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GEORGIA DAIRYFAX

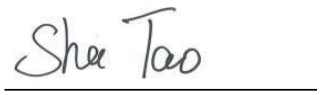
Dear Dairy Producers:

The enclosed information was prepared by the University of Georgia Animal and Dairy Science faculty in Dairy Extension, Research & Teaching. We trust this information will be helpful to dairy farmers and dairy related businesses for continued improvement of the Georgia Dairy Industry.

INSIDE THIS ISSUE: July August September, 2018

UGA extension

Sincerely,



Sha Tao, Assistant Professor

Welcome Dr. Pedro Melendez

Dr. Pedro Melendez recently joined the Department of Population Health, College of Veterinary Medicine of the University of Georgia as Associate Professor & Field Investigator at the Food Animal Health & Management Program. He is based in the Tifton Veterinary Diagnostic and Investigational Laboratory. His responsibilities include clinical, and university service, extension, continuing education, teaching and research.

Dr. Melendez obtained his BS and DVM from University of Chile, and his MS and Ph.D. from University of Florida. In his new position, he will teach veterinary medicine students and graduate students, in addition to participate in programs of continuing education nationally and overseas. He is devoted to provide service to Georgia dairy and beef farmers through farm visits consultation, answering questions by phone and email, and offering extension seminars. In addition, he has the state mission to provide community service through promoting the profession of veterinary medicine for food animals within undergraduate and youth/high school students.

He can be reached through:

E-mail: pedro.melendez@uga.edu

Tel: 229-386-3291

Cell: 573-825-6160

Herd it Through the Bovine

Youth Corner

Jillian Bohlen, PhD

Assistant Professor and Dairy Extension Specialist

706-542-9108 / jfain@uga.edu

Recent Events

Georgia Hosted a Tremendous 2018 Southeast Dairy Youth Retreat

The hosting of the 2018 Southeast Dairy Youth Retreat by the great state of Georgia was a tremendous success. With over 80 youth delegates from five different states and 30 chaperones, we had a packed house for educational opportunities, networking, and fun!! All youth and chaperones arrived in Covington, GA on Sunday, July 8th. After a cookout dinner provided by the Morgan County Dairyman's Association, the Georgia Dairy Youth Foundation board members set the stage for the fun events of the week to come by playing icebreaker games and getting the delegates into teams that would compete at various events throughout the week. To promote networking, each team had members from each of the states represented!

Monday was an educational day at the FFA camp in Covington, GA. Four stations were setup to include udder anatomy, reproductive tract dissection, quiz bowl, and a processing of basic dairy foods! Following lunch, the group participated in team building activities as part of the camp's ropes course and enjoyed other games indoors – it was a HOT day!

Tuesday was designated as "fun" day. The group first set off to Zoo Atlanta where a behind the scenes tour awaited them. During the tour they learned about the dietary needs of some of the zoo animals as well as toured the zoo kitchen. Some of the most interesting things in the kitchen for the animals - Baby food and hot sauce! Following the zoo, the group went for bowling and pizza before returning to the hotel for some free time.

Wednesday was spent seeing parts of what the Georgia dairy industry has to offer. The youth started out bright and early with tour and educational stations at Godfrey dairy. During those educational stations, students learned about their milking parlor and freestall management, fresh cow handling, large equipment operation (with a stunning corn field in the background), and caring for the newborn calf. Following this, the group departed to Rock House Creamery for a tour of the farm facilities and stations setup on their heifer management practices, lactating cow housing program, other agricultural endeavors on farm, and of course taste testing of some wonderful Rock House Creamery products! Following that the group rested for a minute for lunch and learned more about digestion with their exploration of fistulated steers provided by the University of Georgia dairy farm. With time in the day getting short and still so much to do, the group next stopped in at W Dairy. Here the students were able to explore stations to learn about freestall design, milking in a rotary parlor and milk quality, manure management, and calf management with automated calf feeders! The non-educational but equally loved station was an ice cream truck that offered a refreshing treat to what was a blistering day!

The activities of Wednesday and the retreat itself concluded that evening at the Gaither

Plantation where the group enjoyed a steak dinner provided by the Morgan County Cattleman's association. No good retreat can ever come to a close without a good game of Ag Olympics. The Georgia Dairy Youth Foundation used this as their final tally for team scores for the event.

Definitely a successful event and one that Georgia should be proud of! I think the group would agree that they made new friends in agriculture while learning more about dairy husbandry and the hospitality of the Georgia Dairy Industry. This event would not have been possible without the collaboration and contributions of the Georgia Dairy Youth Foundation, Morgan County Dairyman's Association, Morgan County Cattleman's Association, Southeast Milk Check off, Morgan and Newton county extension offices, our Host Farms and the UGA Animal and Dairy Science Department.

We hope everyone is looking forward to the 2019 retreat in VIRGINIA!!!

National 4-H Dairy Conference Delegates Named

Congratulations to the young people selected to serve as Georgia delegates to the 2018 National 4-H Dairy Conference! This year Georgia 4-H had a number of tremendous applicants to serve as delegates to the National 4-H Dairy Conference. So many of these young people are already doing tremendous things in and for the dairy industry. Georgia 4-H (agents, parents, volunteers, producers) should be proud the young people they are developing to serve in the realm of agriculture. This year, we are fortunate to have money available to fund three young people to attend that National 4-H Dairy Conference to be held in conjunction with World Dairy Expo this coming October. The three selected delegates are Mary Anna Bently (Chattooga 4-H), Morgan Patterson (Jasper 4-H), Jackson Strickland (Burke 4-H). Also, Lawton Harris (Morgan 4-H), a 2017 delegate, was selected to the programming committee for the 2018 conference and will attend the conference again this year in that role. Caitlin Jackson of Monroe County will serve as the adult chaperone to these young people on what is sure to be a tremendous trip! A Big CONGRATULATIONS to these young people. Make Georgia proud!!!

Dairy Dawgs on the Moove

Kayla Alward, Graduate Student

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National American Dairy Science Association Meetings

Once again, the Dairy Dawgs had the opportunity to travel over the summer, this time to Knoxville, TN for the National ADSA meeting! Undergraduate students took time off from their various summer jobs and internships to attend this event. Mary Wright traveled from Pennsylvania where she was working on her family's custom heifer raising facility and preparing to start veterinary school at the University of Pennsylvania. Jay Moon, Will Porter, Greyson Fernandez and Hunter Jenkins all came from Georgia to attend the meeting. Jay was working on his family's dairy farm. Will was interning at a large cross-bred dairy, gaining experience with calves and Greyson and Hunter both worked on their own beef operations during the summer. Graduate student Kayla Alward also attended who was working on her research over the summer in Athens, for a grand total of 5 undergraduate students, 1 graduate student and 1 advisor.

Everyone arrived in downtown Knoxville on Saturday afternoon and had the evening to rest up before competitions began on Sunday. Bright and early Sunday morning, the Dairy Dawgs were up and studying for Quiz Bowl. Quiz Bowl comprised the entirety of the day on Sunday, and the Dawgs did a fantastic job demonstrating their dairy knowledge. They made it all the way up to 4th place, only being beat out by Virginia Tech, Penn State and the University of Florida!! That evening, students were able to attend the opening reception and network with professionals from the dairy industry as well as other students and professors.

Monday was another early day, with Hunter Jenkins and Kayla Alward preparing for their presentations. Hunter Jenkins was competing in the Dairy Production division of the Paper Presentation contest. Having served previously as calf manager for the UGA Teaching Dairy farm, Hunter chose to talk about judicious antibiotic use in pre-weaned calves. Meanwhile, Kayla Alward was preparing for the 3 minute thesis competition in which her task was to explain to a layman audience in 3 minutes her research, it's importance to the dairy industry, and importance to the world! That evening, the students had a fantastic and fun opportunity to wrap up their trip by cruising down the Tennessee River on a river boat with fellow students.

Tuesday was the day everyone was anxiously awaiting; the announcement of the winners! Just as in years past, the Dairy Dawgs represented the University of Georgia well and placed in several competitions!

- 4th place Quiz Bowl
- 3rd place Outstanding Website (https://ugadsc.wixsite.com/ugadsc)
- Hunter, Greyson and Mary all received achievement awards for their scholastic achievement
- Hunter Jenkins gave a fantastic talk in the dairy production paper presentation competition with his work titled "Judicious Use of Antibiotics in Preweaned Calves"
- Jay Moon elected to serve as the national Officer at Large to the Student Affiliate Division

- Mary Wright was the outgoing national 2nd Vice President for the Student Affiliate Division
- Kayla Alward placed 2nd in the Graduate Student Division 3 Minute Thesis Competition with her talk entitled "The Big Whoop about Anti-Mullerian Hormone"

Advisor Dr. Jillian Bohlen was elected to serve as President of the ADSA Southern Branch and served as third year advisor to national ADSA-SAD.

Photo. *UGA Dairy Science Student delegation to the National ADSA-SAD/GSD; L-R: Hunter Jenkins, Mary Wright, Kayla Alward, Dr. Jillian Bohlen, Greyson Fernandez, Jay Moon, Kayla Alward, Will Porter*

Dairy Show Team at the GA National Fair

Again this year, the UGA Dairy Show team will exhibit UGA heifers at the GA National Fair. The team would love to have the opportunity to visit with anyone that will be at the fair October 11th – 13th. Please stop by and see them in the Dairy Barn – they'll be the ones in Red and Black singing "Glory, Glory to Ole Georgia"!

