

Tenured Faculty Review
Matt Lippert
Wood County Agriculture Agent

General Situation:

I provide agriculture Extension programming across seven Central Wisconsin Counties as part of the Central Wisconsin Agriculture Specialization (CWAS) group. In this group I serve as the dairy and cranberry production specialist. Counties served include Adams, Green Lake, Juneau, Marquette, Portage, Waushara and Wood Counties. My office is in Wood County and I provide additional general Extension programming in Wood County along with our part time Horticulture Educator Jeremy Erickson. With the nEXT reorganization the future of the CWAS group is in question. Currently one faculty position has converted to academic staff, an interim educator is serving across two counties, one agent will very soon retire and in another county there is a vacancy. Where there were once seven faculty educators there will be two and one academic staff. The status of the other positions is unclear at this time. Administratively these counties have always been in the same district or region, now five of the counties are in a different area.

Along with Portage County, Wood County is now grouped with Clark and Marathon in a new Extension area. In this grouping there are three faculty members (one agent yet to be granted tenure this coming year) and one academic staff. As educators we already program together. We are exploring if the new structure will allow us to develop compatible specializations and find new efficiencies for programming.

Wood County is unique with two population and trade centers in opposite corners of the county. The northern portion of the county is part of a large area dominated by dairy production in central Wisconsin. Marshfield is an important trade area for many people within and outside of the county. Our new Extension area includes two of the largest dairy counties in the state, Marathon and Clark. This new area has more cows and produces more milk than any Extension area in the state.

Wisconsin Rapids is in the southeast corner of the county. Use of the land in the southern portion of the county is heavily devoted to forestry, wildlife and recreation. The area is home to a very specialized cranberry industry. Cranberry production continues to be a major focus for me. Cranberry is the state's leading fruit crop and Wisconsin is number one in the nation for cranberry production. Wood County has the largest cranberry production of any county in the state. I work closely with the Wisconsin State Cranberry Growers Association (WSCGA) and in that role I serve as the only county based faculty in the Department of Agriculture and Life Sciences to work extensively with cranberry growers. The Agriculture and Natural Resources Education (ANRE) program area leadership has encouraged my involvement in this area throughout the state without respect to county or district borders. I edit the Cranberry Crop Management Journal which is funded by a grant from the Wisconsin Cranberry Board and is available free of charge to every cranberry grower in Wisconsin.

In this mixed county dairy is the larger enterprise. Depending on the economic cycle the relative contributions vary. The dairy industry currently is generating about \$60 million of farm gate sales. Cranberry production is normally about \$40 million. All other crops and livestock generate an additional \$30 million in farm revenue.

In addition to very distinct and different programming in dairy and cranberry production I also program in general farm management in response to strong interest in this area.

Dairy Production

Dairy is in its third year of below trend line milk prices. The forecast going forward is a continuation of below average prices. There have been shake ups in the market as most processors have discontinued accepting milk from cows injected with rBST. Last spring, several area processors discontinued accepting milk from a large list of producers leaving them one month or less to find a new market for their milk. These market challenges are a new environment for Wisconsin dairy producers. Herd size has continued to increase as smaller producers exit the industry and the remaining herds expand in size. A large proposed dairy in southeast Wood County in an area currently utilized by recreational land and forestry has been the center of controversy. The decision if the dairy will be allowed is currently in the court system. This situation has led me to be involved in many meetings discussing water quality, water availability and the impacts of agriculture on water and the environment.

Dairy programming accomplishments-

I am the primary dairy content contributor to the CWAS newsletter that is distributed across seven central Wisconsin counties and is received by approximately 3,000 recipients. I contribute regularly to the Wisconsin Agriculturist, an example of my work can be found in **(EXHIBIT A)**. I also contribute to the state wide bilingual dairy worker newsletter Dairy Partner/El Compañero **(EXHIBIT B)**. My dairy programming content is diverse. My areas of greatest focus are feeds and nutrition and dairy cattle genetics. I also program in dairy modernization, milk quality, animal care and well-being.

As part of my nutrition specialization I partnered with the Extension Dairy Team to develop a series of videos on heat stress **(EXHIBIT C)**. I have authored numerous articles on fiber digestibility and have introduced a number of new analytical estimations of digestibility to producers including Total Tract Neutral Detergent Fiber Digestibility (TTNDFD) and Undigestible Fiber (after) 240 hours of rumen fluid digestion (UNDF₂₄₀)

There have been several studies on grazing of dairy replacement heifers. These studies have shown favorable lifetime and first lactation results in animal health and production when these animals return to confinement systems after their brief exposure to a grazing system. I presented at the Grassworks conference in 2017 about grazing dairy dry cows and heifers and specifically adapted to my Wood County work adapting grazing to consistently wet, poorly drained field conditions.

