Welcome!

By Sarah Potts, Ph.D.
Extension Specialist, Dairy and Beef

Welcome to the third issue of the Maryland Milk Moos! The goal of this newsletter is to disseminate news and up-to-date dairy management information to Maryland’s dairy producers. If there is a particular topic that you are interested in, please reach out to me (sbpotts@umd.edu).

Winter brings a time for a break from the busy summer and fall harvest seasons, and is a good time to reflect on the year and plan any changes for next year. As the Holidays approach and celebrations with loved ones begin, we remind everyone to be safe.

In this issue, we acknowledge the retirement of Dr. Bob Peters after 40 years of service to Maryland’s dairy industry. Congratulations Dr. Peters, and thank you for your contributions to Maryland’s dairy producers!

As a reminder, sign up for the Dairy Margin Coverage (DMC) Program and USDA’s Coronavirus Food Assistance Program 2 (CFAP2) both end on December 11, 2020. Contact your local FSA office to sign up for either program.

We wish you and your families all the best for a successful, safe, and healthy New Year in 2021!
Colostrum: Getting Calves off to a Good Start

By Sarah Potts, Ph.D.
Extension Specialist, Dairy and Beef

Colostrum is the first milk produced by the cow after calving and is rich in immunoglobulins (antibodies), growth factors, and several other nutrients and compounds that promote calf health. It is well-known that colostrum is critical for calf health. Due to a lack of transfer of antibodies across the placenta during pregnancy, calves are born with a naïve immune system and rely almost exclusively on consumption of colostrum for the transfer of passive immunity and subsequent immune system development. Inadequate consumption of antibody-rich colostrum shortly after birth can result in poor immune system development, which is associated with high calf morbidity (illness) and mortality (death) rates during the pre-weaning period. There are three key components to a successful colostrum program: quality, quantity, and timing.

Quality

Colostrum quality is determined by assessing immunoglobulin (antibody) concentrations, specifically, the concentration of immunoglobulin G (IgG). Colostrum is considered to be “good” quality if IgG content is greater than 50 g/L. While "visual appraisal of colostrum quality is highly inaccurate because color and viscosity are not related to IgG content."
Colostrum: Getting Calves off to a Good Start (continued)

direct measurement of colostrum IgG levels are expensive and time consuming, there are two tools available that can help producers quickly and economically assess colostrum IgG content through indirect means: a colostrometer and a Brix refractometer. A colostrometer measures specific gravity and a Brix refractometer measures total solids, both of which are have been shown to correspond to IgG content in colostrum. Both are useful tools for estimating colostrum quality, but the Brix refractometer has become popular in recent years because it is less fragile and less sensitive to fluctuations in temperature as compared to the colostrometer. Recent research suggests that a Brix reading of ≥21% is indicative of good quality colostrum. While it is tempting to forego assessment of colostrum using one of these two tools, producers should know that visual appraisal of colostrum quality is highly inaccurate because color and viscosity are not related to IgG content.

In addition to antibody content, producers should also ensure that colostrum is free from harmful bacteria or contaminants. To minimize bacterial growth, fresh colostrum should be fed within 1 hour; if this is not possible it should be stored in the refrigerator (<35°F) for up to 24 hours or the freezer (<-5°F) for up to a year. Safe thawing of frozen colostrum can be accomplished by submerging the container in a warm (<120°F) water bath and feeding within 1 hour of thawing. Using hot water (>120°F) to thaw colostrum can significantly reduce quality by destroying the antibodies.

Quantity

In addition to quality, quantity of colostrum is also important. Calves should be fed colostrum at a rate of approximately 10-12% of body weight. This is typically around 4 quarts for Holstein calves and 3 quarts for Jersey calves. If a calf will not consume all of its allotted colostrum from a bottle, producers should use an esophageal tube-feeder to ensure all of the colostrum is consumed.