Sulfur and chloride based prepartum diets have different responses on calcium metabolism in grazing dairy cattle

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Calcium (Ca) is a major mineral that play a central role in maintaining the normal functioning of vertebrate animals, including muscle contraction, blood coagulation, enzyme activity, neural impulses, hormone secretion, as well as being an essential structural component of the skeleton.

During the peripartum period, the reduction of Ca levels in blood (hypocalcemia) is expected in the dairy cow and is characterized by a blood calcium concentration < 2.1 mmol/L(< 8.5 mg/dl). Hypocalcemia develops as a result of the sudden drain of calcium to colostrum at the onset of lactation. Ten to fifty percent of cows may develop low Ca levels without signs of clinical hypocalcemia (milk fever) up to 10 days postpartum. Hypocalcemia may affect organs that have smooth muscle function such as the uterus, rumen and the abomasum. Consequently, hypocalcemia is a significant risk factor for calving difficulty, retained fetal membranes, metritis, uterine prolapse, displacement of the abomasum, clinical ketosis and fatty liver. These disorders have been also associated with infertility in dairy cows.

When milk fever is developed a treatment protocol must be established. Nevertheless, prevention of this metabolic condition is essential to succeed during the transition period and the rest of lactation. A successful preventive methodology has been the use of anionic salts to reduce the dietary cation-anion difference (DCAD) which has been defined as the difference in milliequivalents of cations (mostly sodium [Na] and potassium [K]) and anions (mostly sulfur [S] and chloride [Cl]) per kilogram of dry matter and has a direct impact on blood acid-base metabolism. Therefore, diets rich in anions (Cl, S) cause a slight metabolic acidosis, reducing the risk of milk fever because calcium is released from the bone in response to an improved action of hormones and vitamin D under the effect of body acidification. Consequently, urinary pH measurement is a useful tool to assess the degree of metabolic acidosis that is imposed by dietary anionic salts. An advantage of this approach is that it accounts for inaccuracies in mineral analyses and for unexpected changes in forage mineral content. Urine pH below 5.8 indicate over acidification and anionic salts should be reduced in the diet. The optimal urinary pH is between 6.0 and 7.0 for Holstein cows and between 5.8 and 6.2 for Jersey cows. In herds experiencing milk fever the urine of prepartum cows will be very alkaline with a pH above 8.0. Most accurate results will be obtained by collecting urine samples at a standard time, preferably within a few hours after feeding. Based on studies conducted by Dr. Jesse Goff from Iowa State University, chloride based products have shown a better power of acidification of urine compared to sulfate based products. However, assessment of anionic diets in prepartum dairy cattle under grazing conditions has been barely evaluated. The impact of pasture, which is very rich in K, should be considered an important modifier of the effect of anion diets on the process of body acidification. On the other hand, by feeding a partial mixed ration with anionic salts and complemented with grazing makes this approach a more challenging method because there is no full control of the total amount of

nutrients (especially minerals) consumed by the cow.

In a study conducted under commercial conditions in a grazing dairy herd in Missouri was aimed to compare the effect of two partial mixed anionic diets based on sulfur and chloride, respectively, and fed to prepartum dairy cows under grazing conditions on plasma calcium. The study was presented at the American Dairy Science Association Annual Meeting in 2017 (J. Dairy Sci., 2017 100, Suppl. 2, abs: 367, pp: 373) and was conducted during the fall of 2016. The dairy was comprised of 20% Holstein, 20% Jersey and 60% crossbred Jersey x Holstein. Cows had been synchronized for breeding such that approximately 600 cows were due to calve in a short period of time. At 30 days before expected parturition, 2 groups of 200 cows each were moved into paddocks where they were fed each day a partial mixed ration containing the anionic supplements. Cows had free access to pasture. The partial mixed ration would constitute half of the daily dry matter intake. Urine samples were collected each week prepartum and checked for pH. Average pre-partum urine pH was 7.71±0.12 and 7.81±0.10 for Chloride and Sulfur based diet, respectively. At calving, 42 cows per group were matched by breed and parity (primiparous, multiparous), and their blood was sampled on day 1, 2, 3, and 7 post-partum. Plasma total Ca was determined by atomic absorption spectroscopy and analyzed statistically.

Results showed that cows fed a prepartum diet based on chloride with free access to pasture had a lower urine pH than cows fed a prepartum diet based on sulfur. In addition, the concentration of plasma calcium at day 1 postpartum in multiparous cows that were fed the chloride based diet during the prepartum period was higher than that of cows fed the sulfur based diet (Table 1). It was concluded that the use of chloride as an anion source for multiparous prepartum cows under grazing conditions is a valid nutritional strategy to prevent hypocalcemia in dairy cattle.

Table 1. *Mean (± SEM) plasma postpartum calcium (mg/dL) in prepartum grazing dairy cattle fed a mixed ration containing either Sulfate or Chloride*

	Sulfate	Chloride	*P*-value
Primiparous			
day 1	7.83+0.3	8.37+0.3	0.20
day 2	8.04+0.3	8.33+0.3	0.58
day 3	7.77+0.3	8.38+0.3	0.20
day 7	8.79+0.3	8.64+0.3	0.98
Multiparous			
day 1	7.30+0.1	7.74+0.1	0.04
day 2	7.56+0.1	7.53+0.1	0.96
day 3	7.63+0.1	7.91+0.1	0.55
day 7	8.07+0.1	8.33+0.1	0.85

The changing dairy products market

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For several years, fluid milk consumption has been declining as consumers turn to new milk alternatives that have been introduced to the market, leaving dairy producers to feel the effects nationwide. Since 1975, fluid milk consumption per capita in the US has decreased from 247 lbs. to 154 lbs. in 2016. This nearly 40% reduction in fluid milk consumption has left dairy producers with a surplus of milk, and no avenue for sale. While fluid milk consumption has been steadily decreasing, total milk consumption has hit an all time high, at 646 lbs. per capita. So where is this increase coming from? While yogurt, butter, and cheese only have a combined per capita consumption of 55.7 lbs., this is an increase of 63% since 1975. But why do we see the increase in yogurt, butter, and cheese, and not milk? The main reason is the abundance of alternatives emerging in the fluid milk market that offer a new idea, design and thought about fluid milk.

If you think about the history of milk, it's been marketed and sold for more than 200 years, which classifies it as a mature product (meaning that it's been around a while and the entire population is aware of it as a product). After 200 years, consumers don't see milk as exciting or trending, and are more apt to reach for a "new" product that's different and grabs their interest. Aside from perceived health benefits, this is one reason why new "alternative" products such as soy milk, almond milk, and coconut milk are increasing in sales, while traditional milk sales decline. However, fear not! There's still hope for the fluid milk market it just requires reinvention of the mature product through changes in composition, convenience, or novelty in its use.

Fairlife formed in 2012 after Coca-Cola partnered with dairy producers, and by 2014, their new milk product hit the shelves. This product was marketed as a "super-milk" due to its unique filtration process that separates out all the components, and then recombines them in particular ratios to obtain a product that is lactose free, high in protein and calcium, and low in sugar and fat. This new idea of a milk product appeals to a wide variety of consumers, particularly because it is lactose free. Though its marketing has had its challenges, just reference the original image of the Pin-Up-Girl ads, they have now found their foothold. Using the marketing of being different, potentially healthier, using specific wording for processing methods, and placing it strategically placement in the grocery cooler has its sales soaring. After only a year on the market, Fairlife's milk product reached $100,000,000 in sales, utilizing 150,000,000 lbs. of fluid milk. With our average Holstein sitting at 26,995 lbs/year for production, this puts to work around 5,556 cows annually. With production only projected to grow, the security for farmers will also grow as demand for these new and trendy products increases.

Since Fairlife came out with their new product, other fluid milk producers have followed suit with similar products that have been redesigned to capture the attention of the next generation of consumers. One of the more popular products is a canned latte produced by La Colombe. Pioneers of nitrous oxide can technology and the only company to hold an FDA approved patent for a food grade nitrous oxide valve, this company has already captured the millennial audience. In the 1st hour of online sales, 10,000 cans were sold. Current production calls for 90,000,000 lbs. of milk

for their product and is projected to grow to an $8-9 billion-dollar enterprise. The company attributes their success to targeting the emerging preferences of consumers, and this product appeals to several of them. The product offers an on-the-go drink for the fast-paced millennials, it is also lactose free, appealing to the growing population that is lactose-intolerant, and offers a variety of flavors to capture a wide audience. In addition to this canned product, they also sell coffee in their cafes, wait for it…..on tap! That's right, just like getting a frothy beer, you can get a frothy latte right from the tap in the café. As you can imagine, this draws in a ton of business because everyone wants to have the latte on tap experience. After that, the product itself is what keeps people coming back.