Genomic DNA testing has had very large impact on genetic progress in dairy cattle. Most of this has developed since my last review. As a result of genomics, producers have information on a number of health traits that were not available in the past. The accuracy of genetic information available for young sires is much greater and has completely transformed the national and global breeding program in dairy cattle. Individual producers have utilized my articles and presentations to understand this new genomic information. Genomics allow producers to be more aggressive in their sire selection and make faster genetic progress. Genomics allows producers to reduce replacement costs. They can remove inferior animals early from their herd based on the knowledge provided from a genomic test. In the past they would feed excess replacements because they were very unsure about which ones would perform satisfactorily once entering the producing herd.

I wrote an article about the importance of raising replacements correctly, an overview for the CWAS quarterly newsletter. It was added to the Extension Dairy Team website: <https://fyi.uwex.edu/dairy/> I have included a screen capture of the website as **(EXHIBIT D)**.

During the last five years I have served as an advisor to the national Holstein Youth program. I was selected by the national Holstein board, my second term ended this past summer. During this time I have worked to provide educational opportunities to youth across the nation primarily as they attend the National Holstein Convention each June. I have made a conscious effort during this time as a youth advisor to participate in dairy youth activities such as 4-H Area Animal Science days. Until two years ago the state 4-H dairy judging finals have been held in Wood County, this past year our county hosted the district Area Animal Science Day event and I took the leadership for both of these events. I have assisted with Wisconsin State Fair Junior Dairy program and with youth activities related to World Dairy Expo.

I have led an effort by other Extension agents and an area technical college to each winter offer a program, the Central Wisconsin Dairy Series. I have presented every year at this program and also have invited state specialists and industry representatives to provide the latest research based information to area producers. I developed and presented "Culling and Replacement Strategies," a presentation that utilized genomics as a new technology at this series. The presentation averaged 3.15 on a 4 point Likert scale, where a 4 was "considerable increase in knowledge" and a 1 was "nothing gained." The same presentation received a 2.71 on the likelihood that the practice would be implemented also on a 4 point scale. I considered this to be a success as genomics were very new at the time and many producers were completely unfamiliar with the technology and its potential applications. There were 50 respondents in this survey based on 2 meeting sites.

With agricultural engineers, Dave Kammel and Brian Holmes I have worked on many operations that have changed their housing systems, milking systems, herd size, cow comfort and efficiency of labor utilization. These consultations have improved the profitability and quality of life for many area farm families and have often been the catalyst for keeping these farms in business as the improved facilities have afforded for intergenerational transfer.

I am a certified Professional Animal Scientist (PAS) through the American Registry of Animal Scientists (ARPAS). Through this program I maintain a commitment to continue to update my education and skills by attending approved seminars. I also have obtained Farmers Assuring Responsible Management (FARM) evaluator certification. FARM is a program that most dairy processors now require their patrons to participate in to benchmark their animal husbandry practices. I participated in the training to increase my understanding of this current industry program.

I often partner with organizations to multiply my efforts and provide greater exposure for my work. Other partners have been the Marshfield Area Chamber of Commerce and Industry (MACCI) Agri-Business Committee the Heart of Wisconsin Chamber (HOW) Agriculture Committee and the Central Wisconsin Forage Council.

I have brought the University to key farms by connecting our state specialists on a number of research projects in our area. Specialists including Pam Ruegg, Randy Shaver, Victor Cabrera and Paul Fricke have been involved in projects on our area dairy farms.

Unique programs that we have offered include CAFO standards updates and skid steer safety certification

Dairy Programming Challenges -

Programming for the CWAS area in dairy production is a challenge due to its sheer size. It is difficult to provide prompt response in person to producers that are two hours away. The production issues between Marshfield, the Central Sands, Elroy and Markesan vary considerably. Even without considering geographical and soil differences all Extension staff with dairy responsibilities face the challenges of serving an increasingly diverse group of producers. Newsletters, workshops, website offerings, articles and web-based applications also add a challenging dimension of mastery to provide access to the many different producers across the area.

Now with the new area structure I share a colleague that also has a dairy and livestock specialization. Our areas of expertise mesh well as my colleague is a bovine reproductive physiologist whereas my specialization is in nutrition and genetics. However even with two of us programming for dairy production one of the partner counties has no livestock emphasis. Clark County is the largest dairy county in the state and has a history and expectation that a dairy and livestock agent will be available to their producers.