Timing

Timing of colostrum consumption is the third component of a successful program. The ability of the calf’s intestine to absorb the antibodies in colostrum greatly diminishes with time, and is essentially nonexistent by 24 hours after birth. Studies show that delivery of two colostrum feedings within the first 12 hours of life can ensure absorption of sufficient quantities of antibodies to develop the immune system. It is generally recommended that the first feeding of colostrum occur within 2 hours of birth and that the second feeding occur within 8-12 hours.
Colostrum: Getting Calves off to a Good Start (continued)

**Evaluation of the Program**

The colostrum feeding program can be evaluated by testing blood levels of IgG within 24-48 hours of birth. The traditional threshold for evaluating success of passive transfer has been >10 g/L. However, recent research suggests that this threshold should be increased to >15 g/L. As with colostrum, estimation of blood IgG levels can be accomplished on-farm through indirect means using a Brix refractometer. If choosing this approach, producers should verify that their Brix instrument is capable of analyzing blood samples.

**Transition Milk & Extended Colostrum Feeding**

In a standard colostrum program, calves are fed whole milk or milk replacer after the first two colostrum feedings, usually beginning around 24 hours after birth. However, the process by which the composition of colostrum becomes similar to that of whole milk is gradual and takes several milkings to fully occur. This milk is often referred to as “transition” milk and although its composition is different from colostrum, it still contains significantly greater concentrations of nutritive (fat and protein) and non-nutritive (growth factors, hormones, white blood cells) components than whole milk, which are important for development. Some of the hormones and growth factors found in colostrum and transition milk are thought to have a positive influence on intestinal growth and maturation, which may help calves digest and absorb nutrients more effectively. While there are no concrete recommendations for the feeding of transition milk or extended colostrum feeding, recent studies have shown some benefits to these practices on pre-weaning growth and feed efficiency.

**Take Home Message**

Quality, quantity, and timing are three key components of a successful colostrum feeding program. All calves should receive two feedings of high quality (>50 g/L IgG) colostrum within the first 12 hours of life (0-2 hours and 8-12 hours) at a rate of 10-12% of body weight. New research related to the benefits of feeding transition milk and extended colostrum feeding is forthcoming, but studies will likely divulge recommendations related to these practices.
Research Update: Effect of Improved Pasture Management on Growth Performance of Holstein Heifers

Sarah Potts, Ph.D.
Extension Specialist, Dairy and Beef

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Extension Specialist, Pasture and Forages

This past summer, a study was conducted at the Central Maryland Research and Education Center dairy farm to investigate the effects of improved pasture management on heifer performance. This study took place between June and October 2020 and utilized 25 pregnant Holstein heifers.

Methods

An existing 25-acre pasture consisting of mostly endophyte-infected tall fescue was divided into two sections to accommodate two treatments: a control treatment (CON) and an experimental, improved pasture management treatment (EXP). The improvements for the EXP treatment were designed to be moderate, lower-intensity changes; these changes included a fertilizer application, implementation of a rotational grazing system (rotation every 2-4 days), and incorporation of a summer annual forage into the rotation. Soil samples obtained in early May were used to guide fertilizer application.

“Producers looking to improve grazing systems on their farm should begin by exploring simple management changes.”

Focal point

The effect of moderate, low-intensity changes in pasture management on pregnant heifers was explored.

Pasture management changes included:

- fertilizer application
- rotational grazing (2-4 days)
- incorporation of a summer annual

Heifers in the experimental group gained more weight, particularly when the summer annual was grazed.

Future studies will examine the economic viability of these strategies for heifers.
application to the EXP pasture; the EXP pastures were fertilized accordingly on May 20, 2020. Approximately 5 acres of the EXP pasture were terminated in early June and replanted in sudangrass (Hay King II HiGest BMR sudangrass) on June 19, 2020. The EXP pasture was then subdivided into 14 paddocks of approximately 1 acre each to facilitate rotational grazing (Figure 1); heifers in the EXP group were rotated to a new paddock every 2-4 days, depending on forage availability. The pasture for the CON treatment was subdivided into 3 sections of approximately 3-4 acres each (Figure 1); heifers in the CON group were moved every 10-15 days, depending on forage availability.

Figure 1. Pasture map for CON and EXP treatments. CON pasture was unimproved and heifers were rotated every 10-15 days. EXP pasture was fertilized and heifers were rotated every 2-4 days. Paddocks 11-14 of the EXP pasture were planted in a summer annual.