The most recent addition to the market is A2 milk. Exclusively marketed by the a2 Milk Company, this "new" milk product is the only product on the market that does not contain the A1 form of beta-casein, which has been linked to digestive issues with some milk drinkers. In fact, many people who are self-diagnosed as lactose intolerant are not lactose intolerant, but instead simply cannot digest the A1 beta-casein. Thus, many who have previously experience digestive upset with conventional milks (containing both A1 and A2 beta-casein) are switching to the A2 milk. But it's not just the product difference that has people flocking to their products. Careful and clever marketing has allowed the a2 Milk Company to expand from selling their products only in New Zealand in 2003, to selling products and employing dairy producers in New Zealand, Australia, China, Singapore, the US and the UK by 2014. Their marketing team uses the unique nature of the product to target consumers who may be experiencing digestive discomfort from their current milk product, or those who have previously given up milk all together due to digestive discomfort with the slogan "bringing back the pleasure of milk" and through heavy utilization of testimonials.

These are just a few examples of companies that have stepped up to revolutionize their milk product in hopes of boosting sales. In the face of a generation that is turning to milk product alternatives, and is becoming more "picky" with their preferences, processors must shake up their marketing tactics, and even shake up their product itself to remain competitive. The dairy industry must begin to see that without these changes to an otherwise mature (and some may even say boring) product, the hope of increasing fluid milk consumption will be ever fleeting.

A brief take for the beef on dairy concept

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In the middle of August, fifteen Holstein heifers from the UGA Teaching dairy in Athens met a new friend that we simply call Angus bull. Motivations for putting these dairy heifers with the beef bull likely don't fall in line with all of those that are in the published data, but let's be honest - It's hot, heat checks have been less than superb thus we've been relying on timed AI for breeding, and these heifers are getting a little age and weight of them – all of this brews the perfect storm of poor conception rates. We could have chosen a dairy bull but with personnel and student safety in mind, they represent a risk we're not willing to take. Now these might not be the best of reasons for breeding to beef genetics but they do represent some very real reasons for action.

The reality is that progression within the dairy industry has positioned using beef genetics to maximize calf revenue as a real and viable option. The primary advancements making this thought reality are the use of **genomic testing** and increased utilization of **sexed semen**. These two allow us to pinpoint genetically superior animals as well as increase the proportion of females from those superior animals to more rapidly advance the genetics of the herd. Use of sexed semen without genotyping has also increased replacement numbers and for those with capped herd sizes, these replacements represent an additional revenue stream.

When reading current literature with regards to the beef on dairy topic, the data and how to utilize it can become confusing based on individual herd goals. Variables such as cull rate, desire to grow the herd, whether you already genotype, expenses versus market trends (beef and milk), current reproductive efficiency, etc. can really impact the economic benefit of a beef on dairy concept. Reality is that there are really two ways to look at this as a "tool" for the dairy herd. One way would be as a way of keeping animals milking but only continuing those **genetic** lines of interest. This would allow the producer to focus on higher genetic animals for replacements and herd progression while keeping lower producers in the herd but not propagating the genetic line. The second would be to use it as a tool in the **reproductive** program to reduce insemination costs. An example would be transitioning all animals at breeding number 3+ to beef semen. That is not to say that the two strategies cannot be used concurrently.

With either reasoning for incorporation of beef genetics, the by-product would be (hopefully) a crossbred calf that can yield a premium when sent to market. Your market and trends depend on what that premium will be. Recent sales in Springfield, MO on baby calves indicated a $20-$90 premium in the beef cross females compared with purebred Holstein and up to a $55 premium in the beef cross bull calves compared with purebred Holstein. The previous month the bull calf premium was closer to $120 to emphasize the market variability.

How then does a producer best capitalize on the use of beef semen?

1) You must evaluate the cost of genomic evaluation and determine if the premium of the crossbred calf would cover this cost. This is a simple expenses/revenue way to evaluate

the decision but one might also consider long term herd productivity by focusing on generating replacements from the top animals in the herd.

2) You must evaluate your standard cull rate to ensure that you have enough dairy replacements for future years
    a. Reality is that culling rates and reproductive efficiency go hand in hand. Therefore, if you cull hard and reproductive efficiency is low to average, beef semen is likely not an option. Improving reproductive efficiency and/or a reduction in cull rate are the two primary variables that would require change to implement this practice.
3) You should determine whether beef semen is best utilized in your heifers, cows, or both.
    a. Current methodologies include
        i. Using sexed semen on 1-2 services and then moving to a conventional beef semen on all animals regardless of genetics.
        ii. Using beef semen on only the genetically inferior
        iii. Using beef semen to get heifers into the herd and allowing performance to then dictate future breeding decisions
        iv. Limit beef semen to poor performing cows and/or cows and heifers with 2+ breedings.
        v. Use beef semen only in the cow population, for genetic or reproductive reasons. Use only dairy semen in heifers as they should represent the most genetically advanced animals in the herd.
4) You should evaluate your current reproductive performance.
    a. In herds with high reproductive efficiency, beef semen may not pay. Instead, these herds may benefit from using sexed semen and selling of dairy replacements.
    b. Whereas herds with low reproductive performance, a reduced semen cost associated with beef genetics may be the more attractive option with the potential to purchase dairy replacements as needed.
5) You should follow market trends to maximize the premium associated with beef cross dairy calves.

Current research publications and popular press articles address the beef on dairy question with models incorporating the use of AI. However it's also possible for some to consider the viability of thinking about the beef on dairy question with the use of natural service. This decision brings about a different set of questions and challenges but might be a way to ease into the process.

What about using natural service beef bulls?

1) Most would consider this a viable option for the heifer population and less so with cows, if they are housed in freestalls.
2) There is a trick in identifying most accurate breeding dates, but there are some options.
    a. Use synchronization programs, even simple prostaglandin programs, to refine the breeding window for more accurate due dates.
    b. Use heat detection aids such as k-mars or patches to determine approximate breed dates.
    c. Use ultrasound for pregnancy check work, which provides an even more accurate way than palpation for fetal aging.
3) Heifer populations on dairy farms should be the most genetically advanced, which brings two more questions to mind.

a. Genotyping would be a way for early identification of the bottom tier heifers, which would then be used for the beef program.
b. A different consideration would be using the beef bull as a cleanup in the reproductive program. This would allow you to at the least get some return on investment from these heifers before they are potentially reproductive culls. Though fertility traits are lowly heritable, it still remains a consideration when selecting animals to breed to beef bulls.

What are the considerations when selecting beef bulls?

1) The primary consideration when selecting beef bulls, especially for their use on heifers should be birth weight (BW) EPDs.
2) If working with a marketing outlet, you may grow more inclined to look at some carcass EPDs for increased value.
3) When using natural service, the bull to female ratio should be 1:20 when using young, yearling bulls and an increase in 10 females per year of bull age up to a 1:50 ratio.
    a. If using any form of synchronization, the ratio should be kept at or below 1:30.
4) Any purchased bulls for natural service need to have passed a Breeding Soundness Exam (BSE) in the 60 days prior to use or you may find yourself in a worse spot than continuing with AI.
5) Any purchased bulls for natural service need to come with a vaccination record that includes the respiratory complex, vibrio, clostridials and lepto.

We are currently in tough milk times and times where every penny counts. Unfortunately, this appears to be the reality for the very near future as well. Why not look into methods and options to increase the value of our secondary market – beef? Outlined above are some fundamental questions to ask and thought processes to work through. Much like every other thing in the dairy business, there is no "cookie cutter" approach to the beef on dairy question that works for everyone. Each producer must put the pencil to the paper to make sure the benefits outweigh the costs. That final piece of paper should have figures that incorporate your marketing ability for the crossbred calf, your current reproductive efficiency, your need for replacements in the future based on culling trends, the cost profile of beef versus dairy semen (that could be straw costs or bull purchase and upkeep costs), and how to best implement (should you choose) to maximize the financial return.

So come next June, UGA will have a set of crossbred beef calves. The heifers will begin to repay us for their cost of rearing and will represent a milk flush when we choose not to calve in our cows. The next pencil and paper activity will be whether marketing those beef calves as baby calves or rearing them to weights matching the beef industry's feeder calf market will yield the greatest net income. That discussion will be left for another day.