Since the CAFO's in the area are primarily dairy operations, I shall address this here. Typically the CAFO's have less need of Extension than lower resource farmers for production management issues. The Golden Sands Irrigated Vegetable Production Area is unique in our state for its low level of animal agriculture. With some CAFO's relocating to the area it will remain low in livestock concentration. These new production units do introduce many animals into areas without a history or culture of understanding and being familiar with dairy production. There are unique environmental challenges of handling livestock waste on sands, but for the most part CAFO's must address these in the permitting process. While CAFO's in many areas face increasing critique from the non-farm public, it is likely more intense in the sands of our CWAS area. CAFO operators need assistance to reach the public in a neutral way to help people realize both the potential negatives and the positive aspects of having a dairy farm in the area.

I have found it a challenge, even when striving to be neutral and unbiased, to be perceived as being part of "big agriculture" and an advocate for this system. I find this a unique challenge because the level of misinformation and fear of the unknown, when addressed, often may be misconstrued as advocacy. If the public views me as an advocate for a system, my ability to successfully convey much needed information is greatly diminished. It is a very fine line to balance.

Future Program Directions Dairy-

My dairy interests and abilities are varied; I intend to continue to develop factsheets, articles, spreadsheets and presentations on dairy cattle feeding, herd inventory management, assessing opportunity in selection based genetic merit. There is much opportunity for collaboration with specialists in these areas. I hope to be able to be involved in research in animal husbandry, specifically research regarding dry and transition cow management and its potential to improve animal performance and well-being.

I continue to be a member of Team Forage. Much of what I consider to be dairy nutrition work, pricing and selection of byproducts, harvesting and selecting higher quality forage materials fits best with Team Forage. There will be a turnover or loss of state specialists in this and other areas. Wood County has specific needs to improve forage quality. In addition to the dairy industry there are many livestock producers with a need to improve pasture and stored forage quality. Improving forage quality is an

important management goal for most dairy farms. In Wood County the need is greater as we have special challenges in the growing and harvesting of high quality forage. As an example, legumes do not persist well here on our heavy soils.

Programming will shift to have more opportunities for dairy farm workers and managers. In the past contact with the owner was usually adequate to develop impacts for the entire operation. The focus on workers on the farm will need to increase as farms become larger. Owners need assistance to train employees and rely on managers to provide focus to specific management concerns. Owners need more resources to train and motivate employees. Managers are looking for opportunities to provide critical training to their employees.

I am increasing my efforts through social media to be available to those interested about dairying and as a conduit to get useful information to dairy producers.

Cranberry Production

During the last five years the cranberry industry has been in a state of surplus production and resulting low prices. Some growers have been forced out of the industry. New hybrids with much higher production capacity are being planted as a way to be able to be profitable with the current low prices. Renovation is very expensive. Smaller and less established growers are finding it challenging to make additional investment during these times of low prices and negative production margins. There continues to be a wide spread between what producers receive for their crop. For several years now there has been a strong advantage to be a member of the grower cooperative Ocean Spray.

The Wisconsin Cranberry Research and Education Foundation has purchased a marsh to be used as a research station beginning with the 2018 year. The station is located in Black River Falls. Production methods continue to improve with the use of monitoring equipment to more closely track soil moisture levels, new safer more selective pesticides, faster more efficient harvest equipment and new more productive hybrids available for production.

Cranberry Programming Accomplishments-

I am the editor of the Wisconsin Cranberry Crop Management Journal. This publication is produced ten times during the growing season and is sponsored by the Wisconsin Cranberry Marketing Committee along with voluntary industry support. I have a committee of state specialists that contribute to the Journal along with key crop consultants. The committee prioritizes potential content. The newsletter is distributed to about 500 growers and industry affiliates across the state. **(EXHIBIT E)**

Since my beginning in the position in 2003 I have had the opportunity to attend the North American Cranberry Research and Extension Workers (NACREW) biannual conference in various cranberry growing regions across the United States and Canada. As part of the NACREW group I serve on the plant nutrition and soil fertility work group. There are a series of publications for across the United States and Canada that addresses the major nutrient needs of the cranberry crop. We continue to update this publication. I and state specialists are doing more work in water management since cranberries exist in or near sensitive wetland areas. New soil moisture monitoring technologies allow growers to raise the crop with lower soil moisture than was the practice in the past. Not only does this conserve on water and energy to move the water but also decreases the potential for contamination of water by fertilizer or pesticides.