In addition to pasture, heifers in both groups were supplemented with 1.5 pounds of ground corn and minerals daily. Body weight, hip height, and wither height were measured approximately every 3 weeks. Forage samples were collected approximately every 3 weeks for forage nutritive value analysis; for each treatment group, samples were collected from the paddock immediately prior to grazing.

**Results**

The average nutrient composition of the forages for the CON and EXP pastures is shown in Table 1. Surprisingly, overall forage nutrient composition was not significantly different across treatment and time. Based on previous studies elsewhere, we expected nutrient analysis of the sudangrass to be different than the perennial pasture. One explanation for this could be that the sudangrass was a little more mature than is ideal when first grazed by the EXP heifers. More frequent forage sampling (> every 3 weeks) may have also allowed for better capture of the variation in nutrient composition throughout the summer.

Despite the similar nutrient composition of the pastures, heifers on the EXP treatment gained

<table>
<thead>
<tr>
<th>Nutrient(^1)</th>
<th>CON (Perennial)</th>
<th>EXP (Perennial)</th>
<th>EXP (Annual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DM (as-fed)</td>
<td>25.0 ± 6.7</td>
<td>22.4 ± 5.3</td>
<td>18.3 ± 5.8</td>
</tr>
<tr>
<td>CP</td>
<td>17.3 ± 4.2</td>
<td>17.8 ± 1.9</td>
<td>19.8 ± 1.8</td>
</tr>
<tr>
<td>ADF</td>
<td>31.7 ± 3.4</td>
<td>30.2 ± 3.7</td>
<td>31.2 ± 1.1</td>
</tr>
<tr>
<td>NDF</td>
<td>56.5 ± 5.1</td>
<td>54.9 ± 5.2</td>
<td>59.5 ± 3.2</td>
</tr>
<tr>
<td>Lignin</td>
<td>3.53 ± 0.96</td>
<td>3.3 ± 0.71</td>
<td>3.4 ± 0.36</td>
</tr>
<tr>
<td>Starch</td>
<td>1.24 ± 0.99</td>
<td>1.8 ± 1.7</td>
<td>1.7 ± 0.62</td>
</tr>
<tr>
<td>TDN</td>
<td>64.2 ± 3.1</td>
<td>66.4 ± 3.1</td>
<td>65.2 ± 2.1</td>
</tr>
<tr>
<td>NE (Mcal/lb)</td>
<td>0.66 ± 0.03</td>
<td>0.68 ± 0.03</td>
<td>0.67 ± 0.03</td>
</tr>
<tr>
<td>RFV</td>
<td>107 ± 14</td>
<td>112 ± 17</td>
<td>--</td>
</tr>
</tbody>
</table>

\(^1\)Nutrients are expressed as a percentage of dry matter, unless otherwise specified. DM = dry matter; CP = crude protein; ADF = acid detergent fiber; NDF = neutral detergent fiber; TDN = total digestible nutrients; NE = net energy for lactation; RFV = relative feed value.
Research Update: Effect of Improved Pasture Management on Growth Performance of Holstein Heifers (continued)

more weight and had significantly greater average daily gains (1.6 vs. 1.0 lb/d) than those on the CON treatment (Figure 2). Heifers on the EXP treatment also had greater gains in wither height than CON heifers, although hip height was not affected by treatment.

Although forage intake was not measured, the greater performance of heifers on the EXP treatment is likely attributed to improved forage utilization, particularly during the time when the sudangrass paddocks were grazed (Figure 2). It has been well-established that livestock will avoid consuming endophyte-infected tall fescue during periods of hot weather because the endophyte toxins (ergot alkaloids) reduce their ability to cope with heat stress. The relatively low rates body weight gain for both groups in this study are likely attributed to the high temperatures during the study period (average high temperatures for June, July, August, and September were 82, 90, 85, and 76°F, respectively). Performance of the CON heifers was probably also negatively influenced by the reliance on endophyte-infected fescue as the primary forage source during these high temperatures as well as overall low-input, minimal maintenance history for these pastures. Improvements in a low- or moderate-input pasture system take time; we expect that performance will increase as improvements continue to be made moving forward.