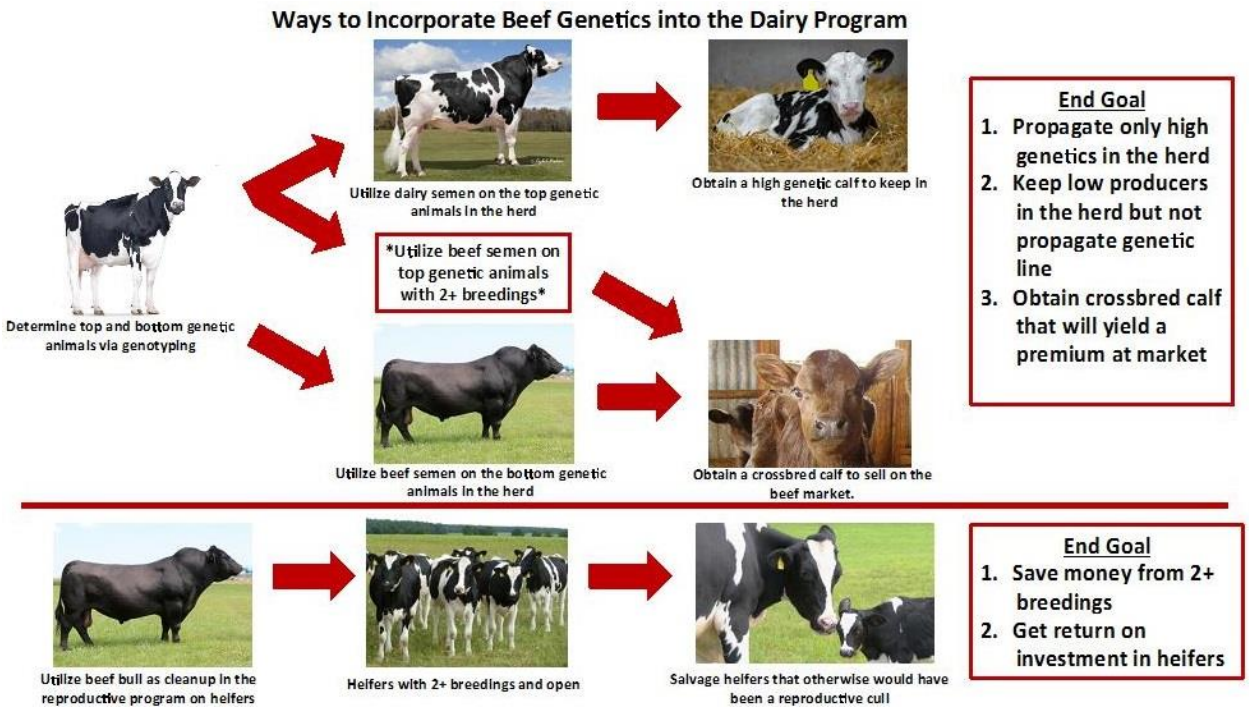

Figure. *An illustration of four different ways to incorporate beef genetics into the dairy herd.*

What you need to know about *Lactococcus* mastitis

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Recently, the concern for *Lactococcus* mastitis has increased. While once only considered to be important in dairy processing as a starter culture in buttermilk and cheese production, recent evidence elevates its importance as a mastitis pathogen. Outbreaks of *Lactococcus* mastitis may occur and thus result in greater prevalence, however increased frequency of identification is primarily related to improved diagnostic options for mastitis pathogens. Nonetheless, *Lactococcus* mastitis is a serious concern given its resistance to common mastitis therapies such as SPECTRAMAST® LC, ToDay®, and even Pirsue®.

Similarities between *Lactococcus* and *Streptococcus* bacteria

Lactococcus (lactococci) bacteria are gram positive, similar to *Streptococcus* (streptococci) and *Staphylococcus* (staphylococci) bacteria. In fact, lactococci were removed from the genus of *Streptococcu*s bacteria and reclassified as the genus *Lactococcus* around 1985 (Schleifer et al, 1985). With standard bacterial culture (both in-lab and on-farm), lactococci and streptococci appear similar, thus even to the trained eye it is nearly impossible to differentiate between them (Figures 1 and 2). Thus, a diagnosis of "strep" or "environmental strep" includes the possibility of *Streptococcus*, *Enterococcus*, and *Lactococcus* bacteria. Quality Milk Production Services (QMPS) at Cornell University analyzed 473 non-*Strep. agalactiae* samples to determine the correct identification of various "environmental streps" and found that approximately 27% of the isolates were actually *Lactococcus* bacteria, with around 67% of bacteria identified as "true" streptococci (Smith et al., 2016).

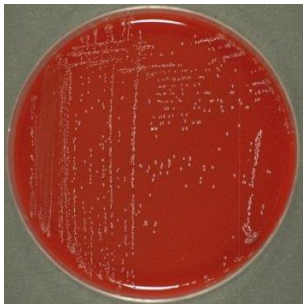

Figure 1. *Lactococcus* sp**.** *Photo courtesy of University of Copenhagen-Denmark*

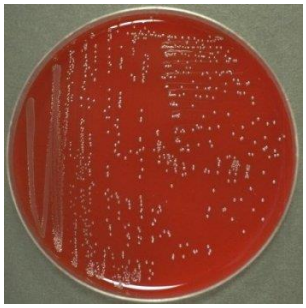

Figure 2. *Streptococcus* sp. *Photo courtesy of University of Copenhagen-Denmark*

Mammary infections caused by lactococci resemble infections caused by environmental streps and other common mastitis pathogens, i.e., clinical mastitis with high SCC. However, one should suspect lactococci if the animal has chronic environmental strep mastitis and is unresponsive to antibiotic therapy. Remember that chronic *Staph. aureus* infections can also present similarly (high SCC, unresponsive to antibiotics); however, culturing easily allows differentiation of streptococci/lactococci vs. staphylococci. Identification of *Lactococcus* (vs. other mastitis pathogens, including true environmental streps) is important because treatment regimens differ. The consensus among some veterinarians for antibiotic therapy against *Lactococcus* is Amoxi-

Mast®, but work with your veterinarian, county agent, and dairy extension specialist before, during, and after diagnostic testing to determine the best route forward, including potential modification of your mastitis prevention and control program. A proper milking routine, including effective pre- and post-dipping, and adherence to bedding maintenance is critical to minimize the risk of *Lactococcus* mastitis since lactococci are frequently found on skin and in the environment, including deep-bedded sand in freestalls. Because lactococci do thrive in the environment, segregation of infected animals will not prevent exposure of healthy cows to this pathogen.

Diagnostic testing for identification of *Lactococcus*

Further diagnostics are required beyond culturing to identify *Lactococcus*. The most common are:

-Polymerase chain reaction (PCR)
-Biochemical testing
-Matrix-assisted laser desorption/ionization-time of flight (MALDI-TOF)

Currently, PCR is not conducted unless in the context of a research trial given its high cost per sample and time to completion (up to $35-40/sample, around 1 week). Similarly, biochemical testing utilizing a miniaturized version is primarily used for research given its labor-intensive protocol and time to completion, though it available at a lower cost than PCR ($15-20/sample, up to 1 week). However, these miniaturized biochemical tests showed high accuracy in other research trials with *Lactococcus* and are currently included as part of an undergraduate research project in the UGA Animal and Dairy Science (ADS) Mastitis Lab. The use of MALDI-TOF has increased in recent years and is a very fast, reliable way to identify *Lactococcus*. The cost ranges from $10-15/sample. Well-equipped diagnostic labs, including the UGA Veterinary Diagnostic Lab, are able to identify many different types of bacteria in milk samples using MALDI-TOF ($15/samples with an accession fee). Results can be available in as little as 48 hours after the sample is received.

Lastly, a newer product on the market called AccuMast from FERA Diagnostics and Biologicals markets an ability to differentiate lactococci from other environmental streps and strep-like bacteria in as little as 16 hours for $7/sample (Ganda et al., 2016; Rodrigues et al., 2016). AccuMast is a culture-based system designed for on-farm use. The system utilizes growth media that results in different colored bacteria depending on its genus and species (Figure 3). Utilization of AccuMast for differentiation of streps and strep-like bacteria (including lactococci) is currently included as part of an undergraduate research project in the UGA ADS Mastitis Lab.

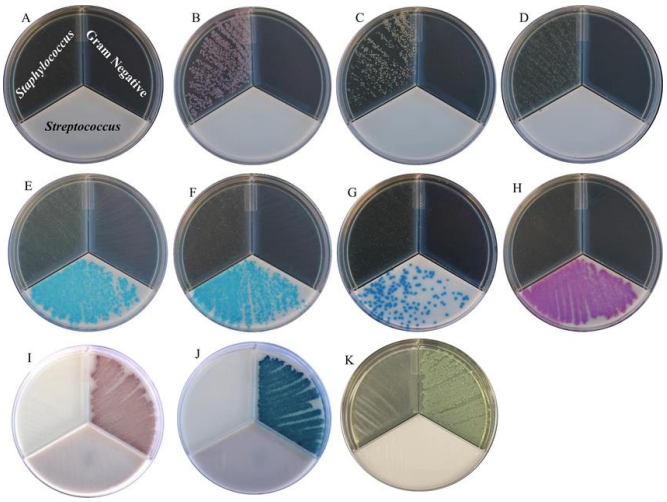

Figure 3. *AccuMast Culture System (Image courtesy of Ganda et al., 2016)*

Steps to take if you suspect *Lactococcus* mastitis:

1) If you are culturing milk (either external or on-farm) and have a high number of environmental streps not responding to therapy:

A. Consider sending quarter milk samples to the UGA Veterinary Diagnostic Lab for analysis.

2) If you are not culturing milk, but your bulk tank analysis indicates *Lactococcus* in your herd (or you are able to request a detailed bulk tank analysis through your co-operative and it shows *Lactococcus*):
   A. Target high SCC cows for further diagnostic testing
      I. Quarter milk samples from candidate cows can be cultured in the UGA ADS Mastitis Lab (limited number done free of charge currently) to identify prevalence of environmental streps and then consider sending identified quarter milk samples to the UGA Veterinary Diagnostic Lab for analysis
      OR
      II. Considering sending quarter milk samples from candidate cows straight to the UGA Veterinary Diagnostic Lab (this would be a more expensive "fishing expedition")

   ** Although bulk tank analysis is extremely useful, depending on the number of cows infected with *Lactococcus*, it may or may not be possible to detect in a bulk tank sample.