I serve on the Wisconsin State Cranberry Growers Association (WSCGA) education committee. We organize the Wisconsin Cranberry School as a joint project between WSCGA and UW-Extension. I coordinate and develop an ongoing feature of the school, an interactive TurningPoint session often referred to a clicker session. An evaluation of the school shows that this is one of the most popular components of the two day school with over two-thirds of respondents giving it the highest rating "Gave me new information."

The education committee also works with Extension to develop an educational program for the Summer Field Day and usually several workshops during the year. Attendance at the school and field day are usually about 400 to 500 attendees. I have spoken at sessions in the school; I evaluate the school speakers and topics. I have been in charge of the marsh tours for the summer field day. There is nothing more hands on than a group of growers driving around another grower's marsh mid-season and observing the weed control, water management and plant growth on another's marsh.

I participate in the research round table held each fall on the Madison campus and also as the Cranberry Marketing Board set their priorities and research funding goals. During the grant process grower's research priorities and researcher's project plans are aligned.

Yields of cranberry in Wisconsin are sharply up the past several years on a per acre basis. Statewide average per acre yield is double of what it was since when I joined Extension in 2003. Increased yield alone would create the potential for crop surplus. Currently there is very little expansion occurring but there has been much during the last 15 years. Renovation to new varieties is the equivalent to expansion as far as its impacts to the total crop production. Growers are updating their whole farm nutrient and water management plans. Implementation of sustainable practices such as spring flood and reduced/monitored water application continue a trend of increase that started about ten years ago.

Cranberry Programming Challenges-

I rely on the availability of state specialists for this very unique and specialized production system. Unlike in other crops there are not teams of county faculty working on these projects.

There are very few horticulturists trained in cranberry production systems. Expanding emerging fruit and nut crops that have focused on small scale local production and value added and direct marketing compete with the specialist's focus on cranberry production to a degree that did not exist in the past. There is a shortage of specialists and academic expertise in cranberry production.

Future Program Directions Cranberry-

A new research station has been purchased. Robinson Creek Cranberry Research Facility is located in Black River Falls. I am one of the closest UW representatives to the station. Researchers are excited about the new opportunities provided by the station. We are still working on plans on how to use the station for research and extension. Rutgers and University of Massachusetts-Amherst both have had dedicated cranberry research stations serving cranberry industries that are far smaller than our Wisconsin cranberry industry.

As crop yields continue to increase in part through the introduction of new high yielding hybrids many management practices are expected to change as these hybrids not only have higher yield and fertilizer requirements but also mature differently and potentially react to insect pests and plant disease differently.

The WSCGA will continue to be a strong partner along with the specialists at UW-Madison and their graduate students.

Farm Management

With the horticulture support that I have in my office farm management is an area that self-identifies as a local need. This assessment is based on the number of contacts I receive regarding farm management topics. These questions include land rent and trends in rental rates, expectations of tenants, insight into factors that affect land rent value, assistance with renting to relatives, calls for contract examples are frequent. Input as far as recent history of land sale prices is also frequently sought. The market in our area varies steeply based on widely varying productivity and competitive pressures for the land.

Small to moderate size producers are often not comfortable with farm management topics and sometime make poor decisions because they have not had the tools or methods to develop sound management information. In surveys conducted by our office farm management is an area of high expectation of what should be offered from our office. In contrast sometimes workshops developed specifically regarding farm management are poorly attended. In addition to small producers, there is a strong need from rural land owners that have little experience regarding farm management.

Farm Management Programming Accomplishments-

Producers through needs assessments and key partners and oversight committees often indicate a desire that Extension educators make effort to educate the general public about current agricultural practice. I am now in my third year of working closely with Farm Technology Days (FTD) 2018 which will be held in Wood County next July 10-12. Farm Technology Days is a large time commitment and much of it is of an organizational nature. There is an opportunity through this event to reach thousands of local non-farm individuals to inform them about the importance, the necessity, of successful agricultural production systems. The FTD organizational process also has created many opportunities to make new contacts with key leaders in the community not directly connected with agriculture or my previous programming. This benefit is not only to me but to the county in general. As I have already indicated this is a county that is divided in its soil, practices and interests. There is great opportunity to improve the networks in this county that tend not to cross highway 73.

Farm Technology Days commitments have caused me to reduce the expected offerings I am planning for the upcoming season. Farm Technology Days has provided an opportunity for me to work more with other county educators and specialists as we work together to develop the educational aspect of the event.