Take Home & Conclusions

While an economic analysis of this strategy is forthcoming, these initial results indicate that making moderate improvements to a pasture system by applying fertilizer (based on soil testing), incorporating a summer annual forage, and implementing a rotational grazing system can improve heifer performance. Producers looking to improve grazing systems on their farm should begin by exploring simple management changes such as fertilizer application and the implementation (or increased intensity) of rotational grazing practices. Incorporation of an annual forage into the grazing system may also help improve performance by offsetting the reduced summer growth (i.e. summer slump) in perennial pastures and mitigating palatability and forage intake issues associated with endophyte-infected fescue pastures during the summer.

Future Plans

A study similar to this will be completed next year; methodology will be similar but will focus on the economic and performance implications of incorporating both winter and summer annual forages into a moderately intensive grazing system. Future studies will continue to explore how improvements in pasture management affect heifer performance and the economic viability of the heifer program.
Optimizing Fertility for Winter Forages

By Amanda Grev, Ph.D.
Extension Specialist, Pasture & Forages

In the previous issue we discussed fall management strategies to maximize the potential of winter forages. We know that with proper fertility and management, winter forages can be both a high yielding and high quality forage crop while also providing environmental benefits in the form of nutrient retention and soil erosion control. As we move into winter, the yield potential for our winter forages has mostly been set based on planting date and fall nitrogen availability. These two critical factors determine the number of fall tillers which set the yield potential for the following spring. However, additional steps can still be taken to boost forage quality and ensure we reach this maximum potential.

One such step is providing additional nitrogen at green up in the spring. Research out of New York with triticale has shown that even with incorporated manure applied before planting in the fall, additional spring nitrogen was still needed. The additional nitrogen did not increase spring yields—there were no differences in yield for spring nitrogen applications ranging from 0 to 120 pounds per acre when manure was applied prior to planting in the fall. Instead, the fertilizer served to raise forage crude protein concentrations. As nitrogen went from 0 to 120 pounds per acre, the crude protein in the triticale increased from 9.5% to 19.2%. Therefore, incorporated pre-plant fall manure for winter

“...supplying additional nitrogen to winter forages at [spring] green-up can be an economic strategy for increasing ration protein concentrations.”

Focal point

- **Additional nitrogen (up to 125 pounds per acre) at spring green-up can increase forage crude protein.**
- **Consider springtime sulfur application to fields that did not receive manure in the fall.**
  - **Recommended application rate:** 1 pound sulfur per 10 pounds of nitrogen
- **Obtaining a routine soil analysis is critical to maximizing forage yield and quality.**
  - **Monitor soil pH to ensure maximum fertilizer efficiency**
forages can meet spring nitrogen needs for maximizing yield but may not meet the needs for maximizing forage crude protein concentrations.

Without a yield increase, is this an economical strategy for boosting dietary crude protein? In the same experiment the 0-pound nitrogen rate produced 570 pounds of crude protein per acre, while the 120-pound nitrogen rate produced 1152 pounds of crude protein per acre. The cost associated with the additional 582 pounds of crude protein produced under the 120-pound rate was $84 (with nitrogen at $0.70 per pound spread) versus a cost of $239 to get the equivalent amount of crude protein using soybean meal. Basically, this means there was a 3 to 1 pay back on the nitrogen fertilizer expense through soybean meal savings. This data suggests that supplying additional nitrogen to winter forages at green up can be an economic strategy for increasing ration protein concentrations, even for fields that received a pre-plant fall manure application. It is fairly common for farms to apply 50 to 100 pounds of nitrogen per acre in the spring, but it may be economical to increase this to 125 pounds of nitrogen per acre to boost forage protein concentrations and save on soybean meal costs. One caution with this strategy: do not try this higher nitrogen rate in fields with winter rye. Triticale is roughly 2/3 the height of rye and is therefore more resistant to lodging. Compared to triticale, rye has limited tillering and produces a taller but thinner stand, making it more prone to lodging at rates above 50 pounds of nitrogen per acre.