3) If you are not culturing milk and are unable to obtain a detailed bulk tank analysis through your co-operative
   A. Consider sending bulk tank samples to the UGA Veterinary Diagnostic Lab. Depending on the number of cows infected with *Lactococcus*, it may or may not be possible to detect it in a bulk tank sample.
   B. Target high SCC cows for further diagnostic testing (then see 2I and 2II above)

If you have any questions, would like to submit samples to the UGA ADS Mastitis Lab, or would like to submit samples to the UGA Veterinary Diagnostic Lab, work with your herd veterinarian, your local county agent, and your extension dairy specialist for mammary health, mastitis, and milk quality (Dr. Valerie Ryman).

Literatures

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3) Schleifer, K. H., Kraus, J., Dvorak, C., Klipper-Balz, R., Collins, M. D. & Fischer, W. (1985). Transfer of Streptococcus lactis and related streptococci to the genus Lactococcus gen. nov. Syst Appl Microbiol 6, 183–195.
4) Smith, JS, Moroni P, Nydam D (2016) Lactococcus: an emerging mastitis pathogen. Dairy Business and Holstein World, Pro-Dairy. 36-38.

UGA extension

What is the microbiome and how does it relate to the cow?

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One of the most popular buzzwords in human and animal health advertising today is "microbiome". While dairy producers know that the microbial population of cattle is important to their production, a lot of people have asked, "what really does 'microbiome' refer to?" The simple answer is the microbiome is the genetic composition of all the microbes present in the gut. Which is quite large in cattle because they possess one of the largest and most diverse microbial populations known, with more than 10^{10} microbial cells/g of digesta. To put that into perspective there are 7 x 10^9 humans living on planet Earth, meaning there are more than 200 x as many bacterial cells in a single ounce of cow manure than there are humans in the world.

How do microbes coexist with cows?

The microbiota and the cow share a mutually beneficial relationship in which the cow provides the microbes with nutrients and the ideal environment (warm, dark, and moist) and a constant flow of nutrients for growth. The microbes in turn provide the cow with nutrients it needs to live. As the microbiota breaks down the feedstuffs, they supply the cow with nutrients (such as energy) that it needs. Because this microbial population, ruminants do not need to be fed as many essential nutrients in their diets. For example, cattle do not need to be fed B vitamins or vitamin C because the bacteria typically produce enough of these to meet the animals needs. The cow-microbe interaction is not the only mutually beneficial one found in the rumen, because many of the microbes within the rumen depend on each other for nutrients, vitamins, and growth factors. Different organisms can utilize and degrade different nutrients, such as cellulose found in forage. As cellulose is broken into smaller pieces by some fungi and bacteria, other bacteria eat the "crumbs". These "crumbsnatchers" produce B vitamins that are needed by the bacteria and fungi that begin the breakdown of cellulose. By working together, the microbial teamwork increases the efficiency of the cow and helps them get the most out of what they eat. Ultimately, instead of feeding our cows, we feed the ruminal microbial population, and **they** feed our cows.

So, what makes up this immense microbial population? The gut of cattle contains a microbial population that is a combination of bacteria, fungi, protozoa, and viruses. There are more than 3000 different species known to be present, but we only know about 10% of all the microbes on earth. Some of these microbes are harmless and some may be harmful to your cows or humans. Some of the most notable potentially harmful organisms present in the cattle gut are *Escherichia coli* O157:H7 and *Salmonella*, which are bacteria that cause foodborne illnesses in humans.

Ruminal bacteria have different roles in the environment, and because there are so many microbes possessing many different strengths, there is fierce competition between the microbes because there is only so much food to go around. The key for bacteria to succeed in the rumen is to have traits that make them best suited for their environment. In the rumen, bacteria are often

generalists or specialists based upon what they can "eat" and how well they gather nutrients which impacts their ability to succeed. Bacteria also differ in their ability to utilize (or even tolerate) oxygen. The gastrointestinal tract is anaerobic, meaning it lacks oxygen. In order make energy without oxygen, bacteria must use fermentation; the same process by which beer and wine are made. A downside to this process is that growing in the absence of oxygen only provides 1/10 as much energy as growing in the presence of oxygen (aerobically). This means that bacteria that grow anaerobically are much less efficient than oxygen-using bacteria, and they are "poisoned" by the presence of oxygen. Oxygen enters the rumen with feed and water, but some bacteria, yeast, and fungi can live both an aerobic and anaerobic lifestyle, so that they quickly gobble up the oxygen that enters the rumen. Many of the organisms common to Direct Fed Microbials (DFM) fall into this aerobic/anaerobic lifestyle.

Are cows efficient?

Efficiency is the name of the game in modern production agriculture. The goal producers have is to get as low of a feed to gain ratio as possible. Monogastric animals, such as pigs and chickens can achieve a 1:1 feed to gain ratio, meaning the animal eats one pound of feed for every pound of gain. Cows cannot do this on grain, instead they have a feed to gain ratio of 4-7:1, meaning they eat four to seven pounds of feed for every pound of gain. What is the reason for this inefficiency? The answer is simply the rumen microbial population, which returns 1/10 as much energy from fermentation as would the host respiration. Because cattle have this "middle man", they lose efficiency of growth compared to monogastrics when fed grain. However, the advantage of ruminants lies in their ability to utilize different feed ingredients, such as forage. Because of the ruminal microbial population, they are able to digest many feeds that are unusable by other animals. They can be turned out in a pasture without being fed a specialized diet and survive perfectly fine and even continue to grow; try to do that with poultry and pigs! So, if we judge efficiency based on an animal's ability to utilize all feedstuffs they can consume, cows and ruminants in general are much more efficient and adaptable to different production situations. It is clear that the ruminal microbiome makes ruminants less efficient in some aspects, but provides cow the ability to convert sunlight (in the form of grass) to high quality protein: milk! The dairy cow is clearly udderly dependent on these microscopic passengers.

Is there any difference in forage quality harvested as hay versus silage or baleage?

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I received a call from a producer who wanted to know if there was a difference in the quality of bermudagrass harvested as hay versus baleage. Fortunately the weather was good and he had a choice. The question arose after two different individuals provided conflicting information on the quality of hay versus baleage. As is often the case, the answer is "it depends". While there can be minor differences in quality related to harvest method, the main factor determining forage quality is the stage of maturity at harvest.

As forage matures, more lignin is produced to support the increasing amount of growth which reduces fiber digestibility. Several years ago a study was conducted at Tifton to measure the changes in chemical composition and digestibility of Coastal and Tifton 85 bermudagrass harvested at 3, 5, and 7 weeks of regrowth (Table 1). The results of this trial illustrate how maturity reduces fiber digestibility along with potential quality differences among cultivars. These changes have also been reported for other forages commonly used by dairymen.

The effect of harvesting bermudagrass as hay or silage on production of lactating cows was evaluated in a different trial at Tifton. Tifton 85 bermudagrass was harvested as hay or silage from the same cutting and fed at 8.5, 15.8, or 23.3% of the ration DM. No differences were observed for hay versus silage, but increasing the amount of Tifton 85 resulted in higher concentrations of dietary NDF which reduced dry matter intake and yields of milk and milk fat. In a follow-up trial, no differences were observed in intake or production when diets containing increasing amounts of Tifton 85 bermudagrass forage were fed, but dietary NDF was adjusted so there were no differences among diets.

Harvesting forage as baleage or silage provides a means for improving forage quality when weather conditions delay harvest as hay. This is especially true for winter annuals as drying conditions are rarely ideal during early spring. Researchers in Louisiana compared the performance of lactating dairy cows fed diets based on ryegrass harvested as baleage, silage or hay. The baleage and silage without delay, but hay harvest was delayed due to poor drying conditions resulting in more mature forage. When they fed the forages, the cows fed the hay produced the least amount of milk whereas those fed ryegrass silage or baleage had similar production.

This year there have been a greater percentage of weeks this summer where the conditions were not ideal for harvesting hay. Producers who were able to harvest forage as baleage or silage should have higher forage quality that those who had to wait to put up hay. For legumes such as alfalfa, there is an advantage for harvesting as baleage or silage even in good weather to reduce leaf loss that occurs during raking and baling, especially in a large round baler. Depending on the system, harvesting baleage or silage can be done without tedding which saves time, fuel, and labor partially offsetting the higher cost of baleage or silage.

When drying conditions are ideal for producing hay, the choice of making hay or baleage should be determined by factors other than quality such as storage, feeding system, retain or sell, etc.

Producers who have equipment for making baleage have options to allow them to minimize maintain improved forage quality.

Table 1. *Effect of age at harvest of Tifton 85 and Coastal bermudagrass on chemical composition and in vitro DM digestibility.*

		Age, weeks of regrowth			
	Cultivar	3	5	7	SE
Chemical composition, % of DM					
CP					
	Tifton 85	15.8	14.5	12.6	0.2
	Coastal	14.7	15.8	13.1	
NDF					
	Tifton 85	75.4	77.3	72.7	0.4
	Coastal	70.3	73.0	69.4	
ADF					
	Tifton 85	32.8	33.0	32.7	0.30
	Coastal	30.6	30.7	30.3	
Lignin					
	Tifton 85	3.4	4.1	4.4	0.04
	Coastal	4.3	4.9	4.7	
48 Hour in vitro DM digestibility, %					
	Tifton 85	65.0	62.3	62.4	0.4
	Coastal	60.4	58.8	59.0	

Mandebvu et al. 1999. J. Anim. Sci. 77:1572-1586.

