cut the costs of operation. The goal was to develop a system that could be widely replicated in economically blighted regions. The grand vision is to ultimately establish regional production systems in population centers worldwide.

A major challenge in producing sufficient food while reducing negative economic and environmental impacts is to find points where profitability and sustainability intersect. One of those is vermicomposting, a process using worms to convert organic wastes into cheap, nitrogen-based soil amendments. Since 2007, SVSU has been vermicomposting with various waste substances and discovered that adding spent coffee grounds to soil provided vital compounds and natural chemicals, thereby increasing the concentration of available nitrogen in vermicompost. The system can be applied to a variety of profitable uses, including direct application for farm fields, greenhouses, lawns and turf grass, and nursery plants.

The potential impact of greenhouse production has been demonstrated extensively in China. 1,003.8 square miles (642,474 acres) of Chinese solar greenhouses were in operation in 2000. During that winter, they produced 90 percent of the vegetables eaten in northern China. They were utilized with little or no auxiliary heating where daily temperatures fall below 14 degrees Fahrenheit and were mainly sited at latitudes of 32 to 43 degrees north. For comparison, Saginaw's latitude is 43.4. The factors controlling thermal efficiency in a greenhouse were noted, including foundation dimensions, soil type and moisture level, regional climate, and changes in roof design. SVSU is studying to what extent this greenhouse design can be adapted for Michigan, which appears to be quite feasible.

Re-tasking landfill operations to a productive use of waste heat and CO₂ is another effective means of producing more energy with less fossil resources that is being researched at SVSU. Currently, each megawatt production of electric power results in the wasteful creation of another megawatt of thermal energy. The U.S. is asleep at the wheel in this area. There are hundreds of power plants in the U.S. that can provide waste heat and CO₂ emission to a substantial greenhouse industry, helping to develop a new agriculture sector.

In summary, SVSU's primary agri-energy research projects were noted: 1) biofuel from glycerin residues of biodiesel processing, 2) solid biofuels and biodegradable plastics from agricultural residues; 3) sustainable intensification by integrating renewable energy with aquaponics; 4) modeling geothermal heating in partly subterranean greenhouse of Asian design; and 5) economic prospects of re-tasking waste management operations with greenhouse agriculture. A very promising future lies ahead in these areas.

Commissioner Regis noted several articles were provided to the Commission that substantiate the SVSU research projects. SVSU is very progressive in agri-energy research and is leading the way to meet the challenges of future food and energy demands.

COMMISSIONER ISSUES

Commissioner Fike reviewed a proposed resolution reaffirming the Michigan Commission of Agriculture's support of incorporating locally grown/produced food into cafeterias in their respective regions; and further, that the Commission encourages schools, restaurants, hospitals, and other institutions to seek out Michigan-grown/produced food.

MOTION: COMMISSIONER HERIOUX MOVED THE RESOLUTION IN SUPPORT OF LOCAL FOOD IN MICHIGAN. COMMISSIONER COE SECONDED. MOTION CARRIED.

Copies of the approved resolution will be transmitted to Governor Jennifer M. Granholm, the Michigan Legislature, the Michigan Food Policy Council, and the Michigan Farm Bureau. Commissioner Regis confirmed that promoting Michigan agriculture is clearly one of the Commission's priorities and opportunities in this area will continue as much as possible.

Commissioner Fike invited the Commission to join the National Farm to Cafeteria Conference to be held in Detroit on May 17-19. Additional information can be found on their website at www.farmentoschool.org. If any Commissioner is interested in attending specific sessions, please advise Commissioner Fike.

Commissioner Regis noted that April is Michigan Wine Month, as declared by Governor Granholm. The Governor continues to make commodity board and commission appointments and this remains a priority until all positions are filled.

Commissioner Regis reported the Michigan Association of Fairs and Exhibitions are hosting an online auction to help support funding for their programs.

Commissioner Regis reminded Commissioners that following adjournment, the remainder of the day's activities do not constitute a formal meeting; therefore, no recommendations or requests for action can be made during that time.

PUBLIC COMMENT

Dr. David Swenson advised he represents **Green Resources Redux, Inc., and Willey and Associates LLC**, and he has Emeritus status as the H.H. Dow Endowed Chair in Chemistry at Saginaw Valley State University.

Dr. Schilling informed him of a large greenhouse complex (42 acres) that was discussed in the New York Times. This greenhouse is profitable despite using commercial fertilizer and propane for heating, because they market only to high-end customers. We desire to produce top quality vegetables and fruits year-round in a sustainable and cost-effective

manner. One option is to place greenhouse structures adjacent to sources of waste heat, such as power plants or beet plants for the thermal needs of the facility.

In the absence of waste heat, a rational option would not be natural gas, but a new technology called plasma gasification. The system we seek to bring into Huron County would consume 2000 tons of carbonaceous material per day, which may be coal plant ash, tires, animal waste, garbage, hazardous waste, medical waste, or crop residue. The proposed plant will generate about 75 million watts of electrical power and 42 million gallons of fuel grade ethanol per year, as well as low pressure steam for industrial or greenhouse heat.

Work at SVSU in the Independent Testing Laboratory is currently being undertaken for Sequest LLC. Sequest is interested in growing algae using heat, electricity, and carbon dioxide from the gasification plant. Rather than focusing on biodiesel, Sequest desires to develop algae as an animal feed supplement to increase omega-3 fats in meat, milk, and eggs. They propose to use algae to feed tilapia (this is their natural food) and establish an aquaponics protocol to grow fresh fruits and vegetables in a greenhouse at an affordable price. The benefit of a system like this is that it can be placed in both rural and urban settings.

Advantages to students range from the educational, with hands-on science learning in regional greenhouses, to development of a robust farm to school program. Advantages to the state include jobs creation, nutrition improvement for the population, and overall reduction of food costs.

Mr. Andy Norenberg, from **Nelson Trane Company**, noted that one of the things the HVAC and energy management industry has probably done a poor job of is marketing to the agricultural industries. As businesses attempt to improve their bottom lines, this will no doubt change. There are numerous opportunities for cost savings measures and improvements in the future. All businesses must be conscious of energy conservation as we move forward.

ADJOURN

**MOTION: COMMISSIONER HERIOUX MOVED TO ADJOURN THE MEETING.
COMMISSIONER GREEN SECONDED. MOTION CARRIED.**

The meeting was adjourned at 12:07 p.m.

Attachments:

- A) *Agenda*
- B) *Agriculture Commission Meeting Minutes March 17, 2010*
- C) *Legislative Status – April 2010*
- D) *Michigan Corn Update (PowerPoint Presentation)*
- E) *Michigan Bean Commission (PowerPoint Presentation)*
- F) *Michigan Milk Producers Association (PowerPoint Presentation)*
- G) *Overview of Agri-Energy Research at Saginaw Valley State University*
- H) *Saginaw Valley State University: New Directions in Agri-Energy Research (PowerPoint Presentation)*
- I) *“Developing Food Production Systems in Population Center” Article*
- J) *“Vermicomposting with Spent Coffee Grounds” Article*
- K) *“Biodegradable Plastics from Soy Protein and Polysaccharide Carboxylates” Article*
- L) *Resolution in Support of Local Food in Michigan*