Along with nitrogen, sulfur is critical for protein formation. To capitalize on both yield and quality from your forage, crops also need sufficient sulfur. There is no longer enough sulfur being deposited in rainfall events to meet the needs of the crops we grow. Research has shown that increases in nitrogen without added sulfur can increase forage crude protein, but only up to a point. Work out of New York found that triticale grown with extra nitrogen but no added sulfur produced forage with 12% crude protein, while
Optimizing Fertility for Winter Forages (continued)

a lesser amount of nitrogen with the addition of sulfur produced forage containing 17% crude protein. Therefore, for a field that has not had manure this fall (manure is a major on-farm sulfur source) it is highly suggested that sulfur be added. An effective ratio is roughly 1 pound of sulfur for every 10 pounds of nitrogen. A mix of 1500 pounds of urea (treated with an anti-volatilization agent) mixed with 500 pounds of ammonium sulfate will give you approximately 40-0-0-6S, which is great for cool-season grasses and winter forages such as triticale.

Finally, remember that the key to good fertility management is to know when fertilizer will produce a response and when it will not. Just as suboptimal protein or energy will limit milk production, suboptimal soil fertility will limit forage production. Conversely, a high or excess level above what is needed will limit profitability and can create shortages of certain nutrients. You can’t balance the soil without knowing what is available, which means that one of the essential steps behind optimizing forage production on your farm should be routine soil analysis. One of the biggest ways to achieve a maximum return on your fertility investment is by optimizing soil pH; ensuring an appropriate soil pH (6.0-7.0 for most forage crops) will ensure other essential nutrients are available to the crop. This is especially important as the price of fertilizer continues to go up. Fields with a pH of 5.5 to 5.8 are common, but at these pH levels you are essentially losing a third of your fertilizer efficiency due to reduced nutrient availability. In this era of high prices and tight margins, we need to ensure that every bit of fertilizer is working to its fullest potential. To accomplish this, use testing to determine what your fields need, correct the pH first, and then balance the other nutrients accordingly to provide an optimum economic response for your fields.
Starting Jan 1, 2021, I will be retired from the University of Maryland. As is often declared when such a moment arrives, the thought of, “Well, where did all the time go?” That reflection has certainly been my reaction as well and it bodes well for me because when the time fly’s by, it means the work was enjoyable and engaging. That has been my overall thought about my career with the University. One of the best ways of explaining that sentiment is, “without exception and after breakfast each morning, I have always looked forward to going to work.” And, for that, I am forever thankful to the University and my colleagues, staff, students, as well as the producer and allied industry friends I have had the pleasure of working with during my tenure. The opportunity to work and serve the people I have known has been extremely rewarding to me, and I am left with many wonderful memories of the many meetings, lectures, trips, and various gatherings throughout the years.

The points I want to cover with this article are about experiences and decisions in the early part of my career. Oddly, at this time, those are the clearest and most vivid in my mind as I reflect on the past. Perhaps memorable, because these early chain of events were the stepping stones for where I have spent my career.

Thinking back, I have asked myself, how did my journey to a University professor and dairy Extension specialist begin? It’s a question that is intriguing, because in my youth, I certainly did not foresee a career as a university professor for myself. Early on, I only saw myself as a hands-on person and I had little interest in academic excellence. In my high school years, especially, I could not imagine myself as someone who would rely on writing and public speaking for career advancement. Yet, to my surprise, those were skills I was able to learn and use effectively.