Look behind the numbers to see the whole story

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One thing a dairy farm does is to generate a lot of numbers. Milk per cow per day, rolling herd average, pounds fed per cow per day, milk income, SCC, hospital cows, roughage to grain ratio, MUN, fat pounds, heat dates, DIM, dry days, due date, calving date, CF, CP, RUP, DP, 150 day milk, labor cost, vet cost, pounds milk per employee, peak milk, summit milk, days open, times bred, sire, dam, heifer %, age to calving, pounds milk per day for life, rating, 305 ME milk, lifetime production, test day average, pounds shipped, protein %, SCC Score, equity, debt, return on investment, temperature, humidity, THI, mastitis cases, DA's, SNF are only some of the information that can be generated.

With today's computers and electronics, a large amount of information can be generated and stored. The key for management is if this information can be usefully. Two criteria are important. First, to manage an item it must be able to be measured. Second, data or numbers are not useful if they do not relate or help you make a decision.

Over the years, as numbers on the farm have increased lists have been produced that identify the most important numbers for a manager to use. These list continue to change and evolve as areas of concern become critical or as new numbers evolve. Many of these numbers could be called compound numbers as they use different pieces of information to create a value for management.

One of these numbers that many have said was a critical value is Income Over Feed Costs (IOFC). This value is calculated from milk income minus feed cost. It is important because milk income is the major source of income on a dairy and feed costs are the largest expense item on a dairy to produce milk. This number is the amount of money available to pay all other expenses. So a goal could be to maximize this number as if it is greater than the expenses then a profit is generated. Also IOFC can be calculated for a cow per day, per cwt (hundred weight of milk) or for the herd on per day or per week basis. All of these may have value but need to be carefully examined for where the numbers are coming from.

First, look at the Milk Income value. The value is the income from milk. The payment is based on the pounds of milk and the components. The value may be calculated for the fat and/or the protein content depending on the area of the US. Also there may be income from the level of SCC, the PI value and a premium for the market. Many comparison use a blend (or average price) for the farm X the pounds of milk. This will give a value for each cow for example that is an average income for the cow based on her pounds of milk. This income can be modified for component content and SCC but typically there is not an individual cow's PI value available.

Second, the feed cost value also has some limitations. The value should be the pounds of feed consumed X the price of the feed. Almost no one individually feeds their cows so the data collected is for a group of cows. The calculation for feed cost is based then on an average intake for a group of cows X the feed ingredients cost. So for an individual cow the value may over or under estimate the true feed cost. Other factors that need to be considered is how much is consumed versus what is put in the feed bunk. Are weight backs collected and fed to other animals?

Trying to compare individual cows on their IOFC is done in many computer programs. Often this gives a false answer as the input values reflect the group. A better evaluation is on a group of animals where the data reflects the group's performance.

An example of how this effects our decisions follows. The IOFC for 4 situations is a) $6.70, b) $2.80, c) $10.30 and d) $6.40. Evaluating this one would say that c is the best and b is the worst, and that a and d are equal.

Looking behind the numbers, the milk production is 80 pounds for all situations and the feed intake is 52 pounds of dry matter for each situation. The difference is that for a) milk price is $.165/lb and feed price is $.125/lb, for b) milk price is $.165/lb and feed price is $.20/lb, for c) milk price is $.21/lb and feed price is $.125/lb, and for d) milk price is $.21/lb and feed price is $.20/lb.

To evaluate the situation. One needs to look at all of the numbers going into the calculation.

Application deadline to renew medium and large state land application permits is approaching

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All confined animal feeding operations (CAFOs) in Georgia with 300 animal units or greater are required by state law to obtain a permit. Most of the CAFOs in the state have either a medium or large state land application system (LAS) permit. Georgia Environmental Protection Division (EPD) review and update these permits every 5 years. The new permits are due to be released in April of 2019. All current permit holders must submit a notice of intent (NOI) form to Georgia Department of Agriculture (GDA) in order to obtain coverage under the new permit. Failure to submit a NOI will result in loss of permit coverage. According to the new permits, owners/operators must apply for the new permits 180 days before the release of the new permit. Therefore, the deadline to submit the NOI to GDA is October 2, 2018. All permit holders received a letter from EPD explaining the requirement to submit a NOI. The letter also contained a copy of the NOI form with directions on how to complete the form. If you did not receive the letter or misplaced the form, it can be found on the AWARE website at www.aware.uga.edu. Don't forget to send in the form by October 2, 2018.

In addition to sending in a NOI for the new permit, a new nutrient management plan (NMP) may also need to be submitted to GDA. If the NMP was approved before March 15, 2011, then a new NMP must be submitted to GDA along with your NOI. However, if the plan was approved after that date then it is still valid. All NMPs must be written by a certified nutrient management specialist. Many county extension agents with CAFOs in their counties are certified to write these plans so simply contact the local extension office. It is important to know that a NMP can be fairly complicated and takes a significant amount of time to complete. So the sooner the process can be started the better. Also, soil tests and manure test are required to complete a NMP so these samples should be submitted and results obtained before the process is started. For questions contact Melony Wilson at mlwilson@uga.edu.

Important Dates

2018-2019

54th Florida Dairy Production Conference

- September, 26, 2018
- Straughn IFAS Extension Professional Development Center, 2142 Shealy Drive, Gainesville, FL 32608
- https://www.eventbrite.com/e/54th-florida-dairy-production-conference-tickets-46245007061?aff=ehomecard

Georgia National Fair

- October 4-14, 2018
- 401 Larry Walker Parkway, Perry, GA
- http://www.gnfa.com/

Sunbelt Agriculture Expo

- October 16-18, 2018
- 290-G Harper Boulevard, Moultrie, GA 31788-2157
- http://sunbeltexpo.com/

Georgia Dairy Conference

- January 21-23, 2019
- Savannah Marriott Riverfront, 100 General McIntosh Boulevard, Savannah, GA 31401
- http://www.gadairyconference.com/

Top GA DHIA By Test Day Milk Production – June, 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/31/2018	431	88	102.8	3.2	2.99	31264	1144
DAVE CLARK*	Morgan	H	6/4/2018	1198	91	90.8	4	3.22	31780	1325
J.EVERETT WILLIAMS*	Morgan	X	6/11/2018	1899	87	90.3	4.4	3.6	28063	
DANNY BELL*	Morgan	H	6/7/2018	272	90	88	3.9	3.02	29839	1147
A & J DAIRY*	Wilkes	H	6/11/2018	442	91	83.9			28175	
DOUG CHAMBERS	Jones	H	6/25/2018	432	88	83.8	3.3	2.35	24878	864
EBERLY FAMILY FARM*	Burke	H	5/30/2018	870	88	82.1	3.5	2.56	26748	968
PHIL HARVEY #2*	Jasper	H	5/24/2018	1410	87	80.9	3.8	2.64	24358	899
SCHAAPMAN HOLSTEINS*	Wilcox	H	5/19/2018	693	89	79.2	3.8	2.88	27117	964
COASTAL PLAIN EXP STATION*	Tift	H	6/17/2018	271	89	78.8	3.3	2.33	25606	923
SCOTT GLOVER	Hall	H	6/13/2018	204	89	78.1	3.6	2.55	27168	1014
ADAM GRAFT*	Mitchell	H	6/24/2018	3383	91	77.8	3.7	2.53	25475	941
TROY YODER	Macon	H	6/13/2018	299	87	77.2	3.8	2.59	24692	1016
SOUTHERN SANDS FARM	Jenkins	H	6/11/2018	92	91	76.4	3.5	2.5	24522	867
IRVIN R YODER	Macon	H	6/14/2018	220	89	74.9	3.7	2.39	23749	909
LARRY MOODY	Ware	H	6/29/2018	1027	89	74.2	3.5	2.3	24130	831
MARTIN DAIRY L. L. P.	Hart	H	6/6/2018	327	90	72.6	3.8	2.54	23630	932
WHITEHOUSE FARM	Macon	H	5/25/2018	233	91	72.1	3.7	2.42	22561	822
TWIN OAKS FARM	Jefferson	H	6/19/2018	93	90	70.5	3.6	2.51	22386	872
HORST CREST FARMS	Jenkins	H	5/24/2018	169	84	70.4	3.8	2.21	20280	769
R & D DAIRY	Lamar	H	6/4/2018	326	90	70.4	3.9	2.52	24711	984