I have continued to receive training on farm succession topics and provide this assistance to help family farmers accomplish transition of their business.

The Central Wisconsin Heart of the Farm (HOF) program continues to be one of the best attended in the state and we have continued to offer the event even in years when the Center for Dairy Profitability (CDP) has not obtained the primary grant that has supported the event. This coming year the partnership for the event is expanding as Clark and Taylor County educators are joining our Marathon and Wood County effort. HOF is offered through a grant with the CDP, we work with a local advisory group to develop our curriculum. Heart of the Farm always includes some business and risk management topics in the program.

We have offered Farm Records training such as QuickBooks training frequently in the area.

Farm Management Programming Challenges-

To date I have struggled to develop unique scholarly materials for farm management related topics. Often the needs are very specific to individual producers or the needed materials have already been developed that I can adequately incorporate into my own curriculum.

Future Program Directions for Farm Management Programming-

While interest in farm record systems has been low, we have had very good success with instructing in specific software such as QuickBooks. Women have been especially invested in farm management topics and we have used this successfully in the development of the HOF program.

This last year the UW-Extension Management Assessment Center came to Wood County. The program was dedicated to members of the Professional Dairy Producers of Wisconsin (PDPW). I was called on to assist with this program. Management Assessment Center was a program I had indicated an interest in five years ago for this review. While this program is limited to the number of attendees it is highly effective at providing quality instruction and I hope to continue to be involved with it in the future. There have been Management Assessment Centers dedicated to Cranberry Growers in the past and this may be a future opportunity.

Farm management overarches the two production systems I work with. State Specialist Jed Colquhoun is just beginning to utilize data already collected on grower reports to Ocean Spray. He is using big data principles to discover relationships between various management practices, crop inputs and yields, plant health and profitability. There is opportunity for me as an Extension worker to convey not only the results of big data findings but how to utilize similar concepts based on detailed record keeping to farm operations.

Earlier I mentioned the large appetite of the public for information regarding land rent. I feel there is a largely untapped potential for discussions regarding land use. This topic does not lend itself to the technology transfer model but is more interactive in its potential for joint discovery from all participants involved. Land use is coming into the discussions of committees that have been convened in response to the potential development of a large dairy in the town of Saratoga. Currently the potential of development of the Golden Sands Dairy and the conversion of forest land to irrigated crop production involving 48 high capacity wells and nearly half of township is a land use topic. There is considerable opportunity to develop programs jointly with our Community Resource Development counterparts to serve this need.

Our county Community Resource Educator has taken a lead in facilitating discussions about land use in South East Wood County. His retirement in January adds to a list of unknowns about how future programming will be conducted.

I predict the success of the newsletter as a means of communicating with producers to gradually diminish. Younger producers are more at ease with social media and the internet as a resource. From my observation they are more willing to embrace general management principles that apply across many types of business whereas the older counterparts are more at home focusing on specific enterprises and production techniques. There is an opportunity there probably best addressed by working jointly with colleagues as a team.

Proposed Plan of Professional Development
Matt Lippert, Wood County Agriculture Agent

Dairy

1. Annual attendance at the Four States Dairy Nutrition Conference
2. Participation in Dairy Team In-services
3. Participation in the Forage Team In-services
4. Attendance at either PDPW or Dairy Business Association (DBA) conferences or Expansion Symposia
5. Maintain Accreditation as an American Registry of Professional Animal Scientists Professional Animal Scientist ARPAS-PAS
6. Participation in Research with Campus Based Researchers- (Randy Shaver, Victor Cabrera)
7. Opportunities to develop feed and livestock inventory management tools with specialists

Cranberry

1. Biannual attendance to the NACREW conference
2. Annual attendance to research round tables – researchers present to advisory teams the results of recent research and likely new and follow up areas of research
3. Attendance at Fruit Crop Team In-services
4. Participation in research with Campus Based Researchers (Guodot, McManus, Atucha)

Farm Management

1. Continued updates with the FINPAK farm budget and cash flow program
2. Continued updates on QuickBooks general record keeping program
3. More updates on risk management tools for all commodities
4. More training on farm transition
5. Management Academy- developing ability to instruct in management style and development

Other

1. Cultural Awareness Training
2. Increase in skills with Google based programs
3. Social Media as an outreach tool
4. Attendance to National Association of County Agricultural Agents –Annual Meeting, Professional Improvement Conference (NACAA-AM/PIC)