But, back to the basic question of the starting point for my career, my thoughts carried me back to growing up on my parents' 160 acre dairy farm in southwestern Minnesota. As the eldest of four children in the family, my Dad and I spent many years together, especially in the evening, milking up to 30 cows in a 23-cow stall barn with Surge bucket milking machines.
Maryland Milk Moos

Dr. Bob Peters: Reflections about the Early Days (continued)

During milking, my Dad and I had the opportunity to talk, and one story he frequently told, greatly influenced me. As background, my Dad finished his high school at the University of Minnesota, St. Paul, in the School of Agriculture, graduating in 1945. This wasn’t a program for talented and gifted students but an option for regular students to gain specialized study in agriculture from university professors at a college campus. One of his classes at the University of Minnesota was taught by Dr. W.E. Petersen, a well-known dairy scientist, author, and excellent teacher, who discovered through his research, that oxytocin when released from the pituitary gland, was the explanation for milk letdown. The part of the story that was especially intriguing was that as a class demonstration, Dr. Petersen would collect blood, rich in oxytocin, and infuse it through a cadaver udder. The udder would gain pressure similar to cows being prepared for milking, and milk could be harvested. That story stayed with me; plus, I was fascinated with how the udder was able to synthesize milk in such large quantities.

After my high school graduation in 1969 and a two year stint at a local state college, I was able to learn much more about Dr. Petersen’s research contribution to dairy physiology as a student in animal science and animal physiology at the University of Minnesota. After earning B.S. and M.S. degrees in 1973 and 1975, respectively, and with greater understanding of dairy science, I was privileged to be accepted as a Ph.D. graduate student at Michigan State University with Dr. Allen Tucker, a renowned dairy cattle lactation physiologist. There is, however, a decisive background story to becoming a graduate student at Michigan State University that played a pivotal role in my career. When I was preparing to finish my M.S. degree in animal physiology at the University of Minnesota, I had learned my final application had been turned down for veterinary school admission. I was discouraged with not being successful with entry into veterinary school but dairy physiology was still a huge interest to me. Thus, I asked my advisor, Dr. Alan Hunter, about pursuing a Ph. D. degree. He strongly advised to go to another university for this degree and he wrote down three names of professors he would recommend as advisors. Those three people were Dr. Bill Hansel, Cornell University; Dr. Bill Thatcher, University of Florida; and Allen Tucker, Michigan State University. As a product of the Mid-west, I could not image dairy cattle in Florida or living there, so I immediately crossed Dr. Thatcher’s name off the list and applied to Cornell University and Michigan State University. Dr. Hansel turned me down but Dr. Tucker accepted my application. Michigan State University turned out to be a perfect fit for me as the Department was 100% Dairy Science. My education was greatly expanded as there was a departmental seminars on some aspect of dairy cattle each week. My mentor, Dr. Tucker, was internationally recognized, well-funded, and an excellent teacher and advisor to learn about lactation physiology, and the essentials of conducting research. My training under him was exceptional and the reputation I earned with the research papers that came out of my dissertation research well-positioned me for tenure track opportunities as a dairy Extension specialist and assistant professor.
Yet another twist in my journey was an experience with serendipity. Each summer, the American Dairy Science Association (ADSA), holds an annual meeting where teaching, research, and Extension project abstracts are presented. In 1979, when I started applying for university positions, the annual ADSA meeting was held at Utah State University, Logan. The annual meeting starts with a reception and while attending, I happened to strike up a conversation with a gentleman I had not previously met. In the course of the conversation, I learned this person was Dr. Dick Davis, chair of the Department of Dairy Science at the University of Maryland. The Department had an open positon for a dairy Extension specialist, and Dr. Davis, having learned in the conversation that I was interested in such a position, asked why I had not applied for the job that was open at Maryland. I had actually known about the position but was holding out for a location in the Midwest. After a brief conversation, Dr. Davis invited me to meet with him the next morning and to share my resume with him. And as the saying goes, “now you know the rest of the story”, i.e., how the University of Maryland became my academic and career home.

After an interview in College Park at the University of Maryland in summer of 1979, and an offer for the position, my first day on the job was Jan. 7, 1980. Shortly after my employment, a county agent in Kent County, John Hall, paid a visit to my office. He informed me that stray voltage was an emerging problem and something I should pursue. This was a problem I had heard about as a graduate student but I had no experience with it, and consequently, faced a steep learning curve on how to detect, analyze, and mitigate such cases. The problem was quite common, and as a result, I literally traveled from Garrett County to the lower Eastern Shore counties and all counties in between in a few weeks. After a couple years, I had visited at least 50 farms, and in cooperation with the power companies, had resolved a number of cases where milk production, parlor throughput, and cow health problems had improved. Yet, looking back, the beginning and launch of my Extension program was a conversation with county Extension agent John.