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

UGA extension

Top GA DHIA By Test Day Fat Production – June 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
J.EVERETT WILLIAMS*	Morgan	X	6/11/2018	1899	87	90.3	4.4	3.6	28063	
DAVE CLARK*	Morgan	H	6/4/2018	1198	91	90.8	4	3.22	31780	1325
DANNY BELL*	Morgan	H	6/7/2018	272	90	88	3.9	3.02	29839	1147
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/31/2018	431	88	102.8	3.2	2.99	31264	1144
SCHAAPMAN HOLSTEINS*	Wilcox	H	5/19/2018	693	89	79.2	3.8	2.88	27117	964
PHIL HARVEY #2*	Jasper	H	5/24/2018	1410	87	80.9	3.8	2.64	24358	899
TROY YODER	Macon	H	6/13/2018	299	87	77.2	3.8	2.59	24692	1016
BRENNEMAN FARMS	Macon	H	5/30/2018	49	89	64.8	4	2.57	20469	771
EBERLY FAMILY FARM*	Burke	H	5/30/2018	870	88	82.1	3.5	2.56	26748	968
SCOTT GLOVER	Hall	H	6/13/2018	204	89	78.1	3.6	2.55	27168	1014
MARTIN DAIRY L. L. P.	Hart	H	6/6/2018	327	90	72.6	3.8	2.54	23630	932
ADAM GRAFT*	Mitchell	H	6/24/2018	3383	91	77.8	3.7	2.53	25475	941
R & D DAIRY	Lamar	H	6/4/2018	326	90	70.4	3.9	2.52	24711	984
TWIN OAKS FARM	Jefferson	H	6/19/2018	93	90	70.5	3.6	2.51	22386	872
SOUTHERN SANDS FARM	Jenkins	H	6/11/2018	92	91	76.4	3.5	2.5	24522	867
WHITEHOUSE FARM	Macon	H	5/25/2018	233	91	72.1	3.7	2.42	22561	822
BOBBY JOHNSON	Grady	X	5/18/2018	521	90	63	3.8	2.39	20092	767
IRVIN R YODER	Macon	H	6/14/2018	220	89	74.9	3.7	2.39	23749	909
DOUG CHAMBERS	Jones	H	6/25/2018	432	88	83.8	3.3	2.35	24878	864
COASTAL PLAIN EXP STATION*	Tift	H	6/17/2018	271	89	78.8	3.3	2.33	25606	923

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

Top GA DHIA By Test Day Milk Production – July 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/31/2018	431	88	102.8	3.2	2.99	31264	1144
DAVE CLARK*	Morgan	H	7/2/2018	1170	91	95.5	4	3.36	31669	1321
DANNY BELL*	Morgan	H	7/5/2018	298	90	90.6	3.8	2.89	29841	1147
J.EVERETT WILLIAMS*	Morgan	X	7/9/2018	1931	88	88.6	4.4	3.47	28165	
A & J DAIRY*	Wilkes	H	6/11/2018	442	91	83.9			28175	
SCOTT GLOVER	Hall	H	7/19/2018	197	89	80.5	3.7	2.57	27214	1018
DOUG CHAMBERS	Jones	H	7/24/2018	432	88	79.5	3.3	2.17	24827	863
EBERLY FAMILY FARM*	Burke	H	7/12/2018	866	89	78.8	3.5	2.44	26748	968
ADAM GRAFT*	Mitchell	H	6/24/2018	3383	91	77.8	3.7	2.53	25475	941
TROY YODER	Macon	H	6/13/2018	299	87	77.2	3.8	2.59	24692	1016
SCHAAPMAN HOLSTEINS*	Wilcox	H	7/11/2018	789	90	76.5	3.8	2.58	27126	976
SOUTHERN SANDS FARM	Jenkins	H	6/11/2018	92	91	76.4	3.5	2.5	24522	867
IRVIN R YODER	Macon	H	6/14/2018	220	89	74.9	3.7	2.39	23749	909
COASTAL PLAIN EXP STATION*	Tift	H	7/24/2018	273	89	74.7	3.4	2.1	25452	909
TWIN OAKS FARM	Jefferson	H	6/19/2018	93	90	70.5	3.6	2.51	22386	872
R & D DAIRY	Lamar	H	6/4/2018	326	90	70.4	3.9	2.52	24711	984
LARRY MOODY	Ware	H	7/29/2018	1013	89	70.3	3.4	2.09	24049	827
OCMULGEE DAIRY	Houston	H	7/12/2018	331	88	70.2	3.5	1.97	21621	780
OVERHOLT FARMS	Macon	H	6/6/2018	236	83	70	3.5	1.99	19288	701
VISSCHER DAIRY*	Jefferson	H	6/8/2018	885	89	69.5	3.3	2.21	23404	797

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

Top GA DHIA By Test Day Fat Production - July 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
J.EVERETT WILLIAMS*	Morgan	X	7/9/2018	1931	88	88.6	4.4	3.47	28165	
DAVE CLARK*	Morgan	H	7/2/2018	1170	91	95.5	4	3.36	31669	1321
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	5/31/2018	431	88	102.8	3.2	2.99	31264	1144
DANNY BELL*	Morgan	H	7/5/2018	298	90	90.6	3.8	2.89	29841	1147
TROY YODER	Macon	H	6/13/2018	299	87	77.2	3.8	2.59	24692	1016
SCHAAPMAN HOLSTEINS*	Wilcox	H	7/11/2018	789	90	76.5	3.8	2.58	27126	976
BRENNEMAN FARMS	Macon	H	5/30/2018	49	89	64.8	4	2.57	20469	771
SCOTT GLOVER	Hall	H	7/19/2018	197	89	80.5	3.7	2.57	27214	1018
ADAM GRAFT*	Mitchell	H	6/24/2018	3383	91	77.8	3.7	2.53	25475	941
R & D DAIRY	Lamar	H	6/4/2018	326	90	70.4	3.9	2.52	24711	984
TWIN OAKS FARM	Jefferson	H	6/19/2018	93	90	70.5	3.6	2.51	22386	872
SOUTHERN SANDS FARM	Jenkins	H	6/11/2018	92	91	76.4	3.5	2.5	24522	867
EBERLY FAMILY FARM*	Burke	H	7/12/2018	866	89	78.8	3.5	2.44	26748	968
IRVIN R YODER	Macon	H	6/14/2018	220	89	74.9	3.7	2.39	23749	909
CECIL DUECK	Jefferson	H	6/1/2018	83	88	64.5	3.6	2.25	21054	779
VISSCHER DAIRY*	Jefferson	H	6/8/2018	885	89	69.5	3.3	2.21	23404	797
JOHN WESTSTEYN*	Pierce	X	6/30/2018	1143	91	56.6	4.3	2.2	20975	826
BOBBY JOHNSON	Grady	X	7/5/2018	521	90	57.3	3.9	2.2	20136	768
WILLIAMS DAIRY	Taliaferro	H	6/1/2018	130	89	65.6	3.7	2.19	22127	819
DOUG CHAMBERS	Jones	H	7/24/2018	432	88	79.5	3.3	2.17	24827	863
FRANKS FARM	Burke	B	6/5/2018	188	88	61.5	4	2.17	19397	752

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

UGA extension

Top GA DHIA By Test Day Milk Production – August 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	8/23/2018	428	88	96.3	3.7	3.14	31721	1143
DAVE CLARK*	Morgan	H	8/6/2018	1210	90	93.5	4	3.25	31578	1314
DANNY BELL*	Morgan	H	8/2/2018	309	90	87.5	3.8	2.87	29652	1139
J.EVERETT WILLIAMS*	Morgan	X	8/13/2018	1990	88	82.2	4.3	3.03	28019	
SCOTT GLOVER	Hall	H	8/14/2018	191	89	81.4	3.7	2.58	27147	1015
DOUG CHAMBERS	Jones	H	8/28/2018	438	88	80.7	3.3	2.19	24853	863
SCHAAPMAN HOLSTEINS*	Wilcox	H	8/16/2018	798	90	78	3.8	2.66	27179	985
TROY YODER	Macon	H	7/31/2018	308	87	77.6	3.9	2.73	24769	1018
EBERLY FAMILY FARM*	Burke	H	8/14/2018	879	89	74.7	3.6	2.29	26648	966
SOUTHERN SANDS FARM	Jenkins	H	8/17/2018	87	91	73.6	3.8	2.38	24718	877
COASTAL PLAIN EXP STATION*	Tift	H	8/22/2018	278	89	71.5	3.7	2.35	25373	907
WHITEHOUSE FARM	Macon	H	7/25/2018	245	90	71.3	3.7	2.2	22625	834
LARRY MOODY	Ware	H	8/29/2018	1004	88	71.2	3.4	2.01	23937	824
IRVIN R YODER	Macon	H	8/8/2018	245	88	70	3.8	2.24	23473	906
OCMULGEE DAIRY	Houston	H	8/15/2018	336	88	67.4	3.5	1.88	21538	778
MARTIN DAIRY L. L. P.	Hart	H	7/23/2018	334	90	65.8	3.9	2.13	23502	926
OVERHOLT FARMS	Macon	H	8/7/2018	235	82	65.1	3.6	1.88	19712	714
RUFUS YODER JR	Macon	H	8/9/2018	155	92	62.8	3.8	2.24	23262	826
VISSCHER DAIRY*	Jefferson	H	8/21/2018	954	88	60.8	3.6	1.93	23925	817
HORST CREST FARMS	Jenkins	H	7/19/2018	167	84	60.1	4	1.95	20152	769
WILLIAMS DAIRY	Taliaferro	H	8/16/2018	125	88	60.1	3.4	1.72	21935	805