While my appointment was primarily in Extension, I also held a minor research appointment as well. I was very fortunate early on in gaining a working relationship to conduct research with Dr. Max Paape at USDA’s Milk Secretion and Mastitis Laboratory. Dr. Paape was not a stranger to me as he was my Ph. D. mentor’s first graduate student at Michigan State. Thus, I sought out Dr. Paape shortly after my arrival at Maryland. This relationship was another perfect match for me as my major interest was in Extension and having the partnership with Dr. Paape, rescinded my obligation of supporting a research laboratory. With the opportunity to collaborate with Dr. Paape, I was able to focus on Extension programs and but also enjoyed the privilege to join an internationally known scientist’s laboratory working on mastitis research and training graduate students. Within a few months, Dr. Paape and I had launched a field research project on three Maryland dairy farms, testing whether a small plastic ring, called an intramammary device, was effective in preventing mastitis infection. This project was followed by many others and several graduate
students finishing their degrees. But, again, initiating a relationship with Dr. Paape was instrumental in helping me to establish a professional reputation in the area of mastitis.

Finally, one relationship that has been foundational in my career success and success as a family, has been my spouse, Cathy. She and I were married in the summer of 1975, just two weeks before we left for East Lansing, Michigan. Although she was an electrician’s daughter, and unfamiliar with the dairy world I loved, she would soon be immersed in my world, and helped me tremendously. It was not unusual, for example, for her to be taking blood samples from cannulated dairy animals at the dairy research center, helping with assays in the laboratory, typing up reference cards for my reprint library, and labeling hundreds of test tubes for the next experiment. The Michigan experience in graduate school definitely laid important ground work in our relationship for years to come. Once we were in Maryland, we grew our family and Cathy was the one that kept the home life alive for our three daughters along with operating a full-time home daycare business. And today, we are proud grandparents of six grandchildren.

Looking back, my advice for youth seeking a successful career and life in general is to follow your interests, build good relationships with friends, neighbors, and teachers, and seek out the best advice you can from those you trust. Search out your options. Key conversations will likely create opportunities that open doors for continued growth and development. Value the relationships that you have in your life and work hard on your priorities. Once these basics are in place and with some faith in the future, the rest will often fall in place for success.

_Pictured above: Dr. Bob Peters and Jeff Semler (UME – Washington County) organize a series of dairy farm tours for researchers from Taiwan in June, 2019._

_Photo credit: Jeff Semler._
Events & Announcements

**December 11, 2020** - Deadline to apply for the USDA Coronavirus Food Assistance Program 2 (CFAP2) aid. Contact your local FSA office or visit [www.farmers.gov/cfap](http://www.farmers.gov/cfap) for more information or to apply.

**December 11, 2020** - Deadline to apply for the Dairy Margin Coverage (DMC) Program for 2021. Contact your local FSA office or visit [https://www.fsa.usda.gov/programs-and-services/dairy-margin-coverage-program/index](https://www.fsa.usda.gov/programs-and-services/dairy-margin-coverage-program/index) for more information or to apply.

**Nutrient Management & Pesticide Applicator CEUs are available online!** Visit [https://extension.umd.edu/news/need-renew-your-pesticide-or-nutrient-management-certification](https://extension.umd.edu/news/need-renew-your-pesticide-or-nutrient-management-certification) for more information.

**Women in Agriculture Webinar: Family Communications in Farm Succession Planning** - December 9, 2020 12-1 p.m. [https://universityofextension.eventbrite.com/](https://universityofextension.eventbrite.com/)

**Virtual Agronomy Meetings** - December 1, 2020 - February 26, 2021 [https://extension.umd.edu/events/thu-2021-01-21-0800-virtual-agronomy-meeting](https://extension.umd.edu/events/thu-2021-01-21-0800-virtual-agronomy-meeting)

Resources

UME Dairy Resources: [https://extension.umd.edu/dairy](https://extension.umd.edu/dairy)

Maryland Agronomy News:

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