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

UGA extension

Top GA DHIA By Test Day Fat Production – August 2018										
					Test Day Average				Yearly Average	
Herd	County	Br.	Test Date	[1]Cows	% in Milk	Milk	% Fat	TD Fat	Milk	Lbs. Fat
DAVE CLARK*	Morgan	H	8/6/2018	1210	90	93.5	4	3.25	31578	1314
RODGERS' HILLCREST FARMS INC.*	McDuffie	H	8/23/2018	428	88	96.3	3.7	3.14	31721	1143
J.EVERETT WILLIAMS*	Morgan	X	8/13/2018	1990	88	82.2	4.3	3.03	28019	
DANNY BELL*	Morgan	H	8/2/2018	309	90	87.5	3.8	2.87	29652	1139
TROY YODER	Macon	H	7/31/2018	308	87	77.6	3.9	2.73	24769	1018
SCHAAPMAN HOLSTEINS*	Wilcox	H	8/16/2018	798	90	78	3.8	2.66	27179	985
SCOTT GLOVER	Hall	H	8/14/2018	191	89	81.4	3.7	2.58	27147	1015
SOUTHERN SANDS FARM	Jenkins	H	8/17/2018	87	91	73.6	3.8	2.38	24718	877
COASTAL PLAIN EXP STATION*	Tift	H	8/22/2018	278	89	71.5	3.7	2.35	25373	907
EBERLY FAMILY FARM*	Burke	H	8/14/2018	879	89	74.7	3.6	2.29	26648	966
RUFUS YODER JR	Macon	H	8/9/2018	155	92	62.8	3.8	2.24	23262	826
IRVIN R YODER	Macon	H	8/8/2018	245	88	70	3.8	2.24	23473	906
WHITEHOUSE FARM	Macon	H	7/25/2018	245	90	71.3	3.7	2.2	22625	834
BOBBY JOHNSON	Grady	X	7/5/2018	521	90	57.3	3.9	2.2	20136	768
DOUG CHAMBERS	Jones	H	8/28/2018	438	88	80.7	3.3	2.19	24853	863
MARTIN DAIRY L. L. P.	Hart	H	7/23/2018	334	90	65.8	3.9	2.13	23502	926
LARRY MOODY	Ware	H	8/29/2018	1004	88	71.2	3.4	2.01	23937	824
HORST CREST FARMS	Jenkins	H	7/19/2018	167	84	60.1	4	1.95	20152	769
VISSCHER DAIRY*	Jefferson	H	8/21/2018	954	88	60.8	3.6	1.93	23925	817
BERRY COLLEGE DAIRY	Floyd	J	7/23/2018	37	81	51.5	4.5	1.9	16619	783

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

Top GA Lows Herds for SCC –TD Average Score – June 2018									
Herd	**County**	**Test Date**	**Br.**	**[1]Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
BERRY COLLEGE DAIRY	Floyd	6/22/2018	J	36	16604	0.8	43	1.4	51
BRENNEMAN FARMS	Macon	5/30/2018	H	49	20469	1.5	79	1.8	155
DANNY BELL*	Morgan	6/7/2018	H	272	29839	1.7	124	2	191
SOUTHERN ROSE FARMS	Laurens	6/7/2018	H	86	20618	1.8	247	2.5	265
TWIN OAKS FARM	Jefferson	6/19/2018	H	93	22386	1.9	94	2.9	249
RONNIE ROBINSON	Spalding	6/19/2018	H	98	16069	1.9	107	2.2	179
COASTAL PLAIN EXP STATION*	Tift	6/17/2018	H	271	25606	1.9	170	2.2	200
RUFUS YODER JR	Macon	6/15/2018	H	153	23312	2	124	2.5	212
SOUTHERN SANDS FARM	Jenkins	6/11/2018	H	92	24522	2	132	2.1	152
MARTIN DAIRY L. L. P.	Hart	6/6/2018	H	327	23630	2	141	2.3	182
PHIL HARVEY #2*	Jasper	5/24/2018	H	1410	24358	2	206	2.6	235
WHITEHOUSE FARM	Macon	5/25/2018	H	233	22561	2.1	173	2.9	248
EBERLY FAMILY FARM*	Burke	5/30/2018	H	870	26748	2.1	192	2.3	204
RODGERS' HILLCREST FARMS INC.*	McDuffie	5/31/2018	H	431	31264	2.1	217	2.3	208
AUSTIN WALDROUP	Troup	6/21/2018	H	125		2.2	120	2.5	188
IRVIN R YODER	Macon	6/14/2018	H	220	23749	2.2	151	2.2	140
DAVID ADDIS	Whitfield	6/21/2018	H	34	19375	2.2	171	1.3	90
WILLIAMS DAIRY	Taliaferro	6/1/2018	H	130	22127	2.2	181	2.6	245
CECIL DUECK	Jefferson	6/1/2018	H	83	21054	2.2	185	2.6	200
ALEX MILLICAN	Walker	5/31/2018	H	98	18340	2.2	204	2	164

[1]Minimum herd or permanent string size of 20 cows. Yearly average calculated after 365 days on test. Test day milk, marked with an asterisk (*), indicates herd was milked three times per day (3X). Information in this table is compiled from Dairy Records Management Systems Reports (Raleigh, NC).

UGA extension

Top GA Lows Herds for SCC –TD Average Score – July 2018									
Herd	**County**	**Test Date**	**Br.**	**[1]Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
BERRY COLLEGE DAIRY	Floyd	7/23/2018	J	37	16619	1.2	57	1.3	49
BRENNEMAN FARMS	Macon	5/30/2018	H	49	20469	1.5	79	1.8	155
DAVID ADDIS	Whitfield	7/24/2018	H	35	19338	1.7	75	1.4	95
DANNY BELL*	Morgan	7/5/2018	H	298	29841	1.8	142	2.1	191
SOUTHERN ROSE FARMS	Laurens	6/7/2018	H	86	20618	1.8	247	2.5	265
TWIN OAKS FARM	Jefferson	6/19/2018	H	93	22386	1.9	94	2.9	249
RONNIE ROBINSON	Spalding	6/19/2018	H	98	16069	1.9	107	2.2	179
JAMES W MOON	Morgan	7/10/2018	H	126	18390	1.9	148	2	154
DAVE CLARK*	Morgan	7/2/2018	H	1170	31669	1.9	186	2.1	217
RUFUS YODER JR	Macon	6/15/2018	H	153	23312	2	124	2.5	212
SOUTHERN SANDS FARM	Jenkins	6/11/2018	H	92	24522	2	132	2.1	152
RODGERS' HILLCREST FARMS INC.*	McDuffie	5/31/2018	H	431	31264	2.1	217	2.3	208
IRVIN R YODER	Macon	6/14/2018	H	220	23749	2.2	151	2.2	140
WILLIAMS DAIRY	Taliaferro	6/1/2018	H	130	22127	2.2	181	2.6	245
CECIL DUECK	Jefferson	6/1/2018	H	83	21054	2.2	185	2.6	200
OVERHOLT FARMS	Macon	6/6/2018	H	236	19288	2.2	205	2.6	224
EBERLY FAMILY FARM*	Burke	7/12/2018	H	866	26748	2.2	223	2.3	208
FRANKS FARM	Burke	6/5/2018	B	188	19397	2.3	225	2.4	157
BUD BUTCHER	Coweta	7/24/2018	H	384	21345	2.3	236	2.8	333
BRUCE HARPER	Morgan	7/11/2018	H	144	17260	2.3	237	2.9	288

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UGA extension

Top GA Lows Herds for SCC –TD Average Score – August 2018									
Herd	**County**	**Test Date**	**Br.**	**[1]Cows**	**Milk-Rolling**	**SCC-TD-Average Score**	**SCC-TD-Weight Average**	**SCC-Average Score**	**SCC-Wt.**
BERRY COLLEGE DAIRY	Floyd	7/23/2018	J	37	16619	1.2	57	1.3	49
IRVIN R YODER	Macon	8/8/2018	H	245	23473	2.1	161	2.1	134
WILLIAMS DAIRY	Taliaferro	8/16/2018	H	125	21935	2.1	187	2.7	253
DANNY BELL*	Morgan	8/2/2018	H	309	29652	2.1	198	2.1	192
EBERLY FAMILY FARM*	Burke	8/14/2018	H	879	26648	2.2	200	2.3	207
J.EVERETT WILLIAMS*	Morgan	8/13/2018	X	1990	28019	2.2	233	2	187
DAVID ADDIS	Whitfield	8/21/2018	H	35	19172	2.2	248	1.4	108
DAVE CLARK*	Morgan	8/6/2018	H	1210	31578	2.3	215	2.1	211
RUFUS YODER JR	Macon	8/9/2018	H	155	23262	2.4	196	2.5	206
SCOTT GLOVER	Hall	8/14/2018	H	191	27147	2.4	199	2.5	170
BRENNEMAN FARMS	Macon	8/6/2018	H	46	20642	2.4	340	1.8	192
ALEX MILLICAN	Walker	7/30/2018	H	93	18057	2.6	252	2.1	170
LOUIS YODER	Macon	7/23/2018	H	110	20360	2.6	302	2.8	327
HORST CREST FARMS	Jenkins	7/19/2018	H	167	20152	2.7	179	3.3	285
DONALD NEWBERRY	Bibb	8/11/2018	H	129	14883	2.7	204	2.8	217
TROY YODER	Macon	7/31/2018	H	308	24769	2.7	223	2.8	207
BRUCE HARPER	Morgan	8/15/2018	H	141	17536	2.7	289	2.8	275
HALE DAIRY	Oconee	7/25/2018	H	112	15854	2.7	357	2.8	301
RODGERS' HILLCREST FARMS INC.*	McDuffie	8/23/2018	H	428	31721	2.8	196	2.4	218
JAMES W MOON	Morgan	8/7/2018	H	128	18356	2.8	218	2	160

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UGA extension